

ATK Medium Caliber Systems

Lightweight 25 mm / .50 Caliber Bushmaster Cannon

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New Orleans, LA

Jim Lamb

OSR No. 07-S-1411

Bradley with M242, 25mm



LW25mm Bushmaster



Medium Caliber Ammunition

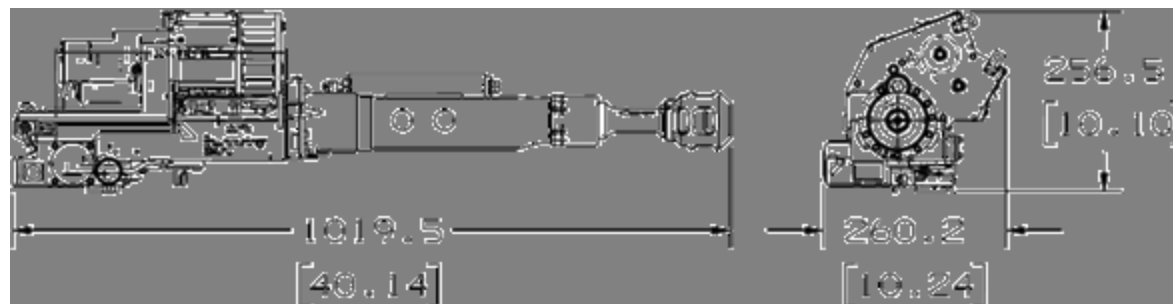


M230 Chain Gun



- **Introduction**
- **.50 caliber Progress to Date**
- **Similarity Between .50 cal and LW25 Ammunition**
- **Design Goals**
- **Commonality of Parts**
- **LW25 Specifications**
- **Size Comparison**
- **Potential Applications**
- **Current Status**

The .50 caliber/LW25mm Bushmaster Chain Gun is a derivative of the combat proven M242 25mm Bushmaster Automatic Cannon. It incorporates all of the battle proven features of the Bushmaster series of cannons, with significant system commonality for low-risk, proven performance.



.50 Cal Progress To Date



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- Characteristics

- Weight:	Receiver	35 lbs
	Feeder	14 lbs
	Barrel	27 lbs
	Total	75 lbs

- Rate of Fire: 400-500 spm.

- Anti-hangfire safety

- Dual feed with forward or side eject

- 28 VDC system

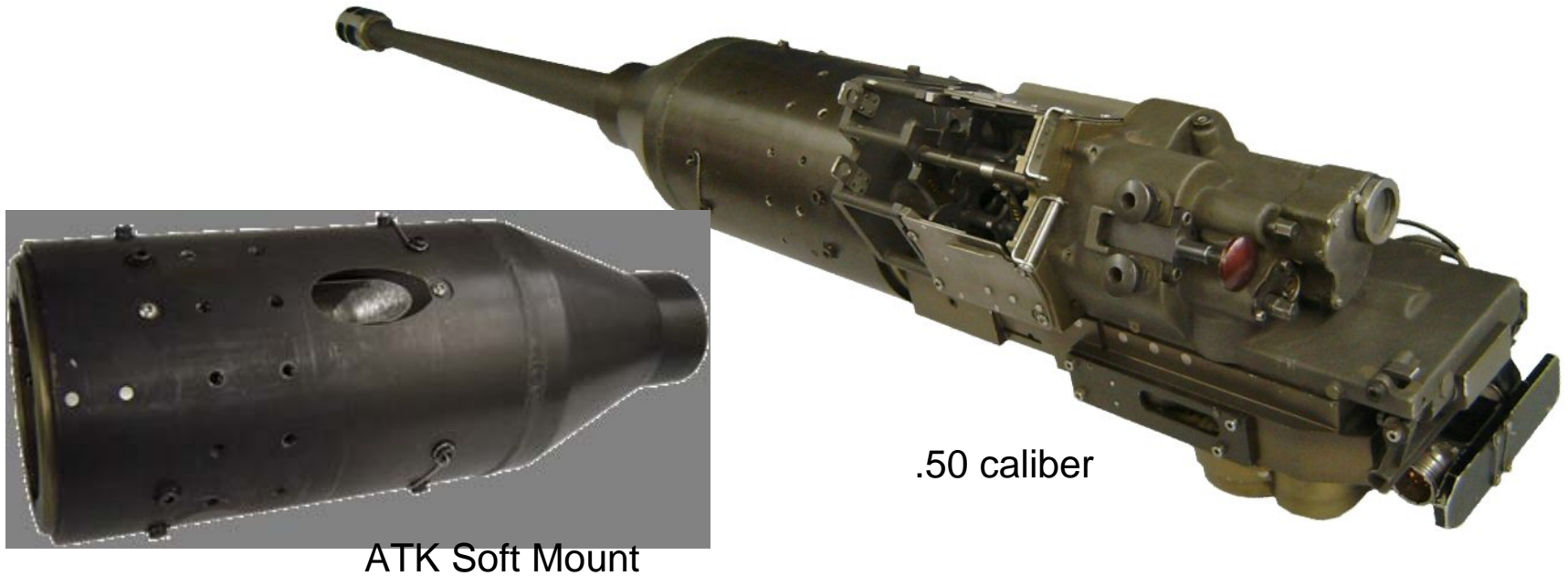
- Hard Mount Recoil = 1500 lbs; ATK Developed Soft Mount Recoil < 600 lbs

- **30,000+ rounds fired**



- **Hardware Development**

- ATK Soft Mount developed and tested; recoil reduced to <600 lbs.



2-sided muzzle brake developed and tested for aircraft applications.

- Air Platform Integration and Testing

- Successfully fired from Boeing Unmanned Light Attack Recon. Testbed (ULART):
August 2006 Yuma Proving Grounds, AZ

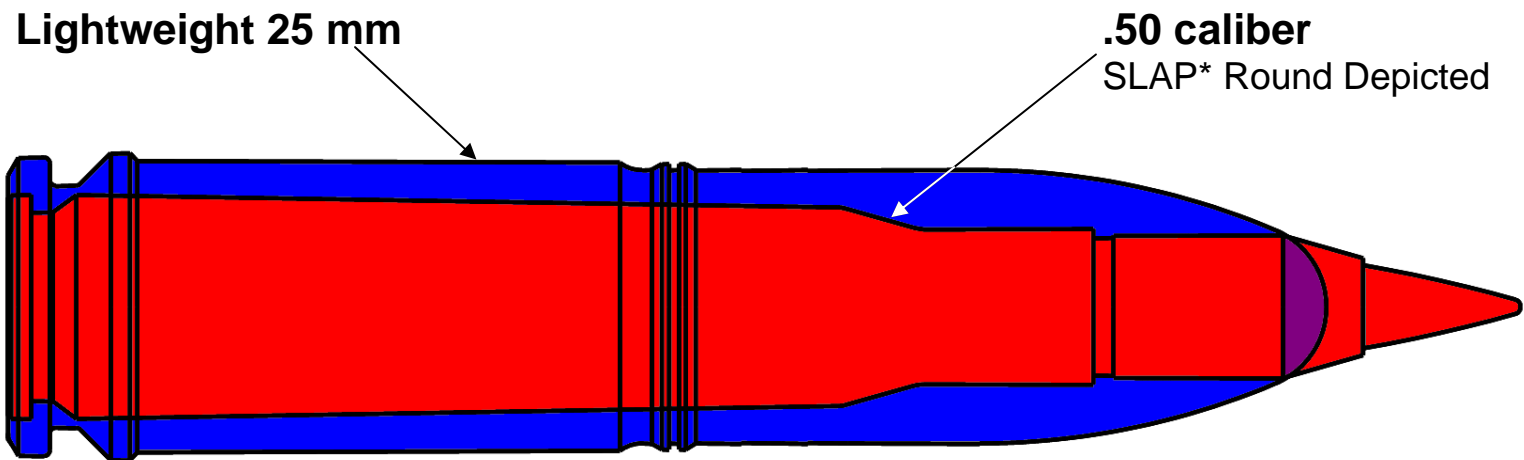


- Land Platform Integration and Testing

- Successfully fired from Boeing Agile Multi-Role Weapon System (AMWS): September 2006 ATK Range Mesa, AZ



- The size of the .50 caliber receiver and chain was well-matched for the conversion to LW25 mm.



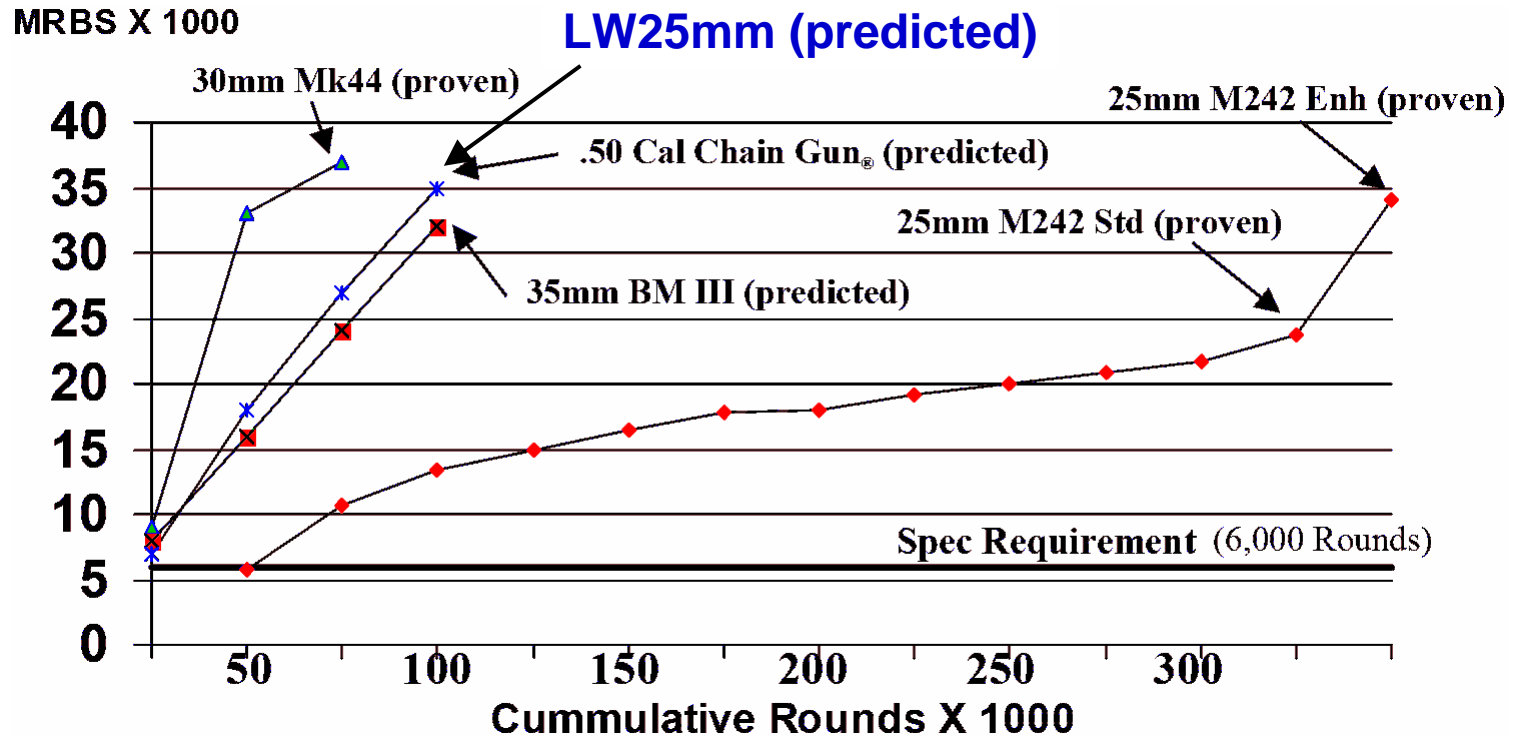
*SLAP = Saboted Light Armor Penetrator

Lightweight 25mm Design Goals



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- Build on the similarity between .50 caliber and lightweight 25 mm ammunition.
- Reduce errors by utilizing as many common parts and designs from the current Bushmaster family of cannons as possible.
- Maintain the reliability characteristic of the Bushmaster line of cannons.



Commonality of Parts



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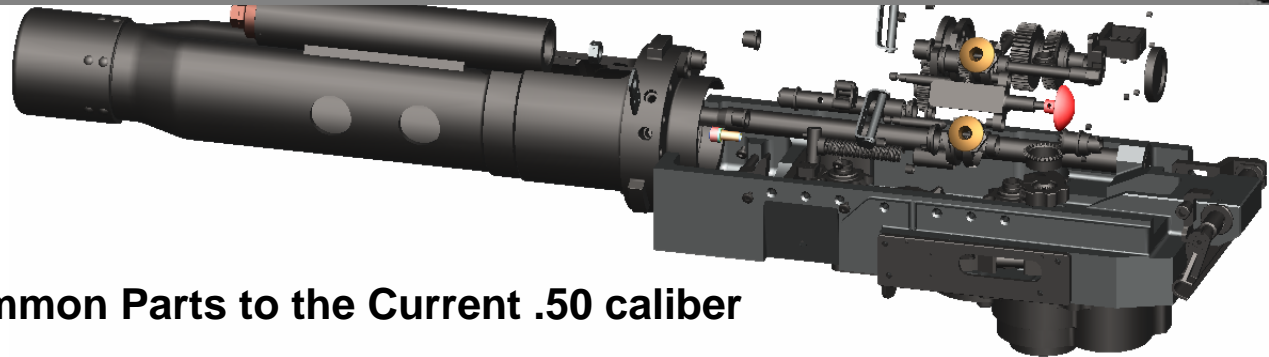
**Standard 25 mm
M242 Muzzle Break**

LW25 mm Unique	38.0%
.50 cal Common	55.4%
Other BM Series	6.6%

New Parts for Lightweight 25 mm Variant



Common Parts to the Current .50 caliber



All of the LW25 mm and .50 Caliber Components Are of Equivalent Design, Fabrication and Function as Other Currently Fielded Bushmaster Guns

- Characteristics

- Weight:	Receiver	34.9 lbs
	Feeder	19.0 lbs
	Barrel	13.6 lbs
	Total	67.5 lbs

- Rate of Fire: 230-260 spm.

- Anti-hangfire safety

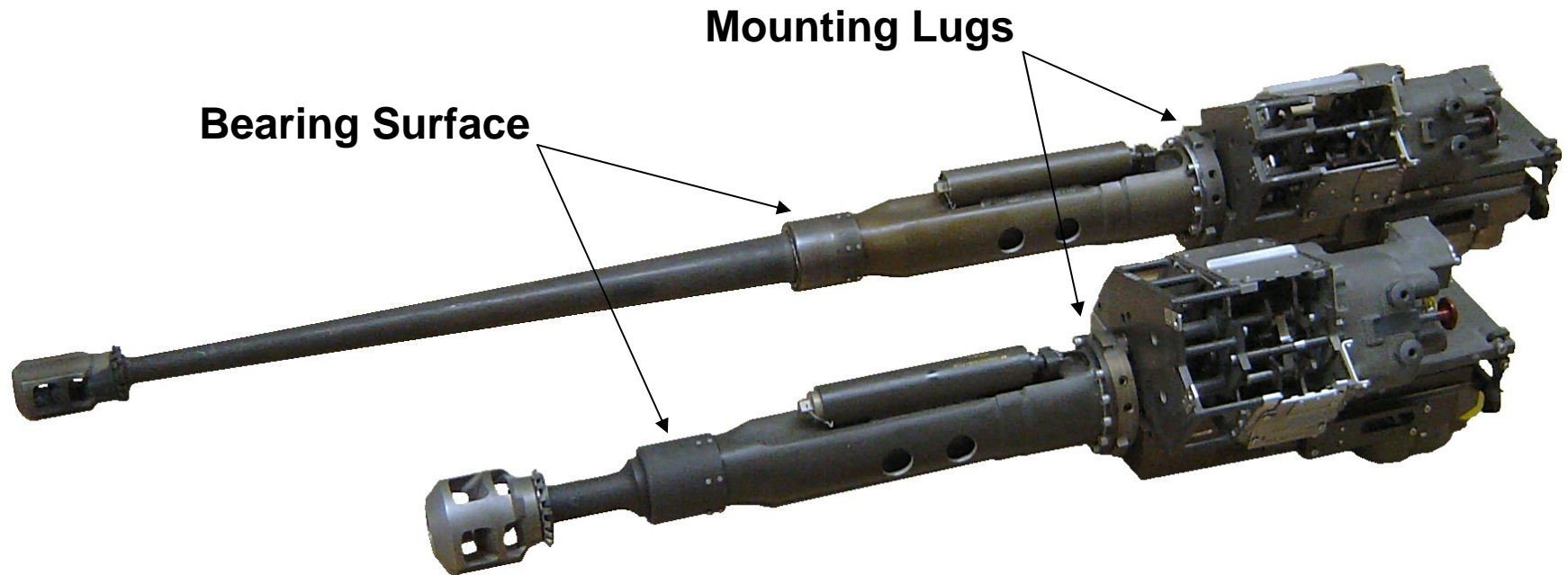
- Dual feed with side eject

- First Round Selectable

- 28 VDC system

- Capable for Firing Both ATK and General Dynamics (GD-OTS) Ammunition, Including Air Bursting Munitions.

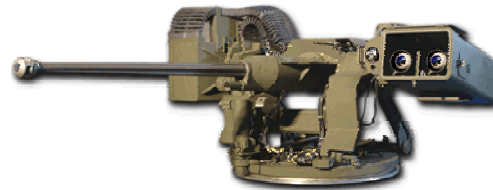
Common Mounting Lugs and Features



- **Close in Support for Manned Vehicles:**
 - FCS
 - NLOS Vehicles
 - Troop Transports
 - Mounted Combat Systems (MCS)
 - Stryker
 - Kiowa Warrior
 - Avenger
 - SOCOM Aviation



- **Main Protection for Remote Vehicles**
 - Remote Weapon Station Integration
 - ARH
 - FCS Mule
 - ARV RSTA
 - Base Security



- **Any Application Currently Mounting .50 cal**

- In Testing

(Video of gun firing)

- **Future Plans**

- Develop Remote Feed Select Operation
- Develop Dual Purpose (LW25/.50 cal) Common Feed Chutes and Magazines
- Develop .50 caliber “Quick Change” Hardware

Program Manager

Robert Glantz
(480) 324-8611
robert.glantz@atk.com

Engineering

James Lamb
(480)324-8658
james.lamb@atk.com

Business Development

Darrel Morris
(480)324-8703
darrel.morris@atk.com

Mailing Address

Alliant Techsystems Inc.
Medium Caliber Systems
3309 North Reseda Circle
Mesa, AZ 85215