



Malcolm Baldrige
National
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2007 Award
Recipient

RDECOM

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Extended Area Protection and Survivability (EAPS) 50mm Cannon

Presented By:
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Systems Engineer
Medium Caliber Weapons Team

- Basic 25mm Bushmaster Cannon
- Bushmaster Cannons
- Extended Area Protection and Survivability (EAPS)
- EAPS 50mm Cannon Requirements
- 50mm Cannon Current Performance.
- Future Work on Cannon





- Designed as the main armament for the Bradley Fighting Vehicle.
 - Validation contract award was May 1972
 - Type Classified Standard Dec 1979
 - Full Material Release Mar 1983
- M242 25mm Chain Gun Performance:
 - Externally powered cannon.
 - Reliability 20,000+ of rounds between stoppages.
 - Primary targets: Area Targets
 - Secondary targets: Lightly Armored Vehicles
 - Fired mixture of HEI-T and APDS-T Rounds
 - Very field maintainable.
 - Dispersion of .44 Mils
 - Fired in a single shot mode and 200 shots per minute mode
 - Light weight.

- 30mm Bushmaster II Automatic Cannon
- 30/40mm Mk44 Bushmaster Automatic Cannon
- 35/50mm Bushmaster III Automatic Cannon
- 40mm Bushmaster IV Automatic Cannon
- Lightweight 25mm Bushmaster Chain Gun
- 50mm EAPS Automatic Cannon



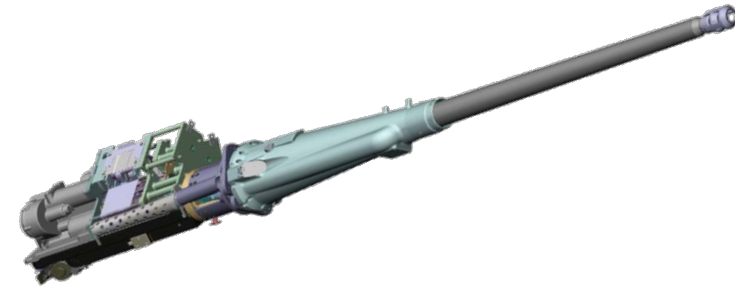
- ***EAPS is an Advanced Technology Demonstrator (ATO-D) Program. The purpose of this program is to develop inner tier gun based air defense technologies that will bridge the gap between the initial C-RAM capability and the Objective EAADS capability for providing a 360 degree hemispherical extended area protection from RAM threats.***

Results:

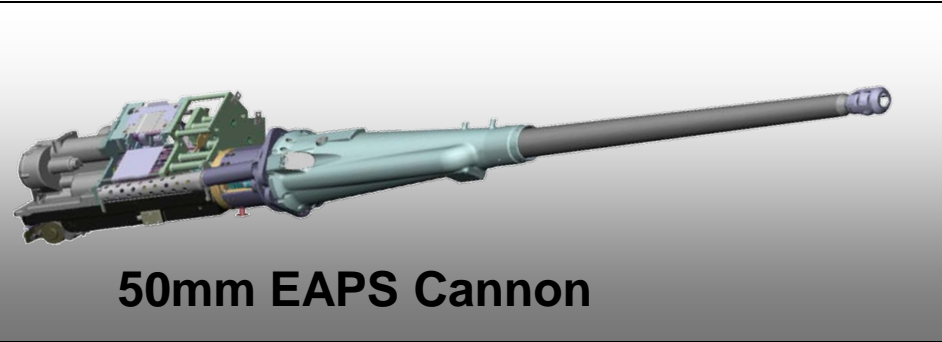
- ***Key developmental technologies include:***
 - ***50mm Automatic Cannon***
 - ***Course Corrected Ammunition***
 - ***Advanced Forward Fragmentation Warhead***
 - ***Ammunition Tracking System (ATS) Radar***

Payoff:

- ***Extended Engagement Range***
- ***Lower Cost per Kill***
- ***10 Round Bursts- less Collateral Damage***



EAPS Concept



RF Data Link

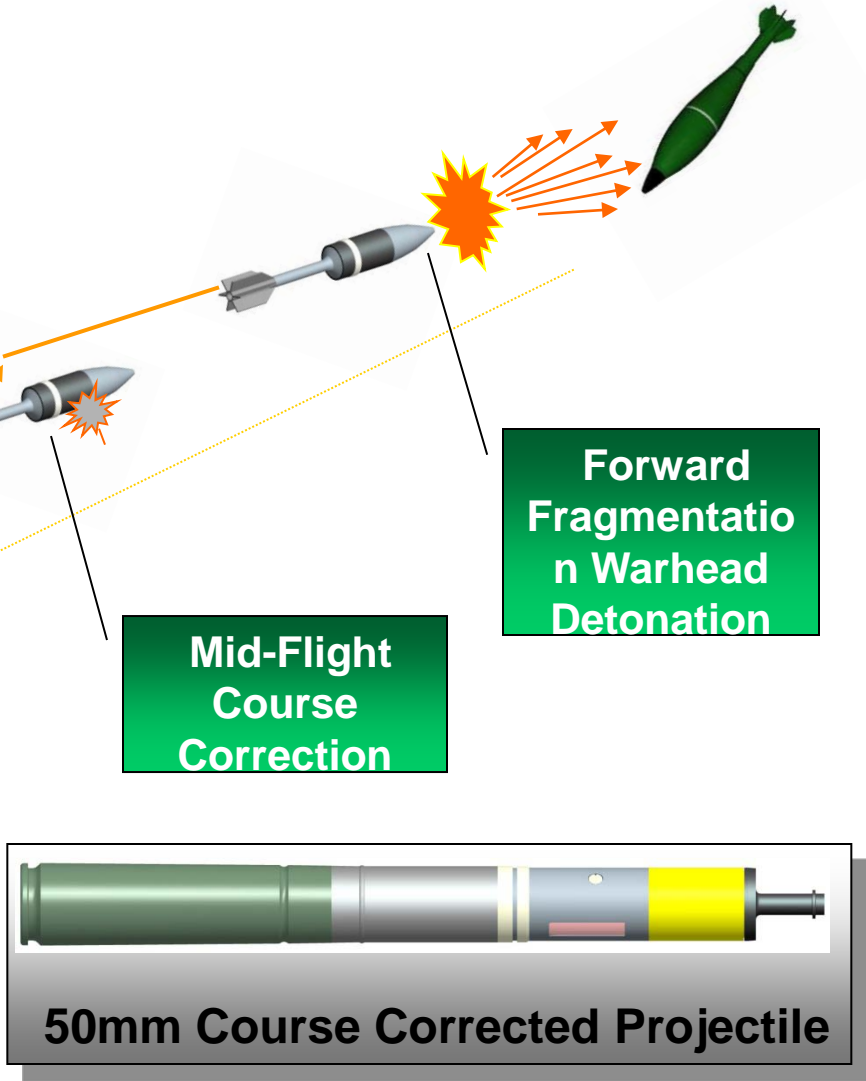
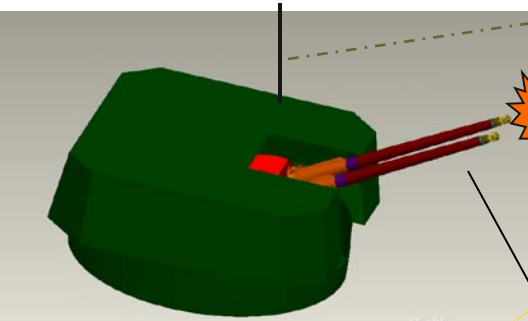
Radar Track

Forward Fragmentation Warhead Detonation

Mid-Flight Course Correction

10 Round Burst

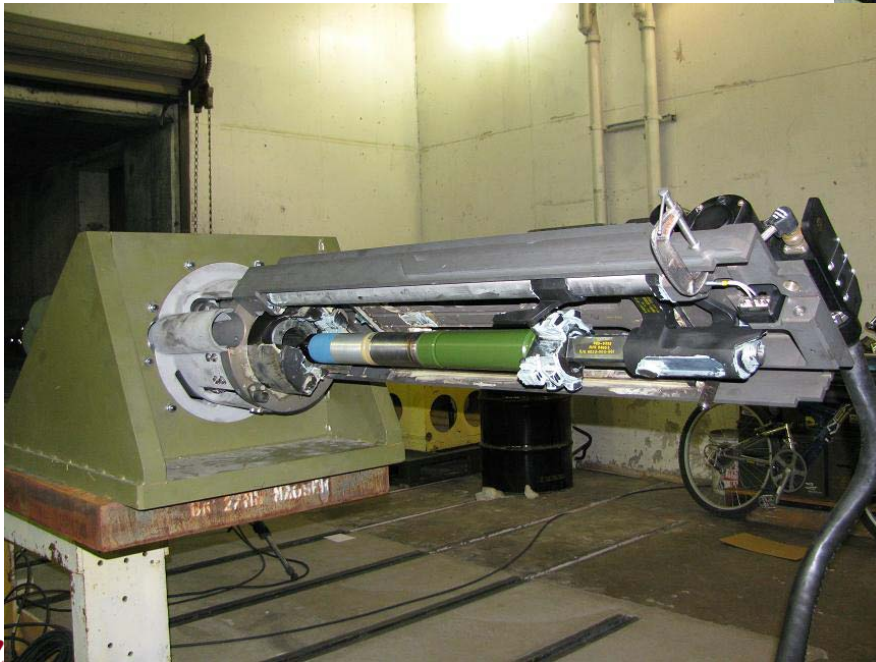
50mm Course Corrected Projectile



- Caliber needed to be in the range of 50 to 60mm
- Proven Scalability
- Accurate
- Light Weight
- Short Lead Time
- Case Availability
- High Firing Rate



- Fired 17 tests rounds with no weapon failure.
- Have achieved firing rates of 120 shots per minute
- Dispersion appears to be in the appropriate range.





EAPS Cannon firing video



BD EAPS Video NOT RELEASED email version.wmv

- Increase firing rate to 200spm
- Increase durability and reliability
- Verify dispersion.

- 50mm Cannon Program on Track for EAPS Program
- Represents largest of all Chain Gun Designs
- Initial Performance Indicates High Probability of Success