Lightweight Medium Machine Gun

Distinct Overmatch on the Current and Future Battlefield

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Introduction

- The Lightweight Medium Machine Gun is a revolutionary weapon designed to eliminate the capability gap that exists between our 7.62mm MG and enemy weapons.
- GD-OTS implemented a systems design approach and DFx methods to optimize the weapon, ammunition, user interfaces and accessories.
- The end result is the GD-OTS Medium Machine Gun a man-portable weapon designed to accurately and effectively engage targets beyond 1800 meters.
Key Requirements for System Design

- Weapon – portable, accurate, reliable
- Ammunition – overmatch to the PKM/PKP machine gun firing the 7.62x54R cartridge
- Optics / accessory integration – flexible, quick and accurate
- Ergonomics / User interface – incorporate best features and lessons learned from other weapons (user input)
- Mounts / Vehicle Integration – M240 interfaces
- DFx (Design for Manufacture & Design for Cost)
System Solution: GD-OTS .338 Medium Machine Gun

- **Weapon**
  - Low recoil mechanism provides stable and accurate automatic fire
    - Felt recoil similar to 7.62mm NATO weapons
  - Lightweight - 24 pounds for portability
  - Drops into existing M192 tripods and M240B vehicle mounts without modification

- **Ammunition**
  - .338 Norma Magnum cartridge with 300 grain bullet = 1800+ meter effective range
    - 2x projectile energy at the muzzle (vs 7.62mm NATO)
    - 5x projectile energy at 1000 meters (vs 7.62mm NATO)
    - 700 meter grazing fire

- **Ergonomic**
  - Easy to field strip
  - Adjustable stock

- **Designed for manufacture - common materials / processes – low cost**
Next Generation Technology

System Weight vs. Max Effective Range

**Effective Range**
- M249 ~ 600 m
- M240 ~ 1100 m
- PKM/PKP ~ 1500 m
- MMG ~ 1800+ m

**MAXIMUM EFFECTIVE RANGE (m)**

**WEIGHT WITH 100 ROUNDS OF AMMUNITION (LBS)**

- M2
- CONVENTIONAL WEAPON TECHNOLOGIES
- .338 MMG

GENERAL DYNAMICS
Ordnance and Tactical Systems
Approved for Public Release
WEAPON FEATURES
**.338 Medium Machine Gun**

- Ammunition: .338 Norma Magnum
- Rate of Fire: ~500 rounds per minute
- Weapon weight: 24 lbs
- Recoil force ~ M240
- Length: 49”
- Barrel Length: 26 inches
- Quick change barrel design
- Fixed headspace and timing
- Mounts: M192 tripod, Vehicle mounts

SAME FOOTPRINT AS AN M240B ~2x THE EFFECTIVE RANGE
Features – Short Recoil Impulse Averaging

Patented recoil mitigation system to balance the weapon during automatic fire

- Incorporates both short recoil and gas assist
- Improves target retention during automatic fire – improved targeting and accuracy at extended ranges
- Felt recoil similar to a 7.62mm machine gun
- Eliminates the need for “soft” mounts
Features – Integrated MIL-STD-1913 Rail

MIL-STD-1913 rails permanently fixed to the receiver behind the top cover

- Optical sights retain their zero
- Sized to accommodate 6x48 optic without interference

Back up iron sights permanently fixed to the receiver

- Adjustable front sights fixed to the barrel
- Operator can zero each barrel to the weapon
Mounting points are common to the M240B, M249 and M60

- Compatible with the M192 tripod and vehicle mounts
- Similar trigger orientation, charger location, and feed path to facilitate Mk93 or Remote Weapon Station integration
Features – Quick Change Barrel

- 26” Standard length.  16” minimum.  10,000 round service life

- SRIA system is insensitive to barrel weight

- Integrated gas system facilitates several options:
  - Heavyweight barrel for vehicle operations
  - Short or lightweight barrel for dismount operations
  - Dedicated blank firing barrel for training operations
  - Suppressed Barrel

- M60 style self-cleaning gas system. Low maintenance.
Similar-to Comparison – MMG vs M240B
.338NM CARTRIDGE
.338 Norma Magnum Ammunition

- Provides standoff vs. enemy 7.62x54R weapons
- Projectile: 300 gr. Sierra HPBT, FMJ
- Max Effective Range: 1800+ m
- Supersonic beyond 1700m
- Substantial long range accuracy
- Common military propellant and primer

AP and Tracer ammunition
- AP bullets are already available
- Current IR&D developing tracer ammunition
.338 NM Ammunition – Polymer Case

- Cooperative development effort with MAC LLC
- Design based on .50 cal Mk323 polymer case
- Weight Reduction: 20% of cartridge weight
- Saves 12.75 Lbs per 500 rounds
ERGONOMICS & INTERFACES
Benefits to the Operator

- The MMG and .338 NM cartridge deliver unmatched range, accuracy and lethality for a man-portable weapon
- Provides standoff against all portable machine guns worldwide
- Recoil mitigation substantially reduces impulse felt by the gunner which improves target retention during automatic fire – and accuracy at long range
- Quick change barrel with fixed headspace and timing
- Ideally suited for both mounted and dismounted operations
  - The MMG will fits any tripod or vehicle mount that will accept the M240B
  - Light enough to dismount and carry to new firing location
  - Can even fire from the shoulder/hip on the move if necessary
- Easy to field strip, clean and maintain
DESIGN FOR MANUFACTURE
DESIGN FOR COST
Design for Manufacture and Cost

- **Design for Manufacture**
  - Manufacturing engineers were part of the design team from Day 1
  - Common manufacturing processes, standard tolerances with no matched assemblies
  - Standard materials with standard finishes
  - Simple assembly in the factory or in the field

- **Design for Cost**
  - Components producible by most machine shops to facilitate competition
  - No exotic materials or processes
The GD-OTS .338 Medium Machine Gun is the Next Generation weapon for our Warfighters and provides capability overmatch to all known portable machine guns in the world.

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