



JOINT PROGRAM EXECUTIVE OFFICE
ARMAMENTS & AMMUNITION

Portfolio Book





Distribution Statement A: Approved for Public Release; Distribution is unlimited (27 Feb 2017), PAO Log #: 230-17

PEO Ammunition

Vision and Mission

Develop, Equip, and Sustain
Lethal Armament and Protective Systems
to Enable Joint Warfighter Dominance

PEO AMMUNITION PORTFOLIO BOOK INDEX

Project Manager Combat Ammunition Systems (PM CAS)

PM Combat Ammunition Systems: 60mm Mortar Ammunition

PM Combat Ammunition Systems: 81mm Mortar Ammunition

PM Combat Ammunition Systems: 120mm Mortar Ammunition

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Combat Ammunition Systems: 75mm/105mm Artillery Ammunition

PM Combat Ammunition Systems: 155mm Artillery Ammunition

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Combat Ammunition Systems: Mortar Weapon & Fire Control

PM Combat Ammunition Systems: Artillery Fuzes

PEO AMMUNITION PORTFOLIO BOOK INDEX

Project Manager Close Combat Systems (PM CCS)

PM Close Combat Systems: Shoulder Launched Munitions

PM Close Combat Systems: Pyrotechnics

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Close Combat Systems: Non-Lethal Munitions

PM Close Combat Systems: Grenades

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Close Combat Systems: Legacy Mines

PM Close Combat Systems: Simulators

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Close Combat Systems: Demolitions

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Close Combat Systems: Networked Munitions

PM Close Combat Systems: Countermine

PM Close Combat Systems: Explosive Ordnance Disposal

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Close Combat Systems: Improvised Explosive Device-Defeat

PEO AMMUNITION PORTFOLIO BOOK INDEX

Project Manager Maneuver Ammunitions Systems (PM MAS)

PM Maneuver Ammunitions Systems: Small Caliber Ammunition

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Maneuver Ammunitions Systems: Medium Caliber Ammunition

PEO AMMUNITION PORTFOLIO BOOK INDEX

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Maneuver Ammunitions Systems: Large Caliber Ammunition

PEO AMMUNITION PORTFOLIO BOOK INDEX

PM Maneuver Ammunitions Systems: Miscellaneous Ammunition

PM Maneuver Ammunitions Systems: Non-Standard Ammunition

PEO AMMUNITION PORTFOLIO BOOK INDEX

Project Manager Towed Artillery Systems (PM TAS)

Project Director Joint Services (PD JS)

PD Joint Services: Holston Army Ammunition Plant Industrial Base Modernization

PEO AMMUNITION PORTFOLIO BOOK INDEX

PD Joint Services: Iowa Army Ammunition Plant Industrial Base Modernization

PD Joint Services: Lake City Army Ammunition Plant Industrial Base Modernization

PD Joint Services: Radford Army Ammunition Plant Industrial Base Modernization

PD Joint Services: Scranton Army Ammunition Plant Industrial Base Modernization

PD Joint Services: Industrial Base

PEO AMMUNITION PORTFOLIO BOOK INDEX

PD Joint Services: Life Cycle Pilot Process

PD Joint Services: Ammunition Peculiar Equipment

PD Joint Services: Demilitarization

PD Joint Services: Ammunition Logistics

Project Director Joint Products (PD JP)

PD Joint Products: Navy Gun

PEO AMMUNITION PORTFOLIO BOOK INDEX

PD Joint Products: Bombs

PD Joint Products: Bomb Fuzes

PD Joint Products: System Component

PM Combat Ammunition Systems

Project Manager Combat Ammunition Systems (PM CAS) Equips Soldiers with all tube launched indirect fire munitions, and mortar weapons systems for the Army's Current, Stryker and Future Forces. Under the Single Manager for Conventional Ammunition (SMCA) responsibilities, PM CAS procures ammunition for other services. The PM does this though life cycle program management of artillery and mortar products.

PROJECT MANAGER • COMBAT AMMUNITION SYSTEMS •
VOLUME LETHALITY PRECISION
CAS

60mm M720A1 High Explosive Cartridge

SYSTEM DESCRIPTION:

The M720A1 Series High Explosive (HE) Cartridge with Multi-Option Fuze is designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions. The complete round consists of a projectile body, a multi-option fuze, a fin assembly, four increments of propellant charge, an ignition cartridge and obturating ring. It is used against personnel and materiel providing both fragmentation and blast effects.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Range: Minimum - 70 meters; Maximum - 3,400 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 20 rounds/minute
- Weight: 3.65 pounds
- Length: 14.84 inches
- Reliability: 98% at 90% confidence level
- Probable Error: Range - 1.5% of mean range; , Deflection – 2.5 miles
- DODIC variations:
  - BA16: PAX-21 & Composition B Explosive, M734A1 Fuze
  - BA44: IMX-104 Explosive, M734A1 Fuze

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamics, Canada: Load, Assemble and Pack
- Day & Zimmermann-Kansas, Parsons, KS: Load, Assemble and Pack

MR DATE: April 2006
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA16, BA44

60mm M888 High Explosive Cartridge

SYSTEM DESCRIPTION:

The M888 Mortar High Explosive (HE) Cartridge is designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions. It is used against personnel and light materiel, providing both fragmentation and blast effect. The M888 has the same body and propulsion system as the M720 Series HE Cartridges but uses the M935 Point Detonating (PD) Fuze. The M935 PD Fuze provides reversible selection between superquick and delay modes. The fuze functions on impact, detonating the fuze booster charge and, in turn, the Composition B explosive. The M888 is purchased only by the U.S. Marine Corps.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 67 meters; Maximum - 3,490 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 20 rounds/minute
- Weight: 3.75 pounds
- Length: 14.738 inches
- Reliability: 99% at 90% confidence level
- Probable Error: Range - 1.5%; Deflection - 2.5 miles

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- American Ordnance-Iowa AAP, Middletown, IA: Load, Assemble and Pack

MR DATE: March 1983
ACQ PHASE: Production & Deployment (U.S. Marine Corps only)
ACAT: III
DODIC B643

24

PM CAS

Combat Ammunition Systems

MR DATE: June 2001
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B647

SYSTEM DESCRIPTION:

The M721 Visible Light (VL) Illumination Cartridge is designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions. The cartridge consists of a M776 Mechanical Time Superquick (MTSQ) Fuze, a thin wall steel body tube and aluminum tail cone that contains the payload (parachute and canister), and a fin assembly that contains the ignition cartridge and propelling charges. The payload is base ejected and upon ignition produces visible light illumination. The VL illumination allows for monitoring of enemy activities and adjustment of fire at greater observation distances during night operations. It also provides a means for day/night signaling. It is particularly useful in combined operations with allies who may not have night vision devices (NVDs). The M721 is ballistically similar to the 60mm M767 IR Illumination Cartridge.

CAPABILITIES/ CHARACTERISTICS

- Range: Minimum - 200 meters; Maximum – 3,200 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained - 20 rounds/minute
- Weight: 3.79 pounds
- Length: 16.81 inches
- Illumination: 300,000 candlepower
- Burn Time: 32 seconds
- Reliability: 95% at 90% confidence level
- Probable Error: Range - 1.5%; Deflection - 2.5 miles

WEAPON SYSTEM

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR:

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: VL Candle

60mm M721 Visible Light Illumination Cartridge

Cartridge, 60mm Visible Light (VL) Illumination, M721

60mm M767 Infrared Illumination Cartridge

SYSTEM DESCRIPTION:

The M767 Infrared (IR) Illumination Cartridge is designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions. The cartridge consists of a M776 Mechanical Time Superquick (MTSQ) Fuze, a thin wall steel body tube and aluminum tail cone that contains the payload (parachute and canister) and a fin assembly that contains the ignition cartridge and propelling charges. The payload is base ejected and upon ignition produces IR illumination. The advantage of the infrared over conventional illumination is that there is minimal visible light. This reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through use of passive Night Vision Devices (NVD).

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Range: Minimum - 300 meters; Maximum - 3,175 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 20 rounds/minute
- Weight: 3.75 pounds
- Length: 16.80 inches
- Illumination: 30 watts/steradian
- Maximum 450 candlepower of visible light emitted
- Burn Time: 40 seconds
- Reliability: 95% at 90% confidence level
- Probable Error: Range - 1.5%; Deflection - 2.5 miles

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: IR Candle

60mm M722A1 White Phosphorous Smoke Cartridge

SYSTEM DESCRIPTION:

The M722A1 White Phosphorous (WP) Smoke Cartridge is designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions and serves as a spotting/marking round. The steel projectile is bulk loaded with white phosphorous. When the fuze functions, it detonates the M85 Burster, which ruptures the projectile and disperses the white phosphorus. The M722A1 replaced the mechanical M745 Point-Detonating (PD) Fuze with the reliable, safe, and cost effective electronic M783 Point Detonating/Delay (PD/DLY) Fuze.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 67 meters; Maximum - 3,490 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 20 rounds/minute
- Weight: 3.75 pounds
- Length: 14.74 inches
- Reliability: 99% at 90% confidence level
- Probable Error: Range - 1.5%; Deflection - 2.5 miles

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack

MR DATE: June 2002
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA04

MR DATE: June 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B646, BA14

MR DATE: June 2004
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA15

SYSTEM DESCRIPTION:

The M769 Full Range Practice Cartridge (FRPC) is designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions. The M769 is a low-cost, full range, practice round that will replace a percentage of the standard High Explosive (HE) rounds used in 60mm mortar training. The complete round consists of a hollow projectile body with vent tube and four vent holes, a practice fuze, a fin assembly, four increments of propellant charge, an ignition cartridge and obturating ring and is identical in shape, size and weight to the M720/M720A1 HE Cartridges. The flash, bang and smoke signature provided by the fuze is channeled to exhaust holes in the rear of the cartridge through the use of a center vent tube.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Compatible with 60mm M224 Series Lightweight Company Mortar System
- Range: Minimum - 70 meters; Maximum – 3,500 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 20 rounds/minute
- Weight: 3.75 pounds
- Length: 14.88 inches
- Reliability: 98.7% at 90% confidence level
- Probable Error: Range - 1.5%; Deflection - 2.5 miles
- Effectiveness: Visual effect to allow adjustment from a range of 2,000 meters

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- Day & Zimmermann, Camden, AR: Load, Assemble and Pack
- Nammo-Pocal, Scranton, PA: Load, Assemble and Pack

60mm M769 Full Range Practice Cartridge

MR DATE: April 2006
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA17, BA45

SYSTEM DESCRIPTION:

The M768 Series Mortar High Explosive (HE) Cartridges are designed for use with the M224/M224A1 Lightweight Company Mortar System (LWCMS) in all light infantry battalions. The complete round consists of a projectile body, a point detonating/delay fuze, a fin assembly, four increments of propellant charge, an ignition cartridge and obturating ring. This round is used primarily in training because it is significantly less expensive than the M720 Series HE Cartridges, the preferred warfighting round. However, the M768 Cartridges are also lethal and can be used in combat.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 70 meters; Maximum - 3,400 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained - 20 rounds/minute
- Weight: 3.65 pounds
- Length: 14.84 inches
- Reliability: 99% at 90% confidence level
- Probable Error: Range - 1.5% of mean range; Deflection - 2.5 miles
- DODIC variations:
  - BA17: PAX-21 & Composition B Explosive
  - BA45: IMX-104 Explosive

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamic, Canada: Load, Assemble and Pack
- Day & Zimmermann-Kansas, Parsons, KS: Load, Assemble and Pack

60mm M768 Series High Explosive Cartridge

60mm M1061 Antipersonnel, Anti-materiel Cartridge

SYSTEM DESCRIPTION:

The M1061 Cartridge consists of a M734A1 Fuze, a fuze adapter, an enhanced fragmentation body loaded with 254 grams of PBXN-110 Explosive, an aluminum case, an obturating ring, a fin adapter and fin , four propelling charge increments, and an ignition cartridge. The design of the shell body produces lethal effects against both personnel and materiel targets. The cartridge will only be used in combat.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Range: Minimum - 61 meters; Maximum - 3,657 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 20 rounds/minute
- Weight: 4 pounds
- Reliability: 98% at 80% confidence level
- Probable Error: Range: 1.5% of mean range; Deflection: 2.5 miles

WEAPON SYSTEM:

- 60mm M224/M224A1 Lightweight Company Mortar System (LWCMS)

PRIME CONTRACTOR

- PM CAS: System Integration
- Orbital Alliant Techsystems, Inc. (OATK): Warhead and Load, Assemble and Pack

27
PM CAS
Combat Ammunition Systems

MR DATE: June 2016
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: BA42
LIN: C22390

MR DATE: April 2002
ACQ PHASE: Production & Deployment
ACAT: III
DODIC C484

SYSTEM DESCRIPTION:

The M816 Infrared (IR) Illumination Cartridge is fired from the M252/M252A1 Mortar System. The M816 Cartridge is ballistically similar to the M853A1 Visible Light Illumination Cartridge, except for the chemical composition of the illuminating material. The cartridge consists of a M772 Mechanical Time Superquick (MTSQ) Fuze, a thin wall aluminum body tube, aluminum tail cone that contains the parachute and canister, and a fin assembly that contains the ignition cartridge and 4 propelling charges. The payload is base ejected and upon ignition produces infrared (IR) illumination. This reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through use of passive night vision devices (NVD).

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Range: Minimum - 1,025 meters; Maximum - 4,925 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 15 rounds/minute
- Weight: 9.25 pounds
- Length: 25.49 inches
- Illumination: 50 watts/steradian
- Maximum of 500 candlepower of visible light emitted
- Burn Time: 60 seconds
- Reliability: 95% at 90% confidence level
- Probable Error: Range - 1%; Deflection – Less than 15 meters at all ranges

WEAPON SYSTEM:

- 81mm M252/M252A1 Mortar System

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: VL Candle

81mm M816 Infrared Illumination Cartridge

MR DATE:
- M821 Series: August 1994
- M889 Series: September 2009

ACQ PHASE: Production & Deployment
ACAT: III
DODIC C868, CA43,CA61,CA63

SYSTEM DESCRIPTION:

The 81mm M821 Series and M889 Series Cartridges are High Explosive (HE) rounds for the 81mm M252/M252A1 Mortar System, designed for use against personnel and light materiel. The 81mm M821/M889 Series Cartridges consist of an High Fragmentation (HF-1) steel projectile body loaded with approximately 2 pounds of Composition B Conventional Explosive or IMX-104 Insensitive Explosive, a plastic obturating ring, a M24 Fin, four M220 Propelling Charges attached to the fin shaft, and a M299 Ignition Cartridge. These cartridges are identical, except for the fuze model - the M821 Series uses the M734A1 Multi-Option Fuze, while the M889 Series uses the M783 Point Detonating/Delay Fuze.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 70 meters; Maximum - 5,859 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained - 15 rounds/minute
- Weight: 9.42 pounds
- Length: 19.6 inches
- Reliability: 98% at 80% confidence level
- Probable Error: Range - 1.5%; Deflection - 1% at all ranges
- DODIC variations:
  - C868: M821A1, Composition B Explosive
  - CA43: M889A2, Composition B Explosive
  - CA61: M821A3, IMX-104 Explosive
  - CA63: M889A4, IMX-104 Explosive

WEAPON SYSTEM:

- 81mm M252/M252A1 Mortar System

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamics, Canada: Load, Assemble and Pack
- Day & Zimmermann-Kansas: Load, Assemble and Pack

81mm M821/M889 Series High Explosive Cartridges

81mm M819 Red Phosphorous Smoke Cartridge

SYSTEM DESCRIPTION:

The M819 Red Phosphorous (RP) Cartridge is a smoke screen round developed for use in the 81mm M252/M252A1 Mortar System. The complete round consists of a fuze with an expulsion charge, a thin wall steel body tube containing 28 smoke wedges, a propelling charge comprised of four horse-shoe type propellant increments, a fin assembly, and an ignition cartridge with an integral percussion primer. After firing and a set time delay, the RP wedges are ejected and dispersed on the target to quickly produce an obscuring smoke screen. A full screen can be developed with 3 rounds as opposed to 15 rounds with the M375 series White Phosphorous (WP) Cartridge. The M819 includes GAMS (Gas Absorbing Modules) to absorb the phosphine gas emitted by the RP to keep the round stable.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 300 meters; Maximum - 4,900 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 15 rounds/minute
- Weight: 10.8 pounds
- Length: 25.375 inches
- Burn Time: 5 minutes for 3 rounds
- Reliability: 98% at 90% confidence level
- Probable Error: Range - 1.5%, Deflection - 15 meters at all ranges
- Effectiveness: Provides 5 times the obscuration effectiveness of the 81mm M375 WP Cartridge

WEAPON SYSTEM:

- 81mm M252/M252A1 Mortar System

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: RP Pellet Production and Load, Assemble and Pack

81mm M853A1 Visible Light Illumination Cartridge

SYSTEM DESCRIPTION:

The M853A1 Visible Light (VL) Illumination Cartridge consists of a fuze, a thin wall aluminum body tube and aluminum tail cone that contains the payload (parachute and canister), and a fin assembly that contains the ignition cartridge and propelling charges. The payload is base ejected and upon ignition produces VL illumination. This VL illumination allows for monitoring of enemy activities and adjustment of fire at greater observation distances during night operations. It also provides a means for day/night signaling. it is particularly useful in combined operations with allies who may not have night vision devices (NVDs). This round illuminates to the full range of the M821A1 and M889A2 High Explosive Cartridges, which allows adjustment of fire at any distance out to the maximum range.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 300 meters; Maximum - 5,050 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 15 rounds/minute
- Weight: 9.25 pounds
- Length: 25.5 inches
- Illumination: 525,000 candlepower
- Burn Time: 50 seconds
- Reliability: 95% at 90% confidence level
- Probable Error: Range - 1%, Deflection - Less than 15 meters at all ranges

WEAPON SYSTEM:

- 81mm M252/M252A1 Mortar System

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: VL Candle

MR DATE: September 1991
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: C870

MR DATE: September 1991
ACQ PHASE: Production & Deployment
ACAT: III
DODIC C871

MR DATE: October 2004
ACQ PHASE: Production & Deployment
ACAT: III
DODIC C875

SYSTEM DESCRIPTION:

The M879 Full Range Practice Cartridge (FRPC) is a U.S.-developed improved practice round for use in the M252/M252A1 Mortar System. The FRPC provides realistic training in place of the current 81mm High Explosive (HE) Cartridges at a significant cost savings. The M751 Point Detonating Practice Fuze can be set, for training purposes, to the required fuze functioning mode for the fire mission. The M751 Fuze used on this round detonates upon impact and produces a flash, bang and smoke signature which gives the forward observer the ability to adjust fire.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Range: Minimum - 70 meters; Maximum - 5,800 meters
- Rate of Fire: Maximum - 30 rounds/minute; Sustained – 15 rounds/minute
- Weight: 9.1 pounds
- Length: 19.55 inches
- Reliability: 97% at 80% confidence Level
- Effectiveness: Visual effect to allow adjustment from a range of 2,500 meters

WEAPON SYSTEM:

- 81mm M252/M252A1 Mortar System

PRIME CONTRACTOR

- PM CAS: System Integration
- Day & Zimmermann, Camden, AR: Load, Assemble and Pack

81mm M879 Full Range Practice Cartridge

120mm M929 White Phosphorous Smoke Cartridge

SYSTEM DESCRIPTION:

The M929 White Phosphorous (WP) Cartridge provides smoke obscuration for area targets. When the fuze functions, it detonates the burster, fragmenting the body and dispersing felt pads which are soaked with 5 pounds of WP. The smoke obscuration is generated by a spontaneous reaction between the WP and oxygen. Two configurations are in inventory: M929 with M734A1 Multi-Option (MO) Fuze and XM929 with M745 Point Detonating (PD) Fuze.

CAPABILITY/CHARACTERISTICS:

- For use with Brigade Combat Team, Mortar System
- Range: Minimum - 200 meters; Maximum - 7,200 meters
- Rate of Fire: Maximum - 16 rounds/minute; Sustained - 4 rounds/minute
- Weight: 30 pounds
- Payload: 5 pounds of white phosphorous • Length 27.9 inches
- Burn Time: Approximately 6.5 Minutes
- Reliability: 97% at 80% confidence level
- Probable Error: Range - 2.0% at maximum range; Deflection – 1.0% at maximum range
- Ballistically similar to the M934A1 High Explosive, M930/M983 Illumination and M931 Full Range Practice Cartridges
- Effectiveness: Provides twice the obscuration effectiveness of the 4.2-inch M328A1 WP Cartridge
- DODIC variations: - C624: M745 PD Fuze - CA03: M734A1 Multi-Option Fuze

WEAPON SYSTEM:

- 120mm M120A1 Towed and M121 Carrier-Mounted Mortar Systems

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack

120mm M934A1 High Explosive Cartridge

SYSTEM DESCRIPTION:

The M934A1 High Explosive (HE) Cartridge is designed for use with the M120A1, 120mm Towed Mortar System and the M121, Carrier Mortar System. It is used against personnel and materiel providing both fragmentation and blast effects. It consists of a steel shell body filled with Composition B Explosive, a multi-option fuze, an aluminum fin, an ignition cartridge and four propelling charges assembled around the fin shaft.

CAPABILITY/CHARACTERISTICS:

- For use with Brigade Combat Team Mortar System
- Range: Minimum - 200 meters; Maximum - 7,200 meters
- Rate of Fire: Maximum - 15 rounds/minute; Sustained - 6 rounds/minute
- Weight: 30 pounds
- Length: 27.99 inches
- Reliability: 97% at 90% confidence level
- Probable error: Range - 1.5%; Deflection - 1.0% at max range
- Effectiveness: 50% improvement over the 4.2-inch M329A2 HE Cartridge
- Uses the M734A1 Multi-Option Fuze to improve safety with elimination of up-leg early functions

WEAPON SYSTEM:

- 120mm M120A1 Towed and M121 Carrier-Mounted Mortar Systems

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamics, Canada: Load, Assemble and Pack

31

PM CAS

Combat Ammunition Systems

MR DATE: March 1999
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: C624, CA03

MR DATE: September 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC CA04

MR DATE: October 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: CA07

120mm M983 Infrared Illumination Cartridge

SYSTEM DESCRIPTION:

The M983 Infrared (IR) Illumination Cartridge was developed for use in the 120mm M120A1 and M121 Battalion Mortar Systems. The M983 IR Cartridge is ballistically similar to the M930 Visible Light (VL) Cartridge except for the chemical composition of the illuminating material, and provides a field of view equal or greater to that of the VL cartridge. The cartridge consists of a fuze, a steel 2-piece shell body, an illuminant candle and parachute assembly, a fin assembly, an ignition cartridge, and four propelling charges assembled around the fin shaft. The IR composition reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through use of passive Night Vision Devices (NVDs). This round illuminates to the full range of the M934A1 HE round.

CAPABILITY/CHARACTERISTICS:

- For use with Brigade Combat Team Mortar System
- Range: Minimum - 375 meters; Maximum - 6,675 meters
- Rate of Fire: Maximum - 16 rounds/minute; Sustained – 4 rounds/minute
- Weight: 30.6 pounds
- Length: 27.67 inches
- Illumination: 75 watts/steradian
- Maximum 550 candlepower of visible light emitted
- Burn Time: 50 seconds
- Reliability: 95% at 90% confidence Level

WEAPON SYSTEM:

- 120mm M120A1 Towed and M121 Carrier-Mounted Mortar Systems

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: IR Candle

MR DATE: January 1999
ACQ PHASE: Production & Deployment
ACAT: III
DODIC CA09

120mm M931 Full Range Practice Cartridge

SYSTEM DESCRIPTION:

This cartridge is a full-range practice round for use in the 120mm M120A1 and M121 Battalion Mortar Systems, providing realistic training for 120mm Mortar crews at a reduced cost. The M931 is ballistically similar to the M934A1/M933A1 High Explosive Cartridges in size, shape and weight. The M931 is equipped with the M781 Point Detonating Practice Fuze which produces a flash, bang, and smoke signature upon impact, providing audio and visual feedback to the mortar crew and forward observer. The M931 Cartridge is not to exceed 75% of the unit production cost of the M934A1/M933A1 Cartridges.

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 200 meters; Maximum - 7,200 meters
- Rate of Fire: Maximum - 15 rounds/minute; Sustained - 6 rounds/minute
- Weight: 30 pounds
- Length: 27.99 inches
- Reliability: 97% at 80% confidence
- Effectiveness: Visual effect to allow adjustment from a range of 3,000 meters
- Equipped with M781 PD Practice Fuze, a facsimile of M734A1 Multi Option Fuze

WEAPON SYSTEM:

- 120mm M120A1 Towed and M121 Carrier-Mounted Mortar Systems

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamics Canada: Load, Assemble and Pack

120mm M933A1 High Explosive Cartridge

SYSTEM DESCRIPTION:

The M933A1 High Explosive (HE) Cartridge is designed for use with the 120mm M120A1 and M121 Battalion Mortar Systems and is used against personnel, bunker and light materiel targets. It consists of a steel shell body filled with Composition B Explosive, and an aluminum M31 Fin Assembly. The propulsion system utilizes the M1020 Ignition Cartridge and four horseshoe-shaped, water-resistant M234 Propelling Charges. The M933A1 is similar to the M934A1 HE Cartridge, except the M934A1 uses the M734A1 Multi-Option Fuze while the M933A1 uses the M783 Point Detonating/Delay (PD/DLY) Fuze.

CAPABILITY/CHARACTERISTICS:

- For use with Brigade Combat Team Mortar System
- Range: Minimum - 200 meters; Maximum - 7,200 meters
- Rate of Fire: Maximum - 16 rounds/minute; Sustained - 4 rounds/minute
- Weight: 30.2 pounds
- Length: 27.99 inches
- Reliability: 97% at 90% confidence level
- Effectiveness: 50% improvement over 4.2" M329A2 HE Mortar Cartridge
- Uses the M783 Point Detonating/Delay (PD/DLY) Fuze

WEAPON SYSTEM:

- 120mm M120A1 Towed and M121 Carrier-Mounted Mortar Systems

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamics, Canada: Load, Assemble and Pack

120mm XM395 Accelerated Precision Mortar Initiative

SYSTEM DESCRIPTION:

The Accelerated Precision Mortar Initiative (APMI) utilizes Global Positioning System (GPS) technology to rapidly defeat personnel targets with low collateral damage. APMI completed qualification for Urgent Material Release in March 2011 and achieved Initial Operational Capability in April 2011. APMI achieved Conditional Materiel Release in April 2016 in support of the Global Response Force (GRF).

CAPABILITY/CHARACTERISTICS:

- Precision capability for BCTs at Battalion Level, ability to defeat targets with low collateral damage
- Accuracy: 10 meters (Threshold); 5 meters (Objective)
- Range: Minimum - 1 kilometer; Maximum - 6.25 kilometers

WEAPON SYSTEM:

- 120mm M120A1 Towed and Stryker Mortar Carrier Mortar Systems

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK) , Plymouth, MN

33

PM CAS

Combat Ammunition Systems

MR DATE: July 2008
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: CA44

MR DATE:
- March 2011: Urgent Release
- Conditional Release: April 2016

ACQ PHASE: Production & Deployment
ACAT: III
DODIC CA55

MR Date: March 2003
ACQ Phase: Production & Deployment
ACAT: III
DODIC: C625

SYSTEM DESCRIPTION:

The M930 Visible Light (VL) Cartridge is fired from the M120A1 Towed and M121 Carrier-Mounted Mortar Systems and is intended for use in illuminating a desired point or area. The cartridge consists of a M776 Mechanical Time Superquick (MTSQ) Fuze, a steel 2-piece shell body that contains the parachute and canister, and a fin assembly. The payload is base ejected and upon ignition produces VL illumination. This VL illumination allows for monitoring of enemy activities and adjustment of fire at greater observation instances during night operations. It also provides a means for day/night signaling. This round illuminates to the full range of the M934A1 HE Cartridge, which allows adjustment of fire at any distance out to the maximum range,

CAPABILITY/CHARACTERISTICS:

- Range: Minimum - 400 meters; Maximum - 6,900 meters
- Rate of Fire: Maximum - 16 rounds/minute; Sustained - 4 rounds/minute
- Weight: 31.4 pounds
- Length: 27.67 inches
- Illumination: 1,000,000 candlepower
- Burn Time: 50 seconds
- Reliability: 95% at point estimate

WEAPON SYSTEM:

- 120mm M120A1 Towed and M121 Carrier-Mounted Mortar Systems

PRIME CONTRACTOR:

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: VL Candle

120mm M930 Visible Light Illumination Cartridge

75mm M337A2 Blank Projectile

SYSTEM DESCRIPTION:
The M337A2 consists of a brass or aluminum cartridge case containing loosely packed black powder and a press-fitted percussion primer. A fiberglass wad is inserted over the black powder and a polystyrene closing cup is cemented in place with a polyester resin adhesive. When the firing pin of the weapon strikes the primer, a flash is generated which ignites the black powder charge producing flash, smoke and a loud report to simulate weapon firing.

CAPABILITY/CHARACTERISTICS:
- Non-tactical rounds, used in ceremonies
- Weight: 3.25 pounds
- Body Type: Brass or Aluminum
- Payload: 1 pound of Black Powder
- Primer: M1B1A2

WEAPON SYSTEM:
- M1A1 Howitzer

PRIME CONTRACTOR
- PM CAS: System Integration
- American Ordnance-Iowa AAP, Middletown, IA: Load, Assemble and Pack

35
PM CAS
Combat Ammunition Systems

MR DATE: November 1984
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: C025

MR DATE: November 1984
ACQ PHASE: Production & Deployment
ACAT: III
DODIC C440

SYSTEM DESCRIPTION:

The 105mm M395 Blank Cartridge is assembled with a loose, 770 gram black powder charge retained by a glass-fiber closing wad and a polystyrene closing cup glued in place by an epoxy resin. The base of the case is fitted with an M61 Percussion Element and an M1A2 or M1B1A2 Primer. Detonation of the case contents creates sound, flash and smoke.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Non-tactical rounds
- Used in ceremonies
- Weight: 6.24 pounds
- Body Type: Brass or Aluminum
- Payload: 770 grams of black powder
- Primer: M1B1A2

WEAPON SYSTEM:

- 105mm M102 and M119 Series Howitzers

PRIME CONTRACTOR

- PM CAS: System Integration
- American Ordnance-Iowa AAP, Middletown, IA: Load, Assemble and Pack

105mm M395 Blank Projectile

MR DATE: April 1986
ACQ PHASE: Production & Deployment
ACAT: III
DODIC C445, CA59

SYSTEM DESCRIPTION:

The M1 is a semi-fixed 105mm High Explosive (HE) Cartridge consisting of the M14B4 Cartridge Case, M28B2 Percussion Primer, M67 Propelling Charge, a nose plug and a projectile containing a TNT or Comp B Explosive fill. The M1 Cartridge is compatible with the M557PD, M739PD, M732VT, M767ETSQ and the M782 MOFA Fuzes. The Insensitive Munition (IM) version (DODIC: CA59) is loaded with IMX-101 Explosive.

CAPABILITY/CHARACTERISTICS:

- Used for fragmentation, blast and mining in support of ground troops and armored columns
- IM variant passes Shaped Charge Jet & Sympathetic Reaction requirements
- Weight: 39.92 pounds
- Body Type: High-fragmentation forged steel
- Propelling Charge: M67
- Maximum Range: 11.5 kilometers
- DODIC variations:
  - C445: Composition B or TNT Explosive
  - CA59: IMX-101 Explosive

WEAPON SYSTEM:

- 105mm M102 and M119 Series Howitzers

PRIME CONTRACTOR

- Blue Grass Army Depot / McAlester AAP: Recap
- American Ordnance-Iowa AAP, Middletown, IA: Load, Assemble and Pack
- BAE-Holston AAP, Holston, TN: IMX-101 Explosive

105mm M1 High Explosive Projectile

105mm M314A3 Visible Light Illumination Cartridge

SYSTEM DESCRIPTION:
The M314A3 Visible Light (VL) Illumination Cartridge is a semi-fixed cartridge intended for signaling or for illuminating the battlefield. The cartridge consists of an M14 Cartridge Case, M28 Percussion Primer, M67 Prop Charge, a projectile which contains a pinned base plug, a black powder expelling charge, an illuminating canister with anti-rotational vanes, and a parachute assembly which is connected to the closed end of the canister. The canister contains an illuminating filler covered by a thin layer of first fire composition.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Weight: 46.4 pounds
- Body Type: Forged Steel
- Payload: 1.67 pounds of illuminant
- Propelling Charge: M67
- Maximum Range: 9.1 kilometers
- Illumination: 525,000 candlepower
- Burn Time: 55 seconds (minimum)

WEAPON SYSTEM:
- 105mm M119 Series Howitzer

PRIME CONTRACTOR
- PM CAS: System Integration
- General Dynamics, Canada: Load, Assemble and Pack

105mm M927 High Explosive Rocket Assist Cartridge

SYSTEM DESCRIPTION:
The M927 High Explosive Rocket Assist (HERA) Cartridge is a semi-fixed cartridge composed of the M14B4 Cartridge Case, M28B2 Percussion Primer, M67 Propelling Charge, a nose plug and a rocket assisted projectile. The projectile warhead contains an explosive filler, an aluminum liner and a supplementary charge. The base of the warhead is threaded in tandem to a rocket motor which contains a rocket propellant grain and an ignition delay. Projectile functioning is dependent upon the fuze used and may function on impact (instantaneous or delay), function above ground either at a predetermined height based upon time of flight, or function in proximity with the target area.

CAPABILITY/CHARACTERISTICS:
- Extended range rocket assisted projectile used for fragmentation, blast and mining support of ground troops and armored columns
- Weight: 37.2 pounds
- Body Type: High Fragmentation Steel
- Payload: 5.8 pounds TNT Explosive
- Propelling Charge: M67
- Maximum Range: 14.3 kilometers

WEAPON SYSTEM:
- 105mm M102 and M119 Series Howitzers

PRIME CONTRACTOR
- Not in production

37
PM CAS
Combat Ammunition Systems

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC C541

MR DATE: July 2007
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC C544

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC CA22, CA34, CA33

SYSTEM DESCRIPTION:

The Projectile Gun Unit (PGU) 44/B is a fixed round with the projectile crimped to the cartridge case to mitigate safety and handling concerns. The PGU-43 & 44/B use the Army M1 Warhead and CYU-1B Brass Cartridge Case, the M28A2 Primer, and the M67 Prop Charge. The PGU-43/B is the inert target practice version which utilizes the less expensive M739A1 Point Detonating/Delay Fuze. The PGU-44/B is the tactical projectile, is filled with 4.6 pounds of Composition B Explosive, and uses the FMU-153/B Point Detonating/Delay Fuze. The PGU-45/B Cartridge uses high fragmentation steel, is filled with 4.6 pounds of Composition B Explosive, and uses the FMU-160 Proximity Fuze. These 105mm cartridges are purchased by the U.S. Air Force.

CAPABILITY/CHARACTERISTICS:

- Used in the U.S. Air Force Special Operations Command AC-130 Gun Ship
- Weight: 40 pounds
- Body Type: Forged Steel
- Payload: 4.8 pounds TNT; 5.0 pounds Composition B Explosive
- Propelling Charge: M67
- Maximum Range: 11.5 kilometers
- DODIC variations:
  - CA22: PGU-43/B Practice
  - CA33: PGU-45/B High Explosive, Fragmenting
  - CA34: PGU-44/B High Explosive

WEAPON SYSTEM:

- Air Force AC-130 Gunship with M137 Cannon

PRIME CONTRACTOR

- PM CAS: System Integration
- General Dynamics, Canada: Load, Assemble and Pack

105mm PGU-43/B TP, PGU-44/B HE, and PGU-45/B

155mm M485A2 Visible Light Illumination Projectile

SYSTEM DESCRIPTION:

The M485 Visible Light (VL) Illumination Projectile is used to illuminate the battlefield at night or during conditions of reduced visibility. The projectile is a hollow steel shell containing a canister with primary expelling charge. A candle assembly, parachute, delay and secondary expelling charge are loaded into the canister. Upon functioning, a double ejection system is used. The first ejection is caused by fuze functioning, expelling the canister and igniting the delay. The second function ejects and ignites the candle from the canister; the main parachute is also ejected and deployed. The drogue chute and fins on the canister reduce the spin and decelerates the canister. The illuminant canister descends at 15 feet/second and burns for a minimum of 100 seconds producing approximately 1,000,000 candle power.

CAPABILITIES/SYSTEM CHARACTERISTICS:

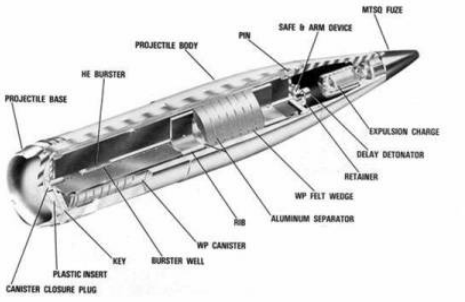
- Used to provide battlefield illumination at night or other conditions of reduced visibility
- Weight: 90 pounds
- Body Type: Forged Steel
- Payload: 5.4 pounds of illuminant composition
- Propelling Charge: M119A2
- Maximum Range: 17.5 kilometers
- Illumination: 1,000,000 candlepower
- Burn Time: 100 seconds (minimum)

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: VL Candle
- Ingersoll Machine & Tool Corp, Canada: Metal parts



155mm M825A1 White Phosphorous Smoke Projectile

SYSTEM DESCRIPTION:

The M825A1 White Phosphorous (WP) Smoke Projectile is a 155-mm smoke screening projectile used to obscure friendly troop and vehicle movement or deliver blinding smoke to an enemy location. When projectile reaches target area, the fuze functions an expulsion charge which ejects the payload canister with 116 WP-impregnated felt wedges. The expulsion charge initiates the fuze delay element which provides time for the canister to clear the projectile body before functioning a 'safe and arm' element which is armed by the set-back and spin of the canister. The safe and arm output ignites a burster which runs down the center of the canister and, upon detonating, shatters the canister causing the WP soaked felt wedges to fall to the ground. Each felt wedge acts as a burning point source for smoke production and after a short period of time a significant smoke screen is built.

CAPABILITY/CHARACTERISTICS:

- Range: 22.5 kilometers
- Weight: 102.6 pounds
- Reliability: 98.5% at 80% Confidence Level
- Fill: 12.75 pounds WP
- Payload: Base ejection canister carrying 116 each WP-impregnated felt wedges
- Ballistically similar to M483A1 Projectile
- Provides 10 meter high, 125-250 meter wide smoke screen lasting 5-10 minutes depending on weather conditions

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- General Dynamics-Scranton AAP, Scranton, PA: Metal parts

39

PM CAS

Combat Ammunition Systems

MR DATE: March 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC D505

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC D528

40

PM CAS

Combat Ammunition Systems

SYSTEM DESCRIPTION:

The M795 High Explosive (HE) Projectile is employed against personnel; trucks; electronic surveillance and target acquisition devices; supply points; command and control and communications (C3) installations; and mechanized and armored forces. The projectile consists of a High Fragmentation Steel (HF-1) Body filled with 23.8 pounds of TNT Explosive or 23.8 pounds of IMX-101 Insensitive Explosive, and a gilded metal rotating band for compatibility with all current and future 155mm Howitzers.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Most capable 155mm Insensitive Munition HE Projectile - passes shape charge jet & sympathetic reaction requirements
- Weight: 103 pounds
- Length: 33.2 inches
- Projectile Body: High Fragmentation Steel
- Explosive: 23.8 pounds of IMX-101 or TNT
- Propelling Charge: M231, M232 and M232A1 MACS
- Maximum Range: 22.5 kilometers
- DODIC variations:
  - D529: TNT Explosive
  - DA54: IMX-101 Explosive

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- PM CAS: System Integration
- American Ordnance-Iowa AAP, Middletown, IA: Load, Assemble and Pack
- General Dynamics-Scranton AAP, Scranton, PA: Metal parts
- BAE-Holston AAP, Holston, TN: IMX-101 Explosive

155mm M795 High Explosive Projectile

MR DATE: May 1999
ACQ PHASE: Production & Deployment
ACAT: III
DODIC D529, DA54

155mm M107 High Explosive Projectile

SYSTEM DESCRIPTION:
The M107 High Explosive (HE) Projectile is a hollow steel shell filled with TNT or Composition B Explosive. A deep fuze cavity intrusion variant permits use of the M782 Multi-Option Fuze. When all other fuzes are employed with the deep cavity variant, a supplementary charge of pressed TNT is used to ensure continuation of the fuze initiation through to the explosive charge. The shallow (normal) cavity variant will employ all fuzes except the deep intrusion proximity fuzes.

CAPABILITY/CHARACTERISTICS:
- Used for blast effect, fragmentation and mining in support of ground troops and armored columns
- Weight: 95 pounds
- Body Type: Forged Steel
- Payload: 14.6 pounds TNT; 15.4 pounds Composition B Explosive
- Propelling Charge: M119A2
- Maximum Range: 18.1 kilometers
- DODIC variations:
  - D544: Deep fuze cavity
  - D571: Normal fuze cavity

WEAPON SYSTEM:
- Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR
- Not in production

155mm M110A2 White Phosphorous Smoke Projectile

SYSTEM DESCRIPTION:
The M110A2 White Phosphorous (WP) Smoke Projectile is a steel shell filled with 15.6 pounds of WP. The round contains an M54A1 Burster extending through the center, and an adapter in the nose of the projectile is threaded to receive the fuze. The M54A1 Burster is made from steel and is filled with Composition B5 Explosive. The fuze functions on impact and detonates the burster. The burster ruptures the projectile case and disperses the WP filler. The WP ignites spontaneously upon contact with air and produces a dense white smoke used for spotting/marking.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Used as obscurant and for spotting/marking
- Weight: 98.5 pounds
- Body Type: Steel
- Payload: 15.6 pounds WP
- Propelling Charge: M119A2
- Maximum Range: 18.1 kilometers

WEAPON SYSTEM:
- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR
- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- General Dynamics-Scranton AAP, Scranton, PA: Metal parts
- Expal, Mecar, and Crane Army Ammunition Activity: M54 Burster

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC D544, D571

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC D550

42
PM CAS
Combat Ammunition Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC D579

SYSTEM DESCRIPTION:

The M549A1 High Explosive (HE) Rocket Assisted Projectile (RAP) has two distinctive pre-assembled components - the high explosive warhead and the rocket motor. The warhead is fabricated from high fragmentation steel for increased effectiveness and contains TNT. The motor body has a hollow boattail base and a recessed nozzle on its central spin axis. The rocket motor is made from a high strength steel alloy and contains 6.5 pounds of solid rocket propellant, providing extended range upon functioning. For all current 155mm artillery systems, the RAP can be fired either "Rocket-On" or "Rocket-Off." For the "Rocket-On" mode, a cap is removed prior to chambering the projectile. This exposes the pyrotechnic delay to propelling charge gases within the gun tube. The delay is ignited and burns for several seconds before igniting the rocket motor for its short in-flight burn of about three seconds. howitzers.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- The RAP was designed to extend the range and improve the effectiveness of the 155mm Howitzer. It is used for fragmentation and blast effects against personnel and materiel.
- Type: HE, Rocket Assisted
- Weight: 96 pounds
- Body Material: High fragmentation steel
- Payload: 15 pounds of TNT
- Propelling Charge: M203A1; M119A2; MACS (M232, and M232A1); and/or M4A2
- Maximum Range: 30 kilometers

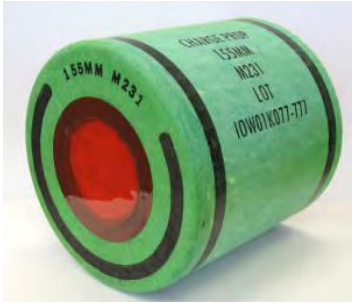
WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- Not in production

155mm M549A1 High Explosive Rocket Assisted Projectile



155mm M231 Propelling Charge

SYSTEM DESCRIPTION:

The Modular Artillery Charge System (MACS) consists of two propelling charge module types, the M231 and the M232/M232A1, and their associated packaging. The system is compatible with all current and planned 155mm field artillery weapons. MACS uses a "build-a-charge" concept in which increments are identical to all others in the same lot designation, eliminating the need to dispose of unused increments. Unused increments are retained for future use. The M231 is fired either individually (charge 1) or in pairs (charge 2) to engage targets from 3 to 11 kilometers. The M231 replaces the M3A1 Propelling Charge (Green Bag) and charges 3 to 6 of the M4A2 Propelling Charge (White Bag). Its use, along with use of the M232/M232A1 to support training worldwide, will result in approximately a $54 per round savings when compared to bag charges. The M231 contains Picatinny Arsenal TM Propellant (PAP) 7993, the Army's first environmentally "green" propellant.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Increased Operational Flexibility
- Efficient Use - No excess powder to dispose, unused MACS increments can be used for future missions; remnant increments from use of legacy green/white bag charges require disposal
- Compatible with M82 (U.S.) and DM191 (NATO) Primers
- Weight: 4.25 pounds
- Length: 6.05 inches
- Diameter: 6.10 inches
- Body: Molded combustible case with flat ends
- Propellant: 3.5 pounds of PAP7993
- Igniter: Bi-directional (ignites either end)
- Range: 3 to 11 kilometers from fielded 155mm artillery systems
- Accuracy: < 2 meters/second
- Training Device: M241 Dummy Charge
- Compliant with Joint Ballistic Memorandum of Understanding between U.S., France, Germany, Italy and the United Kingdom

WEAPON SYSTEM:

- M109A5 Self-propelled Howitzer, M109A6 Paladin, M109A7 PIM Self-propelled Howitzer, M198 Towed Howitzer , and Lightweight M777A2 Towed Howitzer

PRIME CONTRACTOR

- PM CAS: System Integration
- Esterline Defense Products, Coachella, CA: Combustible Case
- BAE-Radford AAP, Radford, VA: Propellant
- General Dynamics, St. Marks, FL: Ball Powder
- GOEX, Minden, LA: Black Powder
- CONCO, Inc., Lousiville, KY: Metal Container
- Delfasco LLC, Afton, TN: Metal Container
- General Dynamics, Camden AR: Load, Assemble and Pack

155mm M232A1 Propelling Charge

SYSTEM DESCRIPTION:

The Modular Artillery Charge System (MACS) consists of two propelling charge module types, the M231 and the M232/ M232A1, and their associated packaging. The system is compatible with all current and planned 155mm field artillery weapons. MACS uses a “build-a-charge" concept in which increments are identical to all others in the same lot designation, eliminating the need to dispose of unused increments. Unused increments are retained for future use. The M232A1, similar to the M232, is fired in groups of 3 or more increments from charge 3 (three M232A1s) to charge 5 (five M232A1s) to engage targets from 7 to 30 kilometers. Besides adding significant operational flexibility of only two types of charges vs. the four current types of bag charges, based on combat scenarios the use of MACS results in a savings of $45 per round when fired from self-propelled howitzers and $109 per round when fired from towed howitzers. The M232A1 is a Product Improvement/39-caliber Optimization Program. It will increase cannon tube life, decrease residue, reduce flash/blast-overpressure, maintain maximum range while achieving greater accuracy, and improve the insensitive munitions properties.

CAPABILITY/CHARACTERISTICS:

- Increased Operational Flexibility
- Efficient Use - No excess powder to dispose, unused MACS increments can be used for future missions; remnant increments from use of legacy green/white bag charges require disposal
- Compatible with M82 (U.S.) and DM191 (NATO) Primers
- Weight: 5.85 pounds
- Length: 6.14 inches
- Diameter: 6.00 inches
- Body: Molded Combustible Case with bumps on both ends
- Propellant: 4.9 pounds of M31A2 with decoppering agent
- Igniter: Bi-directional (ignites either end)
- Range: 7 to 30 kilometers from fielded 155mm artillery systems
- Accuracy: < 2 meters/second
- Training Device: M242 Dummy Charge
- Compliant with Joint Ballistic Memorandum of Understanding between U.S., France, Germany, Italy and the United Kingdom

WEAPON SYSTEM:

- M109A5 Self-propelled Howitzer, M109A6 Paladin, M109A7 PIM Self-propelled Howitzer, M198 Towed Howitzer and Lightweight M777A2 Towed Howitzer

PRIME CONTRACTOR

- PM CAS: System Integration
- Esterline Defense Products, Coachella, CA: Combustible Case
- General Dynamics, Canada: Propellant
- General Dynamics, St. Marks, FL: Ball Powder
- GOEX: Black Powder
- CONCO, Inc., Lousiville, KY: Metal Container
- Delfasco LLC, Afton, TN: Metal Container
- American Ordnance-Iowa AAP, Middletown, IA: Load, Assemble and Pack
- General Dynamics, Camden AR: Load, Assemble and Pack

43

PM CAS

Combat Ammunition Systems

MR DATE: April 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA12

MR DATE:
- M232: March 2004
- M232A1: November 2006

ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA13

44

PM CAS

Combat Ammunition Systems

SYSTEM DESCRIPTION:

The Excalibur XM982 Increment Ia-1, is a precision-guided extended-range artillery projectile that is designed to engage targets with minimal collateral damage. Excalibur is a fin-stabilized and canard-controlled precision-strike projectile with a unitary fragmenting warhead and an inertial navigation/Global Positioning System (GPS) guidance system. The projectile is comprised of a base section, payload section, and a guidance navigation and control section. Fuze options are height of burst, point detonating, and delay.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Precision Guided, Extended Range, Unitary, High Explosive, 155mm Cannon Ammunition
- All Weather, Day/Night, Fire & Forget, Urban/Complex Terrain
- Length: 39 inches
- Weight: 106 pounds
- Maximum Range: 24 kilometers
- Precision: Circular error probable (CEP) - 20 meters
- Reliability: 86.1% (in Theater)

WEAPON SYSTEM:

- M109A6 Paladin Self-propelled Howitzer, Lightweight M777A2 Towed Howitzer, and Archer Self-Propelled Howitzer (Sweden)

PRIME CONTRACTOR

- Raytheon Missile Systems (Tucson, AZ)

155mm XM982 Excalibur Increment Ia-1

MR DATE: July 2013
ACQ PHASE: Production & Deployment
ACAT: I
DODIC DA39

SYSTEM DESCRIPTION:

The Excalibur M982 Increment Ia-2, is a precision-guided, extended-range artillery projectile that is designed to engage targets with minimal collateral damage. Increment Ia-2 provides extended range, improved reliability and improved countermeasure capability. Excalibur is a fin-stabilized and canard-controlled precision-strike projectile with a unitary fragmenting warhead and an inertial navigation/Global Positioning System (GPS) guidance system. The projectile is comprised of a base section, payload section, and a guidance navigation and control section. Fuze options are height of burst, point detonating, and delay.

CAPABILITY/CHARACTERISTICS:

- Precision Guided, Extended Range, Unitary, High Explosive, 155mm Cannon Ammunition
- All Weather, Day/Night, Fire & Forget, Urban/Complex Terrain
- Length: 39 inches
- Weight: 106 pounds
- Maximum Range: 37.7 kilometers
- Precision: Circular error probable (CEP) - 20 meters
- Reliability: 86.1% (in Theater)

WEAPON SYSTEM:

- M109A6 Paladin Self-propelled Howitzer, Lightweight M777A2 Towed Howitzer, and Archer Self-Propelled Howitzer (Sweden)

PRIME CONTRACTOR

- Raytheon Missile Systems (Tucson, AZ)

155mm M982 Excalibur Increment Ia-2

MR DATE: October 2010
ACQ PHASE: Production & Deployment
ACAT: I
DODIC DA45

155mm M982A1 Excalibur Increment Ib

SYSTEM DESCRIPTION:

The Excalibur M982E1 Increment Ib, is a 155mm precision-guided, extended-range artillery projectile that is designed to engage targets with minimal collateral damage. Increment Ib provides extended range, improved reliability and improved countermeasure capability at a reduced cost. Excalibur is a fin-stabilized and canard-controlled precision-strike projectile with a unitary fragmenting warhead and an inertial navigation/Global Positioning System (GPS) guidance system. The projectile is comprised of a base section, payload section, and a guidance navigation and control section. Fuze options are height of burst, point detonation, and delay.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Precision Guided, Extended Range, Unitary, High Explosive, 155mm Cannon Ammunition
- All Weather, Day/Night, Fire & Forget, Urban/Complex Terrain
- Length: 39 inches
- Weight: 106 pounds
- Maximum Range: 39.3 kilometers
- Precision: Circular error probable (CEP) - 10 meters
- Reliability: 90%

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, M109A7 Paladin PIM, and Archer Self-Propelled Howitzer (Sweden)

PRIME CONTRACTOR

- Raytheon Missile Systems (Tucson, AZ)

155mm M1066 Infrared Illumination Projectile

SYSTEM DESCRIPTION:

The M1066 Infrared (IR) Illumination Projectile consists of a canister, drogue parachute along with a primary expelling charge. A candle assembly, main parachute, delay and secondary expelling charge are loaded in the canister. A dual stage ejection system is used to limit forces on the Illumination Candle. First ejection is initiated by fuze function, which expels the canister and ignites the delay. After a delay of 7-9 seconds, secondary functioning ejects and ignites the candle. In addition, the main parachute is deployed at this time providing a descent rate of 15 feet per second. With an optimal height of burst of 600 meters and the use of Night Vision Devices (NVD), a 2400 meter diameter of illumination is provided for a minimum of 120 seconds. The IR composition reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through use of passive NVDs. The round illuminates to the full range of the M107.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Provides stealth capability during nighttime operations
- Range: Minimum - 2.8 kilometers; Maximum - 17.5 kilometers
- Weight: 90 pounds
- Length: 27.55 inches
- Reliability: 94% at 80% confidence level
- Payload: 2.25 pounds of infrared illumination composition
- Ballistically similar to the 155mm M485A2 Visible Light Illumination Projectile

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- PM CAS: System Integration
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: IR Candle

MR DATE: June 2014
ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA58

MR DATE: October 2010
ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA49

MR DATE: June 2012
ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA51

SYSTEM DESCRIPTION:

The M1122 High Explosive (HE) Training Projectile provides a lower cost training round that combines more realistic performance and survivability when compared to standard 155mm training rounds. The M1122 will replace the M804A1 Practice Projectile and be used as an alternative to the M107 HE Projectile for training. It utilizes projectile bodies from the M483A1 demilitarization effort, is filled with high density concrete to simulate the weight of the M795 HE Projectile, and incorporates several Insensitive Munitions (IM) technologies (IMX-101 explosive fill, PBXN-9 Supplementary Charge, Meltable Fuze Well Liner and Meltable Fuze Plug) to increase survivability and safety.

CAPABILITY/CHARACTERISTICS:

- Improved acoustic and visual signature versus M804A1 Practice Projectile
- Weight: 102 pounds
- Length: 35.35 inches
- Maximum Range: 22.5 kilometers
- Propelling Charge: M231, M232 and M232A1 MACS

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- PM CAS: System Integration
- McAlester Army Ammunition Plant, McAlester, OK: Load, Assemble and Pack
- Crane Army Ammunition Activity, Crane, IN: Load, Assemble and Pack

155mm M1122 High Explosive Training Projectile

MR DATE: June 2014
ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA56

SYSTEM DESCRIPTION:

The M1123 Extended Range Infrared (IR) Illumination Projectile is compatible with the M762 Series Fuzes and can be fired using the M119 Series; M203A1; and M231, M232 and M232A1 MACS Propelling Charges. The IR composition reduces the possibility of exposing forward friendly troop positions while also allowing covert adjustment of fire at greater observation distances through use of passive Night Vision Devices (NVDs). This projectile is capable of providing a 2,400 meter diameter of effective IR Illumination for a minimum of 120 seconds out to the ranges of the current M795 High Explosive Projectile.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Weight: 103.3 pounds
- Length: 35.35 inches
- Propelling Charge: M119 Series; M203A1; and M231, M232 and M232A1 MACS
- Maximum Range: 22.5 kilometers
- Illumination: 75 watts/steradian
- Emits a maximum of 650 candlepower of visible light
- Burn Time: 120 seconds (minimum)

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- PM CAS: System Integration
- Crane Army Ammunition Activity, Crane, IN: I Candle
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack

155mm M1123 Extended Range Infrared Illumination Projectile

155mm M1124 Extended Range Visible Light Illumination Projectile

SYSTEM DESCRIPTION:

The M1124 Extended Range Visible Light (VL) Illumination Projectile is used to illuminate the battlefield at night or during conditions of reduced visibility. The cartridge is compatible with the M762 Series Fuzes and can be fired using the M119 Series; M203A1; and M231, M232 and M232A1 MACS Propelling Charges. This projectile is capable of providing effective VL Illumination out to the ranges of the current M795 High Explosive Projectile. The M1124 can be fired from the M109A6 Paladin, Lightweight M777A2 Towed, and M198 Series howitzers.

CAPABILITY/CHARACTERISTICS:

- Weight: 103.3 pounds
- Length: 35.35 inches
- Propelling Charge: M119 Series; M203A1; and M231, M232 and M232A1 MACS
- Maximum Range: 22.5 kilometers
- Illumination: 1,000,000 candlepower
- Burn Time: 100 seconds (minimum)

WEAPON SYSTEM:

- M109A6 Paladin, Lightweight M777A2 Towed Howitzer, and M198 Series Howitzers

PRIME CONTRACTOR

- PM CAS: System Integration
- Crane Army Ammunition Activity, Crane, IN: VL Candle
- Pine Bluff Arsenal, Pine Bluff, AR: Load, Assemble and Pack

MR DATE: June 2014
ACQ PHASE: Production & Deployment
ACAT: III
DODIC DA57

48

PM CAS

Combat Ammunition Systems

M224 60mm Mortar

MR DATE: March 1985
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: N/A

SYSTEM DESCRIPTION:

The M224 60mm Mortar weapon system is a lightweight, high angle of fire, smooth bore, man-portable, muzzle loaded mortar with improved rate-of-fire capabilities. The M224 consists of the following components: M225 Cannon (tube), M170 Bipod Assembly, M7 Baseplate, M8 Auxiliary Baseplate, and the M67 Sight Unit. The M225 Cannon is a smooth bore mortar barrel 40 inches long with external cooling fins on the basecap end. Attached to the basecap end is a combination carrying handle and firing mechanism. The carrying handle has a trigger, firing selector, and a range indicator assembly.

CAPABILITY/CHARACTERISTICS:

- Elevation: Min 800mils, Max 1511 mils
- Range: Min 70 meters, Max 3,500 meters
- Rate of Fire: 30 rounds /minute; Sustained w/ Max Charge - 20 rounds / minute
- System Weight: 46.5 lbs. (Cannon 14.4 lbs, Bipod 15.2 lbs, Baseplate 14.4 lbs, Sight Unit 2.5 lbs.)

WEAPON SYSTEM:

- N/A

PRIME CONTRACTORS

- Watervliet Arsenal, Watervliet, NY: Cannons
- Connectec Defense Systems, Irvine, CA: Weapon Components
- Elbit Systems of America, Fort Worth, TX: Weapon System Integration
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

M224A1 60mm Lightweight Mortar

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The M224A1 60mm Mortar system is approximately 20% lighter (8.9 lbs less) than the current legacy M224 mortar system while retaining the same rates of fire, range, and tube life. The M224A1 consists of the following components: M225A1 Inconel Cannon (tube), M170A1 Bipod Assembly, M7A1 Baseplate, M8A1 Auxiliary Baseplate, and the M67 Sight Unit. The M225A1 Cannon is a smooth bore mortar barrel 40 inches long. Attached to the basecap end is a combination carrying handle and firing mechanism. The carrying handle has a trigger, firing selector, and a range indicator assembly.

CAPABILITY/CHARACTERISTICS:

- Elevation: Min 800mils, Max 1511 mils
- Range: Min 70 meters, Max 3,500 meters
- Rate of Fire: 30 rounds /minute; Sustained w/ Max Charge - 20 rounds / minute
- System Weight: 37.55 lbs. (Cannon 13 lbs, Bipod 12.85 lbs, Baseplate 9.2 lbs, Sight Unit 2.5 lbs.)

WEAPON SYSTEM:

- N/A

PRIME CONTRACTORS

- Watervliet Arsenal, Watervliet, NY: Cannons
- Connectec Defense Systems, Irvine, CA: Weapon Components
- Elbit Systems of America, Fort Worth, TX: Weapon System Integration
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

M252 81mm Mortar

SYSTEM DESCRIPTION:

The M252 81mm Mortar is a smooth bore, muzzle loaded, high angle fire mortar with improved rate-of-fire capabilities. The M252 consists of the following components: M253 Cannon (tube), M177 Bipod, M3A1 Baseplate, and the M67 Sight Unit. The M177 Bipod Mount is a K-frame design consisting of a barrel clamp, two buffers, a traversing mechanism, a cross-leveling mechanism, an elevating mechanism, and two legs.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Elevation: Min 800mils, Max 1511 mils
- Range: Min 80 meters, Max 5.900 meters
- Rate of Fire: 30 rounds / minute; Sustained w/ Max Charge: 15 rounds per minute
- System Weight: System Weight: Cannon 30.5 lbs, Bipod 27 lbs, Baseplate 29 lbs, Sight Unit 2.5 lbs. Total 89 lbs.

WEAPON SYSTEM:

- N/A

PRIME CONTRACTORS

- Watervliet Arsenal, Watervliet, NY: Cannons
- Connectec Defense Systems, Irvine, CA: Weapon Components
- Elbit Systems of America, Fort Worth, TX: Weapon System Integration
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

MR DATE: January 1991
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

M252A1 81mm Lightweight Mortar

SYSTEM DESCRIPTION:

The M252A1 81mm Mortar system is approximately 13% lighter (11.7 lbs less) than the current legacy M252 mortar system while retaining the same rates of fire, range, and tube life. The M252A1 is a smooth bore, muzzle loaded, high angle fire weapon. The M252A1 consists of the following components: M253 Cannon (tube), M177A1 Bipod, M3A2 Baseplate, and the M67 Sight Unit. The M177A1 Bipod Mount is an A frame design consisting of a barrel clamp, two buffers, a traversing mechanism, a cross-leveling mechanism, an elevating mechanism, and two legs. The M252A2 version is also available utilizing the M253A1 Inconel cannon.

CAPABILITY/CHARACTERISTICS:

- Elevation: Min 800mils, Max 1511 mils
- Range: Min 80 meters, Max 5.900 meters
- Rate of Fire: 30 rounds / minute; Sustained w/ Max Charge: 15 rounds per minute
- System Weight: Cannon 30.5 lbs (29.5 lbs for Inconel Cannon), Bipod 21.3 lbs, Baseplate 23 lbs, Sight Unit 2.5 lbs. Total 77.3 lbs (76.3 lbs with Inconel Cannon).

WEAPON SYSTEM:

- M121 Carrier-mounted Mortar System

PRIME CONTRACTORS

- Watervliet Arsenal, Watervliet, NY: Cannons
- Connectec Defense Systems, Irvine, CA: Weapon Components
- Elbit Systems of America, Fort Worth, TX: Weapon System Integration
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

50
PM CAS
Combat Ammunition Systems

MR DATE: March 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The M120A1 120mm Towed Mortar System consists of the following components: M298 Cannon (tube), M191 Bipod, M9 Baseplate, and the M67 Sight Unit. The M120A1, when transported on the M1101 Trailer, is primarily towed by a High Mobility Multi-Wheeled Vehicle (HMMWV).

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Elevation : Min 710mils, Max 1510 mils
- Range: 200m to 7,200m
- Rate of Fire: 16 rounds/minute; Sustained Rate: 4 rounds/minute
- System Weight: Cannon 110 lbs, Bipod 68 lbs, Baseplate 136 lbs, Sight Unit 2.5 lbs. Total 316.5 lbs

WEAPON SYSTEM:

- N/A

PRIME CONTRACTORS

- Watervliet Arsenal, Watervliet, NY: Cannons
- Connectec Defense Systems, Irvine, CA: Weapon Components
- Elbit Systems of America, Fort Worth, TX: Weapon System Integration
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

M120A1 120mm Towed Mortar

MR DATE: March 2003
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The M121 120mm Carrier Mounted Mortar System consists of the M298 Cannon, M9 Baseplate (for ground mount mode), M191 Bipod, an adaptor kit for mounting in the M1064A3 Carrier, and the M67 Sight Unit with an extension assembly. The turntable provides a ninety degree area of fire. The adaptation kit has a breech piece socket, bipod support, travel clamp assembly, step assembly, and brackets to mount the mortar into the M1064A3.

CAPABILITY/CHARACTERISTICS:

- Elevation : Min 750mils, Max 1510 mils
- Range: 200m to 7,200m
- Rate of Fire: 16 rds/min (1 min), Sustained Rate: 4 rds/min
- System Weight: Cannon 110 lbs, Bipod 78 lbs, Baseplate 136 lbs, Sight Unit 2.5 lbs. Total 326.5 lbs

WEAPON SYSTEM:

- N/A

PRIME CONTRACTORS

- Watervliet Arsenal, Watervliet, NY: Cannons
- Connectec Defense Systems, Irvine, CA: Weapon Components
- Elbit Systems of America, Fort Worth, TX: Weapon System Integration
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

M121 120mm Carrier Mounted Mortar

M326 120mm Mortar Stowage Kit

SYSTEM DESCRIPTION:
The M326 Mortar Stowage Kit (MSK) is a hydraulic powered lift system that is mounted on a M1101 Trailer. It allows the crew to emplace and displace the M120A1 Towed Mortar system quickly and efficiently. The system allows the mortar and ammunition to be carried as a single unit.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Increased responsiveness (1 minute emplacement)
- Shoot & Scoot capability (2 minute displacement)
- Serves as a platform to integrate the Dismounted Mortar Fire Control System
- Reduced crew fatigue

WEAPON SYSTEM:
- 120mm M120A1 Towed Mortar Systems

PRIME CONTRACTOR
- Elbit Systems of America, Fort Worth, TX
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

MR DATE: December 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

M95/M96 Mortar Fire Control System - Mounted

SYSTEM DESCRIPTION:
The M95/M96 Mortar Fire Control System-Mounted (MFCS-M) is a highly responsive and accurate fire control system for 120mm mortars. The system allows mortar crews to send and receive digital call for fire messages, determine the pointing and position of the weapon, and calculate ballistic solutions, providing significant enhancements in survivability, accuracy, and responsiveness. Accuracy of the mortar is also increased by a factor of three. The M95 is the MFCS on the M121 carrier-mounted mortar; the M96 is installed into the M577 Fire Direction Center (FDC) vehicle.

CAPABILITY/CHARACTERISTICS:
- MFCS allows mortars to stop, fire, and move in less than one minute (no crew dismount)
- A mortar section can utilize split operations, with the crew dismount not needed, allowing for dispersed operations
- MFCS-M is an on-board system that integrates a fire control computer with an inertial navigation and pointing system

WEAPON SYSTEM:
- M121 Carrier Mounted Mortar System

PRIME CONTRACTOR
- Elbit Systems of America, Fort Worth, TX
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering and Software

MR DATE: January 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

52

PM CAS

Combat Ammunition Systems

SYSTEM DESCRIPTION:

The M150/M151 Mortar Fire Control System-Dismounted (MFCS-D) is an on-board system that integrates a fire control computer with an inertial navigation and pointing system. It allows mortar crews to send and receive digital call for fire messages, determine the pointing and position of the weapon, and calculate ballistic solutions. A gun can operate as the Fire Direction Center (FDC), which allows the Mortar Section to execute dispersed operations. Accuracy of the mortar is increased by a factor of three. The M150 is the MFCS on the M120A1 Towed Mortar System; M151 is installed into the High Mobility Multi-Wheeled Vehicle (HMMWV) prime mover that tows the weapon system.

CAPABILITIES/SYSTEM CHARACTERISTICS:

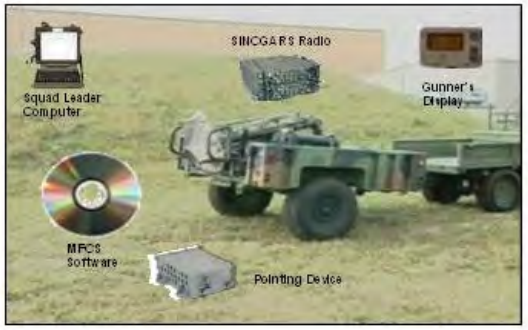
- Improves cartridge accuracy/effectiveness
- Increases soldier survivability
- Interoperable with Forward Observer System (FOS), and Advanced Field Artillery Tactical Data System (AFATDS)

WEAPON SYSTEM:

- M120A1 Ground-mounted Mortar System

PRIME CONTRACTOR

- Elbit Systems of America, Fort Worth, TX
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering and Software



MR DATE: May 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

M150/M151 Mortar Fire Control System - Dismounted

SYSTEM DESCRIPTION:

The M32/M32A1 Lightweight Handheld Mortar Ballistic Computer (LHMBC) is a revolutionary improvement in mortar fire control capability, linking mortar fires with the digital battlefield. The LHMBC consists of modified Mortar Fire Control System software hosted on the Army Common Hardware Rugged Portable Digital Assistant (R-PDA). The R-PDA includes a tactical modem and embedded Global Positioning System (GPS). The LHMBC can be fielded to 60mm, 81mm, and 120mm dismounted units as a replacement for the M23 Computer.

CAPABILITY/CHARACTERISTICS:

- Calculates the ballistic solution for the entire family of Mortar Systems and Ammunition
- Provides ammo inventory management
- Functions as a Fire Direction Center
- Supports all doctrinal Mortar Missions calculating the ballistic solution for all U.S. 60mm, 81mm and 120mm Mortar Systems and Ammunition
- Incremental Software development approach
- Provides automatic gun position via embedded GPS
- System weight < 4 pounds
- Joint development program with U.S. Marine Corps

WEAPON SYSTEM:

- 60mm M224 Series Mortar System
- 81mm M252 Series Mortar System
- 120mm Mortar Systems without MFCS (used as back-up computer)

PRIME CONTRACTOR

- Elbit Systems of America, Fort Worth, TX
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering and Software

MR DATE: Hardware & Software version 5.0: August 2016
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

M32/M32A1 Lightweight Handheld Mortar Ballistic Computer

Mortar Modularity: Product Improvements to the 60, 81, and 120mm Mortar Systems

SYSTEM DESCRIPTION:

Product improvements include: lighter-weight assault baseplate for the 60mm system in hand-held mode (M8X); 60mm round-counter; 60mm range indicator; improved aiming posts/lights; and improved M191A1 Bi-pod for the 120mm Towed Mortar system.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- M8A1: allows 60mm crew to fire charges 0-4 in hand-held mode (versus charges 0-1 with current baseplate)
- 60mm round counter: automated tracking of rounds fired vs paper records
- 60mm range indicator: improved accuracy in hand-held mode
- Aiming Posts/Lights: ruggedized aiming poles with integrated lights (visual & IR); removal of tritium from current lights
- M191A1 120mm Bi-pod: improved operation and integration of pointing device (removing it from its current tube mount)

WEAPON SYSTEM:

- 60mm M224 Series Mortar System
- 81mm M252 Series Mortar System
- 120mm M120 Series Towed Mortar System

PRIME CONTRACTOR

- Watervliet Arsenal, Watervliet, NY: Cannons, Baseplates
- RDECOM-ARDEC, Picatinny Arsenal, NJ: System Engineering

53

PM CAS

Combat Ammunition Systems

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

54

PM CAS

Combat Ammunition Systems

M739A1 Artillery Point Detonating/Delay Fuze

MR DATE: January 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N340

SYSTEM DESCRIPTION:

The M739A1 Artillery Point Detonating/Delay (PD/DLY) Fuze is the Army's preferred, primary fuze for 105mm and 155mm projectiles to address point detonating/delay artillery functions. The M739A1 Fuze contains an Impact Delay Module (IDM) assembly. The IDM provides fuze initiation delay based upon the completion of mechanical actions caused by projectile deceleration and will function immediately after passing through the target.

CAPABILITY/CHARACTERISTICS:

- Hand set capability
- Initiates bursting fragmentation projectiles
- Fuze is compatible with all current 105mm, and 155mm bursting projectiles
- Two Function Setting: Point Detonation & Delay

WEAPON SYSTEM:

- 105mm M102 and M119 Series Howitzers
- 155mm M109A6 Paladin, Lightweight M777A2 Towed Howitzer, M198 Series Howitzers

PRIME CONTRACTOR

- Action Manufacturing, Bristol, PA

M782 Multi-Option Fuze, Artillery

MR DATE: November 2005
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC NA09

SYSTEM DESCRIPTION:

The M782 Multi-Option Fuze, Artillery (MOFA) is compatible with all current bulk filled bursting projectiles fired in the 105mm and 155mm Cannon Systems. The MOFA provides proximity, precision time, delay and impact functions in a single fuze, and the inductive fuze set feature optimizes MOFA for use with automated ammunition handling equipment.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Fuze is compatible with all current 105mm, and 155mm bursting projectiles
- Four Function Settings: Proximity, Time, Point Detonating (PD), Delay
- Reduced logistic burden
- Improved Electronic Counter Measure (EMC) capability
- Rapid inductive set capability
- Improved combat effectiveness
- Setting Reliability: Time - 98.3%, PD - 98.2%, Proximity - 98.3%, Delay - 93.7%

WEAPON SYSTEM:

- 105mm: M102 and M119 Series Howitzers
- 155mm: M109A6 Paladin, Lightweight M777A2 Towed Howitzer, M198 Series Howitzers

PRIME CONTRACTOR

- Not in production

M762A1/M767A1 Artillery Electronic Time Fuze

SYSTEM DESCRIPTION:

The M762A1 and M767A1 Electronic Time (ET) Fuzes are used with spin stabilized 105mm and 155mm artillery projectiles. The M762A1 ET Fuze (DODIC: NA17) is used with the cargo-dispensing projectiles such as M485, M1066, M1123 and M1124 Illumination Projectiles. The M767A1 ET Fuze (DODIC: NA15) is similar to the M762A1; however, a booster cup is attached to its base end to provide compatibility with the bursting and fragmentation projectiles such as M795 and M549A1 High Explosive Projectiles . Both fuzes can be set to function in the time mode or impact mode. The M762A1 and M767A1 can be set manually without the need of a tool or set remotely via an inductive link with an inductive auto setter.

CAPABILITY/CHARACTERISTICS:

- Hand and Auto setting capability
- M762A1 initiates cargo-dispensing projectiles
- M767A1 has booster added for initiating bursting fragmentation projectiles
- Fuzes are compatible with all current 105mm, and 155mm cargo and bursting projectiles
- Two Function Settings: Time & Point Detonation
- DODIC variations:
  - NA15: M767A1, used with bursting and fragmenting projectiles
  - NA17: M762A1, used with cargo-dispensing projectiles

WEAPON SYSTEM:

- 105mm: M119 Series Howitzers
- 155mm: M109A6 Paladin, Lightweight M777A2 Towed Howitzer, M198 Series Howitzers

PRIME CONTRACTOR

- Not in production

M1156 Precision Guidance Kit

SYSTEM DESCRIPTION:

The M1156 Precision Guidance Kit (PGK) is a Global Positioning System (GPS) Guidance Kit with fuzing functions for the M795 and M549A1 155mm High Explosive (HE) Artillery Projectiles. The PGK corrects the ballistic trajectory of the projectile to reduce delivery errors and thus improves projectile accuracy. The PGK will effectively reduce target delivery error of conventional artillery munitions and reduce the number of projectiles required to execute a fire mission.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Accuracy: < 50 meters Circular Error Probable (CEP) (Threshold); <30 meters CEP (Objective)
- Reliability: >92% (Threshold); > 97% (Objective)
- Integrated GPS Receiver
- Deep Intrusion Fuze
- Reduced collateral damage and logistics burden

WEAPON SYSTEM:

- M109A6 Paladin and Lightweight M777A2 Towed Howitzer

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

55
PM CAS
Combat Ammunition Systems

MR DATE: March 2003
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC NA15, NA17

MR DATE: December 2015
ACQ PHASE: Production & Deployment
ACAT: III
DODIC NA29

PM Close Combat Systems

Project Manager Close Combat Systems (PM CCS) provides the Warfighter world-class close combat, force protection and assured mobility capabilities across full spectrum operations through professional, integrated Joint life-cycle management. The PM is committed to helping our Soldiers maintain freedom to move on the battlefield by developing and supporting technologically advanced Networked munitions, Counter Minded, EOD Equipment, IED Defeat, Demolitions, Non-Lethal Systems and Munitions, Special Projects, Grenades, Pyrotechnics and Shoulder Launched Munitions.

PROJECT MANAGER
CLOSE COMBAT SYSTEMS

9mm AT4 Sub-Caliber Training Round

SYSTEM DESCRIPTION:
The M939 is used in place of the AT4 in training sight picture. There are two trace cartridge models. The original cartridge had a red tip and a white band on the projectile, with a half-black head; the current configuration uses a red tip with a blue stripe as tip identification. It is used in AT4 Launcher only with the M287 9mm Tracer Bullet Training Device. Both models have the head-stamp of manufacturer and year.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- M939 is used in place of the AT4 in training sight picture
- Fired from the TACOM-managed M287 Trainer, the velocity and trajectory match that of the AT4
- The M287 launcher produces less noise and no back blast
- Length: 29.7 millimeters
- Weight: 150 grams
- Projectile range: 1,800 meters
- Tracer range: 450 meters

WEAPON SYSTEM:
- M287 9mm Tracer Bullet Training Device

PRIME CONTRACTOR
- Ammunition Accessories, Inc., Lewiston, ID

M136A1 AT4 Confined Space

SYSTEM DESCRIPTION:
The M136A1 AT4 Confined Space (AT4CS) consists of an anti-armor projectile encased in a fiberglass-reinforced launch tube fitted with a firing mechanism, pop-up sights, a carrying sling, protective muzzle covers and shock absorbing bumpers. The projectile consists of an 84mm shaped charge warhead that provides the individual dismounted soldier with the operational capability to engage and defeat armored/lightly armored vehicles from a confined or enclosed space. Each launcher has an integral night vision device mount that accepts any sight or laser aiming light with a rail-grabber attachment. The AT4CS can be safely fired from an enclosure thereby significantly increasing the soldiers' survivability in an urban environment. The AT4CS replaces the Army's combat proven M136 AT4.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Weight: 7.5 kilograms
- Length: 1.04 meters
- Effective range: 15-300 meters
- Penetration capabilities up to 500 millimeters of armor
- Fire from enclosure, air droppable, no maintenance

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Saab Bofors Dynamics, Karlskoga, Sweden

MR DATE: December 2015
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC A358

MR DATE: September 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: CA30

58

PM CCS

Close Combat Systems

SYSTEM DESCRIPTION:

The M141 Bunker Defeat Munition (BDM) is a stand-alone, man-portable, shoulder launched munition. The munition consists of an 83mm High Explosive Dual Purpose Warhead on a free-flight rocket packaged and sealed in an expendable, lightweight launcher. Each launcher has an integral night vision device mount that accepts any sight or laser aiming light with a rail-grabber attachment. The BDM utilizes a unique fuze that automatically selects the warhead fast or long delay detonation mode without gunner selection.

CAPABILITY/CHARACTERISTICS:

- Provides the individual dismounted soldier with the operational capability to incapacitate personnel located within structures such as buildings, fixed facilities, earth and timber fortifications (bunkers), caves and behind masonry walls.
- Carry length: 812 millimeters
- Firing length: 1,372 millimeters
- Effective Range: 15-250 meters
- Carry weight: 7.26 kilograms
- Fuze: MK 420 Dual Safe
- Direct fire, man-portable, no maintenance, night vision capable, air deployable

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Nammo-Talley, Inc., Mesa, AZ

M141 Bunker Defeat Munition

MR DATE: December 1999
ACQ PHASE: Production & Deployment
ACAT: III
DODIC HA08

SYSTEM DESCRIPTION:

The M72 Light Anti-Armor Weapon (LAW) is a compact, ultra-lightweight, single shot, disposable munition optimized to defeat lightly armored vehicles and other hard targets at close combat ranges with a 66mm shaped charge warhead. The improved M72 LAW Family of Munitions offers significantly enhanced capability beyond that of the combat-proven M72A3. The improvements include a higher velocity rocket motor extending the weapon's effective range, a suite of increased lethality warheads, easier trigger release force, rifle type sight system, and better overall system reliability and safety. The latest anti-armor version, designated M72A7, utilizes a qualified insensitive munitions (IM) explosive and other product improvements.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Provides the individual, dismounted soldier with an ultra-lightweight alternative to existing shoulder launched munitions for conditions where mobility is crucial
- Used to engage threat personnel in the open or behind protective barriers such as hasty fighting positions, light clad masonry walls and light vehicles
- Carry length: 775 millimeters
- Firing length: 980 millimeters
- Effective range: 25 meters - 220 meters
- Carry weight: 3.63 kilograms
- Fuze: M412A1 Point Initiating Base Detonating
- M72A7 Armor Penetration: 150 millimeters Reactive Hull Armor

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Nammo-Talley, Inc., Mesa, AZ

M72 Light Anti-Armor Weapon

MR DATE: November 2010 (Urgent Release)
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC HA29

M72AS Sub-Caliber Training System

SYSTEM DESCRIPTION:
The M72AS is the training version of the M72 LAW. It fires a 21mm sub-caliber tracer rocket (DODIC: HA21) in place of the tactical 66mm High Explosive Antitank round.

CAPABILITY/CHARACTERISTICS:
- Simulation of tactical weapon effect
- Caliber: 21mm
- Type: Rocket

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Nammo Talley

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC HZ29

60
PM CCS
Close Combat Systems

MR DATE: November 2005
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L119

SYSTEM DESCRIPTION:

The A/P25S-5 Signal Kit is a distress signaling device used by downed airmen or others exposed to emergency escape or evasion situations. The kit comes equipped with a hand fired projector and a bandoleer assembly which contains a plastic molded bandoleer holding seven red signals. Each signal consists of a small solid propellant rocket motor actuated by a percussion primer, a delay element, and a pyrotechnic candle, all contained in a metal case. The surface of the case is dyed red, to match the color of the candle. The projector is made of black anodized aluminum, and has a signal gripping device and a firing mechanism which consists of a free traveling firing pin with a smooth actuation knob and spring. The projector is connected to the bandoleer by a 30-inch lanyard.

CAPABILITY/CHARACTERISTICS:

- Used as a distress signal for exposed individuals for emergency escape and evasion
- Altitude: 600 feet
- Burn Time: 10 seconds
- Illumination: 10,000 candlepower
- Visible for 15-20 miles
- Part of vest survival kit

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Security Signals; Cordova, TN
- Propellant: Talley Defense Systems; Mesa, AZ

A/P25S-5 Personnel Distress Signal Kit

MR DATE: September 1989
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A965

SYSTEM DESCRIPTION:

The M839 Decoy Cartridge is used to provide an effective survival counter-measure for Army aircraft against radar controlled weapon systems.

CAPABILITIES/SYSTEM CHARACTERISTICS:

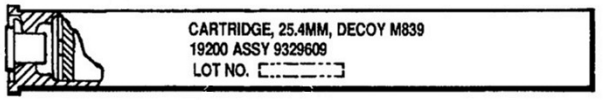
- Ammunition cartridge consisting of a plastic outer case nominally 1-inch wide x 1-inch high x 7 inches long
- The cartridge item contains: a plastic end cap, plastic piston, felt spacer, and impulse cartridge
- The cartridge is fired by electrical initiation of the M796 Impulse Cartridge
- Expels the chaff payload into the air where it blooms into a radar reflecting cloud that breaks "Lock On" radar-controlled weapon systems

WEAPON SYSTEM:

- Rotary Wing and Fixed Wing Aircraft

PRIME CONTRACTOR

- Kilgore Flares Company,LLC, TN
- Armtec Defense, AR



M839 Decoy Cartridge

M195 Green Star Illumination Parachute Hand Held Signal

SYSTEM DESCRIPTION:
The M195 Hand Held Signal (HHS) is a parachute suspended, green star illuminant propelled by a fin-stabilized rocket motor propulsion assembly. The signal is activated by striking the base of the signal with the palm of the hand driving a percussion primer into the initiating charge. The mission need of the M195 is for surface-to-air distress signaling, location signaling between troop emplacements, and battlefield illumination. The M195 is used by all services for both training and war reserve requirements.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Primarily used for battlefield illumination and distress and troop placement
- Signal is a parachute suspended green star illuminant propelled by a fin-stabilized rocket motor
- Length: 10.16 inches
- Weight: 1.2 pounds
- Illumination: 5,000 candlepower for 50 seconds
- Altitude: 725 feet (average)

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Security Signals, Cordova, TN

MR DATE: July 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L305

M158 Red Star Illumination Cluster Hand Held Signal

SYSTEM DESCRIPTION:
The M158 Hand Held Signal (HHS) consists of a five-star red cluster illuminant assembly and rocket motor propulsion assembly. The signal is activated by striking the base of the signal with the palm of the hand driving a percussion primer into the initiating charge. An attached fin assembly provides stability in flight. The mission need of the M158 is to provide limited battlefield illumination in addition to functioning as a distress and troop emplacement signaling device. The M158 is used by all services for both training and tactical requirements.

CAPABILITY/CHARACTERISTICS:
- Primarily used for battlefield illumination and distress and troop placement
- Consists of a five-star red cluster illuminant assembly propelled by a fin-stabilized rocket motor
- Length: 10.16 inches
- Weight: 1.2 pounds
- Illumination: 30,000 candlepower for 6-10 seconds

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Security Signals, Cordova, TN

MR DATE: December 1983
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L306

62
PM CCS
Close Combat Systems

MR DATE: April 1984
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: L307

SYSTEM DESCRIPTION:

The M159 Hand Held Signal (HHS) consists of a five-star white cluster illuminant assembly and a rocket motor propulsion assembly. The signal is activated by striking the base of the signal with the palm of the hand driving a percussion primer into the initiating charge. An attached fin assembly provides stability in flight. The mission need of the M159 is to provide limited battlefield illumination in addition to functioning as a distress and troop emplacement signaling device. The M159 is used by all services for both training and tactical requirements.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Primarily used for battlefield illuminant and distress and troop placement
- Signal consists of a five-star white cluster illuminant propelled by a fin-stabilized rocket motor
- Length: 10.16 inches
- Weight: 1.2 pounds
- Illumination: 30,000 candlepower for 6-10 seconds
- Altitude is 725 feet (average)

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Security Signals, Cordova, TN

M159 White Star Illumination Cluster Hand Held Signal

MR DATE: June 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L311

SYSTEM DESCRIPTION:

The M126A1 Hand Held Signal (HHS) is a parachute suspended red star illuminant propelled by a fin stabilized rocket motor propulsion assembly. The signal is activated by striking the base of the signal with the palm of the hand driving a percussion primer into the initiating charge. The mission need of the M126A1 is for surface-to-air distress signaling, location signaling between troop emplacements, and battlefield illumination. The M126A1 is used by all services for both training and war reserve requirements.

CAPABILITY/CHARACTERISTICS:

- Primarily used for battlefield illumination and distress and troop placement
- Signal is a parachute suspended red star illuminant propelled by a fin stabilized rocket motor
- Length: 10.16 inches
- Weight: 1.2 pounds
- Illumination: 10,000 candlepower for 50 seconds
- Altitude is 725 feet (average)

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Security Signals, Cordova, TN

M126A1 Red Star Illumination Parachute Hand Held Signal

M127A1 White Star Illumination Parachute Hand Held Signal

SYSTEM DESCRIPTION:
The M127A1 Hand Held Signal (HHS) is a parachute suspended white star illuminant propelled by a fin stabilized rocket motor propulsion assembly. The signal is activated by striking the base of the signal with the palm of the hand driving a percussion primer into the initiating charge. The mission need of the M127A1 is for surface-to-air distress signaling, location signaling between troop emplacements, and battlefield illumination. The M127A1 is used by all services for both training and war reserve requirements. The high candlepower intensity lends the M127A1 to battlefield illumination applications.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Primarily used for battlefield illumination and distress and troop placement
- Signal is a parachute suspended white star illuminant propelled by a fin-stabilized rocket motor
- Length: 10.16 inches
- Weight: 1.2 pounds
- Illumination: 90,000 candlepower for 25 seconds
- Altitude is 725 feet (average)

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Security Signals, Cordova, TN

M125A1 Green Star Illumination Cluster Hand Held Signal

SYSTEM DESCRIPTION:
The M125A1 Hand Held Signal (HHS) consists of a five-star green cluster illuminant assembly and a rocket motor propulsion assembly. The signal is activated by striking the base of the signal with the palm of the hand driving a percussion primer into the initiating charge. The mission need of the M125A1 is primarily for signaling among ground troop emplacements and is occasionally used to signal aircraft. The M125A1 is used by all services for both training and tactical requirements.

CAPABILITY/CHARACTERISTICS:
- Primarily used for battlefield illumination and distress and troop placement
- Signal consists of a five-star green cluster illuminant propelled by a fin-stabilized rocket motor
- Length: 10.16 inches
- Weight: 1.2 pounds
- Primarily used for signaling among ground troops and aircraft
- Illumination: 9,000 candlepower for 6-10 seconds
- Altitude is 725 feet (average)

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Security Signals, Cordova, TN

MR DATE: October 1983
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L312

MR DATE: December 1983
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L314

64

PM CCS

Close Combat Systems

M49A1 Trip Flare

MR DATE: December 2006
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC L495

SYSTEM DESCRIPTION:

The M49A1 Trip Flare consists of an illuminant assembly, cover loading assembly, and mounting bracket assembly. The illuminant assembly has an aluminum case containing an ignition increment and three illuminant increments. The waterproof cover loading assembly contains a percussion primer, intermediate charge and spring loaded striker. The mounting bracket holds the illuminant assembly in the desired position. Two carriage bolts with wing nuts are provided to tighten the sleeve, and a flange with two nail holes included for vertical mounting. The base of the bracket is pointed for in-ground installation. The trigger is attached to the exterior of the mounting bracket. The lever is hinged to the cover and is held in position by the safety clip when unarmed. The flare is armed by attaching a trip wire to either the trigger or pull pin.

CAPABILITY/CHARACTERISTICS:

- Defense perimeter warning
- Bracket allows assembly to be held in the desired position
- Provides warning of defense perimeter infiltration by illuminating the field
- Light intensity is 35,000 candlepower for one minute

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Chemring Ordnance, Perry, FL

M206 Aircraft Countermeasure Flare

MR DATE: August 1980
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: L410

SYSTEM DESCRIPTION:

The M206 Aircraft Countermeasure (CM) Flare consists of an eight-inch aluminum rectangular case which houses a magnesium-teflon flare pellet, piston and end cap. The flanged base cartridge has a preformed indentation for insertion of the M796 Impulse Cartridge. Fired by electrical impulse, the impulse cartridge expels the M206 from an aircraft mounted flare dispenser. The ignited magnesium composition produces a high temperature infrared (IR) signature. The IR signature serves as a heat seeking decoy for heat seeking surface-to-air missiles and air-to-air missiles fired upon the aircraft. The Army and Air Force use the M206.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Candle is magnesium-teflon composition
- Provides high temperature IR signature decoy
- Fire from aircraft mounted dispenser
- Counters heat seeking missiles

WEAPON SYSTEM:

- Rotary wing aircraft

PRIME CONTRACTOR

- Kilgore, Toone, TN
- Armtec Defense, East Camden, AR

M211 Infrared Countermeasure Flare

SYSTEM DESCRIPTION:
The M211 Countermeasure Flare is an infrared (IR) decoy utilizing the standard M206 1" x 1" x 8" extruded aluminum case cartridge. Major parts of the decoy are the case with impulse cartridge cup, the piston, the pyrophoric payload foils and the end cap.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Provides IR countermeasure protection against state-of-the-art missiles
- Output: Classified
- Spectral decoy

WEAPON SYSTEM:
- Rotary and fixed wing aircraft

PRIME CONTRACTOR
- Alloy Surface; Chester Twp, PA

MR DATE: May 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC LA14

M212 Countermeasure Flare

SYSTEM DESCRIPTION:
The M212 Countermeasure Flare is a multi-spectral decoy flare utilizing the standard M206 1" x 1" x 8" extruded aluminum case cartridge. It contains a brass forward closure which acts as a weight to improve the aerodynamics of the decoy, and a cast propellant grain. The flare also contains a safe and initiate device (S&I) which uses a boron-potassium-nitrate pellet used to ignite the flare pellet once the S&I has left the case cartridge.

CAPABILITY/CHARACTERISTICS:
- Provides countermeasure protection against state-of-the-art missiles
- Output: Classified
- Multi-Spectral decoy

WEAPON SYSTEM:
- Rotary wing aircraft

PRIME CONTRACTOR
- Kilgore, Toone, TN

MR DATE: May 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC LA15

66
PM CCS
Close Combat Systems

MR DATE:
- MD73: September 1980
- MG62: June 2008

ACQ PHASE: Production & Deployment
ACAT: III
DODIC MD73, MG62

SYSTEM DESCRIPTION:

The BBU-35/B and M796 Impulse Cartridges are a three piece injection molded unit consisting of a cylindrical housing with a flange on one end, a snap-in primer plate, and snap-in closure disc for the flanged end of the unit. The primer plate has a hole in its center to accept a standard military-specification primer. A preformed pellet of a magnesium-teflon composition is coated with a first fire composition that accelerates ignition of the pellet. This pellet is placed in a cardboard tube within the simulator and provides the flash and smoke upon functioning.

CAPABILITY/CHARACTERISTICS:

- Used to initiate several types of munitions (M206, M211, M212 flares and M839 decoy)
- Electrically initiated
- Main charge is HPC-1 Propellant
- DODIC variations:
  - MD73: Army Impulse Cartridge
  - MG62: Air Force version Materiel Released for Army use

WEAPON SYSTEM:

- Rotary wing aircraft

PRIME CONTRACTOR

- EK Ordnance, MN

BBU-35/B & M796 Impulse Cartridges

12 Gauge M1012 Non-Lethal Point Control Cartridge

SYSTEM DESCRIPTION
The M1012 Non-Lethal Point Target Control Cartridge enables shooting at individuals without penetrating the body, but nevertheless delivers a strong blow to the body. The round should be fired at the center mass of an adult at ranges between 10 and 20 meters.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Fired from standard issue 12 Gauge Mossberg 500 and Mossberg 590 Shotguns
- Engagement range: 10 meters to 20 meters

WEAPON SYSTEM:
- Mossberg 500, Mossberg 590 Shotguns

PRIME CONTRACTOR
- Safariland (formerly Defense Tech), Casper, WY

12 Gauge M1013 Non-Lethal Crowd Dispersal Cartridge

SYSTEM DESCRIPTION:
The M1013 Non-Lethal Crowd Dispersal Cartridge gives the soldier a capability to stun or deter two to three people without penetrating their bodies but it nevertheless delivers a strong blow to the body. The round is designed to be fired at the center mass of an adult person at ranges between 10 and 20 meters.

CAPABILITY/CHARACTERISTICS:
- Fired from standard issue 12 Gauge Mossberg 500 and Mossberg 590 Shotguns
- Projectile: 18 rubber balls
- Engagement range: 10-20 meters

WEAPON SYSTEM:
- Mossberg 500, Mossberg 590 Shotguns

PRIME CONTRACTOR
- Safariland (formerly Defense Tech), Casper, WY

MR DATE: January 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AA51

MR DATE: January 2003
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AA52

68
PM CCS
Close Combat Systems

MR DATE: 1QFY19 (Projected)
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AC02

12 Gauge M1116 Extended Range Non-Lethal Marking Cartridge

SYSTEM DESCRIPTION:
The M1116 Extended Range Non-Lethal Marking Cartridge gives the soldier a blunt force trauma capability to stop, confuse, disorient, or deter, and mark for tracking, potential threats at extended ranges between 30 and 50 meters. This round is designed to be fired from standard Army 12 gauge shotguns, at the center of mass of an adult person.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Fired from standard issue 12 Gauge Mossberg 500, Mossberg 590 and MASS (M26) Shotguns
- Projectile: 40 grams of #9 shot in a fluorescent powder coated tear shaped bag
- Engagement range: 30-50 meters

WEAPON SYSTEM:
- Mossberg 500, Mossberg 590, MASS (M26) Shotguns

PRIME CONTRACTOR
- Safariland (formerly Defense Tech), Casper, WY

MR DATE: April 2000
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA06

40mm M1006 Non-Lethal Cartridge (Sponge Grenade)

SYSTEM DESCRIPTION:
The M1006 Non-Lethal Cartridge (Sponge Grenade) delivers a strong, but non-penetrating, blow to the body that deters otherwise obstreperous people. This round is fired at the center mass of an adult at ranges between 10 and 50 meters.

CAPABILITY/CHARACTERISTICS:
- Provides non-lethal means of crowd control
- Launched from 40mm M203 Grenade Launcher
- Effective Range: 10-50 meters

WEAPON SYSTEM:
- M203 Grenade Launcher

PRIME CONTRACTOR
- AMTEC Corp. Janesville, WI

40mm M1029 Non-Lethal Crowd Dispersal Cartridge

SYSTEM DESCRIPTION:
The M1029 Non-Lethal Crowd Dispersal Cartridge enables the soldier to deter two or three people without penetrating their bodies by delivering a strong blow to the body. The round is designed to be fired at the center mass of an adult at ranges between 10 and 30 meters.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Provides non-lethal means of crowd control
- Launched from 40mm M203 Grenade Launcher
- Effective Range: 10-30 meters

WEAPON SYSTEM:
- M203 Grenade Launcher

PRIME CONTRACTOR
- Safariland (formerly Defense Tech), Casper, WY

40mm XM1112 Tactical Non-Lethal Munition

SYSTEM DESCRIPTION:
The XM1112 Tactical Non-Lethal Munition uses a proximity sensor to detect a target from 35 to 300 meters, giving the soldier the capability to engage a individual or a group with a bright flash and audible report. The round also possesses a selectable delay option for room clearing. It can be fired from the M203 and M320 Grenade Launchers.

CAPABILITY/CHARACTERISTICS:
- Fired from 40mm M320 and M203 Grenade Launchers
- Projectile: Aluminum and Plastic
- Consistent non-lethal effect throughout engagement range against point and area targets, indoors and outdoors
- Engagement range: 35-300 meters

WEAPON SYSTEM:
- M320, M203 Grenade Launchers

PRIME CONTRACTOR
- None

MR DATE: November 2002
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA13

MR DATE: 1QFY20 (Projected)
ACQ PHASE: Pre-MS C
ACAT: III
DODIC BA39

70
PM CCS
Close Combat Systems

MR DATE: January 2002
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: FZ14

L96A1 Anti-Riot Grenade

SYSTEM DESCRIPTION:
The L96A1 Anti-Riot Grenade is an anti-riot grenade that dispenses Ortho-Chlorobenzalmalononitrile (CS), a tear gas riot control agent. It is launched from 66mm vehicle mounted dischargers in a 4 grenade salvo. Each L96A1 contains 23 individual canisters, providing a number of dispersants, rather than a single plume. It has an effective range of 65 to 85 meters.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Provides non-lethal, riot control, stand-off capability from vehicles equipped with 66mm grenade dischargers
- Deploys 23 countermeasure resistant CS canisters
- Induces intense irritation of the eyes, mucous membranes and skin
- Range: 65-85 meters

WEAPON SYSTEM:
- M7 Grenade Launcher/Dispenser

PRIME CONTRACTOR
- Chemring, Nottingham, UK

MR DATE: January 2002
ACQ PHASE: Production & Deployment
ACAT: III
DODIC FZ15

L97A1 Anti-Riot Practice Grenade

SYSTEM DESCRIPTION:
The L97A1 Anti-Riot Practice Grenade is a training version of the L96A1 Grenade. It uses Cinnamic Acid (CA) smoke to simulate the riot control agent.

CAPABILITY/CHARACTERISTICS:
- Training grenade for L96A1 Anti-Riot Grenade
- Employed from any 66mm grenade discharger
- Projectile: 23 canisters filled with CA
- Range: 65-85 meters
- Length: 185 millimeters
- Total Weight: 568 grams (1.25 pounds)

WEAPON SYSTEM:
- M7 Grenade Launcher/Dispenser

PRIME CONTRACTOR
- Chemring, Nottingham, UK

M98 Non-Lethal Distraction Grenade

SYSTEM DESCRIPTION:
The M98 Non-Lethal Distraction Grenade is an area target munition fired from the standard 66mm grenade launcher. These rounds are shot from 50 to 150 meters and upon burst deliver a flash bang diversionary warning effect. These munitions are not precision delivered and are meant to affect large numbers of people at longer standoff ranges.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Provides non-lethal, riot control, stand-off capability from vehicles equipped with 66mm grenade launchers
- Projectile: 3 ground bursting sub munitions with pyrotechnic charges for audio and visual stimuli
- Disorients individuals with intense light and sound
- Range: 50-150 meters

WEAPON SYSTEM:
- M7 Grenade Launcher/Dispenser

PRIME CONTRACTOR
- Pine Bluff Arsenal, Pine Bluff, AR

MR DATE: May 2011
ACQ PHASE: Production & Deployment
ACAT: III
DODIC FZ16

M99 Non-Lethal Blunt Trauma Grenade

SYSTEM DESCRIPTION:
The M99 Non-Lethal Blunt Trauma Grenade is an area target munition that can be fired from the standard 66mm grenade launcher. These rounds are designed to fire from 50 to 150 meters and burst delivering a payload of rubber non-penetrating projectiles, affecting a large number of people at longer standoff ranges.

CAPABILITY/CHARACTERISTICS:
- Provides non-lethal, riot control, stand-off capability from vehicles equipped with 66mm grenade launchers
- Projectile: 3 ground bursting sub munitions containing 140 each, 32 caliber PVC balls
- Delivers strong non-penetrating blow to body
- Range: 50-150 meters

WEAPON SYSTEM:
- M7 Grenade Launcher/Dispenser

PRIME CONTRACTOR
- Pine Bluff Arsenal, Pine Bluff, AR

MR DATE: May 2012
ACQ PHASE: Production & Deployment
ACAT: III
DODIC FZ17

72
PM CCS
Close Combat Systems

MR DATE: September 2016
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: GG04

SYSTEM DESCRIPTION:

The M104 Non-Lethal Bursting Hand Grenade is a hand-thrown grenade. Upon detonation, the body disperses balls/pellets that produce a stinging effect to distract and disorient individuals or groups for crowd control/dispersion and force protection. With the increasing likelihood of U.S. Forces being employed in non-traditional military roles, the threat faced by U.S. and allied forces might include rioting mob and harmful crowd activities and harassment techniques, such as rock throwing. The primary focus of the grenade is on counter-personnel capabilities.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Non-lethal, non-fragmenting
- Hand thrown up to 40 meters
- Disperses PVC balls that produce an intense stinging effect.
- Detonation delay is between 2.6 +/-0.5 seconds.

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Combined Systems, Inc. (CSI)

M104 Non-Lethal Bursting Hand Grenade

MR DATE: September 2007
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC GG09

SYSTEM DESCRIPTION:

The M84 Stun Hand Grenade is used as a diversionary or distraction device during building and room clearing operations when the presence of noncombatants is likely or expected and the assaulting element is attempting to achieve surprise. The handheld device is designed to be thrown into a room where it delivers a loud bang and bright flash sufficient to temporarily disorient personnel in the room.

CAPABILITY/CHARACTERISTICS:

- Non-lethal, non-fragment, flash/bang
- Intense flash over 1 million candle-power
- Noise level range from 170-180 dB
- Fuze delay time range 1.5 +.8/-.5 seconds

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- United Propulsion Company (UPCO); Fairfield, CA

M84 Stun Hand Grenade

M102 Reloadable Stun Practice Hand Grenade w/M240 Fuze

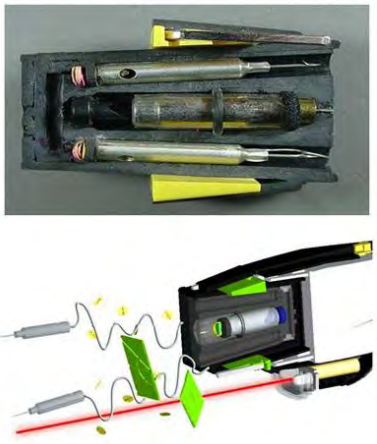
SYSTEM DESCRIPTION:
The M102 Reloadable Stun Practice Hand Grenade (RSPHG) is the practice version of the M84 Non-Lethal Stun Hand Grenade (SHG). It is a pyrotechnic device for diversionary purposes that can be used to train antiterrorist squads, hostage rescue squads, riot control squads, etc. The M102 is a low hazard, non-shrapnel producing explosive device which produces an intense light and sound display with a minimum amount of smoke. It functions the same as the M84 SHG except that the M240 Fuze Cartridge is a one-time use item, with the M102 Practice Grenade Body capable of being used up to 25 times before needing to be replaced.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Cost effective trainer for M84
- Non lethal, non fragment, flash/bang
- Intense flash over 1 million candlepower
- Noise level range from 170-180 dB
- Fuze delay: 1.5 seconds
- Reloadable body (min re-use = 10X; max re-use = 25X)
- DODIC variations:
  - GG18: M102 Practice Grenade Body
  - GG19: M240 Practice Fuze

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Universal Propulsion Corporation (UPCO); Fairfield, CA

MR DATE: August 2007
ACQ PHASE: Production & Deployment
ACAT: III
DODIC GG18, GG19



XP25 Taser Cartridge

SYSTEM DESCRIPTION:
The XP25 Taser Cartridge is fired from the X26E Taser, also known as Launched Electrode Stun Device (LESD). The cartridge has tethered probes that are effective up to a distance of 25 feet and through 2 inches of clothing. The probes provide a charge that induces electro-muscular incapacitation which overrides sensory and motor systems.

CAPABILITY/CHARACTERISTICS:
- Tethered probes that attach to target, transmitting an electrical charge
- Charge induces electro-muscular incapacitation, overriding sensory and motor systems
- Effective up to a distance of 25 feet and through up to 2 inches of clothing

WEAPON SYSTEM:
- X26E Taser

PRIME CONTRACTOR
- Aardvark Tactical Inc, La Verne, CA

MR DATE: April 2012
ACQ PHASE: Production & Deployment
ACAT: III
DODIC JN17

74
PM CCS
Close Combat Systems

MR DATE: April 2012
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: N/A

SYSTEM DESCRIPTION:

The X26E Taser Stun Device is an electro-muscular incapacitation device that can deliver an electrical shock capable of arching up through two inches of clothing and can incapacitate a target without permanent injury or known side effects. The effective range is up to 35 feet. This item is also known as Launched Electrode Stun Device (LESD).

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Used to propel wired-probes or to conduct energy directly to affect sensory and motor functions, allowing control over a targeted individual.

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Aardvark Tactical Inc, La Verne, CA

X26E Taser Stun Device

MR DATE: October 2001
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC WA97

SYSTEM DESCRIPTION:

The Modular Crowd Control Munition (MCCM), a non-lethal variant of the Claymore munition, is the Army's first non-lethal area coverage munition. Developed for the Military Police to provide crowd control and force protection, it temporarily incapacitates a large, hostile group without causing life-threatening consequences to the targeted individuals. This gives the field commander the option to apply non-lethal force as a first line of defense against aggressive non-combatants.

CAPABILITY/CHARACTERISTICS:

- Similarity in appearance to the Claymore munition
- Provides deterrence
- Contains 600 each, .32 caliber rubber balls
- Effective range of 5 to 15 meters with 60 degree coverage
- Command control initiated

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Day & Zimmerman at Lone Star Army Ammo Plant, TX

M5 Modular Crowd Control Munition

M76 Infrared Screening Smoke Grenade

SYSTEM DESCRIPTION:
The M76 Infrared (IR) Screening Smoke Grenade is used to provide an IR and visual smoke screening capability for armored/tactical vehicles. The grenade consists of a plastic cylindrical main body that contains the IR composition, burster, booster lead, and safe and arm (S&A) mechanism. Within 2 seconds after firing, the ignition of the burster charge ruptures the plastic grenade body and disperses the mixture which forms a smoke screen for 45 seconds. The M76 IR Smoke Grenade is the first munition designed to defeat, threat weapon sensors operating in the visual through to far IR regions of the electromagnetic spectrum.

CAPABILITIES/SYSTEM CHARACTERISTICS:
- Body: Plastic
- Weight: 4 pounds
- Filler: 3.1 pounds of IR composition
- Length: 9.3 inches
- Diameter: 2.59 inches

WEAPON SYSTEM:
- M250, M239, M243 Grenade Launchers

PRIME CONTRACTOR
- Not in production

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC G826

M228 Practice Grenade Fuze

SYSTEM DESCRIPTION:
The M228 Practice Fuze is a pyrotechnic delay-igniting fuze. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, safety clip, and igniter assembly.

CAPABILITY/CHARACTERISTICS:
- Used with M69 Grenade Body to replicate M67 Fragmenting Hand Grenade in training
- 4-5.5 second delay
- Emits audible signal and white smoke charge

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Aardvark Tactical Inc, La Verne, CA

MR DATE: October 1983
ACQ PHASE: Production & Deployment
ACAT: III
DODIC G878

76
PM CCS
Close Combat Systems

MR DATE: October 1983
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: G881

SYSTEM DESCRIPTION:

The M67 Fragmentation Hand Grenade is used to supplement small arms fire against enemies in close combat. The grenade produces casualties by high velocity projection of fragments in a uniform distribution pattern. The grenade body is a 2.5 inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 5.5 ounces of Composition B Explosive. Each grenade is fitted with a fuze which is a pyrotechnic delay detonating device. The delay detonating device gives the soldier 4.0 to 5.5 seconds of separation after release of the safety lever. The M213 Fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin. A second safety feature is the steel safety clip. The safety clip's purpose is to prevent the safety lever from moving in the event the safety pin is accidentally dislodged from the fuze.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Can be thrown 35 meters by an average soldier
- Lethal radius is 5 meters from point of impact
- Effective casualty-producing radius is 15 meters from point of impact
- Fragments can disperse as far away as 230 meters
- Supplements small arm fire
- Uses the M213 pyrotechnic delay-detonating fuze
- 4.0-5.5 second delay
- 5.5 oz. Composition B Explosive

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Prime: Day and Zimmerman (DZI), Philadelphia, PA
- LAP: Day and Zimmerman (DZI), Lone Star, TX

M67 Fragmentation Hand Grenade

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC G900

SYSTEM DESCRIPTION:

The AN-M14 TH3 Incendiary Hand Grenade is used to destroy equipment or start fires; it can also damage, immobilize, or destroy vehicles, weapons systems, shelters and munitions. The grenade body is of thin sheet metal and is cylindrical in shape. It is filled with an incendiary mixture, Thermate-TH3, that burns from 30 to 45 seconds, generating heat to 4,000°F. The AN-M14 incendiary hand grenade employs the M201A1 fuze.

CAPABILITY/CHARACTERISTICS:

- Incendiary mixture can burn through 1/8 inch sheet metal
- Used for intended damage, immobilization or destruction of vehicles, weapons systems, shelters, munitions or potentially start fires
- Produces oxygen, molten iron and will burn under water
- Weighs approximately 32 ounces
- Filler: 1.65 pounds of thermite (TH3) mix
- 5.7 inches tall
- Burns for 30-45 seconds
- Temperature of ~4,000 degrees Fahrenheit
- Uses the M201A1 pyrotechnic delay-igniting fuze

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Pine Bluff Arsenal, Pine Bluff, AR

AN-M14 TH3 Incendiary Hand Grenade

M18 Smoke Hand Grenades

SYSTEM DESCRIPTION:

The M18 Smoke Hand Grenades are used for ground-to-air or ground-to-ground signaling. The grenade body is made of thin sheet metal and may be filled with one of four smoke colors: green, yellow, red or violet. Once ignited, each grenade will emit smoke for 50 to 90 seconds. The M201A1 Fuze is a pyrotechnic delay-igniting fuze. The fuze body contains a primer, first-fire mix, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular speed.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Emits smoke for 50-90 seconds
- Can be thrown 40 meters by an average soldier
- Used for ground-to-air and ground-to-ground signaling
- Uses the M201A1 Fuze
- DODIC variations:
  - G940: Green smoke
  - G945: Yellow smoke
  - G950: Red smoke
  - G955: Violet smoke

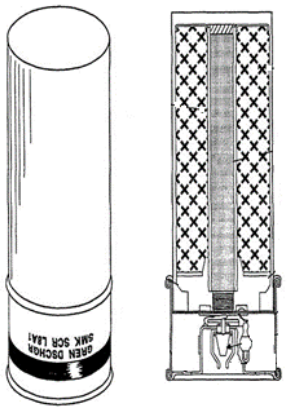
WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- LAP: Pine Bluff Arsenal (PBA), Pine Bluff, AR
- Body & Lid: Technical Products; Tool Masters Inc, AL
- Fuze: Chemring, Perry, FL
- Dye producer: Nation Ford Chemical, SC

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC G940, G945, G950, G955



L8A1/L8A3 Screening Smoke Grenade

SYSTEM DESCRIPTION:

The L8A1/L8A3 Screening Smoke Grenade consists of a rubber cylindrical body and a metal base. The rubber body contains 360 grams of a red phosphorous/butyl rubber mix in a 95/5 proportion and a central plastic burster tube containing a burster charge of 15 grams of black powder. Shortly after launch, the burster charge ignites the red phosphorous/butyl rubber smoke composition and ruptures the rubber grenade body. The ignited smoke composition disperses to produce a red smoke cloud within 2 to 6 seconds after firing at approximately 98 feet (30 meters) from the launching device. It has a bursting fan of 105-degrees, reaching 10 meters high and 20-50 meters forward. The smoke cloud lasts from one to three minutes, and screens unaided or unenhanced vision only. The difference between the two models is the burn time of the delay composition – the L8A1 delay burns for ¾ second while the L8A3 delay burns for 1 second.

CAPABILITY/CHARACTERISTICS:

- Body: Rubber
- Weight: 1.5 pounds
- Filler: 360 grams of red phosphorous/butyl rubber
- Length: 7.28 inches
- Diameter: 2.61 inches

WEAPON SYSTEM:

- M250, M239, M243 Grenade Launchers

PRIME CONTRACTOR

- Pine Bluff Arsenal, Pine Bluff, AR

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: G815

77
PM CCS
Close Combat Systems

78
PM CCS
Close Combat Systems

MR DATE: March 2000
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC GG03

SYSTEM DESCRIPTION:

The M90 Light Vehicle Obscurant Smoke System (LVOSS) Grenade is a soft launched, non-fragmenting, pyrotechnic smoke grenade. It is compatible with presently fielded 66mm smoke grenade launchers. A salvo of four grenades conceals the host vehicle by producing an obscurant screen between the threat weapon and the host vehicle.

CAPABILITIES/SYSTEM CHARACTERISTICS:

- Fielded as part of Light Vehicle Obscurant Smoke System (LVOSS), a HMMWV self-protection system
- Obscures in the visual and near infrared portions of the electromagnetic spectrum
- Non-fragmenting; pyrotechnically disseminated
- Low toxicity and environmentally safe
- Designed for use with the M7 Grenade Launcher/Dispenser

WEAPON SYSTEM:

- M7 Grenade Launcher/Dispenser

PRIME CONTRACTOR

- Pine Bluff Arsenal, Pine Bluff, AR

M90 Light Vehicle Obscurant Smoke System Grenade

MR DATE: September 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC GG25

SYSTEM DESCRIPTION:

The M106 Smoke Obscuration Device Visual Restricted (SOD Vr) is used for personnel screening in the visible spectra. The M106 produces an instant obscurant cloud and is intended for use in restrictive terrain, i.e., inside urban structures, subterranean locations, and caves.

CAPABILITY/CHARACTERISTICS:

- Uses the M201A1 Fuze
- Armed by rotating the pull ring clockwise to disengage pull ring from confidence clip
- Can be thrown 40 meters by the average soldier
- Provides 35 seconds of obscuration smoke
- Can be used in conjunction with the M83 Smoke Grenade to produce a smoke screen for a minimum of 90 seconds
- Training required before use

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Pine Bluff Arsenal, Pine Bluff, AR

M106 Smoke Obscuration Device Visual Restricted

M8 Practice Screening Smoke Pot

SYSTEM DESCRIPTION:
The M8 Practice Screening Smoke Pot is designed to provide adequate screening properties for training requirements. The M8 generates screening smoke when a floating source of smoke is required for river crossings and beach landings. It is a training device for the M4A2 Smoke Pot.

CAPABILITY/CHARACTERISTICS:
- Floating pot
- Smoke obscuration
- Duration of the smoke screen is 280 seconds
- 25 pounds of Terephthalic Acid mix
- Total weight of 38 pounds
- Training for M4A2 Smoke Pot

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Pine Bluff Arsenal, Pine Bluff, AR

MR DATE: March 2002
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: K511

80
PM CCS
Close Combat Systems

MR DATE: September 1992
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: K022

SYSTEM DESCRIPTION:

The M131 Modular Pack Mine System (MOPMS) is a man-portable antitank/antipersonnel (AT/AP) mine system with command detonation capability. It weighs 165 pounds and contains a mix of 17 magnetically fuzed AT mines and four AP mines. Its 4-hour self-destruct command can be recycled three times or command detonated by remote control. The M71 Remote Control Unit can control up to 15 MOPMS dispensers from a distance of 300 to 1,000 meters. The munition is well suited as a protective obstacle for light forces but can be used for tactical purposes as well.

CAPABILITY/CHARACTERISTICS:

- Mobility: deployable by all modes and uniquely tailored for light forces
- Flexibility: command detonation and self-destruct recycling and man-portable
- M131 Mine Dispenser: 17 AT Mines and 4 AP Mines
- M71 Remote Control Unit (LIN: C96840)
- M136 Training Dispenser

WEAPON SYSTEM:

- M131 Dispenser

PRIME CONTRACTOR

- Not in production

M131 Modular Pack Mine System

MR DATE:
- K139: N/A
- J008: May 2005

ACQ PHASE: Production & Deployment
ACAT: III
DODIC K139, J008

SYSTEM DESCRIPTION:

The M68 Inert Claymore Trainer simulates the M18 Series Claymore Mines, and is used for training in the proper methods and precautions to be observed in the care and handling, booby trapping, arming, and disarming of high explosive service antipersonnel mines.

CAPABILITY/CHARACTERISTICS:

- Uses non-electric, inert mini-detonation assembly
- DODIC variations:
  - K139: Electric initiation system
  - J008: Non-electric initiation system

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Spectra Technologies, LLC Camden, AR

M68 Inert Claymore Trainer

M18A1 Claymore

SYSTEM DESCRIPTION:

The M18A1 Claymore Mine is used when a directional, fixed, fragmentation mine is required for the defense of bivouac areas, outposts, and against infiltration tactics. It is also used against thin-skinned vehicles. The main charge may be initiated by electrical or nonelectrical methods. The electrical method is by manual initiation of the electric blasting cap. The nonelectric method makes use of a pull type firing device operated by an observer or by trip wires. The firing device initiates a length of detonating cord attached to a non-electric blasting cap.

CAPABILITY/CHARACTERISTICS:

- To be used as a deterrent for enemy pursuit
- Used for encampment perimeter defense
- Ambush type weapon
- Directs fragments in a 60 degree arc
- Can be used with the Spider Munitions System
- Weight: 6.635 pounds (with electric initiator configuration)
- Weight: 4.153 pounds (with non-electric initiator configuration)
- More than 700 each 1/4-inch diameter steel balls for fragmentation
- M4 Cap and M57 Initiator (production prior to 2005)
- Non-electric (shock tube) initiator (production started in 2005)
- DODIC variations:
  - K143/K145: Electric initiation system
  - J007: Non-electric initiation system

WEAPON SYSTEM:

- Hand emplaced or in conjunction with the Spider Munitions System

PRIME CONTRACTOR

- Spectra Technologies, LLC Camden, AR

81
PM CCS
Close Combat Systems

MR DATE:
- K143/K145: N/A
- J007: May 2005

ACQ PHASE: Production & Deployment
ACAT: III
DODIC: K143, K145, J007

82
PM CCS
Close Combat Systems

MR DATE: September 1995
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The M139 Volcano is a scatterable mine delivery system. It can be employed defensively to delay enemy movement, isolate the battlefield and reinforce friendly fire. The Volcano enables tactical commanders to emplace antitank/antipersonnel or pure antitank minefields with minimal personnel. Each launcher rack can hold 40 mine canisters with a 5 to 1 mix of antitank and antipersonnel mines or 6 antitank mines.

CAPABILITY/CHARACTERISTICS:

- Versatility: deployable from ground or air systems
- Logistics: reduces user burden to emplace minefields
- Common dispenser and ammunition
- Unique mounting kits for host platform: M1120 Heavy Expanded Mobility Tactical Truck; 5 ton truck; Helicopter; M548 Track Vehicle
- Using a ground vehicle, a 1,000 meter minefield can be laid in 4 to 12 minutes based on terrain and vehicle speed. A helicopter can complete the mission in 20 seconds

WEAPON SYSTEM:

- M139 Dispenser

PRIME CONTRACTOR

- Not in production

M139 Volcano Multiple Delivery Mine System

M74A1 Projectile Airburst Simulator

SYSTEM DESCRIPTION:
The M74A1 Projectile Airburst Simulator is intended primarily for umpires to simulate air burst of artillery fire for training troops. The simulator is fired from the AN-M8 Pyrotechnic Pistol and consists of a one-piece outer aluminum case, a black power propelling charge, a closed cylindrical aluminum case containing a boron-barium chromate delay fuse, and a black powder-aluminum flash charge. An M39A1 Percussion Primer is located in the base of the outer case and extends into the propelling charge which, in turn, is in contact with the delay fuse. When fired, the primer ignites the propelling charge. This ignites the delay fuse and propels the inner case of the flash charge out of the outer case. After a delay of 2 to 3 seconds, the fuse ignites the flash charge, which produces a bright flash and loud noise. The fragments from the inner case lose velocity quickly and are so small that they become harmless in a relatively short distance.

CAPABILITY/CHARACTERISTICS:
- Produces a flash and bang
- Displays at 100 foot altitude
- Used to simulate artillery airburst
- Fired from the AN-M8 Pyrotechnic Pistol
- Resembles a shotgun shell

WEAPON SYSTEM:
- AN-M8 Pyrotechnic Pistol

PRIME CONTRACTOR
- Chemring Ordnance, Perry, FL

M115A2 Projectile Ground Burst Simulator

SYSTEM DESCRIPTION:
The M115A2 Ground Burst Simulator consists of a cylindrical paper tube containing a photoflash charge and a whistle assembly. This simulator is a hand-thrown device with a pull cord-actuated igniter which ignites the safety fuse. After a 6 to 10 second delay, the safety fuse ignites the whistle composition which produces an audible whistle sound from 2 to 4 seconds. The final burning ignites the photoflash charge which produces a visible flash and a loud report. This simulator is used to simulate battlefield noises and effect (shells in flight and ground burst explosions). The greatest usage is at the combined training centers and infiltration courses at troop training sites. The M115A2 supports only training and has no application for war reserve requirements. Used by all services, this item is a staple for troop basic training maneuvers.

CAPABILITY/CHARACTERISTICS:
- Produces a whistle followed by a flash and bang
- Used to simulate battle noise and battle effects (shells in fight & explosions)
- Training only

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Pyrotechnics by Grucci Inc.

MR DATE: December 1984
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: L366

MR DATE: May 1988
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L594

84
PM CCS
Close Combat Systems

MR DATE: March 1985
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: L598

M117 Flash Booby Trap Simulator

SYSTEM DESCRIPTION:

The M117 Flash Booby Trap Simulator consists of a cylindrical body and a flat, metal nailing bracket which extends from one end of the body. The body is 0.98 inch in diameter and, without nailing bracket, 2.25 inches long. The nailing bracket increases the length to 3.90 inches. An inner tube approximately 0.5 inch in diameter is located within the body and houses the charge composition. The assembly used for initiating the charge is located in the space between the inner and outer tubes. This assembly consists of a strip of paper coated with a friction-sensitive composition and folded into a pad so that the coated surfaces are face-to-face. The pad is attached to the inner tube. Over the top of the pad is a strip of felt held in place, under light pressure, by adhesive tape wrapped around the inner tube. A length of pull cord runs between the coated surfaces of the pad. One end of the pull cord is covered with friction composition; the other end is coiled and placed in the end of the body opposite the nailing bracket. Movement of the end of the pull cord through the charge-initiating assembly by tripping, pulling, or cutting the trip wire produces an ignition flash. This flash is transmitted into the flash tube directly igniting the pyrotechnic charge. The M117 Simulator has a dimple in the mounting bracket for additional identification at night.

CAPABILITY/CHARACTERISTICS:

- Produces an explosion and flash
- Used to simulate booby traps during maneuvers
- Used to teach troops installation, detection and caution
- Cylindrical paper tube containing a photoflash charge and trip wire

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Bulova Technologies

MR DATE: March 1984
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L599

M118 Illumination Booby Trap Simulator

SYSTEM DESCRIPTION:

The M118 Illumination Booby Trap Simulator consists of a cylindrical body (outer tube) and a flat, metal nailing bracket which extends from one end of the body. The body is 0.98 inch in diameter and, without nailing bracket, 2.25 inches long. The nailing bracket increases the length to 3.9 inches. An inner tube approximately 0.5 inch in diameter is located within the body and houses the charge composition. The assembly used for initiating the charge is located in the space between the inner and outer tubes. This assembly consists of a strip of paper coated with a friction-sensitive composition and folded into a pad so that the coated surfaces are face-to-face. The pad is attached to the inner tube. Over the top of the pad is a strip of felt held in place, under light pressure, by adhesive tape wrapped around the inner tube. A length of pull cord runs between the coated surfaces of the pad. One end of the pull cord is covered with friction composition; the other end is coiled and placed in the end of the body opposite the nailing bracket. A paper cap, held on by a strip of tape, covers this end of the simulator. Movement of the end of the pull cord through the charge-initiating assembly by tripping, pulling, or cutting the trip wire produces an ignition flash. This flash is transmitted into the flash tube directly igniting the pyrotechnic charge.

CAPABILITY/CHARACTERISTICS:

- Produces illumination for 28 seconds minimum
- Used to simulate booby traps during maneuvers
- Used to teach troops installation, detection and caution
- Cylindrical paper tube containing a black powder charge and trip wire

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Bulova Technologies, Plymouth, MN

M119 Whistling Booby Trap Simulator

SYSTEM DESCRIPTION:

The M119 Whistling Booby Trap Simulator consists of a cylindrical body (outer tube) and a flat, metal nailing bracket which extends from one end of the body. The body is 0.98 inch in diameter and, without nailing bracket, 2.8 inches long. The nailing bracket increases the length to 4.4 inches. An inner tube of approximately 0.5 inch in diameter is located within the body and houses the charge composition. The assembly used for initiating the charge is located in the space between the inner and outer tubes. This assembly consists of a strip of paper coated with a friction-sensitive composition and folded into a pad so that the coated surfaces are face-to-face. The pad is attached to the inner tube. Over the top of the pad is a strip of felt held in place, under light pressure, by adhesive tape wrapped around the inner tube. A length of pull cord runes between the coated surfaces of the pad. One end of the pull cord is covered with friction composition; the other end is coiled and placed in the end of the body opposite the nailing bracket. A paper cap, held on by a strip of tape, covers this end of the simulator. Movement of the end of the pull cord through the charge-initiating assembly by tripping, pulling, or cutting the trip wire produces an ignition flash. This flash is transmitted into the flash tube directly igniting the pyrotechnic charge.

CAPABILITY/CHARACTERISTICS:

- Produces a whistling sound for 4-5 seconds
- Used to simulate booby traps during maneuvers
- Used in training to teach the installation detection and use of booby traps and to install caution in troops exposed to traps set by the enemy
- Cylindrical paper tube containing a potassium perchlorate charge and trip wire

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Bulova Technologies

M116A1 Hand Grenade Simulator

SYSTEM DESCRIPTION:

The M116A1 Hand Grenade Simulator consists of a cylindrical paper tube containing a photoflash charge and a whistle assembly. This simulator is a hand-thrown device which a pull-cord actuated igniter which ignites the safety fuse. After a 6 to 10 second delay, the photoflash charge will produce a visible flash and a loud report. This simulator is used to simulate battle noises and battlefield effects. The greatest usage is at the combined training centers and infiltration courses at troop training sites. The M116A1 supports only training and has no application for war reserve requirements. Used by all services, this item is a staple for troop basic training maneuvers.

CAPABILITY/CHARACTERISTICS:

- After a 6 to 10 second delay, the safety fuse ignites photoflash charge which explodes producing a flash and a loud report
- Used to simulate battle noise and battle effects
- Training only, hand thrown
- Cylindrical paper tube containing a photoflash charge
- Initiated by the Omega 60 Battlefield Effects Simulator which replaced the Armor Target Kill System (ATKS)

WEAPON SYSTEM:

- Omega 60 Battlefield Effects Simulator

PRIME CONTRACTOR

- Pyrotechnics by Grucci Inc

85
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: L600

MR DATE: January 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC L601

MR DATE: December 1992
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: L709

SYSTEM DESCRIPTION:

The M25 Target Hit Simulator consists of a plastic cylinder body with a protective cap, which covers a plastic plug and lead wires. The lead wires connect to an electric match inside the body of the simulator which ignites the main charge. The main charge consists of 10-12 pellets, which when ignited pop up 5-10 feet simulating steel on steel contact by a shower of sparks. The Target Hit Simulator is used to cue the gunner and crew on live-fire ranges that a target has been hit by producing a flash of sparks. The target hit simulator is inserted into the DVC17-133G Joanell Device. The ignition plug of the simulator is inserted into the receptacle on the control unit. The simulator is electrically initiated by the control module after a fired round hits an adjoining target.

CAPABILITY/CHARACTERISTICS:

- Simulates steel on steel contact
- Electrically initiated
- Main charge contains 10-12 pellets
- Pellets ignite 5-10 feet in the air
- Initiated by Omega 60 Battlefield Effects Simulator

WEAPON SYSTEM:

- Omega 60 Battlefield Effects Simulator

PRIME CONTRACTOR

- Not in production

M25 Target Hit Simulator

MR DATE: December 1992
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC L715

SYSTEM DESCRIPTION:

The M27 Antitank Guided Missile Signature Simulator (ATGMSS) is used during live fire training exercises to simulate enemy antitank missiles. The ATGMSS consists of a paper tube body with polyurethane foam nose and tail cone. The rocket motor is in cylindrical form within the paper tube. A hole is provided in the tail section for a guide rod on the simulator. The ATGMSS is inserted onto a launcher with the guide rod of the launcher going through the tail cone guide hole. An M79 Electric Match is inserted into the simulator. The electric match ignites the rocket motor and the simulator travels approximately 1,500 meters down range to simulate enemy antitank missile fire.

CAPABILITY/CHARACTERISTICS:

- Used to simulate enemy antitank missile fire during live fire training exercises
- Cylindrical cardboard tube 15 inches long
- Travels down range approximately 1,500 meters
- Initiated by the Omega 60 Battlefield Effects Simulator which replaced the Armor Target Kill System (ATKS)

WEAPON SYSTEM:

- Omega 60 Battlefield Effects Simulator

PRIME CONTRACTOR

- Not in production

M27 Antitank Guided Missile Signature Simulator

M31A1 Direct/Indirect Fire Cue Simulator

SYSTEM DESCRIPTION:

The M31A1 Direct/Indirect Fire Cue Simulator consists of a cylindrical plastic case containing an ignition, flash and bang charge and stars, a seal with plastic cap, and an electric match in the plastic case to ignite the ignition, flash and bang charge. The M31A1 Simulator is initiated by the Direct-Indirect Fire Cue (DIFCUE) Simulator firing device when mounted on armored vehicles. When the M31A1 is ignited, a flash bang and smoke cloud occurs and the stars are ejected to a height of 45 to 60 feet. The M31A1 stars, flash and smoke are visible at a distance of 1,500 meters. The report (sound) does not exceed 140 decibels at a distance of 5 meters. The M31A1 Simulator is a pyrotechnic training device that has been fielded for use by combat training centers and home stations as part of the fielded Multiple Integrated Laser Engagement System (MILES 2000) Tactical Engagement Simulation System. The M31A1 produces visual and audible effects (flash, bang, smoke and stars) to cue a vehicle hit.

CAPABILITY/CHARACTERISTICS:

- Simulates a hit/kill by direct/indirect fire in a training environment (CTC/Home Station) with a shower of sparks
- Stars are ejected to a height of 45-60 feet
- Flash & Smoke visible @ 1,500 meters

WEAPON SYSTEM:

- MILES 2000 Tactical Engagement Simulation System

PRIME CONTRACTOR

- Not in production

M30 Main Tank Gun Simulator

SYSTEM DESCRIPTION:

The M30 Main Tank Gun Simulator consists of a cylindrical plastic case containing a flash and bang charge, seal with a plastic cap and an electric match in the plastic case to ignite the flash and bang charge. The M30 simulator is initiated by the Main Gun Signature Simulator (MGSS) firing device when mounted on the turret of armored vehicles and interfaced to the vehicle's main gun trigger. When the M30 is ignited, a flash bang and smoke cloud occurs. The M30 flash and smoke is visible at a distance of 3,000 meters. The report (sound) does not exceed 140 decibels at a distance of 26 meters. The M30 Tank Gun Simulator is a pyrotechnic training device component of the U.S. Army's Multiple Integrated Laser Engagement System (MILES) 2000 Tactical Engagement Simulation System. The M30 provides tank crews visual and audible effects (flash, bang, smoke) that the main tank gun has been fired. The M30 Simulator has been fielded at Combined Arms Centers and home stations world-wide to enhance training realism and maintain a high level of readiness through effective training.

CAPABILITY/CHARACTERISTICS:

- Produces a flash and smoke simulating firing of a Main Gun
- Carries a simulated unit basic load
- Flash & smoke are visible at 3,000 meters

WEAPON SYSTEM:

- MILES 2000 Tactical Engagement Simulation System

PRIME CONTRACTOR

- Not in production

87
PM CCS
Close Combat Systems

MR DATE: July 2002
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: LA07

MR DATE: June 2000
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC LA06

MR DATE: December 1992
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: L720

SYSTEM DESCRIPTION:

The M26 Target Kill Simulator consists of a cylindrical metal can, plastic cap, and plastic ignition plug with its connecting wire. The wire leads to an electric match which sits on an ignition compound. The M26 is initiated by a 12 volt, 1.2 amp limited firing energy. The target kill simulator is used to cue the gunner and crew on live fire ranges of a killed target by emitting black smoke when a target is struck sufficiently to render it useless. The simulator is inserted into tubes next to the DVC17-133G Joanell Device. The ignition plug of the simulator is inserted into the corresponding receptacle on the control unit. The target kill simulator is electrically initiated by the control module after an adjoining target is sufficiently hit by incoming fire to kill the target.

CAPABILITY/CHARACTERISTICS:

- Used to simulate a burning armored vehicle
- Used to cue gunner and crew of a killed target during live fire training
- Cylindrical metal can 6 inches long by 2.75 inches in diameter
- Produces black smoke for 2-3 minutes

WEAPON SYSTEM:

- DVC17-133G Joanell Device

PRIME CONTRACTOR

- Naval Surface Warfare Center, Indian Head, MD

M26 Target Kill Simulator

MR DATE: May 2007
ACQ PHASE: Production & Deployment
ACAT: III
DODIC LA53

SYSTEM DESCRIPTION:

The M35 Target Hit Simulator Cartridge main charge consists of 10-12 pellets which, when ignited, pop up 1,800 meters simulating a strike on an armored target hit (8-12 white burning stars). The M35 Target Hit Simulator Cartridge is fired from ground mounted Omega 60 Battlefield Effects Simulator (BES).

CAPABILITY/CHARACTERISTICS:

- Used in the Omega 60 Battlefield Effects Simulator (BES)
- Simulates a target hit signal
- Emits 8-12 white burning stars visible at 1,800 meters

WEAPON SYSTEM:

- Omega 60 Battlefield Effects Simulator (BES)

PRIME CONTRACTOR

- Martin Electronics Incorporated, Perry, FL

M35 Target Hit Simulator Cartridge

M34 Hostile Fire Simulator Cartridge

SYSTEM DESCRIPTION:
The M34 Hostile Fire Simulator Cartridge simulates the acoustic (bang) and optical (orange and white smoke) signature of tank main gun firing. The M34 is fired from the Omega 60 Battlefield Effects Simulator (BES) which replaces the Armor Target Kill Simulator (ATKS) on gunnery ranges.

CAPABILITY/CHARACTERISTICS:
- Produces a flash and bang simulating the firing of a main battle tank
- Used in the Omega 60 Battlefield Effects Simulator (BES)
- Emits an orange flash and white smoke visible at 1,800 meters
- Simulates large caliber gun fire

WEAPON SYSTEM:
- Omega 60 Battlefield Effects Simulator (BES)

PRIME CONTRACTOR
- Chemring Ordnance, Perry, FL

M176 Surface to Air Missile Simulator

SYSTEM DESCRIPTION:
The M176 Surface to Air Missile Simulator is a 72mm composite plastic cartridge that houses a self-consuming pyrotechnic pellet that is electrically initiated. The cartridge is inserted into the Weapons Effect Signature Simulator (WESS) launch tube from the bottom of the magazine which ensures the chamfered section, cartridge pins, and contact plate are in alignment. The pyrotechnic pellet burns while it is fired up to 500 ± 50 feet into the air producing a thick smoke trail that extends from the ground to its maximum altitude.

CAPABILITY/CHARACTERISTICS:
- Produces a thick smoke train extending from ground to its maximum attitude of 500 ± 50 feet into the air
- Simulates the smoke trail of a Man-Portable Surface-to-air Missile
- Fired from WESS launcher, part of the Man-Portable Aircraft Survivability Trainer (MAST) system
- Pellet that creates the smoke trail is self consuming

WEAPON SYSTEM:
- Man-Portable Aircraft Survivability Trainer (MAST) Weapons Effect Signature Simulator (WESS)

PRIME CONTRACTOR
- Drew Defence, Germany

89
PM CCS
Close Combat Systems

MR DATE: May 2007
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: LA54

MR DATE: February 2015
ACQ PHASE: Production & Deployment
ACAT: III
DODIC LA70

90
PM CCS
Close Combat Systems

MR DATE: November 1986
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: M023

M112 1-1/4 LB Demolition Block

SYSTEM DESCRIPTION:
The M112 Demolition Block consists of 1.25 pounds of Composition C4 explosive packed in an olive drab, mylar-film container with a pressure-sensitive adhesive tape on one surface. The blocks are primarily used for cutting and breaching operations. The adhesive backing allows the block to be placed on any relatively flat, clean, dry surface, without movement.

CAPABILITY/CHARACTERISTICS:
- Primary block demolition charge presently in use
- Can be cut to fit irregularly shaped targets

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- American Ordnance – Iowa Army Ammunition Plant, Middletown, IA

MR DATE: March 1989
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC M024

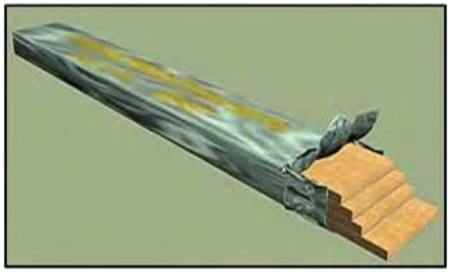
M118 2LB Block Demolition Charge

SYSTEM DESCRIPTION:
The M118 Demolition Charge is used as a cutting charge against steel targets. It consists of four 1/2 pound sheets of flexible explosive packed in a plastic envelope. Each sheet is approximately 3 in x 12 in x 1/4 in thick and has a pressure sensitive adhesive tape attached to one surface.

CAPABILITY/CHARACTERISTICS:
- Used as a cutting charge against steel targets
- The type of demolition achieved depends on the placement of the charge relative to the target
- Sheets can be quickly applied to irregular and curved surfaces
- Easily cut to any dimension
- Used as small breaching charge

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Ensign-Bickford, Graham, KY



TNT Block Demolition Charges

SYSTEM DESCRIPTION:
The TNT Block Demolition Charges are effective for all types of demolition work. TNT block demolition charges are issued in three sizes. The 1/4-pound lock demolition charge is in a cylindrical waterproof cardboard container, and the 1/2-pound and 1-pound block demolition charges are in rectangular waterproof cardboard containers. All three have metal ends with a threaded cap well in one end. TNT (trinitrotoluene) charges have a high detonating velocity and thus TNT is particularly well suited to cutting or breaching many hard surface materials.

CAPABILITY/CHARACTERISTICS:
- Well suited for cutting or breaching hard surfaces except special steel cutting applications
- DODIC variations:
  - M030: 1/4 pound block
  - M031: 1/2 pound block
  - M032: 1 pound block

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Spectra Technologies, LLC, Camden, AR

MR DATE: October 1979
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: M030, M031, M032

40lb Cratering Charge

SYSTEM DESCRIPTION:
The 40 lb. Cratering Charge contains 39 pounds of Composition H-6 Explosive loaded in a steel cylinder. It is approximately 7 inches in diameter and 20 inches tall, and packed in an M18A2 container. The H-6 explosive has a relatively low detonating velocity and is therefore unsuitable for cutting and breaching operations. However, the blast effect, which is related to pressure of gases produced, gives it a pushing or heaving effect which makes it suited for cratering and ditching operations. Because of the large amount of explosive in convenient form, they may also be used in destroying buildings and fortifications and overturning bridge abutments.

CAPABILITY/CHARACTERISTICS:
- Used primarily for cratering and ditching operations. It is usually employed following the use of the 15 pounds or 40 pounds Shaped Charge and dual primed with two M112 Demo Blocks
- Used in destroying buildings and fortifications and for overturning bridge abutments

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- American Ordnance-Iowa AAP, Middletown, IA

MR DATE: December 1993
ACQ PHASE: Production & Deployment
ACAT: III
DODIC M039

92
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: M060

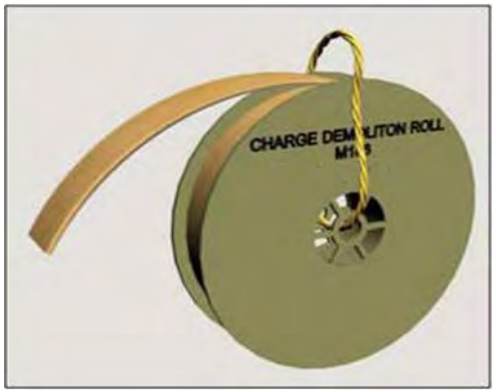
M186 50 ft. Demolition Roll Charge

SYSTEM DESCRIPTION:
The M186 Demolition Charge is a rolled up sheet of explosive approximately 3 in. wide x 1/4 in. deep with a layer of foam backed adhesive tape attached. The adhesive is covered with a release paper. The M186 is packaged in the form-of a 50- foot roll on a plastic spool, rather than in sheet form. Each foot of the roll provides approximately 1/2 pound of explosive. The M186 is especially adaptable for demolishing targets which require use of flexible explosive in long lengths particularly where several feet are required. It is especially useful in cutting steel, trees and targets of irregular shape.

CAPABILITY/CHARACTERISTICS:
- Easily cut to any dimension
- Used as small breaching charge

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Ensign-Bickford, Graham, KY



MR DATE: February 1989
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC M130

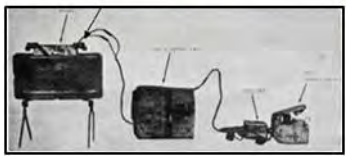
M6 Electric Blasting Cap

SYSTEM DESCRIPTION:
The M6 Electric Blasting Cap is used to initiate high explosives with a blasting machine or other source of electric power. It consists of a base charge of RDX, an intermediate charge of lead azide and an ignition charge of smokeless powder, potassium chlorate and lead salt of dinitro cresol in an aluminum alloy cup. It has two 12-foot lead wires, connected by a bridge wire in the ignition charge, extend through a rubber plug assembly in the open end of the cup.

CAPABILITY/CHARACTERISTICS:
- Weight: 0.07 lb (31.75 g)
- Length (max.): 2.35 in. (5.875 cm)
- Diameter (max.): 0.247 in. (0.6175 cm)
- Explosive: RDX
- Material: Aluminum
- Color: Silver

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Stressau Labs, Spooner, WI



M7 Non-Electric Blasting Cap

SYSTEM DESCRIPTION:
The M7 Non-Electric Blasting Cap is used with the M700 Tme Blast Fuse to initiate high explosive and demolition items. It consists of an aluminum alloy cup containing an ignition charge of lead styphnate, an intermediate charge of lead azide, and a base charge of RDX. The cup is flared at the mouth to mate with the matching shape of the nipple of a firing device base coupling and the flared end facilitates insertion of time-blasting fuse or detonating cord.

CAPABILITY/CHARACTERISTICS:
- Weight : 0.004 kilograms
- Burst Radius: 25 meters
- Basic Load: 20 each
- Load Weight: 0.08 kilograms
- Packaging: 3,600 per case
- Package Weight.: 51.5 kilograms

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Stressau Labs, Spooner, WI

M10 Universal Destructor

SYSTEM DESCRIPTION:
Destructor M10 is essentially an adapter-booster assembly consisting of an ammunition bushing, a booster assembly, an activator bushing, and a blasting cap bushing. The ammunition bushing is threaded externally to fit 1.7 inch or 2 inch diameter fuze wells. Internally, it is threaded to mate with the booster assembly, which consists of two booster cups filled with tetryl pellets. The booster cups, threaded together to form an assembly are attached at the forward end to an activator bushing. The tetryl pellets in the forward cup have center holes designed to accommodate a blasting cap or activator. The 1.5-inch external thread which accepts the activator can also be threaded into a 1.5 inch fuze cavity. The activator bushing, threaded to accept an M1 activator, is assembled at the forward end to a blasting cap bushing which will accept any standard firing device. During shipment and storage, the blasting cap bushing is sealed with a closing plug and cork gasket.

CAPABILITY/CHARACTERISTICS:
- Used for rigging for emergency demolition of ammunition supply points
- Secondary use as component of anti-tamper devices
- Color: Unpainted with black markings
- Weight: 9 oz
- Length: 6 in. x 2 in. dia
- Method of actuation: Military blasting cap or mine activator

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Savit Corp, Rockaway, NJ

93
PM CCS
Close Combat Systems

MR DATE: March 1986
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: M131

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC M241

94
PM CCS
Close Combat Systems

MR DATE: June 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: M420, M421

SYSTEM DESCRIPTION:

The M2A4 and M3A1 Shaped Charges are shaped so as to concentrate their explosive force in a particular direction. They use high explosives to form a metallic or glass liner into a high velocity jet of molten material with the ability to stretch several times its original length. They can obtain tip velocities that can exceed 8km/second. The M2A4 15 LB Shaped Charge has been especially designed for use against reinforced concrete while the M3A1 40 LB Shaped Charge is especially useful against thick reinforced concrete pavements laid on dense high-strength base courses.

CAPABILITY/CHARACTERISTICS:

- Primary use: blast craters in paved and unpaved roads and boring holes in metals, masonry or concrete
- DODIC variations:
  - M420: M2A4 Charge contains a 6 inch stand-off, 11.5 pound Composition B explosive main charge and 0.11 pound Composition A3 booster
  - M421: M3A1 Charge contains a 15 inch stand-off, 29.5 pound Composition B explosive main charge, and 0.11 pound Composition A3 booster

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Day & Zimmermann Inc. Parsons, KS

M2A4 and M3A1 Shaped Charges

MR DATE: May 1987
ACQ PHASE: Production & Deployment
ACAT: III
DODIC M456, M458

SYSTEM DESCRIPTION:

The Type I, Class E detonating cord consists of a core of high velocity explosive in a seamless textile tube. The tube is covered with a thin layer of asphalt, and sheathed in an outer cover of plastic coated textile. The plastic outer cover is smooth and colored olive drab.

CAPABILITY/CHARACTERISTICS:

- Detonating cord is used to prime and detonate the explosive charges
- It has a detonating velocity of 5,900 meters per second.
- Available in 500 feet and 1,000 feet spools
- Waterproof version exists
- Canine scent version exists
- DODIC variations:
  - M456: Tactical
  - M458 : Inert (Blue outer coating)

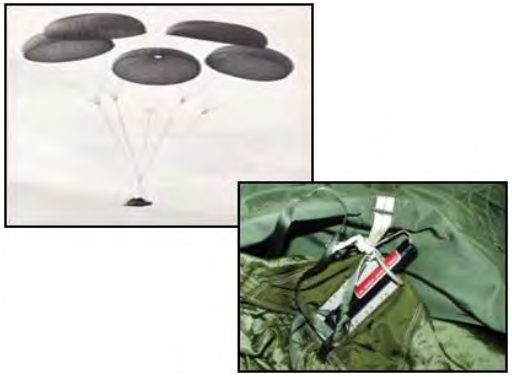
WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Ensign Bickford Co.; Simsbury, CT

Detonation Cord



M21 Cutter Cartridge

SYSTEM DESCRIPTION:
The M21 Cutter Cartridge is a one shot, disposable mechanical unit with the cartridge sealed internally. The purpose of the M21 is to sever a nylon reefing line, allowing the main parachute from cargo delivery aircraft to fully deploy. The cutter is installed in a mounting bracket which is attached to the parachute. Major components of the M21 consist of a case, firing pin assembly, lanyard, knife assembly, delay assembly and cotter pin.

CAPABILITY/CHARACTERISTICS:
- Mechanically Initiated
- 2 second delay
- 4 installed on each G-11 Series Cargo Parachutes
- Heavy drop aerial delivery system
- Sever reefing lines

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Joint Program Management Office (JPO), Indian Head, MD

MR DATE: December 1985
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: M500

Time Blasting Fuse

SYSTEM DESCRIPTION:
The Time Blasting Fuse transmits a delayed spit of flame to a non-electric blasting cap, allowing a soldier to initiate a charge and get to a safe distance before the explosion. The fuse consists of a continuous delay of black powder, tightly wrapped and enclosed by an inner cover of jute yarn counter wound with cotton yarn, and covered by a thin cover of bitumen which in turn is covered on the outside by an extruded plastic sheath. The fuse is olive drab with yellow single band 14 inches wide every 18 inches and double yellow band every 90 inches.

CAPABILITY/CHARACTERISTICS:
- Initiates M7 blasting cap
- The burn rate is 36 to 44 seconds/foot
- When the fuse is ignited, the flame travels through the core of black powder towards the blasting cap and detonates it on contact
- 50 foot spool
- DODIC variations:
  - M670: M700 Fuse
  - M671: Inert Fuse for training

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- RTI Technologies, LLC, Columbia, CT

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC M670, M671

96
PM CCS
Close Combat Systems

MR DATE: August 1986
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: M757

SYSTEM DESCRIPTION:

The M183 Demolition Charge Assembly or satchel charge is used primarily in breaching obstacles or demolition of large structures where large charges are required. The M183 Assembly consists of 16 each M112 C-4 Demolition Charges and four priming assemblies, all contained in an M85 Carrying Case. The adhesive backing on the M112 Block allows placement of the charge on any relatively flat, clean, dry surface.

CAPABILITY/CHARACTERISTICS:

- Used primarily for breaching obstacles and demolition of large structures where large charges are required
- The M112 charge is the primary block demolition charge presently in use
- The demolition block can be cut to fit irregularly shaped targets. Molding the charge can decrease its cutting effect

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Crane Army Ammunition Activity (CAAA), Crane, IN

M183 Demolition Charge Assembly

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC M792

SYSTEM DESCRIPTION:

The MK 138 Demolition Assembly Charge is used for underwater demolitions. It is a charge cloth satchel containing 10 each MK 35 C4 blocks and a flotation bladder. Each block is pressed around 3 ft. of detonation cord with an additional 3 ft. extending from each end.

CAPABILITY/CHARACTERISTICS:

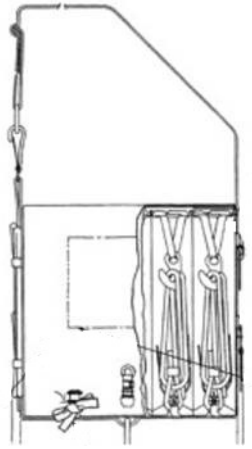
- A satchel charge with 10 each, 2-pound C4 blocks

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- HITECH



MK 138 MOD 1 Demolition Assembly Charge

M58 Mine Clearing Line Charge

SYSTEM DESCRIPTION:

The M58 Mine Clearing Line Charge (MICLIC) is a rocket propelled explosive line charge mounted on a standard military trailer. The line charge is propelled over the minefield by a MK 22 Rocket where it drops onto the ground and is then detonated on command by means of an electrical cable, clearing a one vehicle wide lane 100 meters long, 8 meters wide. The MICLIC is effective against single pulse, pressure fuzed mines. The demolition charge is 350 feet long, consisting of three 100-foot sections and one 50-foot section joined together with a 3/4-inch nylon rope. The charges (5-1/2 x 1-1/2 x 3-1/2 inches) are covered with nylon sleeves and tied to the rope, provide a long flexible line charge. A rocket harness cable is attached to the front of the assembled linear charge and a fuse holder is secured to the trail end. The MICLIC can be ground launched, launched from a landing craft, or launched from a vehicle-towed trailer.

CAPABILITY/CHARACTERISTICS:

- Defeat minefield threats during tactical breaching operations
- The M58 MICLIC is used to clear paths for tanks, vehicles, and personnel through minefields or other obstacles
- Loaded with explosive charges to form a line charge
- Launched with a live rocket motor
- Length: 350 feet
- Weight: 2,042 pounds

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- American Ordnance (Iowa Army Ammunition Plant), Middletown, IA

M68A2 Inert Mine Clearing Line Charge

SYSTEM DESCRIPTION:

The M68 Inert Charge is a reusable training version of the M58 Mine Clearing Line Charge (MICLIC). The simulated demolition charge is 350 feet long, consisting of three 100-foot and one 50-foot section joined together with a 3/4-inch nylon rope. The simulated pellets (5-1/2 x 1-1/2 x 3-1/2 inches), covered with nylon sleeves and tied to the rope provides a long flexible sausage effort simulated linear charge. A rocket harness cable is attached to the front of the assembled simulated charge and an inert fuse holder is secured to the rear end. The MICLIC can be ground launched, launched from a landing craft, or launched from a vehicle-towed trailer.

CAPABILITY/CHARACTERISTICS:

- Training use only
- Assembled with rubber rather than explosive blocks
- Equipped with an inert fuze
- Launched with a live rocket motor in the same manner as the M58 MICLIC

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- American Ordnance (Iowa Army Ammunition Plant), Middletown, IA

97
PM CCS
Close Combat Systems

MR DATE: November 1986
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: M913

MR DATE: November 1986
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC M914

98
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: M980, M981, M982, M983, M984, M985, M986

SYSTEM DESCRIPTION:

Demolition Sheet Charges of flexible explosive come in various lengths and thicknesses. The sheets are easily cut to the desired shape and can be quickly applied to irregular and curved surfaces with adhesive. The sheet charges are used by Explosive Ordnance Disposal (EOD) personnel and U.S. Special Operations Forces (SOF) as a cutting charge against steel, trees and targets of irregular shape.

CAPABILITY/CHARACTERISTICS:

- Easily cut to any dimension
- Used as small breaching charge
- DODIC variations:
  - M980: 38 foot roll
  - M981: 25 foot roll
  - M982: 19 foot roll
  - M983: 15 foot roll
  - M984: 13 foot roll
  - M985: 11 foot roll
  - M986: 9 foot roll

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Ensign-Bickford, Graham, KY

Demolition Sheet Charges

M142 Multipurpose Firing Device

SYSTEM DESCRIPTION:

The M142 Multipurpose Firing Device is intended for use with antipersonnel mines and when setting up booby traps using demolition charges. It provides a simple means of mechanical initiation of a booby trap by release, pull, pressure release, or tension release. The basic component of the device is a mechanical switch designed for mechanical actuation (to initiate the explosive) by pressure, pull, pressure release, or tension release. In addition to its four mode capability, the M142 can be used to ignite either a blasting cap (as in other firing devices) or a time blasting fuse for setting a short delay type booby trap. This device is weather-sealed and will also function under water.

CAPABILITY/CHARACTERISTICS:

- The M142 can be designed to function in the following modes:
- Pressure: 15-25 pounds (min) to function
- Pull: 4-9 pounds min
- Pressure release: 4 pounds (min) (pre-load function at release of 2 pounds)
- Tension release: 3 +/- .25 pounds

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- AMTEC Corp. Janesville, WI

MK 23/MK 24 Powder Actuated Cutter

SYSTEM DESCRIPTION:

The Powder Actuated Cutters are used by Explosive Ordnance Disposal (EOD) personnel to remotely render-safe bombs or projectiles by forceful removal of either the fuze, the fuze base plate containing the fuze, or by striking the item at a strategic location with an explosively propelled ballistic disc. These devices thus allow the target items to be rendered safe without causing high order detonation. These cutters consist of small cylindrical impulse cartridges, specially made bendable metal stands, and sighting devices that connect onto the cartridges. The plastic-cased impulse cartridges each contain a booster and a main explosive charge of 70/30 Octol and a specially shaped metal disc. Upon initiation of the main charge, the resulting shock wave inverts the steel ballistic disk and propels it toward the target.

CAPABILITY/CHARACTERISTICS:

- Main charge: MK 23 - 4 ounces; MK 24 - 1.1 pounds
- Length: MK 23 - 4.38 inches; MK 24 - 5.75 inches
- Diameter: MK 23 - 1.89 inches; MK 24 - 2.8 inches
- DODIC variations:
  - ML04: MK 23 MOD 0
  - ML05: MK 24 MOD 0

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Crane Army Ammunition Activity (CAAA), Crane, IN

99
PM CCS
Close Combat Systems

MR DATE: May 1981
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: ML03

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC ML04, ML05

100
PM CCS
Close Combat Systems

MR DATE:
- M19/M20: June 2004
- M21/M22/M23: November 2004

ACQ PHASE: Production & Deployment
ACAT: III
DODIC: ML47, MN06, MN38, MN07, MN68, MN75, MN41, MN86, MN87, MN88, MN89, MN90, MN37, MN08, ML45

MR DATE: January 2006
ACQ PHASE: Production & Deployment
ACAT: III
DODIC MN79, MN84

SYSTEM DESCRIPTION:
Modernized Demolition Initiators (MDI) are a suite of initiating components used to activate all standard military demolitions and explosives. Developed for the U.S. Army Engineer School, the suite consists of non-electric (NE) blasting cap assemblies and booster assemblies. The suite will eventually replace all electric and non-electric firing systems for conventional forces while maintaining compatibility with existing Army systems.

CAPABILITY/CHARACTERISTICS:
- Initiates all standard military explosives and demolition devices
- Initiate C-4 Explosive, shaped charges, Claymore Mines and all new demolitions
- Initiation signal via shock tube or low strength detonation cord
- Prime charges under 60 feet of seawater or underground
- Easy to use; blasting cap assemblies have their activation system pre-assembled for increased reliability and reduced time on target
- DODIC variations:
  - ML47: M11 Non-Electric (NE) Blasting Cap factory-crimped to a 30-foot length of shock tube
  - MN06: M14 NE Blasting Cap with a 5-minute delay
  - MN38: M15 Inert NE Blasting Cap factory-crimped to a 70-foot length of shock tube
  - MN07: M15 NE Blasting Cap factory-crimped to a 70-foot length of shock tube
  - MN68: M151 Booster Charge
  - MN75: M152 Inert Booster Charge
  - MN41: M18 NE Blasting Cap with a 20-minute delay
  - MN86: M19 200-foot NE Blasting Cap
  - MN87: M20 200-foot Inert NE Blasting Cap
  - MN88: M21 500-foot NE Blasting Cap
  - MN89: M22 500-foot Inert NE Blasting Cap
  - MN90: M23 1000-foot Blasting Cap
  - MN37: M14 Inert NE Blasting Cap
  - MN08: M81 Fuse Igniter
  - ML45: M9 NE Blast Cap Holder holds the shock-tube branch lines secure

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Cap Assemblies: Shock Tube, Charlestown, RI as subsidiary to Ensign-Bickford Aerospace & Defense (BA&D), Simsbury, CT
- Booster Assemblies: EBA&D, Simsbury, CT
- Igniter: MAST Tech, Lake City Ammo Plant, MO

Modernized Demolition Initiators

SYSTEM DESCRIPTION:
The MK 7 Antipersonnel Obstacle Breaching System (APOBS) enables dismounted soldiers to rapidly clear a footpath through both antipersonnel mines and complex multi-strand wire obstacles from a 35 meter standoff position. This two-man portable system provides the U.S. Army and Marine Corps with a partial replacement for the Bangalore Torpedo. APOBS is a Joint Program with the U.S. Marine Corps as the lead service.

CAPABILITY/CHARACTERISTICS:
- Two-man portable rocket propelled line charge 45 meters in length
- Clears a footpath through wire obstacles & antipersonnel landmines
- Incorporates 108 unique fragmentation munitions along the line charge
- Two actuation methods: delay and command modes
- Employed from a 35 meter standoff from obstacle
- Certified as an insensitive munition
- DODIC variations:
  - MN79: MK7 Tactical
  - MN84: MK7 Inert trainer

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Chemring Ordnance, Perry, FL

MK 7 Antipersonnel Obstacle Breaching System

M153/M316 Time Delay Sympathetic Detonator

SYSTEM DESCRIPTION:
The M153 Time Delay Sympathetic Detonator (TD-SYDET) provides U.S. Special Forces the capability of time delay functioning of explosive charges or sympathetic simultaneous detonation of numerous explosive charges/munitions in the same general vicinity through the command and control of only one charge, eliminating the necessity of physically linking them together. The TD-SYDET also consists of the M316 Inert Trainer.

CAPABILITY/CHARACTERISTICS:
- Detonate multiple charges without any physical connection
- Less time-on-target
- Time delay/sympathetic modes can be set in relative or absolute times
- Only secondary explosive used in fire train
- Pre-assembled demolition packages
- DODIC variations:
  - MN91: M153 Tactical detonator
  - QL21: M316 Inert trainer

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Raytheon Technical Services Company, Indianapolis, IN

M1A3 Bangalore Torpedo Demolition Kit

SYSTEM DESCRIPTION:
The M1A3 Bangalore Torpedo Demolition Kit is a man-portable device used to clear paths through barbed wire entanglements and minefields. It clears a path 3 to 4 meters wide through barbed wire entanglements; in minefield breaching, it will explode all antipersonnel mines and most of the antitank mines in a narrow foot path. Bangalore torpedoes have also been used successfully for clearing heavy undergrowth of bamboo and may also be used as a cratering charge against reinforced concrete targets, especially in connection with shaped charges.

CAPABILITY/CHARACTERISTICS:
- Used for most anti-personal and antitank mines
- When the charge is detonated, the resultant blast from the shock wave clears a narrow path through a minefield or barbed wire entanglement.
- Kit consists of eight 2.5 foot long tubes
- Tube fill: 4.6 pounds of Composition B4 with an additional 0.5 pound Composition A3 booster at each end

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Spectra Tech. East Camden, AR

101
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: MN91, QL21

MR DATE: May 2008
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC MP03

102
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: MW84

SYSTEM DESCRIPTION:
The MK 75 Tubular Demolition Charge is used as a cutting charge against underwater impediments such as coral and sand bars. It consists of 50 pounds of flexible explosive formed in a 25 ft. long hollow tube. The interior of the tube contains a corrugated hose to ensure the item maintains shape; the exterior is sheathed with a plastic wrap to help protect against abrasion. The unit comes with rubber boots which seal the ends. The hollow construction ensures proper buoyancy for ease of transport through water, with the boots removed at site to sink the charge.

CAPABILITY/CHARACTERISTICS:
- Charge is hollow for buoyancy; ease of transport
- Boots/covers on end can be removed to sink at site
- MK 29 Accessory Kit has connectors to link multiple charges together
- Used as a blasting charge against coral/sand bars and underwater impediments
- 50 pounds of flexible explosive formed in a hollow tube

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Ensign-Bickford, Graham, KY

MK 75 MOD 0 Tubular Demolition Charge

MR DATE: December 2011
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
The M156 Magneto Inductive Remote Activation Munition System (MI RAMS) is a remote firing device which can provide reliable wireless initiation of demolition charges through all medium not accessible by radio frequency (RF). The MI transmitter uses patented circuits to efficiently create and modulate large amplitude alternating current (AC) magnetic fields. An AC magnetic field induces an electromagnetic field (EMF) voltage in a coil antenna. The MI receiver amplifies and filters the induced voltage, demodulates the signal, and produces an output.

CAPABILITY/CHARACTERISTICS:
- MI fields will penetrate natural or man-made media such as air water, caves, earth or building structures. Not vulnerable to the reflection, refraction or scattering encountered by radio, optical or acoustic waves
- The M39 Receiver is capable of functioning the M50 Shock Tube Initiator (STI) which initiates a Modern Demolition Initiator (MDI)
- Transmitter generates an AC magnetic dipole field
- MI RAMS range: 200 meters through all natural media
- Employment time of 15 days
- Simultaneously firing any number of MI RAMS receivers
- Light weight and man portable
- Uses commercial batteries

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Ultra Electronics, San Bernardino, CA

M156 Kit
(1) M27 Transmitter
(2) M6 Battery Pack
(3) M39 Type "A" Receiver (Reusable)

M50 Shock Tube Initiator (3 per Container)

M156 Magneto Inductive Remote Activation Munition System

M152 Radio Frequency Remote Activation Munition System

SYSTEM DESCRIPTION:

The M152 Radio Frequency Remote Activation Munition System (RF RAMS) is a secure, radio-controlled system designed to provide dismounted soldiers/sailors wireless initiation capability of explosives, demolition charges and munitions. The system was initially designed for and fielded to U.S Special Operations Forces (SOF) personnel (Army and Navy) as a direct replacement for the M122 Firing Device. The M152 consists of one transmitter and a family of receivers which enable the soldier/sailor to remotely employ and detonate explosives while avoiding direct enemy contact. Prior to engagement, operators can perform a full power range data link test to make sure all signals are active through an automatic self-test that is built into the transmitter and receivers. All operations are verified to the user via light-emitting diode (LED).

CAPABILITY/CHARACTERISTICS:

- M26 Transmitter: transmits to one or more receivers up to 2-5 kilometers (Line-of-Sight) and over 10 kilometers (with power pack) range
- M16 Receiver: Simultaneously function 4 or more electrical output for M6 Blasting Caps in series
- M17 Receiver: explosive output initiates an M7 Blasting Cap
- M85 Trainer: Inert fictional trainer for M17 Receiver
- M50 Initiator: interface used to initiate MDI when attached to M16 Receiver
- Receivers programmable to any M26 Transmitter
- Temperature range: -25 degrees to +135 degrees Fahrenheit
- Reduces Soldier/Sailors exposure to threats such as IED & Small Arms
- Light weight and man portable
- Uses commercial batteries

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Raytheon Technical Services Company, Indianapolis, IN

MK 152 Radio Frequency Remote Activation Munition System

SYSTEM DESCRIPTION:

The MK 152 Radio Frequency-Remote Activation Munition System (RF RAMS) is a secure, radio-controlled system designed to provide dismounted soldiers wireless initiation capability of explosives, demolition charges and munitions. The MK 152 system is a variant of the M152 system and was designed for and fielded to U.S Marine Corp Engineer and Explosive Ordnance Disposal (EOD) personnel, followed by fielding to Army EOD. Although each system uses seven factory-set firing codes, the MK 152 codes are unique while the M152 uses four unique and three system common codes. The MK 152 consists of one transmitter and a family of receivers which enable the soldier to remotely employ and detonate explosives while avoiding direct enemy contact. Prior to engagement, operators can perform a full power range data link test to make sure all signals are active through an automatic self-test that is built into the transmitter and receivers. All operations are verified to the user via light-emitting diode (LED).

CAPABILITY/CHARACTERISTICS:

- MK 26 Transmitter: transmits to one or more receivers up to 2-5 kilometer (Line-of-Sight) and over 10 kilometers (with power pack) range
- MK 16 Receiver: Simultaneously function 4 or more electrical output for M6 Blasting Caps in series
- M17 Receiver: explosive output initiates an M7 Blasting Cap
- M85 Trainer: Inert functional trainer for M17 Receiver
- M50: interface used to initiate MDI when attached to M16 Receiver
- Receivers programmable to any M26 Transmitter
- Temperature range: -25 degrees to +135 degrees Fahrenheit
- Reduces Soldier/Sailors exposure to threats such as IED & Small Arms
- Light weight and man portable
- Uses commercial batteries

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Raytheon Technical Services Company, Indianapolis, IN

103
PM CCS

Close Combat Systems

MR DATE: July 1999
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: N/A

MR DATE: October 2015
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

104
PM CCS
Close Combat Systems

MR DATE: December 1999
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: N/A

SYSTEM DESCRIPTION:
The M303 Blasting Demolition Kit (BDK) contains a variety of inert items that are field loaded by the user to make charges that can be used against numerous targets and mission scenarios. With this dynamic system developed for the Special Operations Command, the soldier has the capability to tailor charges to the target by using a variety of inert charges. The soldier assembles a charge for a specific target using BDK components and C4 or other moldable explosives. The kit provides several methods of attaching charges/munitions to targets. The BDK allows the soldier to construct the smallest, lightest charge feasible with the greatest standoff distance attainable, and maximum precision for numerous types of targets and mission scenarios.

CAPABILITY/CHARACTERISTICS:
- Penetration of a variety of rolled homogeneous armor and other targets at standoff ranges
- Flexibility to select the appropriate demolition device for the mission
- Availability of a variety of attachment devices
- Ease in transportation
- Ability to attack at close range or at a standoff distance
- Maximum precision
- Effective on multiple targets and mission scenarios

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Raytheon Technical Services Company, Indianapolis, IN

M303 Blasting Demolition Kit

MR DATE:
- MM15/MM16: N/A
- MN28: March 2003
- MP12/MZ40: November 2014

ACQ PHASE: Production & Deployment
ACAT: III
DODIC MM15, MM16, MN28, MP12, MZ40

SYSTEM DESCRIPTION:
The Selectable Lightweight Attack Munition (SLAM) is a multipurpose munition designed to be readily portable and hand-emplaced against lightly armored infantry vehicles, parked aircraft and petroleum storage sites. It can operate day or night during all weather conditions, and at close range or at a standoff distance of up to 25 feet to defeat selected targets using an explosively-formed penetrator warhead. SLAM has four operating modes: bottom-attack, side-attack, timed-detonation and command-detonation. SLAM will self-destruct at the end of a set time selected by the operator during its employment. Variants exist for both regular Army and U.S. Special Operations Forces (SOF).

CAPABILITY/CHARACTERISTICS:
- Effective Range: up to 25 feet
- Weight: 2.2-3 pounds
- Size: Length - 5.2 inches; width - 3.5 inches; depth - 2.2 inches
- Operational Modes:
  - Bottom attack - magnetic signature of target vehicle triggers SLAM
  - Side attack - infrared signature of target vehicle triggers SLAM
  - Time detonation - detonates at user selected time
  - Command detonation - operator initiated using standard blasting caps or modernized demolition initiators (MDI)
- DODIC variations:
  - MM15: M2 SOF version, self-neutralization capability
  - MM16: M3 SOF version, only used in command-detonation mode
  - MN28: M4 Army version, self-destruct capability
  - MP12: M4A1 Army version, enhanced safety features
  - MZ40: Inert functional trainer kit

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Alliant Techsystems, Inc. (ATK), MN

Selectable Lightweight Attack Munition and Training Kit

M7E1 Spider Networked Munition Increment 1A

SYSTEM DESCRIPTION:

Spider Increment 1A (SI1A) is being developed as a follow-on increment to the baseline Spider Increment 1 (SI1) program to provide an improved networked munition control station (seamless or radio frequency (RF) connectivity to Mission Command System (MCS)) and the ability to employ and control current Spider antipersonnel (AP) munitions and demolitions. SI1A will also demonstrate the initiation of legacy Government-off-the-Shelf (GOTS) Anti-Vehicular (AV) effects. SI1A will retain all current features of SI1, with the addition of the following: (1) new Remote Control Unit (RCU) that will include an enhanced, color mapping capability; (2) control station will be capable of seamlessly communicating via RF the munition field status/location to the MCS; (3) ability to initiate legacy GOTS munitions; and (4) will be compliant with U.S. National Landmine Policy, as is SI1.

CAPABILITY/CHARACTERISTICS:

- Builds upon existing Spider capabilities
- Ability to employ fielded Army blasting cap initiated AP and AV munitions and effects
- Capable of seamless interoperability with mission command

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Northrop Grumman, Carson, CA

M7 Spider Networked Munition

SYSTEM DESCRIPTION:

The M7 Spider Networked Munition is a hand emplaced, remotely controlled, man-in-the-loop (MITL) antipersonnel munition system. Spider provides equivalent munition field effectiveness when compared to capabilities provided by current landmines, but does so without the residual life threatening risks after hostilities end or when warring factions depart. The fielding of this system, with its sensors, communications, and munitions changes the way soldiers operate in an otherwise unpredictable battlefield. The system's design allows for safe and rapid deployment, reinforcement, and recovery as well as safe passage of friendly forces.

CAPABILITY/CHARACTERISTICS:

- Provides improved munition field effectiveness equivalent to current antipersonnel landmines (APLs)
- Hand-emplaced modular system capable of intrusion detection and controlling lethal and non-lethal munitions
- Repeater provides extended range capability for munition control in difficult terrain and non-line of sight
- Interoperability with the tactical internet via FBCB2 communication platform
- Self destruct/self deactivate
- Reuse
- Remotely controlled command fire
- Prevents fratricide
- DODIC variations:
  - TS01: M8 Mini-Grenade Launcher
  - TS02: M9 Extended Range Tripwire Launcher
  - TS09: M332 Munition Control Unit

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Alliant Techsystems, Plymouth, MN
- Textron Defense Systems, Wilmington, MA
- Allegany Ballistics Laboratory, Rocket City, WV

105
PM CCS
Close Combat Systems

MR DATE: TBD
ACQ PHASE: Engineering and Manufacturing Development
ACAT: II
DODIC: N/A

MR DATE: September 2013
ACQ PHASE: Production & Deployment
ACAT: II
DODIC TS01, TS02, TS09

106
PM CCS
Close Combat Systems

MR DATE: TBD
ACQ PHASE: Pre-MS B
ACAT: III
DODIC: N/A

Standoff Robotic Explosive Hazard Detection

SYSTEM DESCRIPTION:
The Standoff Robotic Explosive Hazard Detection (SREHD) consists of a suite of three payload modules to be deployed on a remotely operated Man Transportable Robotic System (MTRS). SREHD will give the operator a leap-ahead capability for the detection, marking and neutralization of explosive hazards at standoff in complex and urban terrain, including confined areas and subterranean environments.

CAPABILITY/CHARACTERISTICS:
- Mine Detection and Marking Payload Module: remotely detects and marks surface laid and buried metallic and low-metallic anti tank (AT) and antipersonnel (AP) landmines and scatterable munitions
- Explosive Hazards Detection and Marking Payload Module: remotely detects and marks surface laid, partially buried and camouflaged explosive hazards
- Neutralization Payload Module: remotely neutralizes surface laid, buried and camouflaged explosive hazards
- Remotely locate mines at a minimum of 10 meters forward
- Increase rate of advance for unit of action
- Marked path for explosive threat avoidance
- Precision marking for threat identification
- Sweeps 0.5-1 meter width (depending on configuration)

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- TBD

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

Family of Military Working Dogs

SYSTEM DESCRIPTION:
A Military Working Dog (MWD) is any dog procured, acquired, or bred by a Department of Defense (DoD) component to meet the following MWD requirements within the DoD: enforcement of laws and regulations, suppression of illegal drugs, detection of explosives and improvised explosive devices (IEDs), protection of installations and resources, force protection operations, and fulfillment of other security tasks. The Family of Military Working Dogs (FMWD) program provides the Dog Handlers/Kennel Masters with equipment to maintain the health and well being of the animals during periods of inactivity and also provides the Dog Handlers with the ability to deploy the animals on a worldwide basis, maintaining both a heated and cooled environment for the animals with deployable kennels. The program also fields Canine Explosive Scent Kits (CESK) which provides the Dog Handlers the ability to maintain the animals' qualifications and certification for the detection of explosive odors.

CAPABILITY/CHARACTERISTICS:
- Patrol Explosive Detection Dog (PEDD) specializes in finding explosives and IEDs
- Patrol Narcotics Detection Dog (PNDD) specializes in drug enforcement programs
- Specialized Search Dog (SDD) is capable of multiple roles
- Mine Detection Dog (MDD) finds all buried mines
- New Scent Kits for SDD and Joint capability contain 12 odors vs. 9 sustained odors for PEDD
- Standard Dog Handlers Kit
- Deployable and Organizational/Installation Kennel Systems

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Equipment Kits: Commercial off the Shelf (COTS)

AN/PSS-14 Mine Detecting Set

SYSTEM DESCRIPTION:

The AN/PSS-14 Mine Detecting Set employs a state-of-the-art metal detector and ground penetrating radar, coupled with an advanced microprocessor array and software, to achieve a high probability of detection. This man-portable system provides dismounted soldiers with a significantly increased mine detection capability and lower alarm rate. AN/PSS-14 is an ACAT III program that entered into Full Rate Production in Aug 06.

CAPABILITY/CHARACTERISTICS:

- Single soldier-operable, handheld standoff mine detection system (HSTAMIDS)
- Combines technologies of Ground Penetrating Radar (GPR) and metal detection
- Locates both metallic and low-metallic, antipersonnel (AP) and antitank (AT) landmines
- Operable in highly mineralized soils and water to depths of 4 feet
- Provides operator audio alerts to landmine detections
- Utilizes advanced algorithms to process sensor data
- Extremely low false alarm rate

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- L3 CyTerra Corp., Waltham, MA

107
PM CCS
Close Combat Systems

MR DATE: July 2006
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

108
PM CCS
Close Combat Systems

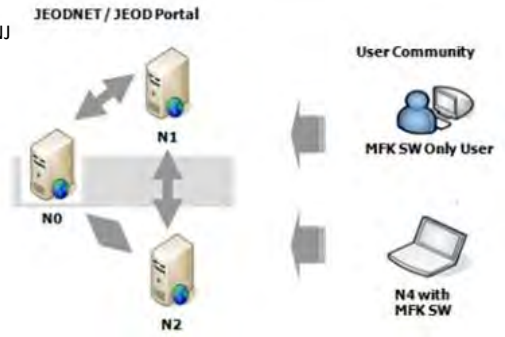
MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: N/A

SYSTEM DESCRIPTION:
The Decision Support System is an Information Technology (IT) Service-Oriented Architecture (SOA), web/portal-based program that addresses Joint Service Explosive Ordnance Disposal (JSEOD) gaps in asset location, collaboration, coordination and real-time data/action sharing and reporting.

CAPABILITY/CHARACTERISTICS:
- JSEOD DSS is composed of 3 core products:
  - JEODNET: provides secure tactical transport mechanism
  - JEOD Portal: provides access to critical EOD info & tools
  - Mobile Field Kit (MFK) Software: JSEOD mission-performance special warfare (SW) tool suite
- Software is updated quarterly via CDs, mailed to users
- Current laptop is Panasonic Toughbook but operates on any laptop
- DSS can access Joint EOD Portal via SIPR

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Panasonic Headquarters, Secaucus, NJ



Decision Support System

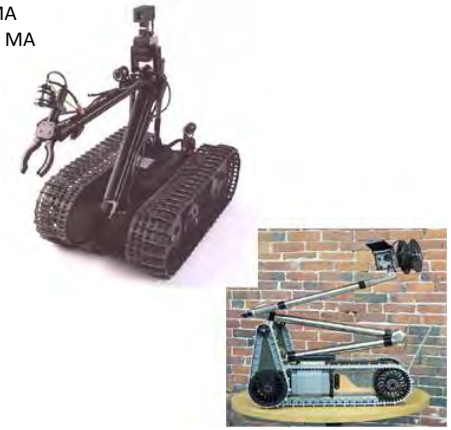
MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
The Manual Transport Robotic System (MTRS) is a light-weight, two-person portable system that consists of robotic vehicle and operator control station with radio frequency (RF) and fiber optic remote control modes selectable by operator.

CAPABILITY/CHARACTERISTICS:
- Performs reconnaissance surveillance and Explosive Ordnance Disposal (EOD) operations on battlefields
- Suitable for peacetime urban scenarios in nuclear, biological, and chemical (NBC) environments
- Ability to perform access, render safe, disruption and disposal operations
- Provides robotic capability to each EOD team

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- MK 1 MOD 1: iROBOT Corp., Burlington, MA
- MK 2 MOD 0: Foster-Miller, Inc, Waltham, MA (subsidiary of QinetiQ, Ltd, UK)



Manual Transport Robotic System

Countermeasure Transmitter AN/PLT-4

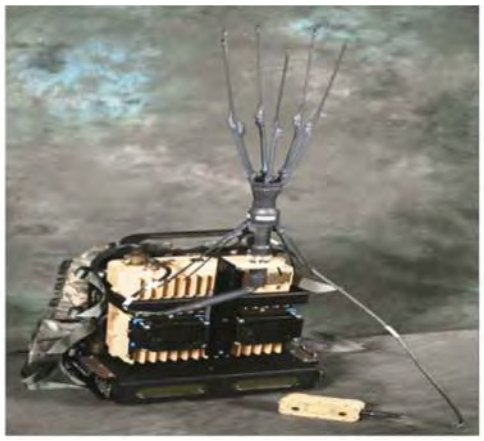
SYSTEM DESCRIPTION:
The AN/PLT-4 Countermeasure Transmitter is a system that provides the Explosive Ordnance Disposal (EOD) technician protection from Improvised Explosive Devices (IEDs) and deliberate explosive devices by preventing their initiation, while working in close proximity to suspect devices.

CAPABILITY/CHARACTERISTICS:
- Prevents initiation of IED threat
- Electronic jamming system

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- ITT, Annapolis, MD

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: N/A



Countermeasure Transmitter AN/PLT-5

SYSTEM DESCRIPTION:
The AN/PLT-5 Countermeasure Transmitter is a system that provides the Explosive Ordnance Disposal (EOD) technician protection from Improvised Explosive Devices (IEDs) and deliberate explosive devices by preventing their initiation, while working in close proximity to suspect devices.

CAPABILITY/CHARACTERISTICS:
- Man-portable (backpack) active system
- Portable electronic jamming system

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Sierra Nevada Corp, Sparks, NV

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

110
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: N/A

SYSTEM DESCRIPTION:

The Percussion Actuated Non-Electric (PAN) Disrupter is a non-electric Explosive Ordnance Disposal (EOD) tool. This stand-off disrupter is designed to remotely disable and render-safe Improvised Explosive Devices (IEDs) from outside the fuze's detection range and without initiating them.

CAPABILITY/CHARACTERISTICS:

- Accurately aimed by a visible light laser
- Can be fired from EOD robots
- 18 inches or 24 inches barrel length
- Components include a 12-gauge barrel and breech assembly, firing stand, aiming laser, and shipping/storage container

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Idea Products, Lexington, KY

Percussion Actuated Non-Electric Disrupter

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The Platoon Supplemental Kit (PSK) has tools, in addition to those in the Explosive Ordnance Disposal (EOD) Response Kit, that enable the Heavy Team to perform mission beyond the capability of the response kit, such as EOD munitions with chemical or biological agents.

CAPABILITY/CHARACTERISTICS:

- Consolidates separate tool sets - eliminates duplication used in incidents involving munitions with chemical or biological agents
- Enables Heavy Team to handle incidents beyond capability of Light Teams WT: 442 pounds.
- 300 Kilovolt Peak (KVP) X-ray source for greater penetration than the current 150 KVP chemical/biological incident response equipment.
- The XRS-3 component is contained in the platoon supplemental with 270 KVP maximum photons and the XR 200 in each team kit (MK 32) produces 150 KVP.
- Special expendable charge containers that can be packed with C4 or det cord for vehicle entry and disruption of Improvised Explosive Devices (IEDs)
- Up-to-date borescope

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Kipper Tools, Gainesville, GA

Platoon Supplemental Kit

MK 41 MOD 1
Advanced Radiographic System

SYSTEM DESCRIPTION:
The MK 41 MOD 1 Advanced Radiographic System (ARS) is a lightweight film-less radiographic system that obtains, enhances and records images of internal structures of Improvised Explosive Devices (IEDs) and Unexploded Ordnance (UXO) for identification.

CAPABILITY/CHARACTERISTICS:
- An interim replacement for MK 41 MOD 0 pending fielding of Future Radiographic Systems
- Used with MK 32 MOD 3 X-ray
- Digital X-rayed image can be stored and transmitted
- Allows for the system components to be powered by 110/120 volt AC or batteries
- Control unit includes two 12 volt rechargeable batteries, and the x-ray source has a 14.4 volt removable, rechargeable battery
- Control unit can also be powered from an external 24 volt DC vehicle battery or an optional adapter
- Compact and lightweight

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- SAIC, San Diego, CA

Army Preposition Stock

SYSTEM DESCRIPTION:
The Army Preposition Stock (APS) enables rapid development of Explosive Ordnance Disposal (EOD) companies without shipping their full Modified Table of Organization & Equipment (MTOE) upon deployment.

CAPABILITY/CHARACTERISTICS:
- Provides prepositioned EOD capability in APS-3 and APS-5 modules
- Sets of selected EOD company equipment
- Limited to large, heavy items which are configuration stable
- Includes Force Modernization buys
- Consolidated with Army National Guard (ARNG) Division Redesign Study (ADRS) buys

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Various

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: N/A

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

112
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The Explosive Ordnance Disposal (EOD) Response Kit is a set of common and special purpose tools used by EOD soldiers in response to incidents involving explosive hazards. It consolidates five separate EOD tool sets to eliminate duplication and reduce overall weight.

CAPABILITY/CHARACTERISTICS:

- Configured into separately packaged functional mission modules:
  - General demolition
  - Technical Intelligence
  - Reconnaissance
  - Improvised Explosive Device (IED) search
- Packaged for storage in Explosive Ordnance Disposal (EOD) utility body
- Shipping: 50 cubic feet and 585 pounds when palletized for separate shipment

WEAPON SYSTEM:

- Hand emplaced

PRIME CONTRACTOR

- Kipper Tools, Gainesville, GA

Explosive Ordnance Disposal Response Kit

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

The MK 32 MOD 3 Portable X-ray Kit allows Explosive Ordnance Disposal (EOD) technicians to examine internal components of suspected explosives, Improvised Explosive Devices (IEDs) or Unexploded Ordnance (UXO). The MK 32 MOD 3 is interoperable with the Advanced Radiographic System (ARS) and MK 32 MOD 2.

CAPABILITY/CHARACTERISTICS:

- Single package, pulsed x-ray source for radiographic examination
- System is lightweight and completely portable
- Ability to penetrate 1/2in of steel (150 KV penetration)
- Weight: 12 pounds
- Size (including battery pack): 12.5 inches (31.75 centimeters) x 4.5 inches (11.5 centimeters) x 7.5 inches (19 centimeters)
- Generator allows for system components to be powered by 110/120 volt alternating current (AC) or batteries.
- X-ray source has a 14.4 volt removable, rechargeable battery, 110 volt charger, remote cable and carrying case

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Golden Engineering, Centerville, IN

MK 32 MOD 3 XR200 Portable X-Ray Kit

MK 42 MOD 0 Medium Directional Energy Tool

SYSTEM DESCRIPTION:
The MK 42 MOD 0 Medium Directional Energy Tool (MDET) is part of a suite of large improvised explosive device (LIED) countermeasure technology and equipment that provides EOD technicians the ability to access, disrupt, and neutralize LIEDs. A LIED is most commonly seen as a car or truck bomb and can also include boats, aircraft, large shipping containers, etc.

CAPABILITY/CHARACTERISTICS:
- Includes 6 to 8 Explosive Ordnance Disposal (EOD) tools required to access, disrupt, or render safe large improvised explosive devices (LIEDs)
- Greater than 100 pounds net TNT equivalent weight
- 2.75 inch diameter recoilless smoothbore disrupter
- Fires a 1.2 liter water charge to penetrate car door or semitrailer side to disrupt LIED inside

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- MDET: Packaging Strategies, Inc., Baltimore, MD
- Propellant Charge: R Stresau Laboratories, Inc., Spooner, WI

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: N/A

Remote Hook and Line Kit

SYSTEM DESCRIPTION:
The Remote Hook and Line Kit allows the Explosive Ordnance Disposal (EOD) team to quickly construct a hook and line mechanism that enables the team to investigate and facilitate detonation and/or removal of incendiary materials in as safe a manner as possible.

CAPABILITY/CHARACTERISTICS:
- Provides capabilities to move, attach, anchor, reach, manipulate, handle and access various items
- Set of hooks, extension rods, lines, blocks, swivels, slings and pull handles
- Primarily used for remotely moving suspect objects
- Wide applications in both Improvised Explosive Devices (IEDs) and Unexploded Ordnances (UXOs) defeat operations
- Over 50 components of 28 different types
- All housed in a steel case with the 100 meter main line reel attached to the lid

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Mithix, Farmerville, TX

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

114
PM CCS
Close Combat Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

Remote Ordnance Neutralization System

SYSTEM DESCRIPTION:
The Remote Ordnance Neutralization System (RONS) provides each Explosive Ordnance Disposal (EOD) team with a peacetime/ wartime remote, standoff capability to perform EOD missions.

CAPABILITY/CHARACTERISTICS:
- Provides Explosive Ordnance Disposal (EOD) soldiers with the ability to perform reconnaissance, remote render-safe procedures and disposal tasks in a high-risk and/or contaminated environment
- Manipulator lifts approx. 100 pounds.
- Maneuvers through openings 30 inches wide
- Primary missions are outdoors due to its size

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Remotec, Clinton, TN

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

MK 38 MOD 0 Small Caliber Dearmer

SYSTEM DESCRIPTION:
The MK 38 MOD 0 Small Caliber Dearmer (SCD) is capable of rendering safe firing devices, small landmines and other small munitions emplaced in various challenging orientations that cannot be practically rendered safe by existing EOD explosively driven tools.

CAPABILITY/CHARACTERISTICS:
- Cutting, gagging, severing or jamming small concealed, or otherwise screened, threat targets
- Set contains three 9mm and three .22 caliber barrel/breech assemblies
- Barrels for each caliber are three different lengths: 2.5 inches, 6 inches and 12 inches
- Each barrel/breech assembly includes a barrel, breech, firing pin, spring, retaining insert and setscrew

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Camtech Precision Manufacturing, Inc. Jupiter, FL

MK 2 MOD 1 Tool Set

SYSTEM DESCRIPTION:
The MK 2 MOD 1 is a .50 caliber dearmer that provides the EOD soldier the capability to render safe small firing devices and fuzes by means of a mechanical, explosively initiated system.

CAPABILITY/CHARACTERISTICS:
- Other uses include cutting, penetration of and the withdrawal of fuze components
- Cartridge tool used principally for shearing and jamming purposes
- Consists of the cartridge tube and standard breech plug
- Standard breech plug accepts either a .50 caliber electrically initiated cartridge or specially prepared non-electric .50 caliber
- Fires either a standard, wedge, chisel or fork slug

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- Savit Corp, Rockaway, NJ

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: N/A

MK 40 MOD 0 Unexploded Ordnance Stand-Off Disrupter

SYSTEM DESCRIPTION:
A modular, recoilless, inert tool, the MK 40 MOD 0 Unexploded Ordnance Stand-Off Disrupter (UXO SD) was designed to remotely disrupt Improvised Explosive Devices (IEDs) and Unexploded Ordnances (UXOs) from a stand-off distance via a percussion activated projectile.

CAPABILITY/CHARACTERISTICS:
- Capable of firing a range of solid projectiles to defeat various threats
- Can configured as a stand-off dearmer
- Features both a laser aiming sight and an optical aiming sight
- Features a lightweight aluminum tripod with adjustable legs and spring-loaded joints for versatile positioning of the tool
- Uses a standard military Impulse Cartridge (DODIC: M174) to propel the projectile

WEAPON SYSTEM:
- Hand emplaced

PRIME CONTRACTOR
- DTI, Arlington, VA

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

116
PM CCS
Close Combat Systems

MR DATE: March 2013 (Urgent Release)
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
The Detector Special Purpose No. 27 system is a passive handheld detector. It provides audible indication of target detected, and audio and visual indication of operational status.

CAPABILITY/CHARACTERISTICS:
- Detection waveform
- Passive handheld detector

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Gill R&D Ltd, Lymington, UK

Detector Special Purpose No. 27

MR DATE: N/A
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
FIDO is an explosive trace detection system used to conduct particle and vapor sampling. Fido V2 can be mounted on Packbot (managed by Robot Systems Joint Project Office).

CAPABILITY/CHARACTERISTICS:
- Handheld system
- Explosive trace detection
- Particle and vapor sampling

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- ICx Technologies, Stillwater, OK

FIDO

Sherlock Explosive Detector FG656H

SYSTEM DESCRIPTION:
Sherlock Explosive Detector provides specific explosive detection and identification capability to the user at entry points and various locations.

CAPABILITY/CHARACTERISTICS:
- Mobile explosive trace detector
- Particle swipe and vapor sampling
- 3.5 inch color glare-resistant display
- 9.4 pounds with battery/network ready and USB compliant
- 2 batteries with 4 hours use and 2 volt DC vehicle adapter
- 1-year parts and labor warranty
- Not ruggedized
- Commercial-off-the-shelf

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Morpho Detection, Wilmington, MA

MR DATE: August 2010 (Urgent Release)
ACQ PHASE: Non POR
ACAT: III
DODIC: N/A

Jackal YH900G

SYSTEM DESCRIPTION:
Jackal is a counter victim-operated Improved Explosive Device (IED) system that transmits a high-power waveform designed to counter the continuing IED threat that coalition forces face in today's combat environment.

CAPABILITY/CHARACTERISTICS:
- Pre-detonates passive infrared sensor-triggered IEDs at standoff distance
- Selected as best-of-breed in 2009 JIEDDO sponsored testing
- Comprised of two major components:
  - Electronic Kit
  - Vehicle installation kits
- Modular architecture; adaptable to new and emerging IED threats
- Can be integrated on multiple tactical MRAP platforms
- Integrated on RG31, MK 5 and MaxxPro Vehicles with or without SPARK Rollers

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Raytheon Technical Services Co., LLC

MR DATE: May 2011 (Urgent Release)
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

Rhino FA954Q

MR DATE: August 2011 (Urgent Release)
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
Rhino is a capability used to defeat a subset of Improvised Explosive Devices (IEDs) and features a universal bracket that can be mounted on any vehicle platform. Rhino can be integrated with SPARK or Cyclone systems to provide flexibility to the soldier.

CAPABILITY/CHARACTERISTICS:
- Vehicle mounted IED pre-detonation capability
- Works against passive infrared-triggered IEDs
- Two current versions:
  - Rhino 2.6 (NSN: 2590-01-588-3902)
  - Rhino 3.0 (MCN: 5895-01-X00-0964)
- Basic systems common to all combat and tactical vehicle platforms
- Vehicle-specific wiring and brackets
- Variable standoff
- Originally theater designed; refined for mass production and usability

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Letterkenny Army Depot, Chambersburg, PA

Ground Torch HA100Y

MR DATE: March 2010 (Urgent Release)
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
The Ground Torch System is a trailer-mounted flame throwing system that provides a controlled burn to remove vegetation and foliage along main/alternate supply routes and canals. The standoff ground ignition system expels a burning gel-like fuel that covers the targeted area and eliminates the concealment and reduces security risks for U.S. Forces.

CAPABILITY/CHARACTERISTICS:
- Clears routes used by the enemy to conceal IEDs or trip wires; egress and regress routes; and triggerman locations
- Sprays with a range of at least 150 feet/50 meters
- Enables removal of vegetation where mechanical systems cannot (i.e. steep banks, canal edges)
- Leveraged U.S. Marine Corps lessons learned
- Army system mounted on M1061A1 Flatbed 5-ton trailer; improved with self-sealing fuel tank and upgraded safety kit
- Prime mover safety confirmations for 5-ton M809 series, M939 series, and Family of Medium Tactical Vehicle (FMTV)

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Firecontrol Inc

Terrapin and LaPeer Culvert Denial Systems

SYSTEM DESCRIPTION:
The Terrapin and LaPeer Culvert Denial Systems block unauthorized access to culverts, the devices used to channel water and allow it to pass underneath roads, railways, or embankments.

CAPABILITY/CHARACTERISTICS:
- Deny the enemy the ability to place IEDs in culverts of various dimensions
- Blocks tampering with the culvert denial devices
- Terrapin: Three-piece system, concrete block, metal conduit, anti-tamper device
- LaPeer: Cam lock, three sizes, in square and round, allow for water flow; leave behind as part of permanent infrastructure

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Lapeer : Exponent Inc.
- Terrapin designed by Army Research Labs with the subcontractor CTI for the pins

MR DATE: August 2010 (Urgent Release)
ACQ PHASE: Non POR
ACAT: III
DODIC: N/A

Counter Bomber

SYSTEM DESCRIPTION:
The Counter Bomber system is designed to detect potential suicide bombers at base entrances and other control points. It provides stand-off detection capability for personnel-borne improvised explosive devices (PBIED) at ranges outside the blast range.

CAPABILITY/CHARACTERISTICS:
- Employs visible or infrared video cameras to automatically detect and track subjects
- Low-power radar to interrogate threat when cued by video
- Automatically assesses the threat in real time
- Consists of radar sensor head, camera, and associated processor box to run software detection algorithms
- Power levels well below IEEE/ANSI RF exposure limits
- Constructed using off-the-shelf hardware components

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Science, Engineering and Technology Corporation (SET), Arlington, VA

MR DATE: N/A
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

MR DATE: N/A
ACQ PHASE: Non POR
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:

Calilgo systems are integrated into High Mobility Multipurpose Wheeled Vehicles (HMMWVs) as well as MRAP vehicles to provide vehicle mounted Improved Explosive Device (IED) pre-detonation capability.

CAPABILITY/CHARACTERISTICS:

- Targets passive infrared-triggered IEDs and other asymmetric threats
- Used on multiple vehicle platforms in combination with Rhino
- Extends Rhino standoff capability against passive infrared sensor-triggered IEDs

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- EV2, UK

Calilgo

Acoustic Hailing Device

SYSTEM DESCRIPTION:
The Acoustic Haling Device (AHD) is a non-lethal, counter personnel, long-range hailing and warning device. This capability helps soldiers more effectively determine the intent of a person, crowd, vessel, or vehicle at a safe distance, potentially deterring them prior to escalating to lethal force.

CAPABILITY/CHARACTERISTICS:
- Capable of producing highly directional sound beams, allowing users to project warning tones and intelligible voice commands beyond small arms engagement range.

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- TBD

Single Net Solution/Remote Deployment Device

SYSTEM DESCRIPTION:
The Single Net Solution/Remote Deployment Device (SNS/RDD) is a man portable, 18 x 9 foot expandable, single use, spiked entanglement net that can be deployed in less than one minute to puncture and lock-up the leading tires of a small vehicle. This net can stop a 5,500 lb. wheeled vehicle traveling at 30 mph, within 200 ft. in a controlled manner at access control points and checkpoints.

CAPABILITY/CHARACTERISTICS:
- Spring loaded pulley system that pulls the Vehicle Lightweight Arresting Device (VLAD)/SNS across a road in 2 seconds
- Provides remote deployment of VLAD/SNS
- Dimensions: 26.8 x 20 x 14 inches

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- QinetiQ/Bridport Aviation, Farnborough, UK

MR DATE: TBD
ACQ PHASE: Engineering and Manufacturing Development
ACAT: III
DODIC: N/A

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

122
PM CCS
Close Combat Systems

MR DATE: June 2009 (Urgent Release)
ACQ PHASE: Production & Deployment (Non-POR)
ACAT: III
DODIC N/A

SYSTEM DESCRIPTION:
The Brigade Combat Team (BCT) Non-Lethal Capabilities Set (NLCS) provides a variety of capabilities that include counter personnel and material systems, protective and enhancement devices and support equipment. The modularity of the NLCS allows the commander to tailor equipment needs based on a specific mission or threat level. Configured to equip a brigade and packed in ten quadcon containers for easy storage and handling, the NLCS can be rapidly deployed by military transport or commercial carrier.

CAPABILITY/CHARACTERISTICS:
- Configured into 5 mission modules: checkpoint, convoy, crowd control/detainee operations, dismounted, and Taser sub-module

WEAPON SYSTEM:
- Various

PRIME CONTRACTOR
- Aardvark Tactical Inc, La Verne, CA

Brigade Combat Team Non-Lethal Capabilities Set

MR DATE: May 2002
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

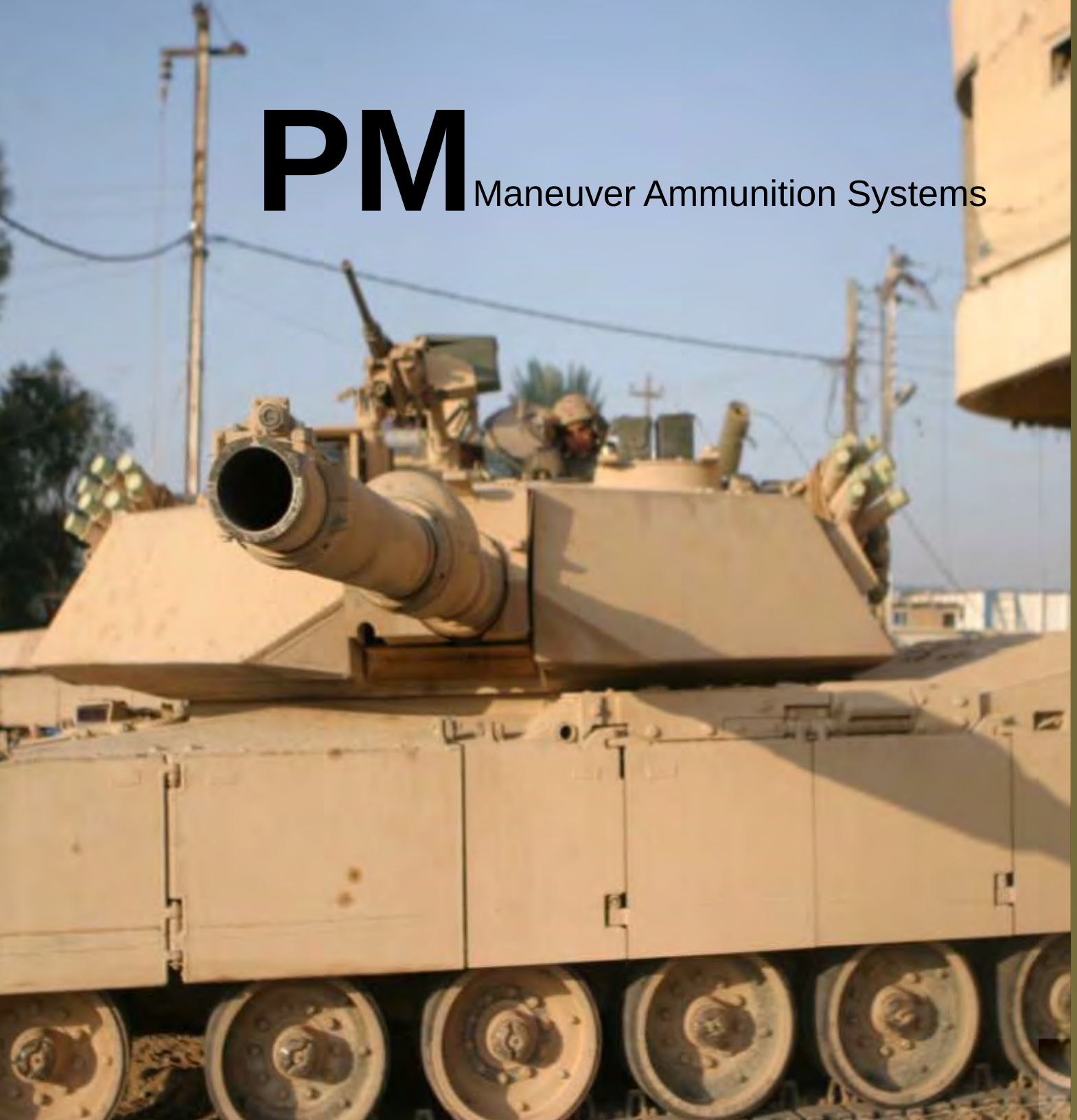
SYSTEM DESCRIPTION:
The Portable Vehicle Arresting Device (PVAD) is used by small units patrolling vehicle checkpoints or roadblocks to prevent unauthorized access of vehicles into or out of protected areas. When in place, it resembles a standard speed bump.

CAPABILITY/CHARACTERISTICS:
- Stops light truck up to 6,500 pounds
- Impedes the opening of front doors eventually trapping passengers inside a vehicle
- Operational within 2 seconds of being activated
- Stops vehicles traveling at a speed of up to 40 miles/hour
- Spans 12-24 feet
- Quickly disassembled, moved, stored, transported, uploaded and reassembled
- It can be set up in less than 2 hours by a small unit (2-3 individuals)
- Uses a high-tensile strength set
- Internal braking mechanisms

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- General Dynamics

Portable Vehicle Arresting Device



PM Maneuver Ammunition Systems

PM

Maneuver Ammunition Systems (PM MAS) provides direct fire combat and training ammunition capabilities to Warfighters (Army, Navy Air Force and Marines) and Government agencies to support dismounted Soldiers, Combat Vehicles, Helicopters, Naval Vessels and High Performance Aircraft. The PM does this through life cycle program management of ammunition in the categories of Large Caliber, Medium and Small Caliber, Medium Cannon Caliber and Non-Standard Ammunition.

Project Manager
PM
Reliable, Precise, Lethal
MAS
Maneuver Ammunition Systems

124

PM MAS

Maneuver Ammunition Services

5.56mm M855 Ball

MR DATE: December 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A059, A062, A064, AA33, AB78

SYSTEM DESCRIPTION:

The M855 Ball Cartridge was originally designed for use in M249 Squad Automatic Weapon (SAW). Later, the M16A2 Rifle was designed to fire the M855 to achieve commonality of ammunition at small unit level. Chamber pressures generated by the M855 and the required barrel twist make it unsuitable for use in the M16A1 Rifle. The M855's steel insert is effective against most types of fabric body armor while its three-piece construction achieves good effects against unprotected personnel targets.

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Conical steel insert and lead antimony alloy cylindrical core in a copper alloy jacket
- Projectile Mass: 62 grains
- Dispersion: Standard Deviation = 6.8 inches @ 600 yards
- Marking: Green Tip
- DODIC variations:
  - A059: 10 round clip, military packaging
  - A062: Linked
  - A064: 4-M855 Ball/1-M856 Tracer, Linked
  - AA33: 10 round clip, commercial packaging
  - AB78: 10 round clip, bulk packaging

WEAPON SYSTEM:

- M16A2 Rifle, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

5.56mm M856 Tracer

MR DATE: March 2013
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A063, A064

SYSTEM DESCRIPTION:

The M856 Tracer Cartridge was originally designed as complement to the M855 Ball for use in the M249 Squad Automatic Weapon (SAW). Because it loses mass as it travels, the M856 necessitates a 1:7 barrel twist to keep it stable in flight. The chamber pressures generated by the M856 and the required barrel twist make it unsuitable for use in the M16A1 Rifle.

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Lead alloy core in a copper alloy jacket with incendiary compound fill in a hollow base
- Projectile Mass: 62 grains
- Dispersion: Standard Deviation < 10.3 inches @ 600 yards
- Marking: Orange Tip
- DODIC variations:
  - A063: M856 Linked
  - A064: 4-M855 Ball/1-M856 Tracer, Linked

WEAPON SYSTEM:

- M16A2 Rifle, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

5.56mm M193 Ball

SYSTEM DESCRIPTION:

The M193 Ball Cartridge was designed during the original M16 Rifle development program and is suitable for use in M16A1 Rifle. It can be safely used in the M16A2 Rifle and newer weapons, but will not perform at its optimal level due to the higher barrel twist rate. Like many other lead core rounds, the M193 is effective against unprotected personnel targets.

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Lead alloy core in a copper alloy jacket
- Projectile Mass: 55 grains
- Dispersion: Mean radius = 2 inches @ 300 meters (from M16A4)
- Marking: None
- DODIC variations:
  - A066: 20 round carton
  - A071: 10 round clip

WEAPON SYSTEM:

- M16A1, M16A2, M16A4 Rifles

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

125

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A071, A066

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A075, A080

SYSTEM DESCRIPTION:

The M200 Blank Cartridge was designed for use in all U.S. 5.56mm weapons: M249 Squad Automatic Weapon (SAW), M16A2/A4 Rifle and M4 Carbine. It cycles the operating parts of these gas-operated weapons when used with the appropriate Blank Firing Adapter (BFA). It also used for ceremonial purposes without a BFA by manually cycling the weapon.

CAPABILITY/CHARACTERISTICS:

- Training use only
- Projectile Design: Not applicable
- Projectile Mass: Not applicable
- Dispersion: Not applicable
- Marking: Purple seal on rosette crimp
- DODIC variations:
  - A075: Linked
  - A080: Single round

WEAPON SYSTEM:

- M16A2/A4 Rifles, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

5.56mm M200 Blank

MR DATE: April 2013
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AA99, AB03

SYSTEM DESCRIPTION:

The MK 301 Dim Tracer cartridge was designed as complement to the M855 Ball. The MK 301 MOD 0 has been Naval Ordnance Safety and Security Activity (NOSSA) qualified for use in Naval Special Warfare Command (NAVSPECWARCOM) weapons including the MK 46 Light-Weight Machine Gun (LMG), M4A1 Carbine, and MK 18 Carbine. The U.S. Army weapons for MK 301 MOD 0 includes the M249 Light-Weight Machine Gun (LMG), M4A1 Carbine, and M16 Rifle. The MK 301 is designed to be used with Night Vision Devices (NVDs) where a lower burning temperature of the dim trace mix produces light in a spectrum invisible to the naked eyes, but visible only to NVDs. The WC-8455 propellant includes flash suppression technology to further reduce the ability for detection by enemy troops in nighttime operations.

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Lead alloy core in copper alloy jacket with incendiary compound fill in hollow base
- Projectile Mass: 62 Grains
- IR Tracer: 900 meters
- Dispersion: Standard Deviation < 10.3 inches @ 600 yards
- Chamber Pressure: 58,700 pounds per square inch
- Length (max): 2.26 inches
- Marking: Violet tip
- DODIC variations:
  - AA99: 10 round clip
  - AB03: 4-M855 Ball/1-MK 301 Dim Trace, Linked

WEAPON SYSTEM:

- MK 46 Light-Weight Machine Gun (LMG), M4A1 Carbine, and MK 18 Carbine, M249 Light-Weight Machine Gun (LMG), and M16 Rifle

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

5.56mm MK 301 Dim Tracer Cartridge

5.56mm M1042, M1071 Close Combat Mission Capability Kit

SYSTEM DESCRIPTION:

The Close Combat Mission Capability Kit (CCMCK) is a user installed weapons modification system that allows the soldier to employ weapons at a short range for force on force training using low velocity marking ammunition while precluding the weapon from firing standard service ammunition. The system will provide normal environmental/weapon employment cues and immediate target feedback though force-on-force, interactive live fire scenario task, and mission execution. Fail-safe is achieved by utilizing a 3 millimeter offset firing pin design, which will only work with the rim fire primer used in the cartridge, but not with a "live" center fire cartridge. In the event a 5.56mm "live" cartridge is chambered and the trigger is pulled, the conversion kit's offset firing pin will strike outside the primer pocket of the 5.56mm "live" round. This makes it impossible to initiate the primer in the "live" cartridge in the converted weapon.

CAPABILITY/CHARACTERISTICS:

- The M4 Carbine/M16 Rifle Conversion Adapter installs with a simple exchange of the bolt. It adapts the host weapon to fire unlinked 5.56mm M1042.
- The M249 Squad Automatic Weapon (SAW) Conversion Kit adapts the host weapon to fire linked 5.56mm M1071.
- Incapable of firing live standard ammunition
- Muzzle Velocity:
  - M1042 - 375 feet/second (when fired out of M16); 375 feet/second (when fired out of M4)
  - M1071 - 375 feet/second (when fired out of M249)
- Weight:
  - M1042 - 94.86 grains (cartridge), 6.9 grains (projectile)
  - M1071 - 147.8 grains (cartridge), 6.9 grains (projectile)
- DODIC variations:
  - AB09: M1042 blue marking, single round
  - AB10: M1042 red marking, single round
  - AB11: M1042 yellow marking, single round
  - AB15: M1071 yellow marking, linked
  - AB16: M1071 blue marking, linked
  - AB17: M1071 red marking, linked

WEAPON SYSTEM:

- M16A2/A4 Rifles, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- Ultimate Training Munitions (UTM)

5.56mm M855A1 Enhanced Performance Round

SYSTEM DESCRIPTION:

The M855A1 Enhanced Performance Round was designed for use in M16A2/A4 Rifles, M4 Carbine, and M249 Squad Automatic Weapon (SAW). The chamber pressures generated by the M855A1 and the required barrel twist make it unsuitable for use in the M16A1 Rifle. The M855A1's steel penetrator is effective against light armored targets while its three-piece construction maintains operational capabilities against unprotected personnel targets. The M855A1 enhances performance on hard targets/barriers and contains an improved propellant which reduces flash.

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Copper core
- Steel penetrator encapsulated in a reverse gilded metal jacket
- Projectile Mass: 62 grains
- Dispersion: Standard Deviation = 6.8 inches @ 600 yards
- Marking: Bronze tip
- DODIC variations:
  - AB56: Linked
  - AB57: 10 round clip, military pack
  - AB58: 10 round clip, commercial pack
  - AB73: 4-M855A1 Ball/1-M856A1 Tracer, Linked
  - AB77: Clipped, bulk pack

WEAPON SYSTEM:

- M16A2/A4 Rifles, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

127

PM MAS

Maneuver Ammunition Services

MR DATE: June 2009
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AB09, AB10, AB11, AB15, AB16, AB17

MR DATE: June 2010 (ECP fielding)
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AB56, AB57, AB58, AB73AB77

128

PM MAS

Maneuver Ammunition Services

MR DATE: January 2014
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AB66, AB67

5.56mm M1037 Short Range Training Ammunition

SYSTEM DESCRIPTION:

The M1037 Short Range Training Ammunition (SRTA) provides the capability to conduct training with a reduced surface danger zone with the M16A1/A2 Rifle, M4 Carbine, and M249 Squad Automatic Weapon (SAW) systems. The M1037 will replace the M862 Short Range Training Ammunition (SRTA) round and will not require weapon modification during training.

CAPABILITY/CHARACTERISTICS:

- 5.56mm cartridge with copper nylon projectile
- Simulates standard 5.56mm ammo out to 100 meters
- Height: 2.2 inches
- Weight: 33 grains (bullet)
- Muzzle Velocity: 3,848 feet/second
- Accuracy: AMR < 3.54 inches @ 100 yards
- Penetration: None, Frangible
- Chamber Pressure: 40,000 pounds per square inch
- Action Time: 1.26 milliseconds (max)
- DODIC variations:
  - AB66: Linked
  - AB67: Single round

WEAPON SYSTEM:

- M16A2/A4 Rifles, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS) - Canada

MR DATE: January 1999
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: AA01, AA02, AA69

5.56mm M995 Armor Piercing Cartridge

SYSTEM DESCRIPTION:

The M995 Armor Piercing (AP) Cartridge was designed for use in all U.S. 5.56mm weapons: the M249 Squad Automatic Weapon, M16A2 Rifle and M4 Carbine. The M995 AP Cartridge, marked with a black tip, is linked with tracer cartridges for machine gun use. The projectile consists of a tungsten carbide penetrator contained in an aluminum cup and jacketed by copper clad steel. It will penetrate 12 millimeters of steel at 100 meters to defeat light armored vehicles and other barrier materials on the battlefield.

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Tungsten-cobalt core centered by aluminum cup
- Dispersion: Standard Deviation < 7.0 inches @ 600 yards
- Muzzle Velocity: 3324 feet/second @ 78 feet
- Cartridge Height/Weight: 2.26 inches/185 grains
- Projectile Mass: 52 grains
- Berdan Primer and copper alloy jacket
- DODIC variations:
  - AA01: Linked
  - AA02: 4-M995 AP/1-M856 Tracer, Linked
  - AA69: 10 round clip

WEAPON SYSTEM:

- M16A2/A4 Rifles, M4 Carbine, M249 Squad Automatic Weapon

PRIME CONTRACTOR

- Nordic Ammunition Group (Nammo), Raufoss, Norway

5.56mm M856A1 Tracer

SYSTEM DESCRIPTION:
The M856A1 Tracer Cartridge was designed as a complement to the M855A1 Enhanced Performance Round (EPR) for use in the M249 Squad Automatic Weapon (SAW). Because it loses mass as it travels, the M856A1 necessitates a 1:7 barrel twist to keep it stable in flight. The chamber pressures generated by the M856A1 and the required barrel twist make it unsuitable for use in the M16A1 Rifle.

CAPABILITY/CHARACTERISTICS:
- Projectile Design: Copper core in copper alloy jacket with incendiary compound fill in hollow base
- Projectile Mass: 57 Grains
- Dispersion: Standard Deviation < 10.3 inches @ 600 yards
- Marking: Orange Tip
- DODIC variations:
  - AB73: 4-M855A1 Ball/1-M856A1 Tracer, Linked
  - AB74: Single round
  - AB75: 4-M995 AP/1-M856A1 Tracer, Linked
  - AB76: 4-M855 Ball/1-M856A1 Tracer, Linked

WEAPON SYSTEM:
- M249 Squad Automatic Weapon

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

5.56mm M862 Short Range Training Ammunition Cartridge

SYSTEM DESCRIPTION:
The 5.56mm Short Range Training Ammunition (SRTA) Cartridge provides a realistic restricted range training alternative to M193/M855 service rounds. The 5.56mm SRTA has a maximum range of 250 meters with a trajectory match and round to round dispersion comparable to the service ammunition out to 25 meters, and provides a functional capability when used in the M16 Rifles and M4 Carbines with the M2 Training Bolt. Because of its design, units are now able to train at nearby locations, accruing savings in terms of fuel, troop support, and billeting while increasing the opportunity to train effectively.

CAPABILITY/CHARACTERISTICS:
- 5.56mm cartridge with plastic projectile
- Used with M2 Training Bolt
- Simulates standard 5.56mm ammo out to 25 meters
- Accuracy: Ave. Mean radius 0.34 inches @ 25 meters
- Muzzle Velocity: 4,525 feet/second @ 15 feet from muzzle
- Length: 2.03 inches
- Weight: 108 grains

WEAPON SYSTEM:
- M16 Rifles and M4 Carbines with M2 Training Bolt

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS) - Canada

129
PM MAS
Maneuver Ammunition Services

MR DATE: April 2012 (ECP fielding)
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AB73, AB74, AB75, AB76

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: AA68

130

PM MAS

Maneuver Ammunition Services

SYSTEM DESCRIPTION:

This M80 Ball/M62 Tracer configuration can be used for both combat and training. These cartridges are for use primarily in the GAU-2B1A Machine Gun (MG) but also can be used in M240 MGs. Both copper alloy and copper alloy clad steel jackets are permissible for the M80 and M62 bullets. The cartridges are linked in a 4:1 ratio at 1,500 cartridges per belt for use in the M134 Minigun.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius for M80 Cartridge: < 7.5 inches @ 600 yards. Average mean radius for M62 Cartridge: < 15 inches @ 600 yards.
- Muzzle Velocity: M80 – 2,750 feet/second @ 78 feet; M62 – 2,670 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: M80 - 392 grains; M62 - 383 grains

WEAPON SYSTEM:

- GAU-2B1A Machine Gun (MG), M240 Series MG, M134 MG

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

7.62mm M80 Ball/M62 Tracer, Linked 4/1 for Minigun

MR DATE: December 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A165

7.62mm M82 Blank, Linked

SYSTEM DESCRIPTION:
The M82 Blank Cartridge is a training unique round, not used in combat. Used in 7.62mm rifles and machine guns with a Blank Firing Attachment (BFA), the round is used to simulate live firing in training exercises.

CAPABILITY/CHARACTERISTICS:
- Muzzle Flash: Visible 100 yards from weapon in darkness
- Screen Perforation: Max 0.1 Inch diameter at 15 feet from muzzle
- Height: 2.595 inches
- Weight: 234.5 grains
- Uses M13 links

WEAPON SYSTEM:
- M240 and M73 Machnie Guns

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

7.62mm M80 Ball / M62 Tracer, Linked 4/1

SYSTEM DESCRIPTION:
This configuration of M80 Ball and M62 Tracer Cartridges is the primary 7.62mm combat cartridge. These cartridges are used in the M240 and M73 Series Machine Guns (MG). The 4-M80 Ball/1-M62 Trace configuration is linked 800 rounds per belt and is packed into M19A1 cans. Both copper alloy and copper alloy clad steel jackets are permissible for the M80 and M62 bullets. The tracer in the M62 enables the shooter to follow the projectile trajectory to make aiming corrections.

CAPABILITY/CHARACTERISTICS:
- Accuracy: Average mean radius for M80 Cartridge: < 7.5 inches @ 600 yards. Average mean radius for M62 Cartridge: < 15 inches @ 600 yards.
- Muzzle Velocity: 2,750 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: M80 - 392 grains; M62 - 383 grains

WEAPON SYSTEM:
- M240 and M73 Machnie Guns

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

131
PM MAS
Maneuver Ammunition Services

MR DATE: December 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A111

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A131

132

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC A151

7.62mm M80/M62, Linked 4/1 for Overhead Fire

SYSTEM DESCRIPTION:

This configuration of M80 Ball and M62 Tracer Cartridges is training unique and used in weapons for firing over the heads of troops being trained in field exercises. These cartridges are used in M240 Series Machine Guns and are accepted at higher performance standards to ensure the safety of personnel operating immediately below the trajectory of the fired bullets. The cartridges are linked in a 4:1 ratio at 800 rounds per belt. The bullet consists of a copper alloy jacket with a lead antimony slug. The tracer in the M62 enables the shooter to follow the projectile trajectory to make aiming corrections.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius for M80 Cartridge: < 7.5 inches @ 600 yards. Average mean radius for M62 Cartridge: < 9 inches @ 600 yards. The extreme spread of each target of the sample cartridges shall not be greater than 45 inches.
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: 392 grains

WEAPON SYSTEM:

- M240 Series Machine Gun

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A164

7.62mm M80 Ball, Linked

SYSTEM DESCRIPTION:

This configuration of the M80 Ball Cartridge is for combat and training. These cartridges are for use primarily in the GAU-2B1A Machine Gun (MG) but also can be used in M240 MGs. Both copper alloy and copper alloy clad steel jackets are permissible for the M80.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius $\leq$ 7.5 inches @ 600 Yards
- Muzzle Velocity: 2,750 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: 392 grains

WEAPON SYSTEM:

- GAU-2B1A Machine Gun (MG), M240 Series MG, M134 MG

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

7.62mm M80 Ball / M276 Dim Tracer, Linked 4/1

SYSTEM DESCRIPTION:

This configuration of M80 Ball and M276 Dim Tracer Cartridges can be used for both combat and training. These cartridges are for use primarily in the GAU-2B1A Machine Gun (MG) but also can be used in M240 Series MG. The signature produced by the M276 Dim Trace cartridge is only visible with Night Vision Goggles (NVG), significantly reducing the potential for detection of U.S. Troops by the enemy. The cartridges are linked in 4:1 ratio at 100 cartridges per belt. Both copper alloy and copper alloy clad steel jackets are permissible for the M80 and M276 bullets.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius for M80 Cartridge: < 7.5 inches @ 600 yards. Average mean radius for M276 Cartridge: < 15 inches @ 600 yards.
- Muzzle Velocity: M80 - 2750 feet/second @ 78 feet; M276 – 2,670 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: M80 - 392 grains; M276 - 381 grains

WEAPON SYSTEM:

- M240 Series Machine Gun

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

7.62mm M80 Ball/M276 Dim Tracer, Linked 9/1

SYSTEM DESCRIPTION:

This configuration of M80 Ball and M276 Dim Tracer Cartridges can be used for both combat and training. These cartridges are for use primarily in the GAU-2B1A Machine Gun (MG) but also can be used in M240 MGs, as well as the M134 Minigun. The signature produced by the M276 Dim Tracer cartridge is only visible with Night Vision Goggles (NVG), significantly reducing the potential for detection of U.S. Troops by the enemy. The cartridges are linked in a 9:1 ratio at 750 cartridges per belt. Both copper alloy and copper alloy clad steel jackets are permissible for the M80 and M276 bullets.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius for M80 Cartridge: < 7.5 inches @ 600 yards. Average mean radius for M276 Cartridge: < 15 inches @ 600 yards
- Muzzle Velocity: M80 – 2,750 feet/second @ 78 feet; M276 – 2,670 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: M80 - 392 grains; M276 - 381 grains

WEAPON SYSTEM:

- GAU-2B1A Machine Gun (MG), M240 Series MG, M134 MG

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

MR DATE: May 2012
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC A255

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A257

134

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AB72

SYSTEM DESCRIPTION:

The M82A1 Blank Cartridge is a training unique round, used for ceremonial applications and sniper training. The cartridge is used in the M14 Rifle without a Blank Firing Attachment (BFA).

CAPABILITY/CHARACTERISTICS:

- Muzzle Flash: Visible 100 yards from weapon in darkness
- Screen Perforation: Maximum 1 inch diameter at 15 feet from muzzle
- Height: (max) 2.595 inches
- Weight: 234.5 grains

WEAPON SYSTEM:

- M14 Rifle

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

7.62mm Blank M82A1

MR DATE: October 1999
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AA03, AA04, AA34, AA35, AA36

SYSTEM DESCRIPTION:

The M993 Armor Piercing (AP) Cartridge was designed for use in the M24 Rifle, M14 Rifle, and M240/240B Machine Gun. The M993 AP cartridge, marked with a black tip, is linked with tracer and dim tracer cartridges for machine gun use. The projectile consists of a tungsten carbide penetrator contained in an aluminum cup and jacketed by copper clad steel. Use of a shaped tungsten core provides enhanced armor penetration and effective means of suppression, representing a key improvement versus the current 7.62mm Ball service round. It will penetrate 7 millimeters of HHA at 500 meters

CAPABILITY/CHARACTERISTICS:

- Projectile Design: Tungsten-Cobalt core centered by aluminum cup
- Accuracy: Average mean radius < 6.0 inches @ 600 yards
- Muzzle Velocity: 2986 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Cartridge Height/Weight: 2.8 inches/362.6 grains
- Projectile Mass: 128 grains
- Berdan Primer and copper alloy jacket
- Penetration: 7mm high hard armor @ 500 meters
- DODIC variations:
  - AA03: Single round
  - AA04: 4-M993 AP/1-M62 Tracer, Linked
  - AA34: 9-M993 AP/1-M276 Dim Tracer, Linked
  - AA35: 4-M993 AP/1- M276 Dim Tracer, Linked
  - AA36: 9-M993 AP/1-M62 Tracer, Linked

WEAPON SYSTEM:

- M24 and M14 Rifles and M240/M240B Machine Guns

PRIME CONTRACTOR

- Nordic Ammunition Group (Nammo), Raufoss, Norway

7.62mm M993 Armor Piercing

7.62mm M118 Special Ball Long Range

SYSTEM DESCRIPTION:
The 7.62mm M118 Special Ball Long Range Cartridge is intended and specifically prepared for use in weapons designated as competition or sniper rifles such as M24, M110, M14 and M21 Sniper Weapon Systems. The M118 cartridge has a plain bullet tip, does not have a bullet cannelure and its case mouth is not crimped.

CAPABILITY/CHARACTERISTICS:
- Provided improved accuracy at extended ranges
- Accuracy: Ave Horizontal Spread: < 10.3 inches @ 1,000 meters
- Average Vertical Spread: < 14 inches @ 1,000 meters
- Muzzle Velocity: 2575 feet/second @ 78 feet
- Average Chamber Pressure: < 60,000 pounds per square inch at 70°F
- Action Time: 4 milliseconds (max)
- Height: 2.83 inches
- Weight: 390 grains

WEAPON SYSTEM:
- M24, M110, M14 and M21 Sniper Weapon Systems

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AA11

7.62mm M973/M974 Short Range Training Ammunition

SYSTEM DESCRIPTION:
The M973 Short Range Training Ammunition (SRTA) Ball and M974 SRTA Tracer (SRTA-T) Cartridges consist of standard cartridge case, propellant and special projectile. Due to their unique aerodynamic design, the projectiles exhibit substantially reduced effective and maximum range while simulating short range trajectory characteristics of their service grade counterparts. The result is a ballistic match of 7.62mm M80 Ball/M62 Tracer out to 100 meters with a maximum range of 600 meters, providing realistic training alternative on restricted ranges. These cartridges are intended for use in M240 Machine Guns with no ancillary hardware or adapters. The tracer produces a visual daylight out to 100 meters. The projectiles are also frangible, which minimizes damage to Military Operations in Urban Terrain (MOUT) training facilities.

CAPABILITY/CHARACTERISTICS:
- Ballistic match to tactical ammo out to 100 meters
- Suitable for restricted ranges
- Does not damage MOUT training facilities
- Accuracy: Average maximum mean radius < 78 millimeters @ 100 meters
- Muzzle Velocity: 2,729 feet/second @ 78 feet from muzzle
- Height: 2.625 inches
- Weight: 300 grains

WEAPON SYSTEM:
- M240 Series Machine Gun

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS) - Canada

MR DATE: January 2011
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AA37

MR DATE: N/A
ACQ PHASE: Eng & Mfg Development
ACAT: III
DODIC AB79

SYSTEM DESCRIPTION:

The M80A1 Ball Cartridge is used in both combat and training. The cartridge is used primarily in the M240, M134 Minigun, and GAU-2B/A Machine Guns (MG) but also can be fired from the M14 Rifle. The bullet consists of copper alloy jacket with an exposed steel penetrator to improve performance against hard and soft targets. The link configuration used in machine guns consists of 200 cartridges per belt.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius ≤ 7.5 inches @ 600 yards
- Muzzle Velocity: 3,050 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: 372 grains

WEAPON SYSTEM:

- M240 Machine Gun, M134 Minigun, GAU- 2B/A Machine Gun and M14 Rifle

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

7.62mm M80A1 Ball/Linked

MR DATE: N/A
ACQ PHASE: Eng & Mfg Development
ACAT: III
DODIC AB86

SYSTEM DESCRIPTION:

The M80A1 Ball/M62 Tracer configuration is used in both combat and training. It can be fired from all 7.62mm Machine Gun (MG) Series weapons – the M240 MG family, and M73 MG. The cartridges are linked 100 rounds/belt in a ratio of 4-M80A1/1-M62A1 and are packed into M19A1 cans. The M80A1 bullet consists of copper alloy jacket with an exposed steel penetrator to improve performance against hard and soft targets. The M62A1 bullet contains a copper alloy jacket and copper slug. The tracer in the M62A1 enables the shooter to follow the projectile trajectory to make aiming corrections.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius ≤ 7.5 inches @ 600 yards
- Muzzle Velocity: 3,050 feet/second @ 78 feet
- Action Time: 4 milliseconds (max)
- Height: 2.80 inches
- Weight: 372 grains

WEAPON SYSTEM:

- M240 Series and M73 Machnie Guns

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

7.62mm M80A1 Ball/ M62A1 Tracer

9mm MK 243 MOD 0 Jacketed Hollow Point Cartridge

SYSTEM DESCRIPTION:
The MK 243 Jacketed Hollow Point (JHP) Cartridge is required for use in situations where high lethality and limited over-penetration of target are necessary to meet mission profile. This ammunition is critical for providing enforcement agents with means to rapidly incapacitate dangerous criminals in situations warranting the use of deadly force. The ammunition is designed to expand and incapacitate more effectively than presently issued ball ammunition. It also reduces risk of injury to innocent bystanders from over penetration of target.

CAPABILITY/CHARACTERISTICS:
- Increased lethality, reduced over penetration of personnel targets, restricted to Law Enforcement use (Hollow Point Ammo banned by International Treaties for Military Conflict)
- 147 Grain, Jacketed Hollow Point Ammunition
- 25 percent lower velocity than M882 Ball
- All Army stocks placed in ammo condition code B (restricting use to Army Law Enforcement in the continental U.S., Hawaii, Alaska, and U.S. Territories)

WEAPON SYSTEM:
- M9 Pistols and MP5N Submachine Guns

PRIME CONTRACTOR
- Olin - Winchester

9mm M882 Ball Cartridge

SYSTEM DESCRIPTION:
The M882 Ball Cartridge is used for training, force protection and combat and is compatible with all NATO 9mm weapons. The only difference between the two DODICs is the packaging - A363 utilizes military-grade packaging that allows it to be transported to overseas troops, while AA49 utilizes commercial packaging and can only be shipped within the Continental United States.

CAPABILITY/CHARACTERISTICS:
- Cartridge designation: U.S. M882 Ball
- Cartridge overall length: 1.165 inches (29.59 millimeters)
- Powder Used: WPR-289
- Powder Weight: 6.0 grains
- Bullet Weight: 124 grains
- Bullet length: 0.610 inches (15.49 millimeters)
- Bullet Velocity: 1260 feet/second @ 16.4 yards
- Bullet Accuracy: Average maximum mean radius < 1.5 inches @ 50 meters
- DODIC variations:
  - A363: Military packaging
  - AA49: Commercial packaging

WEAPON SYSTEM:
- M9 and M11 Pistols

PRIME CONTRACTOR
- Olin - Winchester

137
PM MAS
Maneuver Ammunition Services

MR DATE: April 2006
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A260

MR DATE: January 1987
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A363, AA49

138
PM MAS
Maneuver Ammunition Services

MR DATE: June 2009
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: AB12, AB13, AB14

9mm M1041 Close Combat Mission Capability Kit

SYSTEM DESCRIPTION:
The M1041 Close Combat Mission Capability Kit (CCMCK) is a user installed weapons modification system that allows the soldier to employ weapons at a short range for force-on-force training using low velocity marking ammunition while precluding the weapon from firing standard service ammunition. The system will provide normal environmental/weapon employment cues and immediate target feedback through force-on-force, interactive live fire scenario task, and mission execution. The 9mm conversion kit utilizes a smaller bore diameter and chamber shape to preclude the weapon from firing a combat cartridge. Live round lockout is achieved by using a chamber design that has insufficient head space for the standard caliber "live" round to fully chamber.

CAPABILITY/CHARACTERISTICS:
- The M9 and M11 Pistol Adaptors are designed for firing 9mm M1041 Cartridges
- Incapable of firing live standard ammunition
- Dispersion: 4 inches @ 39 feet from muzzle
- DODIC variations:
  - AB12: Yellow marking
  - AB13: Blue marking
  - AB14: Red marking

WEAPON SYSTEM:
- M9 and M11 Pistols

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS) - Canada

MR DATE: April 2014
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AB30

.50 Cal M8 Armor Piercing Incendiary / MK 257 Armor Piercing Incendiary-Dim Tracer, Linked 4/1

SYSTEM DESCRIPTION:
The M8 and MK 257 cartridges in this configuration have Armor Piercing Incendiary (API) capability. Both cartridges are used against flammable targets and light-armored or unarmored targets, concrete shelters, and similar bullet-resisting targets. The MK 257 API-DT Cartridge provides a dim tracer (DT) capability that reduces the potential of weapon location during night fire and is visible with night vision devices only.

CAPABILITY/CHARACTERISTICS:
- Length: 5.45 inches
- Weight: M8 -1,784.5 grains; MK 257 - 1718 grains
- Muzzle Velocity: 2,905 feet/second
- Accuracy: Average mean radius = 12 inches @ 600 yards
- Penetration: Core min penetrates 87.5% armor at 100 yards
- Chamber Pressure (avg.): M8 - 60,500 pounds per square inch; MK 257 - 65,000 pounds per square inch
- Action Time: 4 milliseconds (max)

WEAPON SYSTEM:
- M2 and M3 Machine Guns

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

.50 Cal M903 Saboted Light Armor Penetrator / M962 Saboted Light Armor Penetrator Tracer, Linked 4/1

SYSTEM DESCRIPTION:
The M903 and M962 Saboted Light Armor Penetrator (SLAP) Cartridges in this configuration contain a Tungsten Alloy penetrator which is sabot-launched at approximately 38% higher velocity than standard rounds. The sabot releases the projectile upon exiting muzzle. The difference between the two cartridge is the addition of a tracer in the M962 that enables the shooter to follow the projectile trajectory to make aiming corrections.

CAPABILITY/CHARACTERISTICS:
- Length: 5.45 inches
- Weight: 1,466 grains for M903; 1,576 grains for M962
- Muzzle Velocity: 4,000 feet/second @ 78 feet
- Accuracy: Average max. mean radius <18 inches @ 600 yards
- Chamber Pressure (avg): max. 55,000 pounds per square inch
- Action Time: 4 milliseconds (max)

WEAPON SYSTEM:
- M2, M2A1, and M3P Machine Guns

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

.50 Cal M8 Armor Piercing Incendiary

SYSTEM DESCRIPTION:
The M8 Armor Piercing Incendiary (API) Cartridge is identified by gray bullet tip. It has a manganese molybdenum steel core, a point filler of incendiary composition, and a lead-antimony base seal. The cartridge combines the functions of an armor piercing bullet and an incendiary bullet, and is used against flammable targets and light-armored or unarmored targets, concrete shelters, and similar bullet-resisting targets.

CAPABILITY/CHARACTERISTICS:
- Length: 5.450 inches
- Weight: 1,784.5 grains
- Muzzle Velocity: 2,905 feet/second
- Accuracy: Average mean radius ≤ 12 inches @ 600 yards
- Chamber Pressure (avg.): max. 65,000 pounds per square inch
- Action Time: 4 milliseconds (max)

WEAPON SYSTEM:
- M107 Sniper Rifle, M82A1/A3 Barrett Rifles

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

MR DATE: November 1996
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A518

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A531

140

PM MAS

Maneuver Ammunition Services

.50 Cal M33 Ball Cartridge, Linked

MR DATE: March 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A555

SYSTEM DESCRIPTION:

The M33 Ball Cartridge has been adopted and produced by at least 30 countries, including the U.S., Britain, Canada, France, Belgium, Israel, Netherlands, Japan, Singapore, and Taiwan. The cartridge has a soft steel core bullet and can be used against personnel or unarmored targets, although it is primarily used for training.

The U.S. has NATO Qualified the Cal .50, M33 Ball Cartridge Design. Lots of M33 cartridges that have been produced by the U.S. and contain the NATO Symbol of Interchangeability on the Outer Pack, may be considered Interchangeable with NATO Coalition forces.

CAPABILITY/CHARACTERISTICS:

- Accuracy: Average mean radius = 12 inches @ 600 yards
- Muzzle Velocity: 2,905 feet/second
- Chamber Pressure: 65,000 pounds per square inch
- Length: 5.45 inches
- Weight: 1762.5 grains
- Uses M9 Links

WEAPON SYSTEM:

- M2, M2A1, and M3P Machine Guns

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

.50 Cal M33 Ball/M17 Tracer, Linked 4/1

MR DATE: May 1985
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A557

SYSTEM DESCRIPTION:

The M33 Ball/M17 Tracer configuration is intended for use on full-sized ranges and is produced to meet a U.S. Military Specification. The M33 cartridge has a soft steel core bullet and can be used against personnel or unarmored targets, while the M17 cartridge produces a red trace that enables the shooter to follow the projectile trajectory to make aiming corrections. This configuration can be used against personnel or unarmored targets, although it is primarily used for training.

The U.S. has NATO Qualified the Cal .50, M33 Ball Cartridge Design. Lots of M33 cartridges that have been produced by the U.S. and contain the NATO Symbol of Interchangeability on the Outer Pack, may be considered Interchangeable with NATO Coalition forces.

CAPABILITY/CHARACTERISTICS:

- Length: 5.45 inches
- Weight: M17 – 1,718 grains; M33 – 1,782 grains
- Muzzle Velocity: 2,905 feet/second
- Accuracy: Average mean radius ≤ 12 inches @ 600 yards
- Trace: 85% min, Visible from 100 yards to 1,600 yards
- Chamber Pressure (avg.): M17 and M33 max. 65,000 pounds per square inch
- Action Time: 4 milliseconds (max)
- Uses M9 Links

WEAPON SYSTEM:

- M2, M2A1, and M3P Machine Guns

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

.50 Cal M1 High Pressure Test

SYSTEM DESCRIPTION:
The M1 High Pressure Test Cartridge is intended for use in proof testing .50 Caliber weapons during manufacture, test or repair and other Research, Technology and Development (RT&D) efforts. This demonstrates the ability of the barrel to withstand higher than normal operational pressures to assure the weapon is safe to use.

CAPABILITY/CHARACTERISTICS:
- Length: 5.45 inches
- Weight: 2,108 Grains
- Chamber Pressure: 68,500 pounds per square inch
- Action Time: 4 milliseconds (max)

WEAPON SYSTEM:
- Every new .50 Caliber barrel and barrels used during Research and Development efforts

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

.50 Cal M8 Armor Piercing Incendiary / M20 Armor Piercing Incendiary-Tracer, Linked 4/1

SYSTEM DESCRIPTION:
The M8 and M20 Cartridges in this configuration have Armor Piercing Incendiary (API) capability. The M8 API is identified by gray bullet tip. The M20 Armor Piercing Incendiary-Tracer (API-T) cartridge is identified by red over grey bullet tip. The cartridges contain a manganese molybdenum steel core, a point filler of incendiary composition, and a lead-antimony base seal. This configuration combines the functions of an armor piercing bullet and an incendiary bullet, and is used against flammable targets and light-armored or unarmored targets, concrete shelters, and similar bullet-resisting targets. The addition of a tracer in the M20 enables the shooter to follow the projectile trajectory to make aiming corrections.

CAPABILITY/CHARACTERISTICS:
- Length: 5.45 inches
- Weight: M8 – 1,784.5 grains; M20 - 1738 grains
- Muzzle Velocity: 2,905 feet/second
- Accuracy: Average mean radius ≤ 12 inches @ 600 yards
- Chamber Pressure (avg.): M20 max. 60,500 pounds per square inch; M8 max. 65,000 pounds per square inch
- Action Time: 4 milliseconds (max)
- Uses M9 Links

WEAPON SYSTEM:
- M2, M2A1, and M3P Machine Guns

PRIME CONTRACTOR
- Lake City Army Ammunition Plant, Independence, MO

141

PM MAS

Maneuver Ammunition Services

MR DATE: November 1996
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A575

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A576

142

PM MAS

Maneuver Ammunition Services

.50 Cal M1A1 Blank

MR DATE: August 1986
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A598

SYSTEM DESCRIPTION:

The M1A1 Blank Cartridge is the .50 Caliber training round used for simulated fire. Its primary means of identification is the absence of a bullet and a 6 fluted rosette crimp at the mouth. A purple lacquer is applied to the mouth to prevent moisture from entering the body and degrading the propellant.

CAPABILITY/CHARACTERISTICS:

- Operates with the M19 Blank Firing Attachment (BFA)
- Weight: 915 grains
- Length: 3.91 inches (99.3 millimeters)
- Cyclic Rate 450 - 600 cycles per minute
- Propellant: OBP-126 or Hi-Skor 700X
- Uses M9 Links

WEAPON SYSTEM:

- M2, M2A1, and M3P Machine Guns

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

.50 Cal M858 Ball/M860 Tracer Plastic Short Range Training Ammunition, Linked

MR DATE: December 1989
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A602

SYSTEM DESCRIPTION:

The M858 Ball/M860 Tracer Short Range Training Ammunition (SRTA) linked configuration is a useful tool in the instruction of the M2 Machine Gun (MG) in range restricted areas, as well as MOUT application. It has a maximum range of 500 meters allowing higher capacity of training on smaller ranges. While using the M2 MG in conjunction with the M3 Recoil Adapter, .50 Caliber SRTA has an accuracy match to the M33 Ball/M17 Tracer linked configuration at 150 meters making this cartridge ideal for training with the M2 both on a vehicular mount and on a tripod.

CAPABILITY/CHARACTERISTICS:

- Length: 5.2 inches
- Weight: 460 grains
- Muzzle Velocity: 2,790 feet/second @ 78 feet from muzzle
- Cyclic Rate 450 - 600 cycles per minute
- Accuracy: Average max. mean radius < 35 centimeters @ 150 meters
- Trace: 90% min, Visible from 20 meters to 150 meters
- Chamber Pressure (avg.): max. 26,100 pounds per square inch
- Action Time: 4 milliseconds (max)
- Uses M9 Links

WEAPON SYSTEM:

- M2, M2A1, and M3P Machine Guns with Recoil Amplifier

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS) - Canada

.50 Cal MK 211 Armor Piercing Incendiary/M20 Armor Piercing Incendiary-Tracer, Linked 4/1

SYSTEM DESCRIPTION:

The MK 211 and M20 Cartridges have Armor Piercing Incendiary (API) capability. The MK 211 API is identified by a green bullet tip with an aluminum color annulus. The M20 Armor Piercing Incendiary-Tracer (API-T) cartridge is identified by red over gray bullet tip and is designed to perforate or penetrate hardened or bullet resistant targets. The MK 211 cartridge provides improved penetration performance against enemy personnel and light armor vehicles versus other .50 Caliber API cartridges. Both cartridges are effective at starting fuel fires including heavy distillates, i.e. diesel fuel.

CAPABILITY/CHARACTERISTICS:

- Designed to perforate or penetrate hardened or bullet resistant targets with after armor effects
- Used against armored personnel vehicles
- Length: 5.45 inches
- Weight: MK 211 - 1,765 grains; M20 – 1,738 grains
- Trace: 85% min, Visible from 100 yards to 1600 yards
- Muzzle Velocity: 2,905 feet/second
- Accuracy: Average mean radius ≤ 12 inches @ 600 yards
- Penetration: M20 - Core min penetrates 87.5% armor at 100 yards
- Chamber Pressure (avg.): MK 211 - max. 65,000 pounds per square inch; M20 - max. 60,500 pounds per square inch
- Action Time: 4 milliseconds (max)
- Uses M9 Links

WEAPON SYSTEM:

- M2, M2A1, and M3P Machine Guns

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

143

PM MAS

Maneuver Ammunition Services

MR DATE: September 1987
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A607

144

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AA61

SYSTEM DESCRIPTION:

The MK 244 Armor Piercing Discarding Sabot-Enhanced Lethality (APDS-EL) Cartridge was developed for the improved MK 15 Phalanx Block 1B Weapon System and is designed for use only in the optimized gun barrels (OGB). The MK 244 cartridge uses an optimized tungsten penetrator that produces a higher kinetic energy on target, extending the effective range against high-speed anti-ship missile threats as well as surface threats. The round is currently being fielded by the U.S. Navy and is available for international Navies upgrading to the MK 15 Block 1B Phalanx.

CAPABILITY/CHARACTERISTICS:

- The MK 244 projectile dispersion is 40% less than MK 149, producing lower circular error probable (C.E.P.) with increased probability of hit.
- Overall Length: 6.615 inches (168mm) (max)
- Cartridge Weight: 4,640 grains (approx.)
- Projectile Weight: 1,950 grains (approx.)
- Propellant Weight: 815 grains (approx.)
- Propellant Type: Double Base Ball/ OBP-888
- Cartridge Case Material: Brass
- Primer: Electric (M52A3B1)
- Muzzle Velocity: 3,610 feet/second @ 78 feet
- Chamber Pressure (ambient): ≤ 61,400 pounds/square inch
- Dispersion: Avg. mean radius ≤ 0.75 milliradians @ 78 feet

WEAPON SYSTEM:

- All 20mm x 102 gun systems, and MK 15 Phalanx Block 1B with optimized gun barrels (OGB)

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

20mm MK 244 MOD 0 Armor Piercing Discarding Sabot-Enhanced Lethality Cartridge w/MK 7 Link

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AA22, AA23

SYSTEM DESCRIPTION:

The 20mm PGU-series munitions are an improvement over M50 series cartridges. The projectiles in this family have an optimized aeroballistic shape that reduces time of flight and increases velocity at range for increased probability of hit. The PGU-28 A/B Semi-Armor Piercing High Explosive Incendiary (SAPHEI) Cartridge is used in both air-to-air and air-to-ground applications due to its armor penetrating capability.

CAPABILITY/CHARACTERISTICS:

- Effective against soft and light armored targets
- Penetration: Probable ballistic limit <2,786 feet/second against 0.375 inch armor at 0 Degrees impact
- Overall length: 168 millimeters
- Propellant: WC 868 Ball Powder
- Primer: M52A3B1 Electric
- Nose Incendiary: RS 41
- Body Incendiary: RS 40
- Body Explosive: Composition A4
- Muzzle Velocity: 3,410 feet/second
- Case Mouth Press: 61,500 pounds per square inch
- Action Time: 4.0 milliseconds
- Accuracy: Average mean radius = 15 inches at 500 yards
- DODIC variations:
  - AA22: Single round
  - AA23: Linked

WEAPON SYSTEM:

- M61 Series Aircraft Gun Systems are used for unlinked bulk ammunition. M197 Aircraft Gun Systems use both unlinked and linked ammunition.

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

20mm PGU-28A/B Semi-Armor Piercing High Explosive Incendiary

20mm MK 149 Armor Piercing Discarding Sabot w/MK 7 Link

SYSTEM DESCRIPTION:
The MK 149 Armor Piercing Discarding Sabot (APDS) Cartridge was developed for the improved MK 15 Phalanx Weapon System for the U.S. Navy's Anti-Ship Missile Defense System.

CAPABILITY/CHARACTERISTICS:
- Originally designed with improved anti-armor capability, optimized exterior ballistic performance and shorter time-of-flight over the M50 series cartridges
- Armor-Piercing Discarding Sabot (APDS)
- Tungsten penetrator
- Fired out of the M61 Cannon in the MK 15 Phalanx Close-In Weapon System (CIWS)
- Muzzle Velocity: 3,685 feet/second @ 78 feet

WEAPON SYSTEM:
- MK 15 Phalanx Weapon System

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A692

20mm PGU-27A/B Target Practice, PGU-30A/B Target Practice w/Tracer

SYSTEM DESCRIPTION:
The 20mm PGU-series munitions are an improvement over M50 series cartridges. The projectiles in this family have optimized aeroballistic shaped that reduces time of flight and increases velocity at range for increased probability of hit. PGU-27 A/B Target Practice (TP) and PGU-30 A/B Target Practice-Tracer (TP-T) Cartridges are cost effective training cartridges that are ballistically matched to the PGU-28 A/B.

CAPABILITY/CHARACTERISTICS:
- PGU-27/30 A/B used as training cartridge for PGU-28/30 A/B Semi-Armor Piercing High Explosive Incendiary (SAPHEI) Cartridges
- Overall length: 6.615 inches
- Propellant: WC 868 Ball Powder
- Primer: M52A3B1 Electric
- Type classified and fielded in F-14, F-15, F-16, F/A-18 and AH-1 aircraft
- Muzzle Velocity: 3,410 feet/second
- Case Mouth Pressure (max): 61,500 pounds per square inch
- Action Time: 4.0 milliseconds
- Accuracy: Average mean radius = 15 inches at 500 yards
- DODIC variations:
  - AA24: PGU-27A/B Single round
  - AA27: PGU-27A/B TP / PGU-30A/B TP-T, Linked 4/1

WEAPON SYSTEM:
- 20mm x 102 Gun Systems

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AA24, AA27

146

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AB07

SYSTEM DESCRIPTION:

The M940 Multipurpose Tracer–Self Destruct (MPT-SD) Cartridge has a delayed reaction after impact that results in large fragments and incendiary effects inside a threat. The traced projectile has a self-destruct capability that minimizes collateral surface damage from engagement of airborne threats. The M940 Cartridge was originally developed for U.S. Army's extinct Vulcan Air Defense System (VADS). The M940 was resurrected by the U.S. Army Counter-Rocket, Artillery and Mortar Program (C-RAM).

CAPABILITY/CHARACTERISTICS:

- Originally designed to defeat aircraft at ranges up to 2,000 meters
- Land-based PHALANX Weapon System (C-RAM) employs the M940 against rockets, artillery shells, and mortar rounds
- Traced multipurpose cartridge w/self-destruct capability
- Pyrotechnic initiated explosive (PIE)
- Steel projectile body filled w/high explosive and incendiary mix
- Aluminum nose w/incendiary mix
- Overall Cartridge length: 156.6 millimeters
- Propellant type: WC 866
- Electric Primer: M52A3B1

WEAPON SYSTEM:

- Land-based Phalanx Weapon System w/M61A Gatling Gun

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

20mm M940 Multipurpose Tracer - Self Destruct w/MK 7 Link

MR DATE: December 1990
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC A940

SYSTEM DESCRIPTION:

The M910 Target Practice Discarding Sabot–Tracer (TPDS-T) Cartridge was developed as a low cost, range limited target practice cartridge to simulate the M791 and M919 Armor Piercing Cartridges. It is fired from weapon systems mounted on U.S. Army M2/M3 Bradley Fighting Vehicle System (BFVS), the U.S. Marine Corps LAV-25, and Navy MK 38.

CAPABILITY/CHARACTERISTICS:

- Simulates the M791 and M919 Cartridges
- Typical Dispersion: 0.40 X 0.40 Mils
- Muzzle Velocity: 1,520 meters per second (mps)
- Chamber Pressure: 410 Megapascals (Mpa)
- Trace Time: 2.0 seconds (Minimum)
- Time of Flight to 2,000 Meter Target: 1.90 seconds

WEAPON SYSTEM:

- M242, KBA, M811 and GAU-12/A Cannons mounted on the Army Bradley Fighting Vehicle, U.S. Marine Corps LAV-25, and Navy MK 38

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

25mm M910 Target Practice Discarding Sabot with Tracer

25mm M794 Dummy Cartridge

SYSTEM DESCRIPTION:

The M794 Dummy Cartridge is used for training of proper handling and loading of ammunition and for non-firing system training and checkout of the 25mm Cannons. The cartridge consists of a steel case and a steel projectile body. The steel cartridge case is filled with an inert epoxy resin.

CAPABILITY/CHARACTERISTICS:

- Inert Training Device
- Simulates Size, Shape and Mass of M792, M792, MK 210, PGU-23, PGU-25 and PGU-32 cartridges

WEAPON SYSTEM:

- M242, KBA, M811 and GAU-12/A Cannons mounted on the Army Bradley Fighting Vehicle, U.S. Marine Corps LAV-25, Navy MK 38, U.S. Air Force AC-130

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A967

25mm M792 High Explosive Incendiary w/Tracer Cartridge

SYSTEM DESCRIPTION:

The M792 High Explosive Incendiary-Tracer (HEI-T) Cartridge was developed as part of the original Bradley Fighting Vehicle System (BFVS) to engage enemy personnel, lightly armored vehicles to include Soviet type personnel carriers, weapon emplacements, and to conduct reconnaissance by fire. It is fired from weapon systems mounted on the U.S. Army M2/M3 BFVS or the U.S. Marine Corps LAV-25 Light Armored Vehicle.

CAPABILITY/CHARACTERISTICS:

- Effective against personnel
- Effective against light structures
- Effective against light vehicles
- Typical Dispersion: .50 mils x .50 mils
- Muzzle Velocity: 1,100 meters per second (m/s)
- Chamber Pressure: 496 MegaPascals (MPa) max
- Self destructs at 6.2 seconds

WEAPON SYSTEM:

- MK 44 Bushmaster Chain GunM242, KBA, M811 and GAU-12/A Cannons mounted on the Army Bradley Fighting Vehicle and U.S. Marine Corps LAV-25

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: March 1989
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A975

147
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A982

SYSTEM DESCRIPTION:

The PGU-25/U and PGU-25A/U High Explosive Incendiary (HEI) Cartridges were designed to provide aerial gun platforms with capability against aircraft and light materiel targets.

CAPABILITY/CHARACTERISTICS:

- Effective against aircraft and light materiel targets
- Cartridge Weight: 499 grams
- Overall Length: 8.63 inches
- Fuze: M505 Point Detonating
- Cartridge Case: Steel
- Propellant: WC 890 Ball Powder
- Primer: M115 Percussion with IB-52 Booster Pellet
- Muzzle Velocity: 1,100 meters per second (m/s)
- Dispersion: .77 mils x .77 mils

WEAPON SYSTEM:

- M242, KBA, M811 and GAU-12/A Cannons mounted on the U.S. Marine Corps AV-8B Harrier and U.S. Air Force AC-130 Gunship

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

25mm PGU-25/U & A/U High Explosive Incendiary Cartridge

MR DATE: June 2001
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A986

SYSTEM DESCRIPTION:

The M919 Armor Piercing Fin Stabilized Discarding Sabot-Tracer (APFSDS-T) Cartridge was developed to counter the growing light armor vehicle threat. It is the primary medium caliber armor piercing service round for the U.S. Army and provides a significant increase in lethality compared to the 25mm M791 APDS-T cartridge it replaces. It is used in the M242 Automatic Cannon which is turret mounted on M2 or M3 Bradley Fighting Vehicles and the U.S. Marine Corps LAV-25. The cartridge has a steel case crimped to a projectile assembly. The projectile assembly consists of a depleted-uranium penetrator, steel fin, nylon obturator, aluminum windscreen, aluminum sabot, plastic nose cap, and tracer pellets. The steel cartridge case contains a percussion primer, flash tube, and propellant.

CAPABILITY/CHARACTERISTICS:

- Effective range & penetration capability - Classified
- Enhances overall performance and survivability of Bradley Fighting Vehicle System
- Provides capability against known light armor systems

WEAPON SYSTEM:

- M242 Cannon mounted on the Army Bradley Fighting Vehicle and U.S. Marine Corps LAV-25

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL

25mm M919 Armor Piercing Fin Stabilized Discarding Sabot w/Tracer Cartridge

25mm PGU-32/U Semi-Armor Piercing High Explosive Incendiary w/Tracer Cartridge

SYSTEM DESCRIPTION:

The PGU-32/U Semi-Armor Piercing High Explosive Incendiary-Tracer (SAPHEI-T) Cartridge was designed to provide aerial and surface gun platforms with improved effectiveness against soft and light armored targets. It incorporates the basic multipurpose technology providing inherent detonation delay, improved graze sensitivity, and light armor capability.

CAPABILITY/CHARACTERISTICS:

- Effective against light structures
- Effective against light vehicles
- Provides improved effectiveness against soft and light armored targets
- Typical Dispersion: .77 mils x .77 mils
- Ballistic match to PGU-20/U API, PGU-33/TPF-T and conventional 25mm ammunition
- Muzzle Velocity: 1,100 meters per second (m/s)
- Chamber Pressure: 425 MegaPascals (MPa)

WEAPON SYSTEM:

- M242, KBA, M811 and GAU-12/A Cannons mounted on the U.S. Marine Corps AV-8B Harrier and U.S. Navy MK 38 Platforms

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A990

150
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AA90

SYSTEM DESCRIPTION:
The MK 239 Target Practice-Tracer (TP-T) is a low cost training cartridge with a steel projectile.

CAPABILITY/CHARACTERISTICS:
- Overall Length: 290 millimeters
- Cartridge Case: Extruded aluminum
- Propellant: Single-based granular
- Primer: M36A2 Percussion
- Muzzle Velocity: 1,080 meters per second (mps)
- Projectile: Steel
- Accuracy: 1.0 mil x 1.0 mil at 1,000 meters
- Platform: Used by Navy on Landing Platform Docks (LPD) and Littoral Combat Ships (LCS)

WEAPON SYSTEM:
- MK 44 Bushmaster Chain Gun

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

30mm MK 239 Target Practice w/Tracer Cartridge

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC AB20, B103

SYSTEM DESCRIPTION:
The PGU-14C/B Armor Piercing Incendiary (API) Cartridge has the kinetic energy needed to defeat armor and is used in the U.S. Air Force GAU-8A Automatic Gun System.

CAPABILITY/CHARACTERISTICS:
- Overall Length: 290 millimeters
- Cartridge Case: Extruded aluminum
- Propellant: Single-based granular
- Primer: M36A2 Percussion
- Muzzle Velocity: 1,013 meters per second (mps)
- Case Mouth Pressure: 61,400 pounds per square inch (psi) (max)
- Action Time: 5.3 milliseconds
- Accuracy: 1.0 mil x 1.0 mil at 1,000 meters
- Not Ballistically Matched to PGU-15A/B rounds
- DODIC variations:
  - AB20: PGU-14C/B
  - AB20: 5 ea PGU-14A/B API or PGU-14B/B API and 1 ea PGU-13/B HEI or PGU-13A/B HEI

WEAPON SYSTEM:
- U.S. Air Force GAU-8A Automatic Gun System

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

30mm PGU-14C/B Armor Piercing Incendiary Cartridge

30mm PGU-13B/B & D/B High Explosive Incendiary Cartridge

SYSTEM DESCRIPTION:
The PGU-13B High Explosive Incendiary (HEI) Cartridge's primary role is to defeat light armor targets. It is used in the U.S. Air Force GAU-8A Automatic Gun System.

CAPABILITY/CHARACTERISTICS:
- Overall Length: 290 millimeters
- Cartridge Case: Extruded aluminum
- Propellant: Single-based granular
- Primer: M36A2 Percussion
- Fuze: M505 Point Detonating
- Muzzle Velocity: 1,021 meters per second (mps)
- Case Mouth Pressure: 61,400 pounds per square inch (psi) (max)
- Action Time: 5.3 milliseconds
- Accuracy: 1.0 mil x 1.0 mil at 1,000 meters
- DODIC variations:
  - AB22: PGU-13B/B (Remanufactured)
  - B104: PGU-13 A/B or PGU-13 D/B

WEAPON SYSTEM:
- U.S. Air Force GAU-8A Automatic Gun System

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AB22, B104

30mm MK 266 MOD 1 High Explosive Incendiary w/Tracer Cartridge

SYSTEM DESCRIPTION:
The MK 266 MOD1 High Explosive Incendiary-Tracer (HEI-T) Cartridge utilizes a non self-destruct fuze and is effective against small watercraft and light armored naval platforms.

CAPABILITY/CHARACTERISTICS:
- Overall Length: 290 millimeters
- Cartridge Case: Extruded aluminum
- Propellant: Single-based granular
- Primer: M36A2 Percussion
- Muzzle Velocity: 1,080 meters per second (mps)
- Fuze: Point Detonating
- Projectile Explosive: PBXN-5
- Accuracy: 0.5 mil x 0.5 mil at 1,000 meters
- Platform: Used by Navy on Landing Platform Docks (LPD) and Littoral Combat Ships (LCS).

WEAPON SYSTEM:
- MK 44 Bushmaster Chain Gun

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc. (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: AB44

152

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B116

SYSTEM DESCRIPTION:

The PGU-15A/B Target Practice (TP) Cartridge is used for training in the U.S. Air Force GAU-8A Automatic Gun System. The PGU-15A/B is a low cost target practice round ballistically matched to the PGU-13 High Explosive Incendiary (HEI) Cartridge.

CAPABILITY/CHARACTERISTICS:

- Overall Length: 290 millimeters
- Cartridge Case: Extruded aluminum
- Propellant: Single-based granular
- Primer: M36A2 Percussion
- Muzzle Velocity: 1,021 meters per second (mps)
- Case Mouth Pressure: 61,400 pounds per square inch (psi) (max)
- Action Time: 5.3 milliseconds
- Accuracy: 1.0 mil x 1.0 mil at 1,000 meters

WEAPON SYSTEM:

- U.S. Air Force GAU-8A Automatic Gun System

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL

30mm PGU-15A/B Target Practice Cartridge

MR DATE: October 1995
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B118

SYSTEM DESCRIPTION:

The M788 Target Practice (TP) Cartridge was developed as part of the Apache Attack Helicopter System as a low cost target practice cartridge to simulate the M789 High Explosive Dual Purpose (HEDP) Cartridge. It is the only training round qualified for use by the U.S. Forces in the M230 Chain Gun. The M230 Chain Gun is mounted on the AH-64 Apache and Army Special Operations Forces Blackhawk Helicopters. The M788 cartridge consists of a steel projectile body and an aluminum nose. The projectile is mated to the cartridge case assembly which is composed of an aluminum case, a PA520 electric primer, flash tube assembly and propellant.

CAPABILITY/CHARACTERISTICS:

- Lightweight 30mm Target Practice
- Simulates ballistic trajectory of the M789 HEDP Cartridge
- Muzzle Velocity: 805 meters per second (mps)
- Case Mouth Pressure: 430 MegaPascals Max (Elevated Temperature Mean Peak Pressure)

WEAPON SYSTEM:

- M230 Chain Gun mounted on AH-64 Apache Helicopter and Blackhawk Helicopter

PRIME CONTRACTOR

- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

30mm M788 Target Practice Cartridge

30mm M789 High Explosive Dual-Purpose Cartridge

SYSTEM DESCRIPTION:

The M789 High Explosive Dual Purpose (HEDP) Cartridge was developed as part of Apache Attack Helicopter System and is the only tactical round qualified for use by the U.S. Forces in the M230 Chain Gun. The M230 Chain Gun is mounted on the AH-64 Apache Helicopter and Army Special Operations Forces Blackhawk Helicopter. The M789 Cartridge consists of a hollow steel projectile body containing high explosive and a spin compensated copper shaped charge liner. The projectile body is mated to a M759 Point Detonating Fuze. The cartridge. case assembly is composed of an aluminum case, PA520 electric primer, flash tube assembly and propellant. The M789 Cartridge provides both armor-piercing capability and fragmentation for use against armored targets and troops, respectively.

CAPABILITY/CHARACTERISTICS:

- Effective against personnel
- Effective against light armor
- Muzzle Velocity: 805 meters per second (mps)
- Case Mouth Pressure: 430 MegaPascals Max (Elevated Temp. Mean Peak Pressure)
- Utilizes M759 Point Detonating Fuze and spin compensated shape charge liner

WEAPON SYSTEM:

- M230 Chain Gun mounted on AH-64 Apache Helicopter and Blackhawk Helicopter

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL

MR DATE: October 1996
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: B129

30mm M848 Dummy Cartridge

SYSTEM DESCRIPTION:

The M848 Dummy Cartridge is used in drills of the weapon mechanism, to test link/de-link functions, and as an inert training device.

CAPABILITY/CHARACTERISTICS:

- Inter training device
- Simulates size, shape and mass distribution of M789 HEDP

WEAPON SYSTEM:

- M230 Chain Gun mounted on AH-64 Apache Helicopter

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL

MR DATE: October 1987
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: B133

154

PM MAS

Maneuver Ammunition Services

MR DATE: December 1989
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B504

40mm M661 Green Star Parachute Cartridge

SYSTEM DESCRIPTION:

The M661 Green Star Parachute Cartridge is a fixed round of ammunition consisting of a projectile assembly and a cartridge case assembly. The projectile has a one-piece, hollow aluminum body with a metal rotating band. A plastic ogive, embossed with a raised letter for night identification of payload, is snapped into an O-ring in the front opening of the projectile cavity. The cavity contains a pyrotechnic flare candle assembly, and an integral ignition/ejection charge attached to a 20-inch diameter parachute. Once fired and upon reaching the burst altitude, the ejection charge ignites the candle and blows the candle assembly out through the top of the projectile body. The attached parachute deploys upon ejection to lower the candle at 7 feet per second, resulting in a burn time of approximately 40 seconds. The candle functions at an altitude of 500-700 feet when fired vertically and is visible to an air observer at a slant range of at least 3 miles from 3,000 feet altitude.

CAPABILITY/CHARACTERISTICS:

- Illumination and signaling round designed for less weight, bulk and greater accuracy than comparable hand-held signals
- Burst Height: 150-215 meters
- Muzzle Velocity 76 meters/second
- Candlepower: 8,000 candela
- Burn Time: 30 seconds

WEAPON SYSTEM:

- M79, M203 and M320 Grenade Launchers

PRIME CONTRACTOR

- AMTEC Corp., Janesville, WI.

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC B505

40mm M662 Red Star Parachute Cartridge

SYSTEM DESCRIPTION:

The M662 Red Star Parachute Cartridge is a fixed round of ammunition consisting of a projectile assembly and a cartridge case assembly. The projectile has a one-piece, hollow aluminum body with a metal rotating band. A plastic ogive, embossed with a raised letter for night identification of payload, is snapped into an O-ring in the front opening of the projectile cavity. The cavity contains a pyrotechnic flare candle assembly, and an integral ignition/ejection charge attached to a 20-inch diameter parachute. Once fired and upon reaching the burst altitude, the ejection charge ignites the candle and blows the candle assembly out through the top of the projectile body. The attached parachute deploys upon ejection to lower the candle at 7 feet per second, resulting in a burn time of approximately 40 seconds. The candle functions at an altitude of 500-700 feet when fired vertically and is visible to an air observer at a slant range of at least 3 miles from 3000 feet altitude.

CAPABILITY/CHARACTERISTICS:

- Illumination and signaling round designed for less weight, bulk and greater accuracy than comparable hand-held signals
- Burst Height: 150-215 meters
- Muzzle Velocity: 76 meters/second
- Candlepower: 20,000 candela
- Burn Time: 30 seconds

WEAPON SYSTEM:

- M79, M203 and M320 Grenade Launchers

PRIME CONTRACTOR

- Not in production

40mm M781 Practice Cartridge

SYSTEM DESCRIPTION:
The M781 Practice Cartridge is a fixed round of ammunition consisting of a metal projectile body with a rotating band and a cartridge case assembly. A hollow plastic ogive is filled with a high visibility yellow-orange dye. The projectile assembly is attached to a cartridge case with an attached adhesive substance. The case is a hollow bi-chambered plastic cylinder. A .38 Caliber blank cartridge is press-fitted into the base of the cartridge case and provides the gas pressure needed to propel the projectile through the launcher barrel. Upon impact with the target, the frangible ogive ruptures and releases the dye causing a puff of yellow-orange smoke which simulates explosive impact.

CAPABILITY/CHARACTERISTICS:
- Used for gunnery training
- Target Practice round designed to ballistically simulate the M433 HEDP Cartridge
- Emits bright orange dye upon target impact
- Max Range: 400 meters
- Muzzle Velocity: 75 meters/second
- 100 Rounds per wood box

WEAPON SYSTEM:
- M79 and M203 Grenade Launchers

PRIME CONTRACTOR
- AMTEC Corp., Janesville, WI.

40mm M583A1 White Star Parachute Cartridge

SYSTEM DESCRIPTION:
The M583A1 White Star Parachute Cartridge is a fixed round of ammunition consisting of a projectile assembly and a cartridge case assembly. The projectile has a one-piece, hollow aluminum body with a metal rotating band. A plastic ogive, embossed with a raised letter for night identification of payload, is snapped into an O-ring in the front opening of the projectile cavity. The cavity contains a pyrotechnic flare candle assembly, and an integral ignition/ejection charge attached to a 20-inch diameter parachute. Once fired and upon reaching the burst altitude, the ejection charge ignites the candle and blows the candle assembly out through the top of the projectile body. The attached parachute deploys upon ejection to lower the candle at 7 feet per second, resulting in a burn time of approximately 40 seconds. The candle functions at an altitude of 500-700 feet when fired vertically and is visible to an air observer at a slant range of at least 3 miles from 3,000 feet altitude.

CAPABILITY/CHARACTERISTICS:
- Illumination and signaling round designed for less weight, bulk, and greater accuracy than comparable hand-held signals
- Burst Height: 183 meters
- Muzzle Velocity: 76 meters/second
- Candlepower: 90,000 candela
- Burn Time: 30 seconds

WEAPON SYSTEM:
- M79, M203 and M320 Single-Shot Launchers

PRIME CONTRACTOR
- AMTEC Corp., Janesville, WI.

155
PM MAS
Maneuver Ammunition Services

MR DATE: October 1983
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: B519

MR DATE: March 1988
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: B535

156
PM MAS
Maneuver Ammunition Services

40mm M585 White Star Cluster Cartridge

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC B536

SYSTEM DESCRIPTION:
The M585 White Star Cluster Cartridge is a fixed round of ammunition consisting of a projectile assembly and a cartridge case assembly. The projectile has a one-piece, hollow aluminum body with a rotating band. A plastic ogive, embossed with a raised "W" for night identification of payload color and five raised dots to identify a cluster round, is snapped into an O-ring in the front opening of the projectile cavity. The cavity contains an illuminant candle assembly of five white star charges and a black powder ejection charge. The projectile assembly is fitted into the cartridge case. The case is a hollow bi-chambered cylinder that contains the propellant. Upon ignition of the propellant, the expanding gases propel the projectile through the launcher tube to a burst altitude of 550 feet (at a quadrant elevation of 85 degrees). The burning propellant also ignites the delay element in the base of the projectile. Within 4 to 5 seconds after firing, the delay element ignites the ejection charge. The ejection charge ignites the star charges and blows the candle assembly out through the top of the projectile body. The individual stars burn for approximately 7 seconds during free fall and produce 55,000 candlepower.

CAPABILITY/CHARACTERISTICS:
- Illumination and signaling round designed for less weight, bulk, and greater accuracy than comparable hand-held signals
- Burst Height: 167 meters
- Muzzle Velocity: 76 meters/second
- Candlepower: 55,000 candela
- Burn Time: Minimum of 5.5 seconds per pellet

WEAPON SYSTEM:
- M79, M203 and M320 Single-Shot Launchers

PRIME CONTRACTOR
- Not in production

40mm M430A1 High Explosive Dual Purpose Cartridge

MR DATE: October 1996
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B542

SYSTEM DESCRIPTION:
The M430A1 High Explosive Dual Purpose (HEDP) Cartridge is fixed round of ammunition with internally embossed steel projectile body containing Composition A5 High Explosive and a copper, shaped-charge liner. An M549A1 Point Initiating, Base Detonating (PIBD) Fuze is threaded into body to form the complete projectile. The cartridge case is a hollow, bi-chambered aluminum cylinder with vents between chambers. The propellant chamber is sealed at rear with a base plug and a percussion primer is crimped into center of base plug. Upon impact with the target, detonation of the main charge provides both the armor piercing effect of the shaped charge and fragmentation of the steel body.

CAPABILITY/CHARACTERISTICS:
- Incorporated link pivot coupling that allows the user to link additional ammo for continuous fire capability
- Fuze: M549A1 PIBD
- Penetrates 3 inches of steel armor
- Inflicts personnel casualties in target area
- Max Range: 2,200 meters
- Muzzle Velocity: 241 meters/second
- Linked into 32 round belts

WEAPON SYSTEM:
- MK 19 Machine Gun

PRIME CONTRACTOR
- AMTEC Corp., Janesville, WI.

40mm M433 High Explosive Dual Purpose Cartridge

SYSTEM DESCRIPTION:

The M433 High Explosive Dual Purpose (HEDP) Cartridge is a fixed round of ammunition consisting of a projectile assembly and cartridge case assembly. The projectile consists of a hollow steel cup and aluminum skirt with metal rotating band. An M550 Point Initiating, Base Detonating (PIBD) Fuze assembly and copper liner are fitted into the opening of projectile cavity. The cavity is filled with high explosive, shaped charge. The projectile assembly is crimped into cartridge. case. The cartridge case is a hollow, bi-chambered aluminum cylinder with vents between chambers. The propellant chamber is sealed at rear with a base plug and a percussion primer is crimped into center of base plug. Upon impact with the target, detonation of the main charge provides both the armor piercing effect of the shaped charge and fragmentation of the steel body.

CAPABILITY/CHARACTERISTICS:

- Dual-Purpose impact round designed to penetrate, at least 2.5 inches of steel armor and inflict personnel casualties in target area
- Max Range: 400 meters
- Muzzle Velocity: 76 meters/second
- Packaged six rounds/bandoleer

WEAPON SYSTEM:

- M79, M203 and M320 Single-Shot Launchers

PRIME CONTRACTOR

- AMTEC Corp., Janesville, WI.

40mm M385A1 Practice Cartridge

SYSTEM DESCRIPTION:

The M385A1 Practice Cartridge is a fixed round of ammunition designed only for practice or for proof testing of weapons. It consists of a one-piece solid inert aluminum projectile body together with a metal rotating band which is press-fitted into an aluminum bi-chambered cartridge. The case contains the propelling charge and percussion primer.

CAPABILITY/CHARACTERISTICS:

- Used primarily for proof-testing of weapons
- Fired from MK 19 Machine Gun
- Max Range: 2,200 meters
- Muzzle Velocity: 241 meters/second
- Packed into PA120 container

WEAPON SYSTEM:

- MK 19 Machine Gun

PRIME CONTRACTOR

- AMTEC Corp., Janesville, WI.
- Projectile assembly - GTI

157

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: B546

MR DATE: October 1990
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: B576

MR DATE: October 1989
ACQ PHASE: Production & Deployment
ACAT: III
DODIC B584

40mm M918 Target Practice Cartridge

SYSTEM DESCRIPTION:

The M918 Target Practice Cartridge is designed to simulate the M430A1 HEDP Cartridge in appearance and ballistics. The M918 Cartridge consists of a one-piece steel body with an aluminum insert, fitted to cartridge case assembly. An aluminum ogive contains a firing pin, a rubber anti-creep spring and a M550 Point Initiating, Base Detonating (PIBD) Fuze escapement assembly, and is threaded to projectile body. An aluminum insert contains the flash charge mixture, while the cartridge case is a bi-chambered aluminum cylinder with vents between chambers. The propellant chamber is sealed at rear with a base plug and a percussion primer is crimped into the center of base plug. Upon impact with the target, gases generated by the burning flash powder are concentrated upon the base of the projectile body causing it to rupture and produce a flash, smoke, and a loud report.

CAPABILITY/CHARACTERISTICS:

- Used in gunnery training
- Target practice round designed to simulate M430A1 HEDP in appearance and ballistics
- Max Range: 2,200 meters
- Muzzle Velocity: 241 meters/second
- Packed into PA120 container

WEAPON SYSTEM:

- MK 19 Grenade Launcher

PRIME CONTRACTOR

- AMTEC Corp., Janesville, WI.
- Projectile assembly - GTI

MR DATE: October 2010
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA03

40mm M992 Infrared Illuminant Cartridge

SYSTEM DESCRIPTION:

The M992 Infrared Illuminant Cartridge is used to enhance night visibility of enemy troops while using night vision devices. The projectile has a one-piece, hollow aluminum body with a metal rotating band. A plastic ogive, embossed with a raised letter for night identification of payload, is snapped into an O-ring in the front opening of the projectile cavity. The cavity contains a pyrotechnic flare candle assembly, and an integral ignition/ejection charge attached to a 20-inch diameter parachute. Once fired and upon reaching the burst altitude of 500-700 feet, the ejection charge ignites the candle and blows the candle assembly out through the top of the projectile body. The attached parachute deploys upon ejection to lower the candle at 7 feet per second, resulting in a burn time of approximately 40 seconds.

CAPABILITY/CHARACTERISTICS:

- Provides minimal visual signature outside of infrared wavelength
- Provides IR Illumination to enhance nighttime operational capabilities for troops engaged using night vision equipment
- Fired From M79, M203 and M320 Single-Shot Launchers
- Burst Height 150-215 meters
- Muzzle Velocity 76 meters/second
- Burn Time 40 seconds
- IR Illumination 26 watts/steridan (minimum)
- Less than 300 candlepower (candela) of visible light

WEAPON SYSTEM:

- M79, M203 and M320 Single-Shot Launchers

PRIME CONTRACTOR

- AMTEC Corp., Janesville, WI.

40mm M918/M385A1 Mixed Belt

SYSTEM DESCRIPTION:

The 40mm M918/M385A1 Mixed Belt configuration consists of a 2:1 mix of M918 and M385A1 cartridges. The M918 cartridge is fixed round of ammunition consisting of a one-piece steel body with an aluminum insert, fitted to a cartridge case assembly. The aluminum ogive contains a firing pin, a rubber anti-creep spring, and a M550 Point Initiating, Base Detonating (PIBD) Fuze escapement assembly and is threaded to projectile body. The aluminum insert contains a flash charge mixture. The M385A1 cartridge is a fixed round of ammunition consisting of one-piece solid aluminum projectile body with copper rotating band.

CAPABILITY/CHARACTERISTICS:

- Used in gunnery training
- M918 - Target practice round designed to simulate the M430A1 High Explosive Dual Purpose cartridge in appearance and ballistics
- M385A1 - A target practice or proof-testing round
- Max Range: 2,200 Meters
- Muzzle Velocity: 241 meters/second
- Packed into PA120 container
- Linked 22-M918 to 10-M385A1, configured in a 2-M918 to 1-M385A1 mix

WEAPON SYSTEM:

- MK 19 Grenade Launcher

PRIME CONTRACTOR

- AMTEC Corp., Janesville, WI.

40mm L60 M81A1 Armor Piercing Incendiary Cartridge

SYSTEM DESCRIPTION:

The M81A1 Armor Piercing Incendiary (API) Cartridge is used by the U.S. Air Force Special Operations Command in the M2A1 L60 Gun System found on the AC-130 Gunship. It is an untraced projectile crimped to a brass case and is the current training substitute for the PGU-9 HEI, PGU-49/B and PGU-50/B. The incendiary tip provides impact signature which aids in training as a spotter round. This round is also effective against tanks and light armored vehicles.

CAPABILITY/CHARACTERISTICS:

- 40mm Armor Piercing Incendiary
- Overall length: 447 millimeters (nominal)
- Cartridge Case: Brass
- Propellant: M1 Single-based granular
- Muzzle Velocity: 880 meters per second
- Penetrator: Steel slug
- Packed in MK 1 can: 4 clips of 4 cartridges each (total of 16 cartridges/can)

WEAPON SYSTEM:

- M2A1 L60 Gun System

PRIME CONTRACTOR

- Not in production

159

PM MAS

Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: BA30

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: BA36

160
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA47

SYSTEM DESCRIPTION:
The PGU-49/B High Explosive Incendiary (HEI) Cartridge used by U.S. Air Force Special Operations Command in the M2A1 L60 Gun System found on the AC-130 gunship. It is an untraced projectile crimped to a brass case which is effective against personnel and light vehicles.

CAPABILITY/CHARACTERISTICS:
- 40mm High Explosive Incendiary
- Overall length: 447 millimeters (nominal)
- Cartridge Case: Brass
- Muzzle Velocity: 880 meters per second
- Packed in MK 1 can: 4 clips of 4 cartridges each (total of 16 cartridges/can)

WEAPON SYSTEM:
- M2A1 L60 Gun System

PRIME CONTRACTOR
- GD-OTS Canada/Sloboda

40mm L60 PGU-49/B High Explosive Incendiary Cartridge

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC BA48

SYSTEM DESCRIPTION:
The PGU-50/B High Explosive Incendiary (HEI) Cartridge is used by U.S. Air Force Special Operations Command in the M2A1 L60 Gun System found on the AC-130 Gunship. It is an untraced projectile crimped to a brass case which is effective against personnel and light vehicles.

CAPABILITY/CHARACTERISTICS:
- 40mm High Explosive Incendiary
- Overall length: 447 millimeters (nominal)
- Cartridge Case: Brass
- Muzzle Velocity: 880 meters per second
- Packed in MK 1 can: 4 clips of 4 cartridges each (total of 16 cartridges/can)

WEAPON SYSTEM:
- M2A1 L60 Gun System

PRIME CONTRACTOR
- OATK/Helenic Defense.

40mm L60 PGU-50/B High Explosive Incendiary Cartridge

40mm High Velocity M918E1 Target Practice Day/ Night/ Thermal Cartridge

SYSTEM DESCRIPTION:
The 40mm High Velocity M918E1 Target Practice Day/Night/Thermal (TP-DNT) Cartridge does not have a fuze or energetics. This eliminates unexploded ordnance risks and enables vehicle maneuver training allowing soldiers to "train as they fight" by delivering a non-dud producing high velocity grenade training cartridge whose impact signature can be seen day or night by the unaided eye and through current and future thermal vision sights.

CAPABILITY/CHARACTERISTICS:
- Used in gunnery training
- M918E1- Target practice round designed to simulate the M430A1 High Explosive Dual Purpose cartridge in appearance and ballistics
- Max Range: TBD
- Muzzle Velocity: TBD
- Packed into PA120 container
- Impact signature seen day or night by unaided eye and through current or future thermal and night vision sights

WEAPON SYSTEM:
- MK 19 Grenade Machine Gun

PRIME CONTRACTOR
- To Be Determined (TBD)

40mm Low Velocity M781E1 Target Practice Day/ Night/ Thermal Cartridge

SYSTEM DESCRIPTION:
The 40mm Low Velocity M781E1 Target Practice Day/Night/Thermal (TP-DNT) Cartridge does not have a fuze or energetics. This eliminates unexploded ordnance risks and enables soldiers to "train as they fight" by delivering a non-dud producing low velocity grenade training cartridge whose impact signature can be seen day or night by the unaided eye and through current and future thermal vision sights

CAPABILITY/CHARACTERISTICS:
- Used in gunnery training
- M781E1- Target practice round designed to simulate the M433 High Explosive Dual Purpose cartridge in appearance and ballistics
- Max Range: TBD
- Muzzle Velocity: TBD
- Packed into PA120 container
- Impact signature seen day or night by unaided eye and through current or future thermal and night vision sights

WEAPON SYSTEM:
- M320 and M203 Grenade Launcher

PRIME CONTRACTOR
- To Be Determined (TBD)

161
PM MAS
Maneuver Ammunition Services

MR DATE: 3QFY19 (Projected)
ACQ PHASE: Engineering Manufacturing Development (EMD)
ACAT: III
DODIC: BA55

MR DATE: 3QFY19 (Projected)
ACQ PHASE: Engineering Manufacturing Development (EMD)
ACAT: III
DODIC: BXX2

162
PM MAS
Maneuver Ammunition Services

MR DATE: March 1984
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC C508

105mm M456A2 High Explosive Antitank Multipurpose w/ Tracer Cartridge

SYSTEM DESCRIPTION:
The M456A2 is a High Explosive Antitank Multipurpose with Tracer (HEAT-MP-T) cartridge for use in the M68, 105mm Cannon of the Stryker Mobile Gun System (MGS). It is designed for use against armored targets and contains Composition B Explosive and a copper shaped charge liner inside a steel body. A point-initiating, point-detonating fuze is initiated by an impact switch in an aluminum standoff spike. Upon initiation, the explosive collapses the copper liner and creates a high velocity jet of metal particles that penetrates the target.

CAPABILITY/CHARACTERISTICS:
- Impact switch assembly provides higher functioning reliability
- Initiation can occur from contact with any part of the standoff spike assembly
- Improved performance on irregular surfaces and graze functioning
- Provides antitank capability to Stryker MGS

WEAPON SYSTEM:
- 105mm M68 Series Cannon of Stryker MGS

PRIME CONTRACTOR
- Not in production

MR DATE: August 1986
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC C511

105mm M490A1 Target Practice w/Tracer Cartridge

SYSTEM DESCRIPTION:
The M490A1 Target Practice-Tracer (TP-T) Cartridge is for use in the M68 Series Cannon for training in marksmanship. The cartridge is similar in external appearance and ballistically similar to the M456 Series HEAT-T Cartridge. The projectile consists of a steel body and steel standoff spike. It also has no fin assembly and is static stabilized. The cartridge case is filled with loosely packed propellant and is fitted with an electric primer.

CAPABILITY/CHARACTERISTICS:
- Maximum range: 8,207 meters (8,975 yards)
- Muzzle velocity: 1,170 meters/second (3,850 feet/second)
- Length: 39 inches
- Weight: 45 pounds

WEAPON SYSTEM:
- 105mm M68 Series Cannon of Stryker Mobile Gun System

PRIME CONTRACTOR
- Not in production

105mm M724A1 Target Practice Discarding Sabot w/Tracer Cartridge

SYSTEM DESCRIPTION:

The M724A1 Target Practice Discarding Sabot-Tracer (TPDS-T) Cartridge is similar in external appearance and is ballistically similar out to 2,000 meters with the M392A2 APDS-T cartridge. A plastic band encircles the sabot at the forward end while a fiber rotating band and rubber obturating band are mounted toward the base of the sabot. The igniter tube of the electric primer extends almost the entire length of the propellant, which is packed loosely in the cartridge case. The electrically initiated primer ignites the propelling charge and tracer. Gases produced by the burning propellant propel the projectile from the gun. The sabot is discarded after leaving the muzzle of the weapon as a result of setback, centrifugal, and air pressure forces and the solid core of the projectile continues to the target. Since it is a practice round, the projectile lacks the penetrating capability of a service round.

CAPABILITY/CHARACTERISTICS:

- Maximum range: 16,739 meters (18,450 yards)
- Muzzle velocity: 1,539 meters/second (5,080 feet/second)
- Length: 33 inches
- Weight: 32 pounds

WEAPON SYSTEM:

- 105mm M68 Series Cannon of Stryker Mobile Gun System

PRIME CONTRACTOR

- Not in production

MR DATE: N/A
ACQ PHASE: Operations & Sustainment Development (EMD)
ACAT: III
DODIC: C520

105mm M900 Kinetic Energy Cartridge

SYSTEM DESCRIPTION:

The M900 is an armor piercing, fin stabilized discarding sabot with tracer (APFSDS-T) cartridge. The projectile portion of the round consists of a sub-projectile and a sabot. The sub-projectile is made up of a monolithic depleted uranium core fitted with an aluminum windshield, a steel tip, and an aluminum fin assembly. The sabot is comprised of three 120° aluminum sections which are assembled around the sub-projectile. Upon leaving the gun, aerodynamic forces cause the sabot to separate from the sub-projectile allowing the sub-projectile to continue on a true course to target while the sabot segments fall quickly to earth. Target penetration is effected strictly by the high kinetic energy of the sub-projectile impacting the target.

CAPABILITY/CHARACTERISTICS:

- Antitank round intended for use with 105mm Stryker Mobile Gun System against armored targets
- Effective Range: 3,000 meters
- DU Penetrator
- Weight: 18.50 kilograms (40.8 pounds)
- Length: 1,003 millimeters (39.5 inches)

WEAPON SYSTEM:

- 105mm M68 Series Cannon of Stryker Mobile Gun System

PRIME CONTRACTOR

- Not in production

MR DATE: June 1992
ACQ PHASE: Operations & Sustainment Development (EMD)
ACAT: III
DODIC: C543

164

PM MAS

Maneuver Ammunition Services

105mm M1040 Canister Cartridge

MR DATE: February 2007
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: CA40

SYSTEM DESCRIPTION:

The M1040 Canister Cartridge satisfies the Mobile Gun System's (MGS) primary armament requirement to defeat a dismounted infantry squad approaching in a wedge formation. Upon muzzle exit, the projectile breaks apart and releases over 2000 tungsten spheres, similar to a shotgun shell. The cartridge's unique design provides effectiveness across temperature extremes.

CAPABILITY/CHARACTERISTICS:

- Provides antipersonnel capability for Stryker Mobile Gun System
- Required to provide 50% incapacitation to 5 men of a 10 man squad from 100-300 meters (Threshold); 50-500 meters (Objective)

WEAPON SYSTEM:

- 105mm M68 Series Cannon of Stryker MGS

PRIME CONTRACTOR

- Not in production

105mm M724A2 Target Practice Discarding Sabot w/Tracer Cartridge

MR DATE: 1QFY18 (Projected)
ACQ PHASE: Production & Deployment Development (EMD)
ACAT: III
DODIC: CA58

SYSTEM DESCRIPTION:

The M724A2 Target Practice Discarding Sabot-Tracer (TPDS-T) Cartridge will support live fire training for the Stryker Mobile Gun System (MGS) crews in the Stryker Brigade Combat Team (SBCT). The cartridge will be similar to the 105mm M900 tactical cartridge in weight and physical appearance. The M724A2 will be range limited to 7,000 meters maximum when fired at a 10^{o} gun elevation.

CAPABILITY/CHARACTERISTICS:

- Provides live fire training for the MGS crews in the Stryker Brigade Combat Team (SBCT)
- Max range not to exceed 7 kilometers when firing @ 10^{o} gun elevation
- Provides crews with a training round that has the look and feel of the current M900 tactical cartridge

WEAPON SYSTEM:

- 105mm M68 Series Cannon of Stryker MGS

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

105mm M393A3 High Explosive Plastic w/Tracer Cartridge

SYSTEM DESCRIPTION:
The M393A3 High Explosive Plastic-Tracer (HEP-T) Cartridge satisfies the Mobile Gun System's (MGS) primary armament requirement to defeat standard infantry bunkers and create openings in double reinforced concrete walls through which infantry can pass through.

CAPABILITY/CHARACTERISTICS:
- Creates holes in 8 inches double rebar concrete walls so infantry can pass through
- Utilizes dual-safe fuze
- Defeats bunkers, light armored vehicles, trucks, cars and sniper positions

WEAPON SYSTEM:
- 105mm M68 Series Cannon of Stryker MGS

PRIME CONTRACTOR
- Not in production

105mm M467A1 High Explosive Plastic-Target Practice w/Tracer Cartridge

SYSTEM DESCRIPTION:
The M467A1 High Explosive Plastic Target Practice-Tracer (HEP-TP-T) Cartridge is an inert round of ammunition fitted with a tracer. The cartridge is used in the M68 Series Gun mounted on the Mobile Gun System (MGS) of the STRYKER Brigade Combat Team (BCT) in support of gunnery training and qualification. The cartridge is also physically and ballistically matched to the 105mm M393A3 High Explosive Plastic with Tracer (HEP-T) Cartridge.

CAPABILITY/CHARACTERISTICS:
- Replaced M86 primer with M125 Type thick wall primer
- Training round for M393A3 HEP-T
- Dimensional, weight and ballistic match to M393A3 HEP-T
- Range limited to 8,000 meters

WEAPON SYSTEM:
- 105mm M68 Series Cannon of Stryker MGS

PRIME CONTRACTOR
- Not in production

165
PM MAS
Maneuver Ammunition Services

MR DATE: September 2005
ACQ PHASE: Operations & Sustainment Development (EMD)
ACAT: III
DODIC: CA32

MR DATE: September 2005
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC CA37

MR DATE: September 1994
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC C784

SYSTEM DESCRIPTION:

The M831A1 Target Practice-Tracer (TP-T) Cartridge contains a propulsion system consisting of a stub metal case with combustible sidewall, granular single base M14 propellant, and an electric primer, while the projectile consists of a steel spike (nose), aluminum body, and ring stabilizer with slots that impart spin. After ignition, the stub metal case and primer are ejected into the tank turret, the projectile continues to target. There is a red burning tracer in the stabilizer to aid in following the projectile to target.

CAPABILITY/CHARACTERISTICS:

- Training cartridge simulates the M830 HEAT-T tactical cartridge
- Target Range: 2,000 meters
- Maximum Range: 6,500 meters
- Muzzle Velocity: 1,137 meters/second
- Weight: 22.9 kilograms (50.5 pounds)
- Length: 981 millimeters (38.62 inches)
- Firing Temperature Limits: -32°C to +52°C (-25°F to +125°F)

WEAPON SYSTEM:

- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR

- Not in production

120mm M831A1 Target Practice w/Tracer Cartridge

MR DATE: August 1986
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC C785

SYSTEM DESCRIPTION:

The M865 Kinetic Energy Practice Cartridge is a target practice, cone stabilized, discarding sabot with tracer (TPCSDS-T) cartridge. It contains a propulsion system consisting of a stub metal case with combustible sidewall, granular single base M14 propellant, and an electric primer, while the projectile consists of a two piece sub-projectile (steel core with a slotted tail cone/fin) and aluminum sabots. After ignition, the stub metal case and primer are ejected into the tank turret; when the projectile exists the gun, the sabot segments separate and the sub-projectile continues to target. There is a yellow/orange burning tracer in the tail cone (fin) to aid in following the sub-projectile to target.

CAPABILITY/CHARACTERISTICS:

- Training cartridge simulates the M829 Series tactical cartridges
- Target Range: 2,500 meters
- Max Range: 8,000 meters
- Muzzle Velocity: 1,700 meters/second
- Weight: 19 kilograms (41.9 pounds)
- Length: 881 millimeters (34.7 inches)
- Firing Temperature Limits: -32°C to +52°C (-25°F to +125°F)

WEAPON SYSTEM:

- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL

120mm M865 Kinetic Energy Practice Cartridge

120mm M830 High Explosive Antitank Multipurpose w/Tracer Cartridge

SYSTEM DESCRIPTION:
The M830 High Explosive Antitank Multipurpose-Tracer (HEAT-MP-T) Cartridge is a high explosive round having both anti-armor and antipersonnel capabilities. The round consists of a steel body loaded with explosives surrounding a copper shaped charge liner and wave shaper. The projectile embodies a steel spike with a shoulder and nose switching mechanism for full frontal area functioning and graze impact which initiates a base detonating fuze. The fuze is located at the rear of the projectile body. The projectile body has a copper obturator, boom and fin assembly for flight stabilization. The fin contains a tracer for projectile to target visual tracking.

CAPABILITY/CHARACTERISTICS:
- Anti-armor and antipersonnel capabilities
- Muzzle Velocity: 1,139.9 meters/second
- Weight: 24.2 kilograms (53.4 pounds)
- Length: 981 millimeters (38.6 inches)
- Firing Temperature Limits: -46°C to +63°C (-50°F to +145°F)

WEAPON SYSTEM:
- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: August 1986
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: C787

120mm M830A1 High Explosive Antitank Multipurpose w/Tracer Cartridge

SYSTEM DESCRIPTION:
The M830A1 High Explosive Antitank Multipurpose-Tracer (HEAT-MP-T) Cartridge is a high explosive antitank, multipurpose, tactical service round for U.S. Main Battle Tank. It is designed with a tracer, discarding sabot, and radio frequency (RF) proximity sensor mounted on the nose to provide capability against helicopters, and improved capabilities against reactive applique armor.

CAPABILITY/CHARACTERISTICS:
- Multipurpose capability beyond that of the M830 HEAT-MP-T cartridge
- Muzzle Velocity: 1,410 meters/second
- Weight: 22.7 kilograms (50.1 pounds)
- Length: 984 millimeters (38.74 inches)
- Firing Temperature Limits: -32°C to +52°C (-25°F to +125°F)

WEAPON SYSTEM:
- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR
- Not in production

MR DATE: June 1994
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: C791

168
PM MAS
Maneuver Ammunition Services

MR DATE: March 2003
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC CA05

120mm M908 High Explosive Obstacle Reduction w/Tracer Cartridge

SYSTEM DESCRIPTION:
The M908 High Explosive Obstacle Reduction-Tracer (HE-OR-T) Cartridge is a high explosive cartridge for use in the 120mm M256 Smooth Bore Cannon. It consists of an 80mm, high explosive-filled, flight projectile with discarding sabot. It's identical to the 120mm M830A1 HEAT-MP-T, except for the steel nose that is used in place of a proximity switch. The cartridge provides similar capability as the M830A1 against buildings, bunkers and light armor, as well as enhanced performance against concrete obstacles.

CAPABILITY/CHARACTERISTICS:
- Same aeroballistics as the M830A1 HEAT-MP-T tactical cartridge
- Effective against buildings, bunkers and light armor
- Enhanced performance against concrete obstacles

WEAPON SYSTEM:
- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR
- Not in production

MR DATE: September 2004
ACQ PHASE: Operations & Sustainment
ACAT: II
DODIC CA26

120mm M829A3 Kinetic Energy Cartridge

SYSTEM DESCRIPTION:
The M829A3 cartridge is a kinetic energy (KE), armor-piercing, fin-stabilized, discarding sabot, with tracer (APFSDS-T) round. It employs a "Super DU" Penetrator manufactured via a process that enhances Depleted Uranium's properties, and a revolutionary discarding sabot manufactured from a light-weight composite material. It employs an enhanced high density conventional propulsion system utilizing RPD-380 Propellant. It is capable of defeating tanks equipped with Explosive Reactive Armor (ERA), when fired from existing 120mm series Abrams tank fleet.

CAPABILITY/CHARACTERISTICS:
- 120mm Kinetic Energy Cartridge
- Designed to Defeat Modern Tanks with ERA
- Incorporates improved penetrator, sabot and propulsion system over prior generation 120mm KE cartridges

WEAPON SYSTEM:
- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR
- Not in production

120mm M1002 Target Practice Multipurpose w/Tracer Cartridge

SYSTEM DESCRIPTION:

The M1002 Target Practice Multipurpose-Tracer (TPMP-T) Cartridge is a training cartridge for the M830A1 HEAT-MP-T and M908 HE-OR-T tactical cartridges. This target practice cartridge contains a propulsion system consisting of a stub metal case with combustible sidewall, granular single base M14 propellant, and an electric primer, while the projectile consists of a multi-piece sub-projectile (nose, body, tailcone) and sabots. The nose has an air/ground mode selector switch simulator to provide for loader training familiarization with switch setting operations on the tactical cartridge. After ignition, the stub metal case and primer are ejected into the tank turret, when the projectile exists the gun, the sabot segments separate and the sub-projectile continues to target. There is a red burning tracer in the tail cone to aid in following the sub-projectile to target.

CAPABILITY/CHARACTERISTICS:

- Training cartridge simulates the M830A1 HEAT-MP-T and M908 HE-OR-T tactical cartridges
- Target Range: 3,000 meters
- Maximum Range: 8,000 meters
- Muzzle Velocity: 1,375 meters/second
- Weight: 20.8 kilograms (46 pounds)
- Length: 984 millimeters (38.74 inches)
- Firing Temperature Limits: -32°C to +52°C (-25°F to +125°F)

WEAPON SYSTEM:

- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL

MR DATE: May 2008
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: CA31

120mm M1028 Canister Cartridge

SYSTEM DESCRIPTION:

The M1028 Canister Cartridge is to be used against ground troops at short range (<700 meters). It utilizes a payload of ~1100 tungsten balls that are dispersed from a projectile casing upon muzzle exit, similar to how a shotgun shell exits the muzzle.

CAPABILITY/CHARACTERISTICS:

- Provides effective antipersonnel capability
- Developed to defeat 50% of advancing squad & platoon from 200-500 meters (Threshold); 100-700 meters (Objective)

WEAPON SYSTEM:

- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR

- Not in production

MR DATE: November 2006
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC CA38

169
PM MAS
Maneuver Ammunition Services

170

PM MAS

Maneuver Ammunition Services

120mm M829A4 Advanced Kinetic Energy Tank Cartridge

MR DATE: May 2016
ACQ PHASE: Production & Deployment
ACAT: III
DODIC CA64

SYSTEM DESCRIPTION:

The M829A4 Armor Piercing Fin Stabilized, Discarding Sabot with Tracer (APFSDS-T) Cartridge is the follow on to the M829A3 APFSDS-T cartridge. The M829A4 is the most effective anti-armor kinetic energy cartridge round fired from the M256 Smoothbore Cannon mounted on the Abrams Main Battle Tank. The M829A4 provides Armored Brigade Combat Team overmatch against current and future enemy tanks equipped with Explosive Reactive Armor and Active Protection Systems.

CAPABILITY/CHARACTERISTICS:

- Lethality: up to 2 kilometers (threshold), up to 4 kilometers (objective)
- Uses an advanced depleted uranium penetrator and Advanced Case System cartridge case
- Utilizes new, high energy temperature insensitive propellant

WEAPON SYSTEM:

- 120mm M256 Smoothbore Cannon

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

120mm XM1147 Advanced Multipurpose, High Explosive w/Tracer Cartridge

MR DATE: 2QFY21 (Projected)
ACQ PHASE: Engineering and Manufacturing Development
ACAT: II
DODIC CZ11

SYSTEM DESCRIPTION:

The XM1147 Advanced Multipurpose High Explosive-Tracer (AMP HEMP-T) Cartridge is a full bore multipurpose high explosive cartridge being developed for the Abrams Main Battle Tank. The AMP cartridge will provide new capabilities for the Antitank Guided Missile (ATGM) Team at extended range and double reinforced concrete wall (DRCW) breach while also consolidating the capabilities of four legacy munitions: M830A1 HEAT-MP-T, M830 HEAT-MP-T, M1028 Canister, and M908 HE-OR-T. AMP is programmed for the required mode of operation (Point Detonate, Point Detonate Delay, or Airburst) via the Abrams Fire Control System on a platform equipped with an Ammunition Data Link. AMP will provide the means for defeating enemy ATGM teams, DRCW, light armor, bunkers, massed infantry, and obstacles with a single munition using a multi-mode programmable fuze.

CAPABILITY/CHARACTERISTICS:

- ATGM Defeat from 50m to 2000m
- DRCW breach 30" x 50" opening with no more than three rounds from 50m to 200m
- Light Armor defeat out to 2,000m
- Bunker defeat with two rounds from 200-1,000m
- Massed infantry defeat from 200m-5,000m
- Obstacle rubbling from 200m-1,000m
- Firing Temperature Limits: -32°C to +63°C (-25°F to +145°F)
- Maximum Cartridge Weight: 62lb

WEAPON SYSTEM:

- 120mm M256 Smooth Bore Cannon

PRIME CONTRACTOR

- TBD

No picture available

10 Gauge Blank Cartridge

SYSTEM DESCRIPTION:
The 10 Gauge Blank Cartridge is similar to standard shotgun cartridges but it contains no lead shot. It has a plastic cartridge case and is marked "blank" on the shell. The cartridge is designed to produce a noise when initiated and is used as a salute item in large caliber weapons. The blank is inserted either in a prepared cartridge case or in a breech block of the weapon being used. It's commonly fired in 3-inch guns, 75mm guns, 75mm howitzers or 105mm howitzers.

CAPABILITY/CHARACTERISTICS:
- Length: 2.88 inches (73.2 millimeters)
- Weight: 290 grains
- Propellant: OBP-124 Powder
- Propellant Weight: 8 grams

WEAPON SYSTEM:
- 3-inch guns, 75mm guns, 75mm howitzers, 105mm howitzers

PRIME CONTRACTOR
- Olin - Winchester

12 Gauge #00 Buckshot Cartridge

SYSTEM DESCRIPTION:
The 12 Gauge #00 Buckshot Cartridge uses a plastic case and is loaded with smokeless powder and No. 00 commercial shot. The tube coloring has been changed from standard red to olive drab to camouflage the round. This round is commonly used for force protection and combat use in the military issue shotgun.

CAPABILITY/CHARACTERISTICS:
- Shell Length: 2-3/4 inches
- Velocity: 1,325 feet/second
- Propellant: Smokeless
- Weight: 12.8 grains
- Accuracy: 65% shot within a 30 inch circle at 40 yards

WEAPON SYSTEM:
- Mossberg 590, Remington 870 Manual and Semi-Automatic 2-3/4 inch chamber military issue shotgun

PRIME CONTRACTOR
- Olin - Winchester

171
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: A010

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A011

172
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A014

12 Gauge #7 1/2 Shot Cartridge

SYSTEM DESCRIPTION:
The 12 Gauge #7 1/2 Shot Cartridge is a 2 3/4 inch diameter round with 1 1/8 ounces of #7 1/2 shot (approximately 551 pellets, .094 inches in diameter). It is packed 25 cartridges in a cardboard carton, 20 cartons in a fiberboard box. The ammunition is used for training and target competition.

CAPABILITY/CHARACTERISTICS:
- Shell Length: 2-3/4 inches
- Velocity: 1,145 feet/second
- Accuracy: 70% shot within a 30 inch circle at 40 yards
- Propellant: OBP-124 Powder

WEAPON SYSTEM:
- Mossberg 590, Remington 870 Manual and Semi-Automatic 2-3/4 inch chamber military issue shotgun

PRIME CONTRACTOR
- Olin - Winchester

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A017

12 Gauge #9 Shot Cartridge

SYSTEM DESCRIPTION:
The 12 Gauge #9 Shot Cartridge is a 2 3/4 inch diameter round with 1 1/8 ounces of #9 shot (approximately 923 pellets, .079 inches in diameter). It is packed 25 cartridges in a cardboard carton, 20 cartons in a fiberboard box. The ammunition is used for training and target competition.

CAPABILITY/CHARACTERISTICS:
- Shell Length: 2-3/4 inches
- Velocity: 1,145 feet/second
- Accuracy: 50% shot within a 30 inch circle at 25 yards
- Propellant: OBP-124 Powder

WEAPON SYSTEM:
- Mossberg 590, Remington 870 Manual and Semi-Automatic 2-3/4 inch chamber military issue shotgun

PRIME CONTRACTOR
- Olin - Winchester

12 Gauge M1030 Breaching Cartridge

SYSTEM DESCRIPTION:
The M1030 Breaching Cartridge is used to counter threats located in locked/sealed buildings and are using active and passive countermeasures against the soldier. Currently, there is no 12 Gauge shotgun cartridge in the inventory that has the capability to open a door by the destruction of the lock or hinge with a single round. This cartridge is a low-hazard, non-shrapnel producing device that will disintegrate on impact.

CAPABILITY/CHARACTERISTICS:
- Defeat door lock mechanisms, hinges and pad locks on interior wooden doors
- Weight: 617 grains
- Overall Length of 62.23 millimeters (2.45 inches)
- Diameter of 22.35 millimeters (0.88 inches)
- Muzzle Velocity: 1,148 feet/second @ 3 feet from muzzle

WEAPON SYSTEM:
- Mossberg 500, Mossberg 590, and Winchester 1200 Shotguns

PRIME CONTRACTOR
- Olin - Winchester

MR DATE: October 2007
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: AA54

.22 Cal Long Range Match Grade Cartridge

SYSTEM DESCRIPTION:
The .22 Caliber Long Range Match Grade Cartridge is used by ROTC candidates in marksmanship competition.

CAPABILITY/CHARACTERISTICS:
- Velocity - meters/second (feet/second)
  - Muzzle - 305 (1000)
  - 20 meters (20 yards) - 296 (973)
  - 50 meters (50 yards) - 284 (935)
- Energy - kilogram-meter (foot-pound)
  - Muzzle - 12.3 (89)
  - 20 meters (20 yards) - 11.6 (84)
  - 50 meters (50 yards) - 10.7 (78)

WEAPON SYSTEM:
- ROTC match grade pistols

PRIME CONTRACTOR
- Alliant Techsystems, Inc. (ATK)

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A091

174

PM MAS

Maneuver Ammunition Services

.300 Magnum MK 248 MOD 0 Cartridge

MR DATE: March 2013
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: A191

SYSTEM DESCRIPTION:

The MK 248 MOD 0 Cartridges contains a 190 grain Sierra Match King Hollow Point Boat Tail (HPBT) bullet. The bullet is lead with a jacket composed of copper or copper alloy and is a reverse drawn open tip match type. This bullet is intended for use in the M2010 Enhanced Sniper Rifle or MK 13 Rifle for sniper applications.

CAPABILITY/CHARACTERISTICS:

- Effective Range 1,100 meters
- Height: 3.5 inches
- Weight: 190 grains
- Muzzle Velocity: 3,000 feet/second
- Accuracy: Individual shot groups < 4.71 inches @ 300 yards and 9.42 inches @ 600 yards
- Chamber Pressure: 78,900 pounds per square inch

WEAPON SYSTEM:

- M2010 Enhanced Sniper Rifle, MK 13 Rifle

PRIME CONTRACTOR

- Vista Outdoor Sales (formerly ATK-Federal) Anoka, MN

.30 Cal M1909 Blank Cartridge

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC A222

SYSTEM DESCRIPTION:

The M1909 Blank Cartridge is used for simulated firing in training or for saluting purposes. The cartridge is identified by the absence of a bullet and has purple lacquer applied over the crimped cartridge case mouth to keep out moisture.

CAPABILITY/CHARACTERISTICS:

- Height: 4.90 inches
- Weight: 218 grains

WEAPON SYSTEM:

- M1 Garand, M1903 Springfield, M1917 Enfield Rifles

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

.50 Cal, 7.62mm, 5.56mm, 9mm Dummy, Drill & Inert Cartridges

SYSTEM DESCRIPTION:

Dummy, Drill and Inert cartridges are used for weapons training and maintenance. The cartridges are nickel plated and fluted to separate appearance from live and blank ammunition.

CAPABILITY/CHARACTERISTICS:

- Brass cartridge cases, copper bullets, nickel plated
- No energetic or stored energy
- Cases are fluted except the 9mm which has two holes
- Primer cavity in base but no primer inserted
- DODICs:
  - AB45 - 9mm
  - AB46 - 5.56mm
  - AB47 - 7.62mm
  - AB48 - .50 Cal
  - AB36 - .50 Cal, linked

WEAPON SYSTEM:

- Used in each caliber's weapon system

PRIME CONTRACTOR

- Lake City Army Ammunition Plant, Independence, MO

175
PM MAS
Maneuver Ammunition Services

MR DATE: October 2010
ACQ PHASE: Production & Deployment
ACAT: III
DODIC AB36, AB45, AB46, AB47, AB48

176
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC N/A

7.62x54mm Ammunition

SYSTEM DESCRIPTION:
7.62x54mm ammunition is Soviet designed cartridges used in the PK Series of weapons. It is effective against unprotected personnel targets. Configurations include Lead Core Ball, Armor Piercing, Sniper/Match, and Tracer cartridges.

CAPABILITY/CHARACTERISTICS:
- Velocity: 828 meters/second
- Pressure: 2,855 kilograms/square centimeter
- Types: Ball, Tracer, Blank
- Projectile Design: Lead or steel core, bimetal jacket
- Case Design: Steel or bimetal
- Projectile Mass: Ball - 9.6 grams (approx.) Tracer - 9.6 grams (approx.)
- Marking: Ball - None, Tracer - green or red tip

WEAPON SYSTEM:
- PK Series Machineguns

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC N/A

73mm Rounds

SYSTEM DESCRIPTION:
The 73mm ammunition is designed to destroy armored vehicles, hasty fortifications, and enemy troops. Configurations include High Explosive Fragmentation, High Explosive Antitank, and Thermobaric ammunition.

CAPABILITY/CHARACTERISTICS:
- Velocity: 316 meters/second
- Max Range: 4,500 meters
- Penetration: 300 millimeters
- Types: High Explosive, High Explosive Antitank, Thermobaric

WEAPON SYSTEM:
- SPG-9 Kopye, 2A28 Grom

PRIME CONTRACTOR
- Arsenal & VMZ, Bulgaria

122mm Artillery Ammunition

SYSTEM DESCRIPTION:
The family of 122mm artillery ammunition is intended to destroy manpower, armored vehicles and shelters, obscure targets, and provide illumination.

CAPABILITY/CHARACTERISTICS:
- Velocity: 565-690 meters/second
- Max Range: 15.3 kilometers
- Operational Temp: -40 to +50C
- Types: HE Frag, HEAT, Smoke, Illum
- Fired from D-30 and 2S-1 122mm Howitzer

WEAPON SYSTEM:
- Soviet 122mm D-30 Howitzer

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

12.7x108mm Ammunition

SYSTEM DESCRIPTION:
The Soviet-designed 12.7x108mm ammunition is used in the DShK and NSV Machine Guns. It is effective against light-armored air and ground targets.

CAPABILITY/CHARACTERISTICS:
- Velocity: 818-833 meters/second
- Penetration: 20 millimeters @ 300 meters
- Types: Armor Piercing Incendiary (API), Armor Piercing Incendiary- Tracer (API-T)
- Projectile Design: Lead or steel core, bimetal jacket
- Case Design: Steel
- Projectile Mass: API - 64 grams (approx.), API-T - 59.6 grams (approx.)
- Marking: API - black and red tip, API-T - violet and red tip

WEAPON SYSTEM:
- DShK and NSV Machine Guns

PRIME CONTRACTOR
- TBD

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC: N/A

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC: N/A

178
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC: N/A

57mm and 80mm Aviation Rockets

SYSTEM DESCRIPTION:
The 57mm and 80mm Aviation Rockets are fired from aircraft with UB-16-57UM and UB-32 and other Rockets Pods. The rockets are designed to destroy enemy manpower, shelters and armored targets. Configurations include High Explosive (HE) Fragmentation, HE Dual-purpose, Flechette, and Smoke.

CAPABILITY/CHARACTERISTICS:
57mm Rocket specs:
- Velocity: 586 meters/second (max)
- Penetration: 250 millimeters (max)
- Operational Temp: -40 to +50 degrees Celsius
- Types: S-5KO, S-5KP & S-5KO (Practice)
- Packaged 8 Rockets/Crate

80mm Rocket specs:
- Velocity: 654 meters/second (max)
- Penetration: 400 millimeters (max)
- Operational Temp: -40 to +50 degrees Celsius
- Types: S-8KO, S-8KP & S-8KO (Practice)
- Packaged 4 Rockets/Crate

WEAPON SYSTEM:
- UB-16-57UM and UB-32 Rockets Pods

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

57mm S-5 Series Rocket

80mm S-8 Series Rocket

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC: N/A

5.45x39mm and 7.62x39mm Ammunition

SYSTEM DESCRIPTION:
These Soviet designed cartridges are fired from the AK series of weapons. Configurations include Lead Core Ball, Armor Piercing, and Tracer cartridges.

CAPABILITY/CHARACTERISTICS:
5.45x39 typical specs:
- Velocity: 880 meters/second
- Pressure: 2,799 kilograms/square centimeter
- Types: Ball, Tracer, Blank
- Projectile Design: Steel core, bimetal jacket
- Case Design: Steel
- Projectile Mass: Ball - 3.4 grams (approx.), Tracer - 3.2 grams (approx.)
- Marking: Ball - None, Tracer - Green or Red Tip

7.62X39mm typical specs:
- Velocity: 725 meters/second
- Pressure: 2,799 kilograms/square centimeter
- Types: Ball, Tracer, Blank
- Projectile Design: Lead or steel core, bimetal jacket
- Case Design: Steel or bimetal
- Projectile Mass: Ball - 7.9 grams (approx.), Tracer - 7.6 grams (approx.)
- Marking: Ball - None, Tracer - green or red tip

WEAPON SYSTEM:
- AK Series Assault Rifles

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

60mm Mortar Cartridge Family

82mm Mortar Cartridge Family

120mm Mortar Cartridge Family

Non-Standard Mortar Ammunition; 60, 82 and 120mm -Mortar Cartridges; High Explosive Fragmentation, Smoke, Training and Illumination

SYSTEM DESCRIPTION:
The family of non-standard mortar ammunition is intended to destroy manpower in the open and in trenches, obscure targets, and provide illumination. Ammunition is available in 60mm, 82mm and 120mm diameters and include the following configurations: High Explosive Fragmentation, Smoke, Illumination and Training.

CAPABILITY/CHARACTERISTICS:
Example for 82mm Mortar cartridge

- Velocity: 211 meters/second
- Maximum Range: 4,500 meters (High Explosive), 4,850 meters (Smoke), 3,380 meters (Illum)
- Operational Temp: -50 to +50 degrees Celsius (High Explosive), -30 to +50 degrees Celsius (Smoke and Illum)
- Types: HE, Smoke, Illum
- Fired from M69 82mm Mortar

WEAPON SYSTEM:
- Yugoslavian 60mm, 82mm and 120mm Mortar Systems

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC: N/A

PP3, PP9 & PPL Pyro-Cartridges

SYSTEM DESCRIPTION:
PP3, PP9 & PPL Pyro-Cartridges are used in Soviet helicopters to operate safety in equipment and cycle the weapon in the event of a jam.

CAPABILITY/CHARACTERISTICS:
- PP3 - Activates fire bottles on the Mi-17 Helicopter
- PP9 - Opens the canopy of the Mi-35 Helicopter
- PPL - Actuating cartridge for the Yak-B 12.7x108mm Machine Gun

WEAPON SYSTEM:
- Various

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC: N/A

180
PM MAS
Maneuver Ammunition Services

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC N/A

40mm Rocket Propelled Grenade-7 Ammunition

SYSTEM DESCRIPTION:
The family of 40mm ammunition fired from the RPG-7 launcher is intended to engage enemy troops in open and in light shelters, and to engage tanks, armored vehicles and fortifications.

CAPABILITY/CHARACTERISTICS:
- Velocity: 112-152 meters/second
- Max Range: 1,000 meters (High Explosive model)
- Max Range: 500 meters (High Explosive Antitank model)
- Fired from RPG-7 launcher
- High Explosive ammunition designed to defeat enemy troops in open terrain or in light shelters
- High Explosive Antitank ammunition designed to defeat tanks, armored vehicles, and fortifications

WEAPON SYSTEM:
- RPG-7 Launcher

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

40mm RPG Family

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: N/A
DODIC N/A

40mm VOG Ammunition

SYSTEM DESCRIPTION:
The VOG Grenade ammunition is designed to defeat enemy troops in open terrain or light shelters. Configurations include High Explosive (HE) Fragmentation, HE Fragmentation w/Jumping Action, Smoke, and Anti-Diver Grenades.

CAPABILITY/CHARACTERISTICS:
- Velocity: 75 meters/second
- Max Range: 400 meters
- Operational Temp: -50 to +50 degrees Celsius
- Fired From GP-25/30 Under-Barrel Grenade Launchers
- Packaged 40 rounds/sealed can

WEAPON SYSTEM:
- GP-25/30 Under-Barrel Grenade Launchers

PRIME CONTRACTOR
- General Dynamics Ordnance and Tactical Systems (GD-OTS), St. Petersburg, FL
- Orbital Alliant Techsystems, Inc (OATK), Plymouth, MN

40mm RPG-7 Ammunition

PM Towed Artillery Systems

Project Manager
Towed Artillery Systems
(PM TAS) Provides direct, reinforcing, and general support towed artillery fires to maneuver forces. Provide direct support artillery for the Stryker and Infantry Brigade Combat Teams.

182
PM TAS
Towed Artillery Systems

MR DATE: July 2007
ACQ PHASE: Operations & Sustainment
ACAT: II
DODIC: N/A

SYSTEM DESCRIPTION:

The Lightweight 155mm (LW155) M777A2 Towed Howitzer is a joint Marine Corps and Army program that replaces the 155mm M198 Towed Howitzer. The LW155 is a general support system for the Army's light units, a direct-support cannon fire support system for the Stryker Brigade Combat Team and the sole howitzer in the Marine Corps. The LW155 weighs less than 10,000 pounds and has a maximum firing range of approximately 30 kilometers with rocket-assisted projectiles, 24.7 kilometers with standard rounds and up to 40 kilometers using the M982 Excalibur Projectile. It has a maximum firing rate of four rounds per minute and a sustained rate of two rounds per minute. The M777A2 is fitted with onboard electronics, giving it self-locating, self-laying and digital communications similar to the M109A6 Paladin.

CAPABILITY/CHARACTERISTICS:

- Improved Lethality and Strategic Deployment
- Increased tactical mobility and reliability
- Improved survivability (decreased emplace/displace time – shoot and scoot tactics with digital fire control)
- 1-Mil pointing accuracy
- M776 NATO compliant cannon
- Titanium structures
- Digital and Optical Fire Control System
- Inertial navigation with GPS backup
- Primer feed mechanism
- Independent suspension
- Semi-automatic breech and loading tray
- Rate of Fire: 4 rounds/minute (maximum); 2 rounds/minute (sustained)
- Emplace (Displace): <3 minutes (2-3 minutes)

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- British Aerospace Engineering (BAE) Ordnance Systems, London, England

Lightweight, 155mm M777A2 Towed Howitzer

Lightweight, 105mm M119A2 Towed Howitzer

SYSTEM DESCRIPTION:

The M119A2 Lightweight Towed Howitzer provides continuous close fires to the Infantry Brigade Combat Teams. The system weighs 4,270 pounds and is air assault/ air drop capable. It has a range of 19.5 kilometers (Km) with rocket assisted munitions (14 Km unassisted). It fires all currently fielded U.S. munitions and has a rate of fire of 6 rounds per minute. Each M119A2 section has seven crewmen. The prime mover for the M119A2 is the Humvee.

CAPABILITY/CHARACTERISTICS:

- One piece cradle trunnion
- Replacement of various weldments with one-piece castings
- More robust fire control mount
- M20A1 Cannon
- Bow-shaped tubular trails and spade
- Elevating mechanism
- Hydro-pneumatic variable length recoil
- Spring type equilibrilators
- 2-wheeled, single axle carriage
- Optical Fire Control System
- Rate of Fire: 10 rounds/minute (maximum); 3 rounds/minute (sustained)
- Emplace/Displace: 3 minutes

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Rock Island Arsenal

Lightweight, 105mm M119A3 Towed Howitzer

SYSTEM DESCRIPTION:

The M119A3 Lightweight Towed Howitzer provides continuous close fires to Infantry Brigade Combat Teams. The system weighs 4,690 pounds and is air assault/air drop capable. It has a range of 19.5 kilometers (Km) with rocket-assisted munitions (14 Km unassisted). It fires all currently fielded U.S. munitions and has a rate of fire of six rounds per minute. Its approved prime movers include the Humvee and 2.5-ton and 5-ton trucks. A program to integrate digital fire-control capability onto the M119A2 howitzer was approved in 2008 and resulted in the Full Materiel Release of the M119A3 in March 2013. Using the software for the 155mm M777A2 Towed Howitzer maximizes commonality in operation and training while minimizing program cost, schedule and risk. The application of a digital fire control allows the digitized M119A3 to emplace and displace faster, provide more responsive fires, and become more survivable on the battlefield. Additionally, the system includes a Suspension Lockout System (SLOS) and fixed recoil which improve stability during high elevation firings while providing a more simplified and easily maintained system.

CAPABILITY/CHARACTERISTICS:

- Improved lethality and strategic deployment
- Improved survivability (decreased emplace/displace time – shoot and scoot tactics with digital fire control)
- 1-Mil pointing accuracy
- Onboard ballistic calculations
- Embedded training
- Fire Control Computer
- Inertial navigation with GPS backup
- Integrated Muzzle Velocity Sensor
- Self-contained and supplemental power
- Digital communication with Fire Detection Center
- Rate of Fire: 10 cartridges/minute (maximum); 3 cartridges/minute (sustained)
- Emplace, Displace: <3 min, 2-3 min

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- U.S. Government

183
PM TAS
Towed Artillery Systems

MR DATE: June 2008
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC: N/A

MR DATE: March 2013
ACQ PHASE: Production & Deployment
ACAT: III
DODIC N/A

184
PM TAS
Towed Artillery Systems

SYSTEM DESCRIPTION:

The Improved position & Azimuth Determining System (IPADS) is a self-contained inertial survey system that provides common control for all Army and Marine Corps field artillery, mortar, and artillery meteorological and radar systems. IPADS-G adds a GPS feature to the IPADS and augments operations of the fire support community by providing the ability to maintain the current accuracy of IPADS without stopping for zero-velocity updates, increasing the artillery timeliness, availability of fires, lethality, survivability, and force protection on extended convoys or artillery missions. IPADS-G is also capable of operating in an inertial fashion independently of GPS aid.

CAPABILITY/CHARACTERISTICS:

- Weight: 135 pounds
- Accuracy: Horizontal: 4.0m Circular Error Probable (CEP), Vertical: 2.0m CEP, Azimuth: 0.4 mils Probable Error (PE)
- Survey Area: 75 kilometers radius from last update point
- Survey Area: 221 kilometers from last update point
- Mission Duration: Unlimited
- Temperature: Operation: -46 to +52 C, Storage: -46 to +71 C
- Power: Steady state: 104 watts (3.7 amp @ 24 VDC), Transient: 120 watts (5 amp @ 24 VDC)
- Initialization Time: 5-10 minutes
- Mean Time Between Failure: 2,500 hours
- LIN: S69925
- Digital Interface to Advanced Field Artillery Tactical Data System (AFATDS)
- Digital Map Capability
- Reliability - 30 times more reliable than PADS
- Keyboard light for night Ops enhanced control and display performance
- All Required Data On Single Screen
- Embedded navigation & Training Manual Embedded Emulator for unit training establishes common survey
- Increased Lethality Enables Massing of Fires
- Two-level maintenance operator remove and replace
- 1 PADS IMU = 2/3 New IPADS

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- L3 Communications

Improved Position & Azimuth Determining System

MR DATE: January 2007
ACQ PHASE: Operations & Sustainment
ACAT: III
DODIC N/A

122mm Howitzer, D30

SYSTEM DESCRIPTION:

The D-30 howitzer is a 122 mm Soviet towed howitzer that entered service in the 1960s. It weighs 7,055 pounds and has a maximum range of 15.4 kilometers (21.9 kilometers assisted). It has a maximum rate of fire of 10 to 12 rounds per minute and a sustained rate of five to six rounds per minute. In 2010, PM TAS was given a requirement to provide 204 D-30s to the Afghan National Army (ANA), provide training on the operation and maintenance of the weapon system, and establish a refurbishment capability in Afghanistan to allow Afghan workers to refurbish additional howitzers; PM TAS has completed this mission. In 2016, PM TAS was given a new requirement and is currently providing specifications to support the ANA Fleet.

CAPABILITY/CHARACTERISTICS:

- 360 degree on-carriage traverse with 3 leg stabilizing system
- Fires HEAT, smoke, illumination and chemical projectiles
- Optical Fire Control ("Glass and Iron" sights) - 6000 mil system, being converted to 6400 mil for Afghan National Army (ANA)
- Sight quadrants and telescopes for direct and indirect fire
- Hydraulic or mechanical jack for carriage lift
- Independent recoil system located above the gun barrel
- Vertical falling breech with auto cartridge extraction

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- UNIS Group, Bosnia I Herzegovina
- General Dynamics, Ordnance and Tactical Systems, St. Pete, FL

185
PM TAS

Towed Artillery Systems

MR DATE: N/A
ACQ PHASE: Operations & Sustainment
ACAT: N/A
DODIC: N/A

PD Joint Services

Scranton Army Ammunition Plant

Project Director
Joint Services
(PD JS) coordinates and integrates the DoD's Single Manager for Conventional Ammunition (SMCA) functions, processes, and operations; executes the SMCA's industrial base responsibilities to include Army Ammunition Plant modernization and sustainment; manages the Demilitarization of all conventional ammunition and missiles for the Services; manages ammunition manufacturing technology - prototyping programs and Army ammunition logistics R&D programs.

PD Joint Services

Holston Army Ammunition Plant

SYSTEM DESCRIPTION:
Holston Army Ammunition Plant
- Mission: Manufacture RDX, HMX and IMX based explosives
- Contractor: BAE Ordnance Systems Inc.
- PD JS Mission: Manage all Holston modernization efforts and facility use contract process and awards

CAPABILITY/CHARACTERISTICS:
• Core Capabilities:
- Production and development of Insensitive Munition explosives
- Synthesis and manufacture of high explosives
- Melt-cast, cast-cured, pressed and extruded explosives formulation

WEAPON SYSTEM:
• N/A

PRIME CONTRACTOR
• British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Planned new acid processing facility at Holston Army Ammunition Plant

SYSTEM DESCRIPTION:
This efforts addresses the relocation of the acid processing operations being carried out in Area A to Area B, the main production site. This relocation will result in a reduction of the overall facility footprint and an increase in plant energy efficiency.

CAPABILITY/CHARACTERISTICS:
• N/A

WEAPON SYSTEM:
• N/A

PRIME CONTRACTOR
• British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

188

PD JS

Joint Services

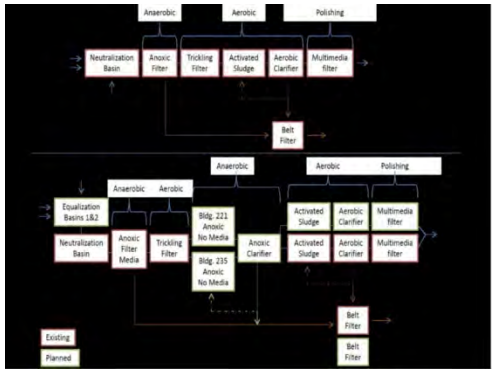
MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
The existing Industrial Wastewater Treatment Facility (IWWTF) cannot support current and future explosives manufacturing demands for the Department of Defense (DoD) while maintaining compliance with the National Pollutant Discharge Elimination System (NPDES) Permit. Design and construction of an expanded and upgraded IWWTF will include equalization basins (flow regulation), biological treatment basins (anoxic and aerobic treatment processes) as well as solids and sludge handling (media filters, clarifiers and belt filter presses) to accommodate the higher nitrate loading and flow rates with current and projected manufacturing demands.

CAPABILITY/CHARACTERISTICS:

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)



Planned expansion to the Industrial Wastewater Treatment Facilty at Holston Army Ammunition Plant

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
The U.S. Department of Defense is implementing an Insensitive Munitions (IM) initiative that uses new ingredients which exhibit high energetic performance but less sensitivity properties. Research and development of IM-compliant ammunition items has resulted in the implementation of a new generation of IM melt-cast explosives, e.g. PAX-41, IMX-101, and IMX-104. These formulations utilize a common fill to replace legacy explosives, e.g. TNT in artillery and Composition B in mortar munitions. The two critical ingredients in IMX production are dinitroanisole (DNAN) and nitrotriazalone (NTO). In order to meet the projected demand for IMX materials a dedicated production facility for DNAN and NTO is required at HSAAP. The IMX Ingredients Production Facility Modernization Project will increase Holston AAP IMX production capacity from 2 million pounds per year to 6 million pounds per year.

CAPABILITY/CHARACTERISTICS:

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

Insensitive Munitions Explosives Ingredients Production Facility at Holston Army Ammunition Plant

Iowa Army Ammunition Plant

SYSTEM DESCRIPTION:
Iowa Army Ammunition Plant
- Mission: Load, Assemble, and Pack (LAP) of medium and large caliber ammunition items
- Contractor: American Ordnance
- PD JS Mission: Manage all Iowa Production Base Support (PBS) efforts and facility use contract process and awards

CAPABILITY/CHARACTERISTICS:
• Core Capabilities:
- LAP for full range of munitions
- Tank ammo (105mm; 120mm)
- High explosive artillery
- Mortars and components (60mm and 81mm)
- Medium caliber (40mm)
- Composition C4 block/MICLIC
- Pressed (missile) & cast warheads
- Missile assembly and warheads
- Detonators

WEAPON SYSTEM:
• N/A

PRIME CONTRACTOR
• American Ordnance (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Iowa Army Ammunition Plant Upgraded Coal Fired Steam Plant

SYSTEM DESCRIPTION:
The result of this project will be a reliable steam plant that meets the National Environmental Standards for Hazardous Air Pollutants (NESHAP) requirements, and promotes energy efficiency. The project will upgrade the existing coal-fired boiler steam plant and add pollution control equipment and technology to comply with the Maximum Achievable Control Technology requirements.

CAPABILITY/CHARACTERISTICS:

WEAPON SYSTEM:
• N/A

PRIME CONTRACTOR
• American Ordnance (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

190

PD JS

Joint Services

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
Lake City Army Ammunition Plant
- Mission: 5.56mm, 7.62mm and .50 caliber production
- Contractor: Orbital Alliant Techsystems
- PD JS Mission: Manage all Lake City modernization efforts

CAPABILITY/CHARACTERISTICS:
- Core Capabilities
  - High volume manufacture and assembly of small arms cartridges
  - Percussion and electric primers
  - Pyrotechnics (tracer) manufacturing

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc (OATK) (Plant Operating Contractor)

Lake City Army Ammunition Plant

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
This project is designed to improve the quality of work environment for production personnel, through the installation of a heating, ventilation and air condition (HVAC) system that meets temperature and humidity level standards as recognized by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE). The system will alleviate heat, humidity and air impurities-related equipment failures as new, modernized production equipment is sensitive to its operating environment. The system is scheduled to be operational 4QFY17.

CAPABILITY/CHARACTERISTICS:

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- Orbital Alliant Techsystems, Inc (OATK) (Plant Operating Contractor)

No picture available

Lake City Army Ammunition Plant Heating Ventilation and Air Conditioning for Production Buildings 1 and 3

Radford Army Ammunition Plant

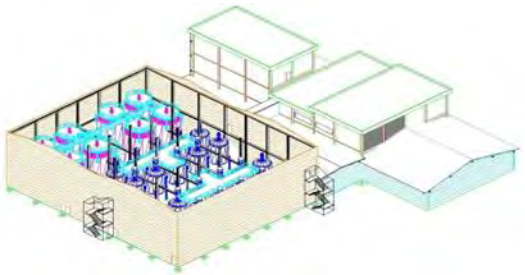
SYSTEM DESCRIPTION:
Radford Army Ammunition Plant
- Mission: Manufacture large volumes of propellants and Nitrocellulose
- Contractor: BAE Ordnance Systems Inc.
- PD JS Mission: Manage all Radford modernization projects, sustainment projects, facility use contract process, awards, and execution.

CAPABILITY/CHARACTERISTICS:
- Core Capabilities:
  - Nitrocellulose
  - Solventless propellant
  - Solvent base propellant
  - Single and multiple base propellant

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A



Radford Army Ammunition Plant Nitrocellulose Facility

SYSTEM DESCRIPTION:
This effort will design and construct a state-of-the-art Nitrocellulose (NC) manufacturing plant that is energy efficient and right sized to meet the Department of Defense's needs. The new facility will require fewer operators, have a smaller footprint and will increase environmental compliance, while improving product quality, safety, surge capacity and cost savings through a more efficient process.

CAPABILITY/CHARACTERISTICS:
- Nominal capacity 20 million pounds per year with surge capacity of 28 million pounds per year
- Two trains capable of producing NC Grades A through E

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

192
PD JS
Joint Services

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
This effort will design and construct a right-sized and efficient natural gas-fired packaged boiler facility to meet Radford Army Ammunition Plant's (RFAAP) steam demand, with co-gen capacity to provide 40% of RFAAP's electrical need. The new design will meet 2013 Maximum Achievable Control Technology (MACT) Standards.

CAPABILITY/CHARACTERISTICS:
Capable of producing 100% of Radford AAP daily steam and electrical requirements

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

Radford Army Ammunition Plant New Natural Gas Steam/Power Plant

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
This effort will replace the current Solvent Recovery Distillation Facility with a new distillation system. The current system has exceeded its 20 year design life, experiences frequent unscheduled shut-downs, and has deteriorated distillation towers and corroded storage tanks.

CAPABILITY/CHARACTERISTICS:
- Sized to support ~ 5 million pounds to 8 million pounds of solvent single based propellant production
- Compliments the newly constructed solvent recovery granular activated carbon (GAC) facility
- Increases solvent recovery efficiency
- Minimizes unscheduled shut-downs
- Reduces maintenance costs

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- British Aerospace Engineering (BAE) Ordnance Systems, Inc. (Plant Operating Contractor)

Radford Army Ammunition Plant Solvent Recovery System

Scranton Army Ammunition Plant

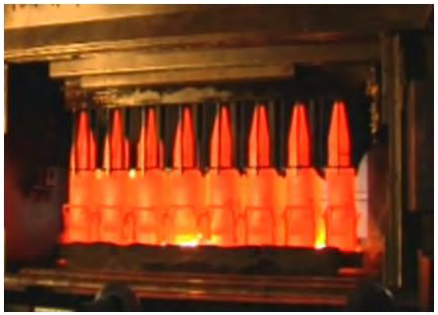
SYSTEM DESCRIPTION:
Scranton Army Ammunition Plant
- Mission: Manufacture 105mm to 155mm diameter projectiles, including M795; 120mm family of mortar shell bodies; and 5"/54 Caliber Navy projectiles
- Contractor: GD-OTS
- PD JS Mission: Manage all Scranton modernization efforts and the acquisition strategy for the property management contract.

CAPABILITY/CHARACTERISTICS:
- Core Capabilities:
  - Manufacturer of high volume, large caliber ammunition metal parts
  - Only qualified producer of the body for the 155mm M795 artillery round
  - High tonnage forging

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- General Dynamics - Ordnance and Tactical Systems (GD-OTS) (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A



Scranton Army Ammunition Plant Low Volume Flexible Production Line

SYSTEM DESCRIPTION:
This effort installed a flexible production line to be significantly more efficient at lower volumes of production. This effort added a new small batch heat treat system, new rough turn lathes, new and refurbished bond welders, installation of a quick die change system for the press lines, and modernization of the flexible machine cell. These systems are capable of manufacturing various types of projectiles, with minimal time required to change tooling. These systems reduce the overhead burdens associated with under utilized equipment specialized for high volume production.

CAPABILITY/CHARACTERISTICS:
- Can transition from one size of projectile to another

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- General Dynamics - Ordnance and Tactical Systems (GD-OTS) (Plant Operating Contractor)

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

194

PD JS

Joint Services

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
In this initiative, conventional ammunition acquisitions are reviewed to determine if they are consistent with retaining national technology and industrial base (NTIB) capabilities in accordance with 10 U.S.C. 2304(c)(3) and Section 806 of Public Law 105-261. Section 806 of Public Law 105-261: provides the Single Manager for Conventional Ammunition (SMCA) the authority to restrict the procurement of conventional ammunition to sources within the NTIB in order to maintain National Technology and Industrial Base (NTIB) capabilities.

CAPABILITY/CHARACTERISTICS:
- Determines if limitations of specific procurements of ammunition are necessary to maintain a facility, producer, manufacturer or other supplier available for furnishing an essential item of ammunition or ammunition component for national emergency or industrial mobilization.

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

No picture available

Section 806 Policy

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
The Single Point Failure (SPF) Program identifies and maintains a single point failure list for ammunition components and end items procured by PEO Ammunition. Risk assessments are conducted using multiple measures to determine the risk of each single point failure item.

CAPABILITY/CHARACTERISTICS:

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

No picture available

Single Point Failure Program

No picture available

Single Manager for Conventional Ammunition Industrial Base Strategic Plan

SYSTEM DESCRIPTION:
The Industrial base Strategic Plan: 2025 provides strategic guidance and establishes a management framework to posture the ammunition development, production and logistics supply chain to effectively and efficiently respond to the Joint Warfighter's current and future conventional ammunition requirements. The plan was previously published in 2004, 2009 and 2016.

CAPABILITY/CHARACTERISTICS:
- Sets the tone for the Army's Ammunition Industrial Base (IB), for both government and commercial producers, for the next 10 to 15 years.
- Updates ammunition plant and depot strategies while incorporating relevant: Research, Development, Test and Evaluation (RDT&E) strategic plans; logistics strategies and IB plans; long-range modernization initiatives; and demilitarization strategic plans to address the Ammunition Enterprise IB vision across the entire life cycle.
- Define challenges across the ammunition life-cycle.
- Outline management principles and strategies to sustain IB capabilities and ensure readiness.
- Describes the Goals, Objectives, Strategies, Outcomes and Performance Measures for the Ammunition IB.

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

No picture available

Armament Retooling and Manufacturing Support Program

SYSTEM DESCRIPTION:
The Armament Retooling and Manufacturing Support (ARMS) program was established by Congress in 1993 (ARMS Act of 1992) and Codified in 2000 (10 U.S.C. 4551-4555) to encourage commercial use of underutilized Government-owned, Contractor-operated (GOCO) Army Ammunition Plant facilities. The program lets businesses take advantage of Government incentives to use land and diverse industrial facilities that include infrastructure, utilities, buildings and equipment at very flexible and reasonable terms. The ARMS Legislation allows tenant revenue to be used at each GOCO instead of being returned to the U.S. Treasury.

CAPABILITY/CHARACTERISTICS:
- Reduces cost of facility ownership, operations, maintenance, and environmental remediation
- Reduces product costs
- Reduced or eliminates cost of asset disposal

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

196

PD JS

Joint Services

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Green Primer Pilot Process

SYSTEM DESCRIPTION:

The goal of this effort is to design, build, and prove-out an automated pilot process for the manufacture of Metastable Interstitial Composite (MIC) primers for use in small caliber & hand grenade munitions. The development of this primer and manufacturing process will support the replacement of lead styphnate in current primer designs, eliminating the exposure of operators to lead during primer manufacturing.

CAPABILITY/CHARACTERISTICS:

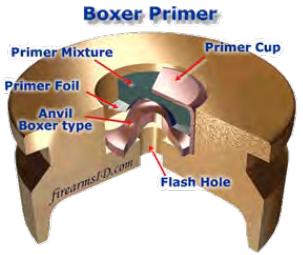
- Expected Completion: 4QFY18
- End Items Supported: 5.56mm caliber primers & hand grenade fuze primers
- Adaptable process to accommodate different primer sizes
- Start-to-Finish primer manufacturing: Primer mix to primer cup loading to drying to sealing to primer pack out

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Franklin Engineering
- Innovative Material Processing



MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Ultrasound Probes for use in Explosive Manufacturing

SYSTEM DESCRIPTION:

The goal of this effort is to develop an ultrasound probe and related process controls to detect variations in nitramine levels during the processing and recrystallization of explosives such as RDX as well as HMX Classes I, III, and V. The current production systems cannot detect the variations in nitramine levels, leading to the production of non-conforming product, resulting in high rework rates (10-25% depending on process). The successful development of the probe and controls will reduce costs, increase throughput and lessen the environmental impacts associated with scrap material.

CAPABILITY/CHARACTERISTICS:

- Expected Completion: 2QFY17
- End Items Supported: RDX & HMX loaded products
- Ultrasonic probe certified for use in energetic operations
- Probe controls integrated with legacy HMX controls

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Applied Sonics

APE 1236M2 Explosive Waste Incineration

SYSTEM DESCRIPTION:

The Ammunition Peculiar Equipment (APE) 1236M2 Explosive Waste Incinerator utilizes a gas-fired steel rotary kiln which is an unlined rotary furnace originally designed to destroy small arms and bulk explosives. The kiln contains internal spiral flights, which move the waste in an auger-like fashion through the retort as the kiln rotates. The flights also provide charge separation for the in-process materials, and discourage sympathetic detonations and scattering of materials. The kiln is equipped with a variable speed drive, which allows varying rotation speeds and material residence time. The pollution abatement system breaks down organic compounds and captures particulate effluents in compliance with applicable state and federal environmental laws and regulations.

CAPABILITY/CHARACTERISTICS:

- Locations used: Crane Army Ammunition Activity, McAlester Army Ammo Plant, Tooele Army Depot, Hawthorne Army Depot

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Autoclave Meltout System

SYSTEM DESCRIPTION:

The Autoclave Meltout System is used to remove and reclaim meltable main charge explosives such as TNT, Composition B, and Tritonal from projectiles and bombs. The system consists of a steam heated pressure vessel and pneumatic control panel. Projectiles or bombs are disassembled to expose the explosive. The item is inserted into the autoclave, the lid closed, and the steam turned on. The molten explosive flows from the bottom of the autoclave. After completion of the melt cycle, the steam is turned off and an integral nozzle sprays cooling water prior to removal and reloading of the next batch of items. Reclamation of the explosives is completed by processing the removed explosive through collection piping, agitated melt kettles, and flaker belt or casting trays. The Autoclave Meltout System can come in any multiples to accommodate the facilities available and the workload demand.

CAPABILITY/CHARACTERISTICS:

- Locations used: McAlester Army Ammunition Plant (MCAAP), Hawthorne Army Depot (HWAD) and Korean Demil Facility (DEFAC)

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Tooele Army Depot (TEAD), Tooele, UT : System Designer
- Maecon Inc., CA: System Designer

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

198

PD JS

Joint Services

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
Open Burn / Open Detonation is a safe and cost effective approach to demilitarize and destruct items which are too costly, complicated or dangerous to disassemble. The controlled open detonation or open burning of explosives or munitions, is performed in a safe and environmentally acceptable manner, using: 1) burn pans to prevent ground contamination, 2) recovered explosives for cost effective donor material and 3) earth covered detonations to contain fragments.

CAPABILITY/CHARACTERISTICS:

WEAPON SYSTEM:
• N/A

PRIME CONTRACTOR
• N/A

Demil Operations - Open Burn / Open Detonation

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

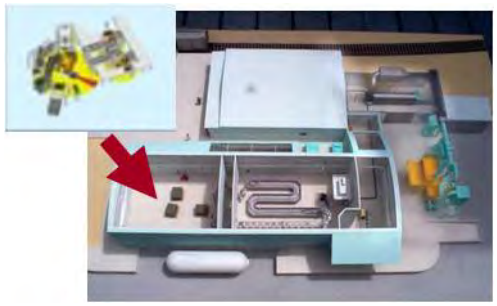
SYSTEM DESCRIPTION:
The Hot Gas Decontamination (HGD) Chamber is a low temperature thermal treatment process used for treating munitions bodies, range scrap, noncombustible building materials and process equipment that still retain residual amounts of energetic materials. The HGD system is a batch process that uses hot jets of air to heat contaminated items to temperatures of 500^{o} F so the energetic materials can be decomposed, vaporized, or deflagrated. The HGD facility can also decontaminate energetically contaminated process equipment without destruction, enabling re-use in other applications.

CAPABILITY/CHARACTERISTICS:
• Location used: Hawthorne Army Depot

WEAPON SYSTEM:
• N/A

PRIME CONTRACTOR
• N/A

Hot Gas Decontamination



McAlester Cryofracture Demilitarization Facility

SYSTEM DESCRIPTION:
At the McAlester Cryofracture Demilitarization Facility (MCDF), munitions to be demilled are made brittle by immersion in a liquid nitrogen bath and subsequently crushed; warheads are punched out using a hydraulic press. Fractured explosive components are subjected to thermal treatment in an Ammunition Peculiar Equipment (APE) 1236 Explosive Waste Incinerator. Residual material is separated, energetically deactivated using an induction heater and collected for proper disposal. The initial focus for MCDF is on ADAM Mines, however trial runs have been conducted on small steel bodies, high explosive-loaded munitions such as grenades, mines, and submunitions typically found in Improved Conventional Munitions, Combined Effects Munitions, and Cluster Bomb Units.

CAPABILITY/CHARACTERISTICS:
- Cools munitions in liquid nitrogen (-320.8^{o} F) prior to fracture/energetic accessing in a hydraulic press
- Simple system processes a wide variety of munitions
- Completely destroys the munition
- Flexible process is not sensitive to munition configuration or condition

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Ammonium Perchlorate Rocket Motor Destruction System

SYSTEM DESCRIPTION:
The Ammonium Perchlorate Rocket Motor Destruction System (ARMD) is a closed thermal destruction capability for the destruction of solid propellant rocket motors containing ammonium perchlorate (AP). The facility is designed to process both un-sectioned Multiple Launch Rocket System (MLRS) rocket motors as well as larger composite propellant motors such as Army Tactical Missile System (ATACMS) and standard missile motors by sectioning them into smaller segments. The attached thermal treatment facility destroys the organic materials present in the AP-based propellant, and the subsequent treatment of process gasses captures the particulate effluents in compliance with Pennsylvania Department of Environmental Quality Standards.

CAPABILITY/CHARACTERISTICS:
- Located at Letterkenny Munitions Center (LEMC), Chambersburg, PA

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR:
- Environmental Chemical Corporation (ECC), Burlingame, CA: System Developer

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

200
PD JS
Joint Services

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
This effort supports the advanced prototyping of container systems that are automation-friendly, provide for rapid load reconfiguration, feature standardized interfaces, promote unitization, are 'right sized' for combat unit loads, are designed for maintainability / recyclability, address Insensitive Munitions (IM) / explosives safety requirements and provide environmental protection.

CAPABILITY/CHARACTERISTICS:
- Increases throughput by reducing time to build and constrain loads
- Minimizes environmental impact and cost by delivering munitions in the right quantity to the combat unit
- Lowers production cost by reducing the number of munition container types
- Supports container reuse and retrograde of munitions
- Compatible with future automated Material Handling Equipment and processing facilities
- Incorporates IM features
- These programs are applicable to multiple families of munitions from 120mm tank and mortar down to 5.56mm small caliber in development.

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

Munitions Containerization Systems

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

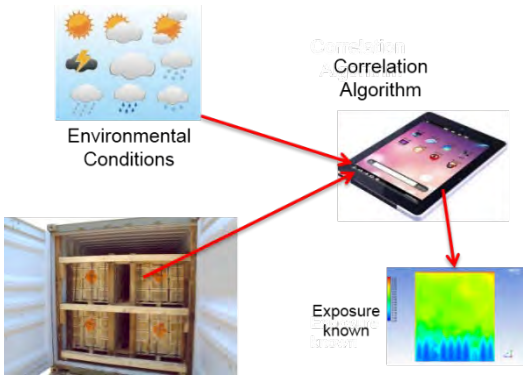
SYSTEM DESCRIPTION:
This effort supports advanced prototyping of simple to complex environmental health and inventory monitoring systems to improve reliability and asset visibility and enable effective condition based maintenance for ammunition.

CAPABILITY/CHARACTERISTICS:
- Enables item / pallet level environmental monitoring and effective condition based management of ammunition
- Provides a means for soldiers to establish munitions readiness status
- Improve safety and reliability through knowledge of adverse events
- Provides data for continuous product improvement
- Reduce stockpile reliability testing and cost
- Multiple munitions health and inventory monitoring technologies are being developed with varying levels of capability and complexity for deployment with developmental large / medium caliber smart and other high value ammunition assets down to small caliber

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

Munitions Health and Inventory Monitoring Systems



Munitions Predictive Life

SYSTEM DESCRIPTION:
The purpose of the Munitions Predictive Life initiative is to develop sensing technologies and algorithms that enable munitions to indicate their serviceability to the operator based upon aggregate environmental exposures, system cycling and munition degradation models.

CAPABILITY/CHARACTERISTICS:
- Enables munitions health data to be analyzed in real-time to project usable munitions life based on their environmental exposure levels
- Provides for more informed stockpile management decisions helping to ensure that munitions delivered to the soldier are safe and reliable. Also reduces cost and the logistics burden by ensuring munitions are issued for expenditure before they become unserviceable.
- Provides data for continuous product improvement
- A suite of complex to simple sensing technologies and algorithms are being developed for use with smart and other high value ammunition down through small caliber

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

Improved Munitions Packaging

SYSTEM DESCRIPTION:
The purpose of the Improved Munitions Packaging initiative is to develop ammunition packaging with lightweight advanced materials and highly efficient designs. These will be applied to legacy items still in production.

CAPABILITY/CHARACTERISTICS:
- Improves field ammunition operations by introducing new packaging designs, components, features, and materials that are less expensive, lighter, have fewer layers and produce less battlefield residue
- Enhances ammunition survivability and reliability through improved environmental protection
- Develops environmentally friendly packaging
- Ensures packaging meets all munitions packaging requirements / standards and relevant performance requirements derived from the warfighter
- These programs are applicable to multiple families of munitions from 120mm tank and mortar down to 5.56mm small caliber in production. Current efforts in progress include Plastic Cylindrical Container, Pouch for 5.56mm, and Plastic Rectangular Container.

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A

MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

202
PD JS
Joint Services

Insensitive Munitions Integration Program

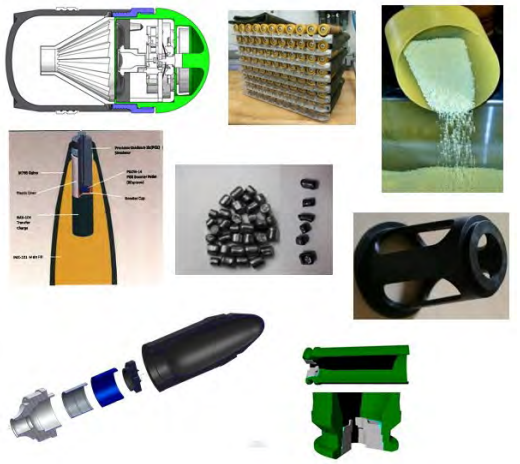
MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
The purpose of the Insensitive Munitions (IM) Integration Program is to develop and integrate IM technologies into end items in order to improve munition survivability and warfighter safety. IM Technologies will be developed in the areas of warheads, propulsion and propellants, explosives, and packaging, using modelling and simulation to augment live testing.

CAPABILITY/CHARACTERISTICS:
- Directly supports PD JS in achieving IM compliance for munitions by bridging the gap between near-term PM-funded IM efforts and long-term Science and Technology IM programs
- Incrementally improves the IM characteristics of the PEO Ammo portfolio
- Assesses reduced sensitivity high energy energetics, explosives and propellants
- Also considers the design and evaluation of packaging containers and other material solutions to mitigate IM threats

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A



Ammo Provider

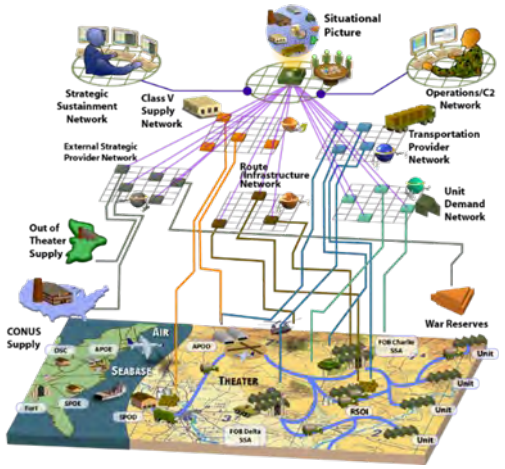
MR DATE: N/A
ACQ PHASE: N/A
ACAT: N/A
DODIC: N/A

SYSTEM DESCRIPTION:
The purpose of the Ammo Provider initiative is to demonstrate technologies that assure a survivable munitions logistics system by increasing distribution velocity and protecting ammo storage areas

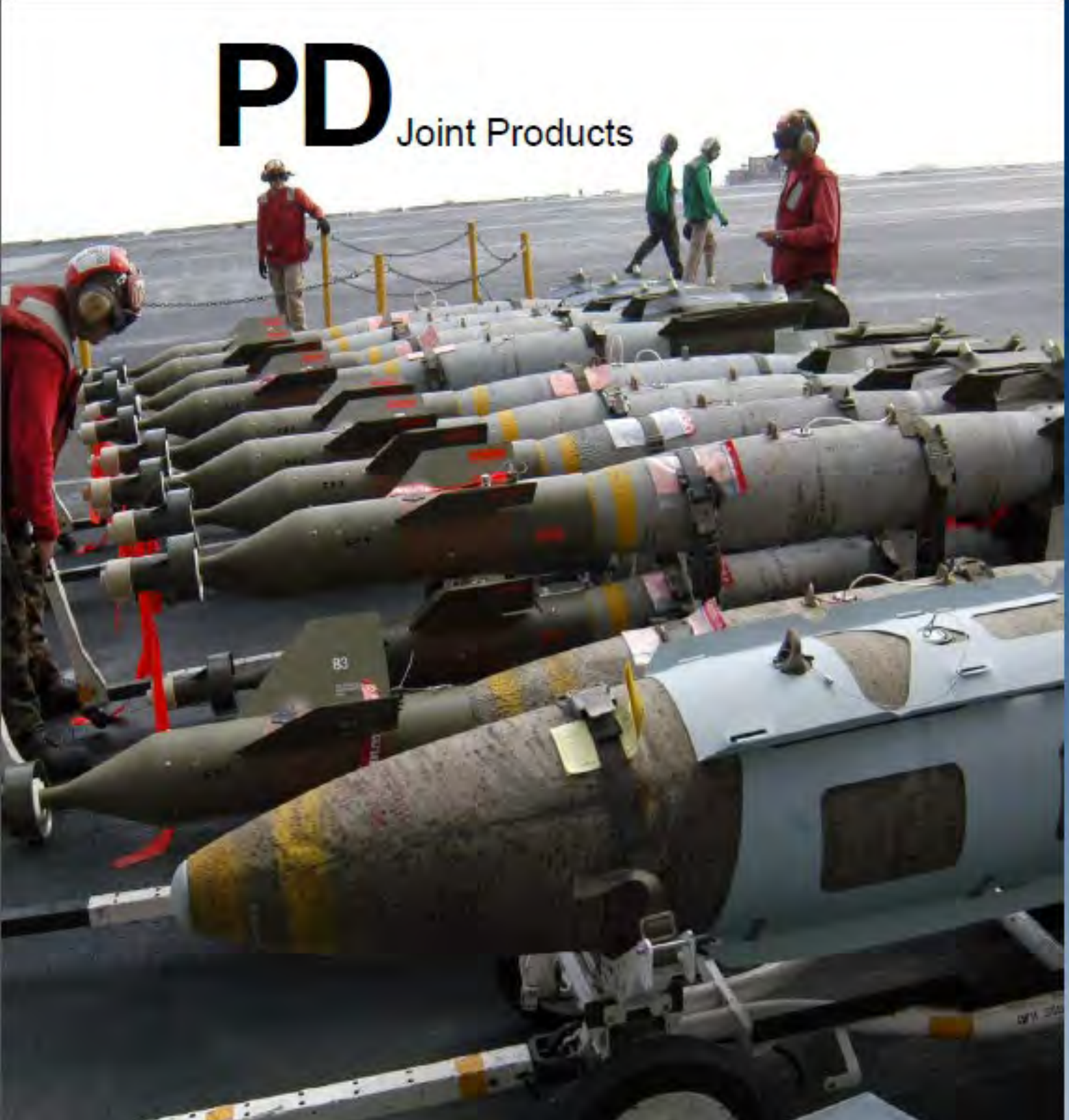
CAPABILITY/CHARACTERISTICS:
- Enables faster distribution of ammunition through development of: supply point automation tools, partial pallet consolidators, routine/emergency resupply modules, and adaptive demand estimation planning tools
- Improves ammunition stockpile management through enhancements in tactical ammunition accountability, predictive reliability, marking and application technologies
- Provides faster, less expensive repackaging and reconfiguration for ammunition retrograde through improved dunnage materials and battlefield manufacturing tools
- Enhances capability to safely move and store incompatible munitions by automating ammunition storage site safety planning and developing enhanced explosive safety tools (barriers/shields)
- A set of logistics enablers that will improve ammunition handling, storage, and transportation planning, management, and distribution systems. Key efforts include: Automated Supply Point – Scalable, Munitions Survivability Software, and Class V Adaptive Demand Estimation Tool

WEAPON SYSTEM:
- N/A

PRIME CONTRACTOR
- N/A



PD Joint Products



PD Joint Products

(PD JP) Established October 2009, the Project Director (PD) for Joint Products is one of the newest PDs within PEO Ammunition. PD Joint Products executes Single Manager for Conventional Ammunition (SMCA) acquisition responsibility for products configuration managed by and/or primarily procured for other Services to include Air Force and Navy Bombs and associated components, Energetics, Navy Gun Ammunition product lines, and CAD/PADs for Army Aviation.

204
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: DA59

SYSTEM DESCRIPTION:
The Projectile Explosive Loaded Subassembly is an explosive - loaded MK 64 projectile body. It provides a moderately priced solution for Naval Surface Fire Support (NSFS) and Surface Warfare (SuW) Missions with end user tailored fuzing solutions and also supports ammunition inventory renovation and modernization efforts.

CAPABILITY/CHARACTERISTICS:
- Provides accurate naval gunfire against fast, highly maneuverable surface targets, air threats and shore targets during amphibious operations
- Components are the MK 64 Projectile Body, Fuze Adapter, and PBXN-9 Explosive

WEAPON SYSTEM:
- 5" /54 Cal Gun

PRIME CONTRACTOR
- General Dynamics – Scranton AAP, Scranton, PA: MK 64 Projectile Body
- BAE-Holston AAP, Holston, TN: PBXN-9
- Crane Army Ammunition Activity, Crane, IN: Load, Assemble, and Pack

No picture available

Projectile 5”/54 CAL Explosive Loaded Subassembly

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC D326

SYSTEM DESCRIPTION:
The MK 67 MOD 3 Propelling Charge is a component to the end round that provides the force to propel the projectile from the gun to the target.

CAPABILITY/CHARACTERISTICS:
- The MK 67 MOD 3 can be used in all versions of the 5"/54 Cal Gun
- Maximum Projectile Range is approximately thirteen (13) nautical miles
- BS-NACO propellant used in gun; gun barrel experiences virtually no wear
- Components: MK 45 Primer, BS-NACO Propellant (21 lbs.), Cartridge Case, MK 12-3 Poly Plug, Wads and Spacers

WEAPON SYSTEM:
- 5" /54 Cal Gun

PRIME CONTRACTOR
- BAE-Radford AAP, Radford, VA: BS-NACO Propellant
- Day & Zimmermann, Camden, AR: MK 45 Primer
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

Propelling Charge 5"/54 CAL MK 67 MOD 3

205
PD JP
Joint Products

No picture available

Projectile 5"/54 CAL Blind Loaded-Plugged, MK 92 MOD 1

SYSTEM DESCRIPTION:
The Projectile 5"/54 Blind Loaded & Plugged (BL-P) MK 92 MOD 1 is an inert round that utilizes the MK 64 projectile body. This round is used for training and firing warning shots.

CAPABILITY/CHARACTERISTICS:
- The MK 92 BL-P Projectile is designed for target practice, warning rounds and other events to maximize safety
- It is completely inert
- The projectile consist of a forged steel body filled with inert, homogeneous dry material and fitted with a dummy nose plug
- The base of the projectile is solid with a 1/2 caliber boattail and a copper rotating band
- The projectiles are designed to be similar to the MK 64 family of projectiles in exterior shape and balance
- Components are MK 64 Body, dummy nose plug, and inert fill

WEAPON SYSTEM:
- 5" /54 Cal Gun

PRIME CONTRACTOR
- General Dynamics-Scranton AAP, Scranton, PA: MK 64 Projectile Body
- Crane Army Ammunition Activity, Crane, IN: Load, Assemble and Pack

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC D349

No picture available

Projectile 5"/54 CAL High Explosive-Multi-Option Fuze, MK 186 MOD 0

SYSTEM DESCRIPTION:
The 5"/54 Navy Gun System is used as a tactical weapon against surface and airborne targets, and Naval Surface Fire Support for U.S. Marine Corps on shore. The 5"/54 caliber conventional ammunition is used in the MK 45 Lightweight Gun Mount (LWGM) on CG 47 Class Cruisers and DDG 51 Class Destroyers. The MK 45 lightweight gun provides surface combatants accurate naval gunfire against fast, highly maneuverable surface targets, air threats and shore targets during amphibious operations. The MK 186 MOD 0 High Explosive Multi-Option Fuze (HE-MOF) Projectile employs the MK 437 Multi-Option Fuze Navy (MOFN) on the MK 64 Projectile Body. It provides a moderately priced solution for Naval Surface Fire Support (NSFS) & Surface Warfare (SuW) Missions, and will be the pre-eminent high explosive projectile configuration in Navy Gun.

CAPABILITY/CHARACTERISTICS:
- Provides accurate naval gunfire against fast, highly maneuverable surface targets, air threats and shore targets during amphibious operations
- Components are the MK 64 Projectile Body, MK 437 MOFN, MK 4 Fuze Cap, Fuze Adapter, PBXN-9 Explosive, Felt Spacer, and Lid

WEAPON SYSTEM:
- 5" /54 Cal Gun

PRIME CONTRACTOR
- General Dynamics-Scranton AAP, Scranton, PA: MK 64 Projectile Body
- BAE-Holston AAP, Holston, TN: PBXN-9
- Crane Army Ammunition Activity, Crane, IN: Load, Assemble and Pack

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC DA48

206
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: NA27

SYSTEM DESCRIPTION:

The MK 437 Multi-Option Fuze Navy (MOFN) is a multi-function fuze designed with four (4) modes of engagement: Proximity, Electronic Time, Point Detonation, and Delay. The MOFN uses inductive setting to provide accurate target engagement. The fuze uses PBXN-5 Explosive as the booster. A mechanical Safe & Arm (S&A) device serves to prevent the projectile from exploding prematurely after deployment from the weapon.

CAPABILITY/CHARACTERISTICS:

- Used on the MK 186 MOD 0 HE-MOF projectile
- Four modes of engagement:
  - Proximity
  - Electronic Time
  - Point Detonation
  - Delay

WEAPON SYSTEM:

- N/A

PRIME CONTRACTOR

- Orbital Alliant Techsystems, Inc (OATK), Allegany Ballistics Lab, Rocket Center, WV

Multi Option Fuze Navy
5"/54 CAL MK 437

MK 82 500lb General Purpose Bomb

SYSTEM DESCRIPTION:
The MK 82 General Purpose Bomb is designed for soft, fragment-sensitive targets such as troops, petroleum-based liquids, radars and aircraft. The Air Force is the primary user. This weapon is not intended for hard targets or penetrations. The primary fill for the MK 82 is Tritonal (live load) but is also loaded with an inert fill.

CAPABILITY/CHARACTERISTICS:
- Weight: 533.10 pounds
- Length: 85.86 inches
- Diameter: 10.80 inches
- DODIC variations:
  - E485: MK 82 MOD 1, Tritonal fill
  - F237: MK 82 MOD 1, Inert fill
  - F243: MK 82 MOD 0, Inert fill

WEAPON SYSTEM:
- Various fixed-wing aircraft

PRIME CONTRACTOR
- General Dynamics, Garland, TX: Empty Bomb Assembly
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

BDU-56 Series 2000lb Practice Bombs

SYSTEM DESCRIPTION:
The BDU-56 Practice Bomb is an inert version of the MK 84 General Purpose Bomb. This inert "heavyweight" bomb is dropped either with a parachute for "High Drag" mode or without a drag device for "Slick" mode. Delivery of a BDU-56 High Drag Bomb from a low altitude, low dive angle results in the bomb impacting at or near the target and has very little or no ricochet due to the aerodynamic effect of the high drag retard device. However, when the high drag system fails to deploy, the weapon takes on the characteristics of a low drag weapon and has a significantly increased slant range to impact (up to 4,000 ft. longer under certain conditions). The bomb is manufactured as a forged steel body with concrete fill.

CAPABILITY/CHARACTERISTICS:
- Training bomb to simulate the 2,000lb MK 84 General Purpose Bomb
- Weight: 2,168.42 pounds
- Length: 291.84 inches
- Diameter: 18 inches
- DODIC variations:
  - E756: BDU-56/B, Concrete fill

WEAPON SYSTEM:
- Various fixed-wing aircraft

PRIME CONTRACTOR
- Not in production

207
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: E485, F237, F243

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC E756

208
PD JP
Joint Products

BDU-33 25lb Practice Bomb

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC E969

SYSTEM DESCRIPTION:
The BDU-33 Practice Bomb is a tear drop shaped bomb that simulates a MK 82 low drag configuration. It utilizes a spotting charge to display target marking. When the bomb is released from the aircraft it free falls until impact. Upon impact the bomb drives a firing pin assembly against a primer activating the signal charge. The resulting flash and puff of smoke permits visual evaluation of accuracy. The Navy's bomb configuration with similar function is the MK 76 but has different dimensional attributes.

CAPABILITY/CHARACTERISTICS:
- Training bomb that simulates the 500lb MK 82 Series General Purpose Bomb in low drag configuration

WEAPON SYSTEM:
- Various fixed-wing aircraft

PRIME CONTRACTOR
- Delfasco, LLC, Afton, TN

MK 76 25lb Practice Bomb

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC E973

SYSTEM DESCRIPTION:
The MK 76 Practice Bomb is a tear drop shaped bomb that simulates a MK 82 low drag configuration used by the Navy. It is similar to the Air Force's BDU-33. It utilizes the M4 or CXU-3 signal cartridges as a spotting charge to display target marking. Upon impact the bomb drives a firing pin assembly against a primer activating the signal charge. The resulting flash and puff of smoke permits visual evaluation of accuracy.

CAPABILITY/CHARACTERISTICS:
- Training bomb that simulates the 500lb MK 82 Series General Purpose Bomb in low drag configuration

WEAPON SYSTEM:
- Various fixed-wing aircraft

PRIME CONTRACTOR
- Delfasco, LLC, Afton, TN

BLU-110 Series General Purpose Bomb

SYSTEM DESCRIPTION:

The BLU-110 General Purpose Bomb is identical to the MK 83 MOD 4 1000lb General Purpose Bomb, with the exception of the explosive fill. The MK 83 MOD 4 Bomb is filled with Tritonal Explosive and the BLU-110 Bomb is filled with PBXN-109 Explosive. The BLU-110 Bomb is used by the Navy and Air Force. The Navy version is thermally-protected to extend the cook-off times and has three yellow bands on the bomb. The Air Force version has only one yellow band. This bomb has a slender body made of steel with a well in the nose section for a proximity sensor, mechanical fuze and adapter booster, or a penetrating nose plug; and a well in the aft section for a tail electric fuze. It is compatible with proximity sensor, mechanical and electrical or electronic fuzes. It uses a conical or retarding fin, or laser/GPS guidance airfoil kit, or a mine kit.

CAPABILITY/CHARACTERISTICS:

- Attacks soft fragment sensitive targets, troops, petroleum-based liquids, radars, and aircraft in the open.
- Weight: 903 pounds (bomb with casing); 905 pounds (bomb with fin, ME-83); 995 pounds (bomb with retarded fin, BSU-85)
- Length: 72.47 inches (bomb with casing); 114.07 inches (bomb with fin, ME-83); 110.25 inches (bomb with retarded fin, BSU-85)
- Diameter: 14.22 inches
- DODIC variations:
  - EB28: BLU-110 /B
  - F288: BLU-110A/B

WEAPON SYSTEM:

- Various fixed-wing aircraft

PRIME CONTRACTOR

- General Dynamics, Garland, TX: Empty Bomb Assembly
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

209
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: EB28, F288

BDU-50 Series 500lb Practice Bomb

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: EB71, EA94

SYSTEM DESCRIPTION:

The BDU-50 is a 500lb practice bomb, an inert version of the MK 82 Bomb. This inert "heavyweight" bomb is dropped either with a parachute for "High Drag" mode or with no drag device for "Slick" mode. Delivery of a BDU-50 High Drag Bomb from a low altitude, low dive angle results in the bomb impacting at or near the target and has very little or no ricochet, due to the aerodynamic effect of the high drag retard device. However, when the high drag system fails to deploy, the weapon takes on the characteristics of a low drag weapon and has a significantly increased slant range to impact (up to 4,000 ft. longer under certain conditions). The bomb is manufactured as a cast ductile iron configuration.

CAPABILITY/CHARACTERISTICS:

- Training bomb to simulate the 500lb MK 82 General Purpose Bomb
- Weight: 521 pounds
- Length: 89.44 inches
- Diameter: 10.80 inches
- DODIC variations:
  - EB71: BDU-50C/B
  - EA94: BDU-50D/B

WEAPON SYSTEM:

- Various fixed-wing aircraft

PRIME CONTRACTOR

- Allied Mechanical Wisconsin, Tower Industries, Inc., Greenville, WI

MK 83 1000lb General Purpose Bomb

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC EC37, E509

SYSTEM DESCRIPTION:

The MK 83 General Purpose Bomb is designed for soft, fragment sensitive targets such as troops, petroleum-based liquids, radars and aircraft in the open. The Navy is the primary user. This weapon is not intended for hard targets or penetrations. The primary fill for the MK 83 is Tritonal Explosive, but it also can be loaded with an inert fill.

CAPABILITY/CHARACTERISTICS:

- Attacks soft fragment sensitive targets, troops, petroleum-based liquids, radars, and aircraft in the open
- Weight: 1,000 pounds
- Length: 115 inches
- Diameter: 14 inches
- DODIC variations:
  - EC37: MK 83 MOD 4, Inert fill
  - E509: MK 83 MOD 4, Tritonal fill

WEAPON SYSTEM:

- Various fixed-wing aircraft

PRIME CONTRACTOR

- General Dynamics, Garland, TX: Empty Bomb Assembly
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

BLU-109 Series 2000lb Hard Target Penetrator Warhead

SYSTEM DESCRIPTION:

The BLU-109 is a 2000lb hard target penetrator warhead. The BLU-109/B and C/B are used by the Air Force; the BLU-109A/B is the Navy version and the B/B is FMS use only. The A/B has the BLU-109/B's Tritonal explosive replaced with PBXN-109, is fitted with a permanent external hardback, and has an external thermal protective coating. The BLU-109 B/B is physically the same as the BLU-109/B but has the PBXN-109 as the explosive. The BLU-109C/B is an Air Force version that uses AFX-757 Explosive and Insensitive Munition hardware (ventplate). The BLU-109 body is a 25.4mm (1 in.) thick casing of forged gun-barrel hardened steel and is approximately twice the thickness of the MK 84. It is typically detonated by an FMU-143 series tail fuze. The absence of a nose fuze well makes the nose stronger and, additionally, the weapon's base plate is reinforced to better protect the fuze from the shock of impact. The BLU-109 is not used as a standalone free fall bomb; it is a warhead for the following guided bombs and missile: GBU-10, -15, -24, -27 and -31(V)3/B; and AGM-130.

CAPABILITY/CHARACTERISTICS:

- Penetrates bunkers, aircraft shelters and concrete structures
- Weight: 2,168.42 pounds
- Length: 98.85 inches
- Diameter: 14.50 inches

- DODIC variations:
  - F034: BLU-109/B, Inert fill (Air Force)
  - F140: BLU-109/B, Tritonal fill (Air Force)
  - ED49: BLU-109C/B, AFX-757 fill (Air Force)
  - E342: BLU-109A/B, Inert fill (Navy)
  - F142: BLU-109A/B, PBXN-109 fill (Navy)

WEAPON SYSTEM:

- Various fixed-wing aircraft

PRIME CONTRACTOR

- General Dynamics, Garland, TX: Empty Bomb Assembly
- Ellwood National Forge, Irvine, PA: Empty Bomb Assembly
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: F034, F140, ED49, E342, F142

BLU-117 2000lb General Purpose Bomb

SYSTEM DESCRIPTION:

The BLU-117 General Purpose Bomb is identical to the 2000lb MK 84 MOD 6 Bomb, with the exception of the explosive fill. The MK 84 MOD 6 Bomb is inert filled and the BLU-117 General Purpose Bomb is filled with AFX-795 Insensitive Munitions (IM) Explosive. It is used by the Air Force. This bomb has a slender body made of steel with a well in the nose section for a proximity sensor, mechanical fuze and adapter booster, or a penetrating nose plug; and a well in the aft section for a tail electric fuze. It uses a conical fin, or laser/GPS guidance airfoil kit, or a mine kit. The BLU-117C/B and BLU-117B/B have vented base plates for better IM reaction.

CAPABILITY/CHARACTERISTICS:

- Attacks soft and intermediately protected targets, buildings, rail yards, and lines of communications
- Weight: 1,880 pounds
- Length: 97.34 inches
- Diameter: 18.30 inches

WEAPON SYSTEM:

- Various fixed-wing aircraft

PRIME CONTRACTOR

- General Dynamics, Garland, TX: Empty Bomb Assembly
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: ED09

212
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC F275, ED02, F262

SYSTEM DESCRIPTION:

The MK 84 General Purpose Bomb is designed to attack soft and intermediately protected targets. The destruction mechanism of the MK 84 is blast and fragmentation. Ideal targets for this weapon are buildings, rail yards, and lines of communication. The Air Force is the primary user of this item. Blast sensitive targets, such as petroleum-based liquids, motor pools, and troop concentrations, are the primary targets for this weapon. The primary fill for the MK 84 is Tritonal Explosive, but it is also loaded with an inert fill.

CAPABILITY/CHARACTERISTICS:

- Attacks soft and intermediately protected targets, buildings, rail yards and lines of communications
- Weight: 1,997.22 pounds
- Length (with nose fuze): 149.27 inches
- Length (without nose fuze): 145.37 inches
- Diameter: 18.00 inches
- DODIC variations:
  - F275: MK 84 MOD 4, Tritonal fill
  - ED02: MK 84 MOD 10, No fill
  - F262: MK 84 MOD 4, Inert fill

WEAPON SYSTEM:

- Various fixed-wing aircraft

PRIME CONTRACTOR

- General Dynamics, Garland, TX: Empty Bomb Assembly and Tritonal-filled Bomb
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

MK 84 2000lb General Purpose Bomb

BLU-111 Series 500lb General Purpose Bomb

SYSTEM DESCRIPTION:
The BLU-111 General Purpose Bomb is identical to the 500lb MK 82 MOD 1 Bomb, with the exception of the explosive fill. The MK 82 MOD 1 Bomb is filled with Tritonal Explosive and the BLU-111 General Purpose Bomb is filled with PBXN-109 Explosive. The BLU-111 is used by the Navy and Air Force. This bomb has a slender body made of steel with a well in the nose section for a proximity sensor, mechanical fuze and adapter booster, or a penetrating nose plug; and a well in the aft section for a tail electric fuze. It is compatible with proximity sensor, mechanical and electrical or electronic fuzes. It uses either a conical, non-retard, or retarding fin, or laser/GPS guidance airfoil kit, or a mine kit. The BLU-111B/B (Air Force) and BLU-111C/B (Navy) have vented base plates for better IM reaction. The Navy BLU-111 bomb bodies have a thermal protective coating applied to the surface to extend the cook-off times. The Air Force version will not be thermally coated. The BLU-111/B nomenclature was originally established for the Air Force but has not been procured or used.

CAPABILITY/CHARACTERISTICS:
- Attacks soft fragment sensitive targets, troops, petroleum-based liquids, radars, and aircraft in the open
- Weight: 460 pounds (bomb with casing); 485 pounds (bomb with fin, MAE-93); 530 pounds (bomb with retarded fin, BSU-86)
- Length: 60.57 inches (bomb with casing); 85.3 inches (bomb with fin, MAE-93); 91.30 inches (bomb with retarded fin, BSU-86)
- Diameter: 11.05 inches
- DODIC variations:
  - F289: BLU-111A/B, used by Navy and Air Force
  - ED15: BLU-111B/B, used by Air Force
  - ED16: BLU-111C/B, used by Navy

WEAPON SYSTEM:
- Various fixed-wing aircraft

PRIME CONTRACTOR
- General Dynamics, Garland, TX: Empty Bomb Assembly
- McAlester AAP, McAlester, OK: Load, Assemble and Pack

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC F289, ED15, ED16

MK 84 Conical Fin

SYSTEM DESCRIPTION:
The MK 84 Fin is used on 2000lb General Purpose Bombs. They can also be used on BLU-117 Bombs.

CAPABILITY/CHARACTERISTICS:
- MK 84 Bomb Fin stabilizes bomb for delivery from high altitudes

WEAPON SYSTEM:
- 2000lb General Purpose Bombs (MK 84 & BLU-117)

PRIME CONTRACTOR
- Delfasco, LLC, Afton, TN

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC F607

214
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC: F782

SYSTEM DESCRIPTION:
The BSU-33 Fin is used on 500lb General Purpose Bombs and is a smaller version of the MK 84 conical fin.

CAPABILITY/CHARACTERISTICS:
- BSU-33 Bomb Fin stabilizes bomb for delivery from high altitudes

WEAPON SYSTEM:
- 500lb General Purpose Bombs (MK 82 & BLU-111)

PRIME CONTRACTOR
- Delfasco, LLC, Afton, TN

BSU-33 C/B Conical Fin

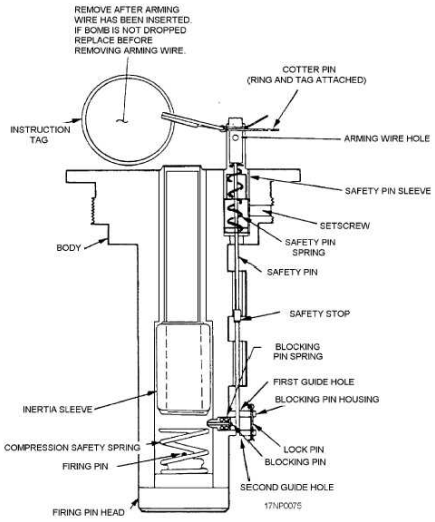
MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC FW44

SYSTEM DESCRIPTION:
The MK 89 MOD 0 Spotting Charge Adapter is installed in the tail fuze well of full-scale MK 80 Series Practice Bombs. This device allows for the fitment of signal cartridges in the full scale practice bombs in order to enhance visual observation of weapon-target impact.

CAPABILITY/CHARACTERISTICS:
- Integrates a signal cartridge into a full-scale MK 80 Series Practice Bomb
- Signal cartridge enhances visual observation of weapon-target impact

WEAPON SYSTEM:
- MK 80 Series Practice Bombs

PRIME CONTRACTOR
- Not in production



MK 89 MOD 0 Spotting Charge Adapter

FMU-143 Series Bomb Impact Fuzes

SYSTEM DESCRIPTION:

The FMU-143 Bomb Fuze is used on penetrator warheads. The fuzing system consists of the FMU-143 Bomb Impact Fuze and the FZU-32B/B Bomb Fuze Initiator. All electrical energy necessary to operate the fuze electronics and to initiate all fuze explosive devices comes from the initiator, an air stream driven generator. At weapon release, the arming wire is pulled from the fuze safety device pop-out pin and a lanyard activates the bomb fuze initiator. The fuze electronics, consisting of two electronic timers operating in parallel, at the preselected time will cause the rotor to be driven to the armed position by explosive bellows drivers. At rotor arming, generator output is disconnected. Firing energy is stored in capacitors. At impact, switches close and provide firing power for the delay detonator.

CAPABILITY/CHARACTERISTICS:

- The FMU-143 Bomb Impact Fuze is used on penetrator warheads: BLU-109, BLU-113, BLU-121, BLU-122, BLU-116
- Different variants are based on delay times as follows:
  U.S. Air Force -
  - ED30: FMU-143 R/B Bomb Impact Fuze (30 ms)
  - ED29: FMU-143 S/B Bomb Impact Fuze (60 ms)
  - ED28: FMU-143 T/B Bomb Impact Fuze (120 ms)

USN -
- EC19: FMU-143 K/B Bomb Impact Fuze (30 ms)
- EC20: FMU-143 L/B Bomb Impact Fuze (60 ms)
- EC21: FMU-143 M/B Bomb Impact Fuze (120 ms)

WEAPON SYSTEM:

- Penetrator bombs (BLU-109, BLU-113, BLU-121, BLU-122, BLU-116)

PRIME CONTRACTOR:

- Orbital Alliant Techsystems, Inc (OATK), Allegany Ballistics Lab, Rocket Center, WV

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC ED30, ED29, ED28, EC19, EC20, EC21

DSU-33 D/B Proximity Sensor

SYSTEM DESCRIPTION:

The DSU-33 D/B Proximity Sensor provides a height of burst capability. The sensor provides an accurate range measurement with very low sensitivity to transmitted power, antenna pattern, terrain reflectivity, or receiver losses, and increases immunity to Electromagnetic Interference. On release, the sensor battery initiation circuit charges, fires and initiates the thermal battery. Power is transmitted to operate the clock oscillator and to charge the fire capacitors located in the fire pulse generator. The binary integrator (a counter) checks on the Doppler frequency and phase to verify a bonafide target return. When the counter reaches the appropriate threshold value, it commands the fire pulse generator to release the energy stored in its capacitor signaling the processor in the fuze and initiating the firing train.

CAPABILITY/CHARACTERISTICS:

- The DSU-33 D/B proximity sensor provides airburst capability to the General Purpose Bombs, including GBU-31, GBU-32, GBU-38 JDAM, M117 GP Bomb, BLU-110, BLU-111 & BLU-117 Bombs

WEAPON SYSTEM:

- General Purpose Bombs

PRIME CONTRACTOR:

- Not in production

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT:
DODIC KY70

216
PD JP
Joint Products

MR DATE: N/A
ACQ PHASE: Production & Deployment
ACAT: III
DODIC: Various

SYSTEM DESCRIPTION:
Cartridge Actuated Devices (CAD) and Propellant Actuated Devices (PAD) are items that function as a system component. CAD/PAD items are unique since they are an airframe component, but are regarded as a munitions device. The design and function of these devices vary widely in complexity.

CAPABILITY/CHARACTERISTICS:
- In operation, these items release precise explosive energy to assist in Aircrew escape, fire suppression or emergency release systems. These items have a set shelf life and installed life.
- Both CADs and PADs contain energetic material along with a mechanical or electronic actuating component.

WEAPON SYSTEM:
- Army combat aviation rotary aircraft

PRIME CONTRACTOR:
- BAE Systems, AZ: JM78, JM79
- Kidde Aerospace, NJ: MT20, TY60
- Breeze Eastern, NJ: MJ20
- Stratus Systems, LA and Hanley Industries: JM96
- Mass Systems, CA: WB53
- CAD, Inc: DWGS
- Pacific Scientific, AZ and UTAS (UTC Aerospace Systems), CA: MT06, MS80s, MS91, MS94-97, DWEA. UTAS only: SP02/SP03, DWGS
- Pyrotechnic Specialties, Inc., GA and AMTEC (formerly Tech Ord), SD and IL: MD66

Cartridge Actuated Devices/ Propellant Actuated Devices