

**2008 NDIA
Gun and Missile Systems Conference &
Exposition
21 – 24 April 2008**

30mm Air Bursting Munitions for the MK44 Cannon

**Erik Elmer
ABM Technical Lead
ATK Armament Systems**



Bradley with M242, 25mm



LW25mm Bushmaster



Medium Caliber Ammunition



M230 Chain Gun



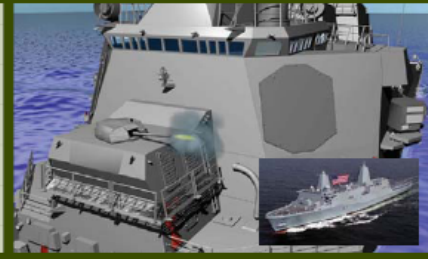
- **Gun System Overview**
- **MK44 ABM System Overview**
- **30mm ABM Ammunition Overview**
- **System Performance**
- **Contacts**

30mm Air Burst Munition

SELECTED FOR QUALIFICATION BY U.S. NAVY / U.S. MARINE CORPS



- ATK command arm fuze with turns-count technology
- Setting system integrated into Mk44 cannon
- Effective against personnel and materiel targets



EFV ABM System Requirements (ABM Baseline)

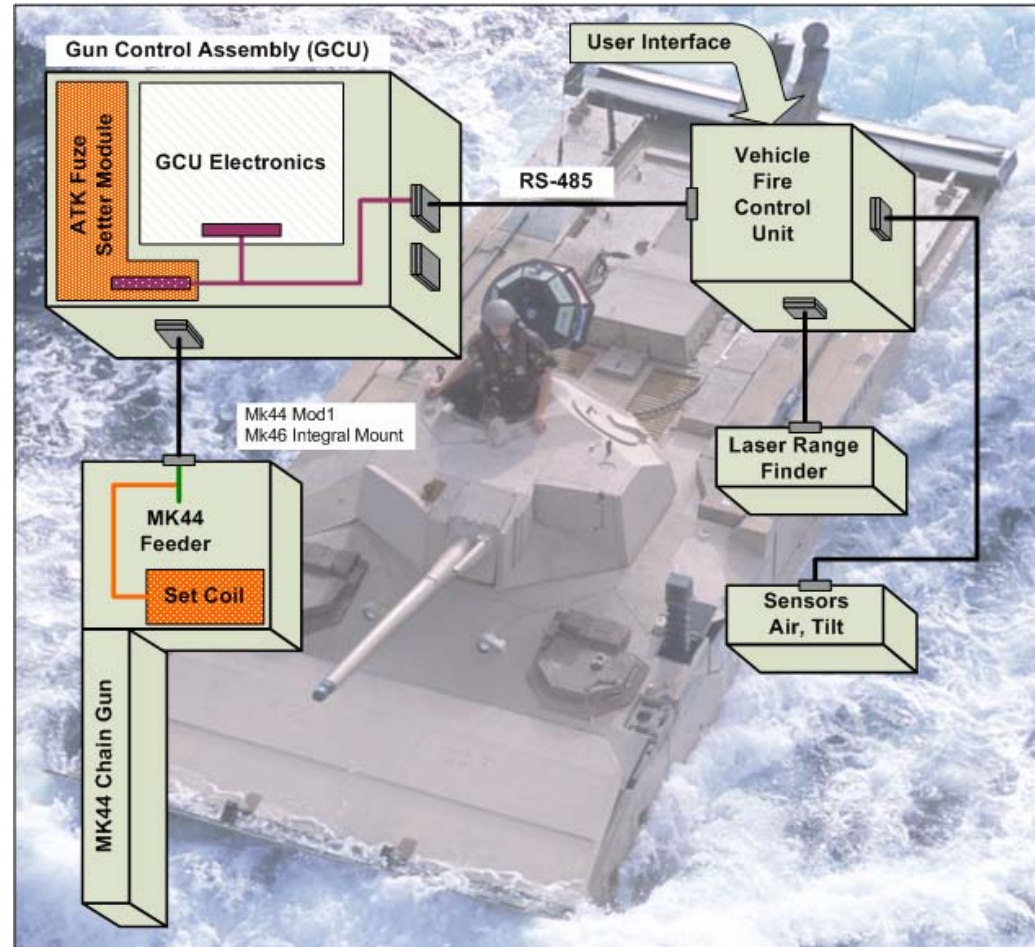


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The following components comprise the 30mm ABM MK44 Gun System for the Marines EFV:

- MK44 with modified timing
- ABM Capable Gun Control Unit (GCU)
- Setter drive coil assembly, located within the gun assembly
- ABM Ballistic Algorithm incorporated in Fire Control software
- RS-485 Communication between FC and GCU
- Laser rangefinder
- Sensors for air temperature and pressure
- Tilt sensor on gun barrel (pitch, roll)
- Gunner display to assist and confirm target aiming



FCS ICV ABM System Requirements (ABM Baseline)

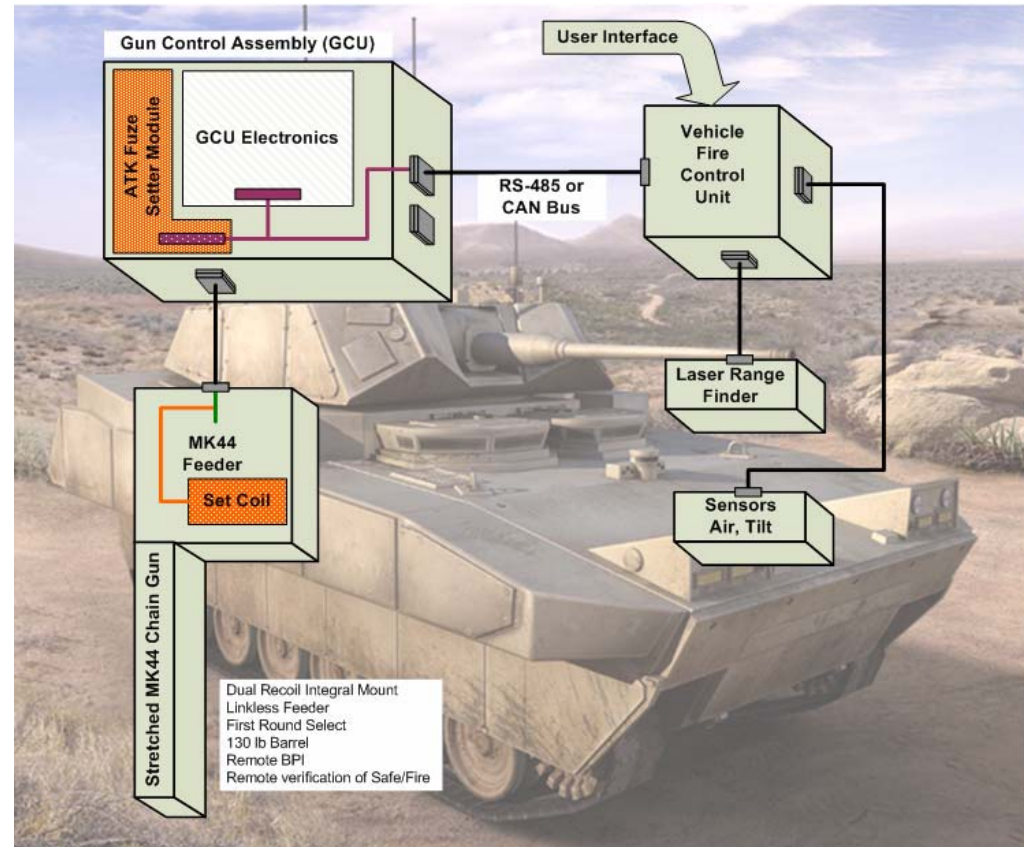


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The following components comprise the 30mm ABM MK44 Gun System for the FCS ICV

- Stretched MK44 with modified timing
- ABM Capable Gun Control Unit (GCU)
- Setter drive coil assembly, located within the gun assembly
- ABM Ballistic Algorithm incorporated in Fire Control software
- Fire Control / GCU Communication:
 - Option of RS-485 or CAN Bus
- Laser rangefinder
- Sensors for air temperature and pressure
- Tilt sensor on gun barrel (pitch, roll)
- Gunner display to assist and confirm target aiming

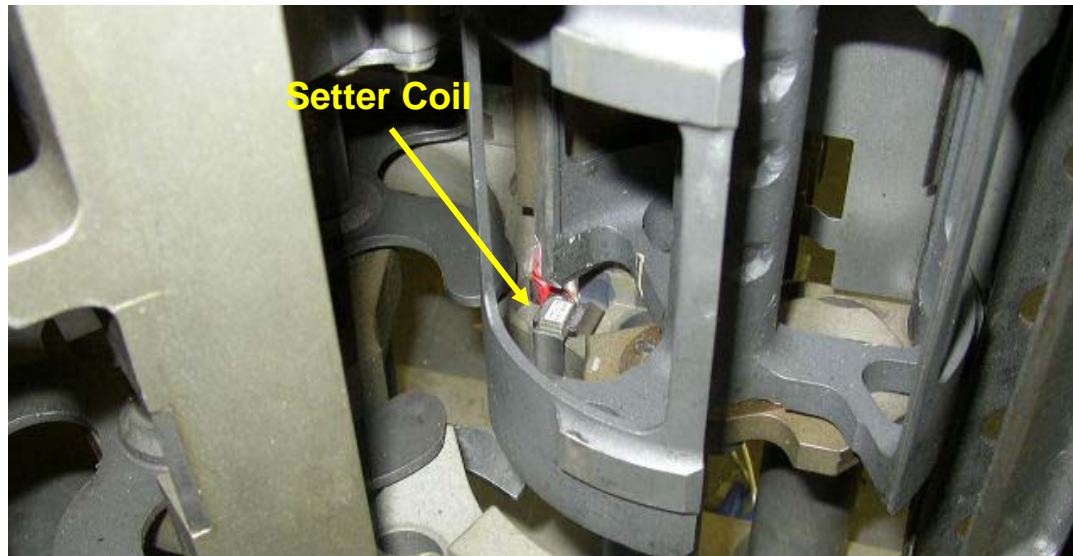
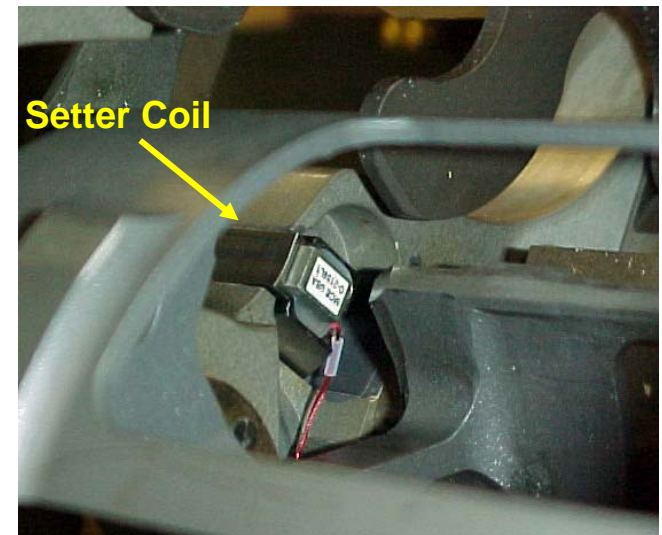
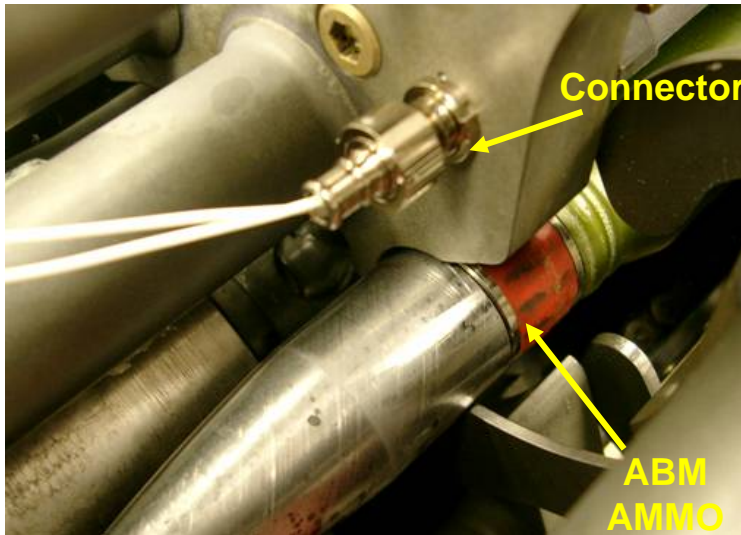


Integrated Fuze Setter Coil with MK44 Feeder



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Simple Integration of Inductive Setter Coil into MK44 feeder

- **USN selected ATK inductive set ABM for Qualification Program**

- ATK will incorporate ABM kits into EFV weapons in support of Qualification Program



Expeditionary Fighting Vehicle (EFV)

- **ATK on contract for ABM guns for Elbit**

- Utilizes ATK inductive setter
- Includes modified gun cycle timing with First Round Select



Elbit Turret



Fuze Location



Power Source



S&A



Fuze Electronics

Features:

- **Base fuze for improved forward fragmentation in air burst mode and superior penetration capability in PD and PD-delay modes**
- **SAPHEI-T warhead for high performance penetration**
- **Unique, cost effective Setback Generator (SBG) design**
- **Command Arm Safe and Arm (S&A) design – cost effective and flexible**

Normal Modes

| Modes of Operation | Primary Target | Comments |
|---------------------------|---|---|
| Air Burst Mode | Troops in Squad, ATGM, over walls | Will PD if projectile encounters a hard target prior to set air burst range |
| Point Detonate | LFIE, Water Craft, Lightly Armored Vehicles, etc... | Fuze functions in this mode if no inductive communication received |
| Point Detonate with Delay | | Short Delay |

Military Operations in Urban Terrain (MOUT)

| Modes of Operation | Primary Target | Comments |
|-------------------------------------|-------------------------------|---|
| Air Burst Mode Quick Arm | Confined Areas, Urban Targets | Will PD if projectile encounters a hard target prior to set air burst range |
| Point Detonate Quick Arm | | |
| Point Detonate with Delay Quick Arm | | Short Delay |

ATK Air Burst Ammo Target Set



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Urban, Wall, and Bunker Targets

8" Double Reinforced Concrete



Terracotta



Lightly Fortified Infantry Emplacement (LFIE)

Personnel Targets



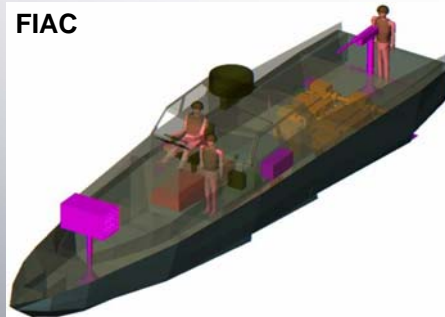
ATGM Crew



Troops in squad



FIAC



Personal Watercraft



RHIB



Auto



BTR



Armored Vehicles & Automobiles



Naval Targets



CONTACTS



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