



Soldier Division Director David Libersat June 2, 2015



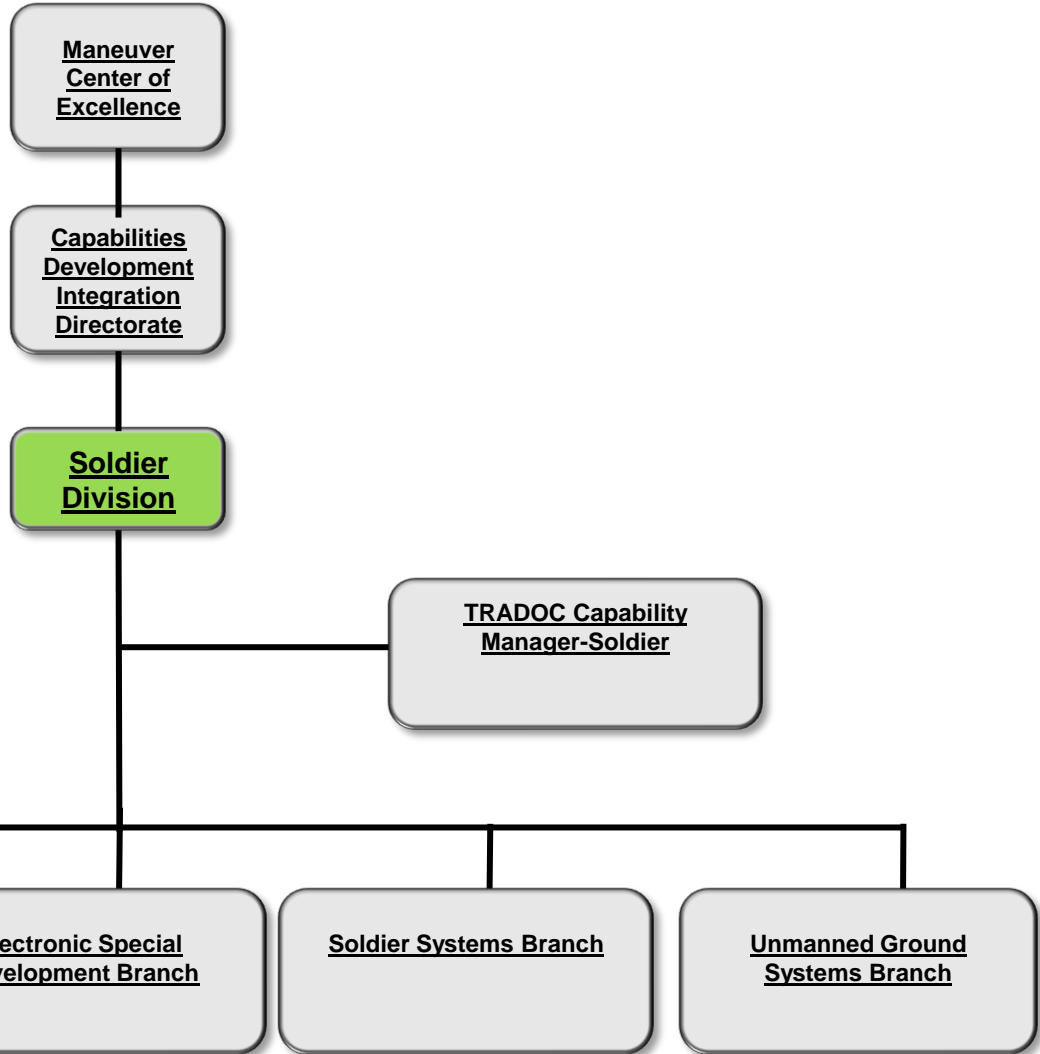


Soldier Division



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Soldier Division develops future requirements and manages Soldier capabilities for all Soldiers across all DOTMLPF domains, in all formations, with a primary focus on Maneuver Brigade Combat Teams and Squads, in order to strengthen America's Force of Decisive Action and provide the Army with the best trained and equipped Soldiers in the world.





Soldier Division / TCM – Soldier Existing/Emerging Requirements



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Improve Mobility

- Reduce the Soldier's Load
- Enhanced Tactical Mobility for Airborne and Air Assault Ops

Enhance Lethality

- Overwhelming small unit lethality
- Precision munitions
- Reduce target location error

Efficient Sustainment

- Generate, store, and manage power
- Efficient battery recharge

Effective Mission Command: LOS and BLOS voice and data while operating dismounted in austere environments

Improve Soldier Survivability

- Improved IED detection at extended ranges
- Preemptive threat detection
- Counter enemy UAS



Soldier Division / TCM - Soldier



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FOCUS AREA

Common Robotics System (Individual), CRS(I)

Family of Weapon Sights

Enhanced Night Vision Google

Connecting Soldiers & Squad to the Network

Region and Climate Specific Capabilities

Counter Defilade Target Engagement

Individual Assault Munitions

Wireless Power Technology

Squad & Soldier Power Generation



Lethality Vision



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- Understanding that we are a nation at war, we look to maintain and improve on an over-matching capability against our enemies in all current and future operational environments
- Providing US Soldiers with operationally relevant, state-of-the-art systems that have fully integrated capabilities to provide Soldiers at the small unit level over-match capabilities against all threats in the full spectrum of Army, Joint, and Coalition Force operations.

Small Arms Strategy

- Field **evolutionary** capabilities to support near term mission
 - Lethality (See first, strike first)
 - Mobility (Soldier Load)
 - Survivability
 - Reliability and durability
- Develop **revolutionary**, operationally significant capabilities

(Effect = Soldier + Weapon + Enablers + Ammo + Training) (SWEAT)



Small Arms Ammunition Configuration (SAAC) Study



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Given improving threat small arms capabilities, the Army must determine a feasible, suitable, and acceptable ammunition configuration in order to develop and implement a small arms systems strategy that ensures overmatch at the lowest tactical level in 2025 and beyond.

General scope and boundaries:

- Focus on “Individual Soldier, fire team, and squad”*
- Fixed squad size and concept:
 - US Army: 9 man, 2 fire teams, 1 volume fire system in each fire team
 - USMC: 13 man, 3 fire teams, 1 volume fire in each fire team
- Achievable effects of the ammunition system
 - Attributes of the weapons system that impact ammunition performance
 - Human factor constraints
- Considers all available alternatives, conventional and unconventional





SAAC Study (Cont.)



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Ammunition Attributes:

- Lethal Mechanism
- Ability to hit (wind drift, etc.)
- Impact energy at range



Target Effect

to include Modifiers
(Armor, Barriers, etc.)

Weapon Attributes (Constraints):

- Bore Length
- Muzzle Velocity
- Weight



Shooter Constraints:

- Length
- Muzzle Pressure / Noise
- Shootability (Recoil, etc.)
- Weight

Not considered:

- Ergonomics
- Weapon Design
- Handguns
- Crew Served Configurations
- Training
- Squad or Platoon Design

System Boundary Logic

You can't kill without effects on the target

You can't produce effects if you can't hit

You can't hit with a weapon you can't shoot

You can't shoot a weapon you can't carry



Next Generation Squad Automatic Rifle



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- Replacement for M249 Squad Automatic Weapon ~2025
- Improved Lethality (Probability of Hit and Incapacitation)
- Precise to 600m Volume Effects to 1200m
- Lightweight Weapon and Ammunition
- Improved Mobility
- Improved Reliability
- Reduced Signature
- Integration with Future Fire Control Capabilities Key



Future Fire Control



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Three Variants

Squad – M4 and M249

Crew Served – M240, M2, and Mk19

Precision – Asst Sniper and Sniper



- Decrease time to engage (Increase Probability of Hit)
- Increase detection and ID range
- Digital overlay display inside optics field of view
- Provide covert pointing day and night
- Provide degraded capability in a no power situation
- Provide networked lethality through Intra Soldier Wireless and Nett Warrior. Objectively, Soldiers may handoff targets for situational awareness as well as engagement by organic fires
- Size Weight and Power (SWaP) optimized
- Range determination to the maximum effective range of the Squad
- Variable or selectable power/magnification

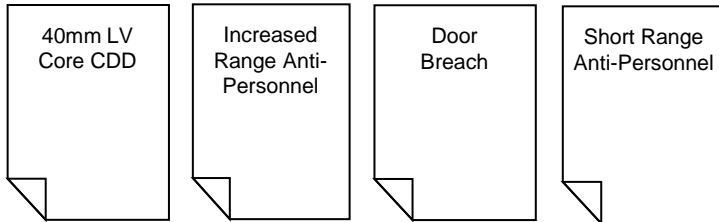


40mm LV Family of Ammunition



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---New Capabilities---



- The CDD and cartridge-specific annexes entered Joint Staffing May 2015.
- 40mm LV FoA will be employed from the M203/M320 Grenade Launcher and provide :

- Increased Range Anti-Personnel (IRAP)
 - Increased lethality
 - Increased engagement ranges
 - Improved accuracy
 - Counter defilade Door Breaching (DB)
 - Gain access to an existing entry point
 - Limit collateral damage
 - Accurate deployment
- Short-Range Anti-Personnel (SRAP)
 - Urban/Restrictive Terrain
 - Close Quarter Combat
 - Enhanced Lethal effects
 - Limited collateral damage



---Operational Shortfall---

Small Arms Capabilities Based Assessment (SA-CBA), April 2008.

IRAP- *“Warfighters lack the ability to achieve desired accuracy and incapacitating effects against personnel targets in defilade at ranges out to 500 meters”.*

DB- *“Squads lack the ability to conduct ballistic breach at ranges up to 50 meters. Squads lack the ability to conduct rapid (single-shot) breach without pause between actual breach and entry of initial force”.* The ability for Soldiers to conduct a ballistic breach of an existing door creating an entry point into a building or other structure is critical during Urban Operations.

SRAP- *“Warfighters lack the ability to achieve desired accuracy and incapacitating effects against personnel targets from 0-50 meters”.* Grenadiers must be able to quickly place lethal fire on close range threat personnel that are an immediate danger to the small unit with a high probability of incapacitation, while reducing collateral damage and with fewer non-combatant casualties.



40mm HV Improved Munitions



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---New Developmental Capabilities---

- The 40mm HV Improved Munitions CDD entered Proponent World-Wide Staffing February 2015
- The CDD addresses one capability, the Improved High Explosive Dual Purpose (I-HEDP) cartridge
- The I-HEDP cartridge is compatible with the Mk19 Mod 3 Grenade Machine Gun and provides:
 - Increased lethality
 - Improved accuracy
 - Counter defilade
- Evaluation of emerging technologies and possible non developmental item (NDI) material solutions for HV 40mm Air bursting ammunition are on-going



---Operational Shortfall---

Small Arms Capabilities Based Assessment (SA-CBA), April 2008.

I-HEDP-“Platoons lack the ability to achieve desired accuracy and incapacitating effects with volume fire up to 2400 meters”.

Units must be able to apply lethal over-match against targets at increased ranges and with greater accuracy using the 40-mm high velocity Mk19 Mod 3 Grenade Machine gun (GMG)



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Questions?