



U.S. Army Munitions HQ DA G-3/5/7



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What I Thought It Would Be Like...





What It's Really Like...





Agenda

- DA G-3/5/7 Munitions Mission
- Current Operational Trends and Observations
- Munitions Requirements Process (MRP)
- Major On-going Actions/Initiatives



DA G3 Munitions Mission

- Serve as Army Staff focal point for integrating all munitions issues
- ARSTAF Team of Teams = G-3/5/7, G4, G8 and ASA (ALT)
- Where do we focus?
 - ✓ Determine ALL munitions requirements
 - ✓ Sustain the warfight
 - ✓ “Operationalize” munitions issues and recommend priorities
 - ✓ Coordinate munitions resourcing strategy
 - ✓ Synchronize munitions policy
 - ✓ Oversee Army weapons training program
 - ✓ Monitor munitions and industrial base readiness



Munitions "Team of Teams"

Validation, Prioritization, Resourcing, Policy

G-3/5/7

- CIC: **Capability Rqts**
- SSW: **War Plans**
- FM: **Force Structure**
- TRA: **Develop Requirements**
- CIR: **Develop priorities**

G-4

- **Sustainment**
- Munitions Div

G-8

- **Programming & Budgeting**
- BOS Div's (Missiles)
- Ammunition Div

ASA(ALT)

- **Acquisition & Program Management**
- Missile Systems & Ammunition Directorate

Requirement Generators

DoD MRP

Joint Staff JCIDS

AR2B

Long-Term

Near-Team

TRADOC
STRAC, POI, CBT Loads

CAA
QWARRM

ATEC
TEST

OTHER CMDS
ONS



Acquisition and Logistics

AMC

AMCOM
LCMC

Life-Cycle Mgr of Acquisition & Production of Missiles, Logistics Readiness, and Sustainment

JM&L
LCMC

Life-Cycle Mgr of Acquisition & Production of SMCA, Logistics Readiness, and Sustainment



Current Operational Trends and Observations



Current Operational Trends and Observations

- Our inventory is not necessarily tuned for “full spectrum” operations and change is slow going (e.g. 2.75” rockets, 40mm NL)
- We must not “prepare” for the last fight (2.75” rockets, VL/IR Illum)
- We must be more responsive to rapidly changing Tactics, Techniques and Procedures to support the current warfight and persistent conflict (e.g. 17lb 2.75” rockets, Blast/Frag Hellfire)
- AT does not always equal AP ([play Hellfire video](#))
- Phase 4 Operations and “Persistent Conflict” require more than small arms (e.g. Demo, precision guided munitions, non-lethals, etc.)
- Joint and Coalition Ammunition planning and training is critical. Technology cannot outpace slowest runner (7.62 Dim Trace, Aphids)



Current Operational Trends and Observations

Continued...

- We are and will continue to fly (fixed and rotary) 155mm and more (intra and inter theater)
- Buying foreign to make up for shortfalls should never happen again (e.g. UK small arms)
- Ammunition Foreign Military Sales (FMS) are on the rise and must be leveraged for; Strategic Shaping/Coalition building and Industrial Base readiness
- Reduction in inventory (due to overall reduction in force structure, increased lethality and precision) has led to a greater reliance on near real time inventory and expenditure data (not there yet)
- Non-lethals must quickly transition to lethal effects to best support Escalation of Force, detainee operations, etc. (no more FN303's). Extended range (150m) for NL is critical to buy standoff time.
- Technology is great but watch for Achilles heel (Excalibur)



Current Operational Trends and Observations

Continued...

- Just in time production does not equate to just in time logistics
- Precision vs dumb munitions balance is not easy. TRADOC is conducting a detailed study to support senior decision makers
- TRADOC also working a study to help focus PEO- Missiles and Space RDT&E and S&T funding requests in FY12-17 POM
- Operational Needs System (ONS) system is working
- Significant increase in ammunition and explosive related accidents with fatalities
- We have a knowledge gap among junior to mid-grade officers



Munitions Requirements Process (MRP)



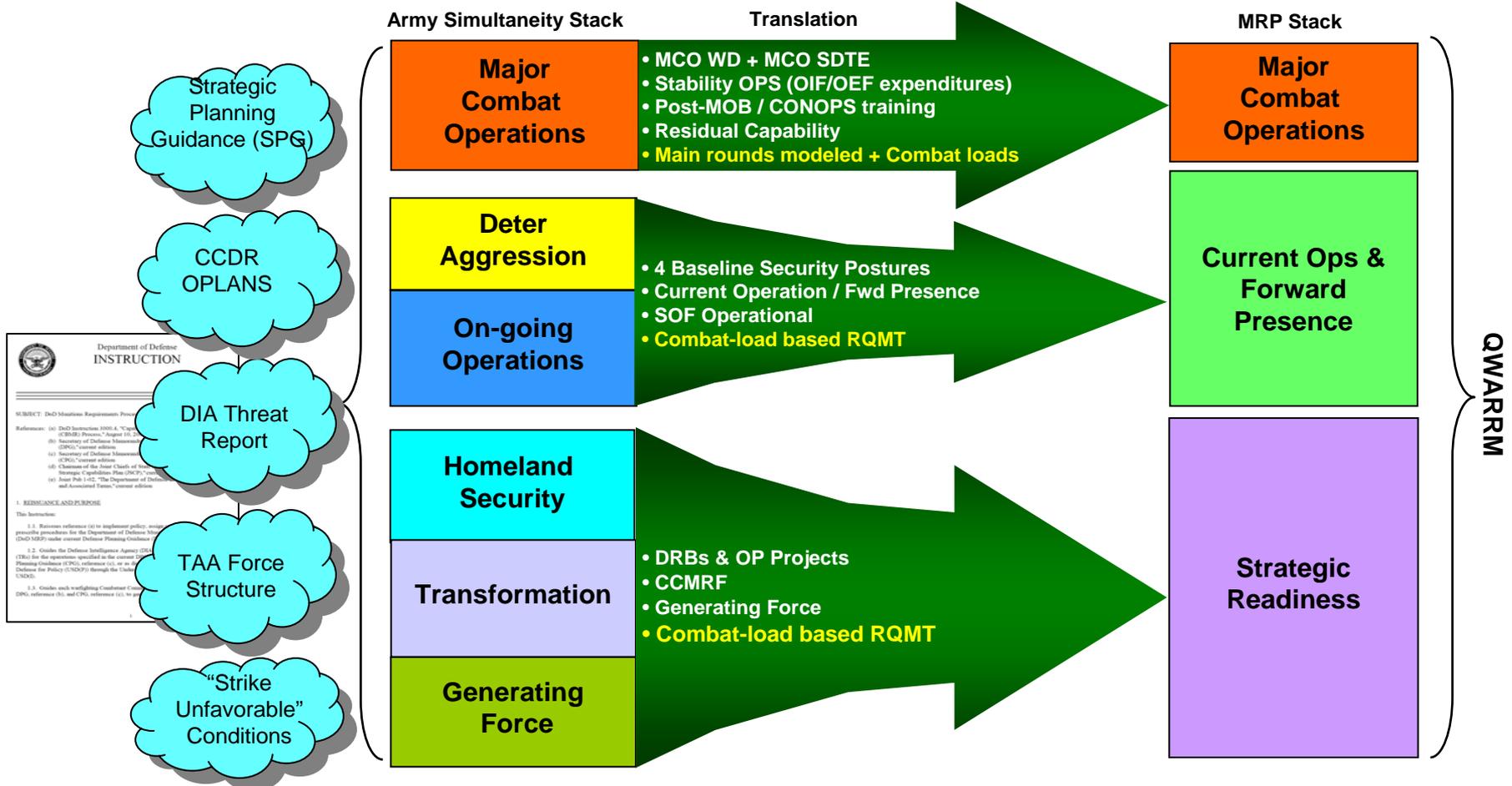
Munitions Requirements Process (MRP)

- DoD Instruction 3000.4 Munitions Requirements Process (MRP) directs all Services to develop munitions requirements biennially
- MRP is a deliberate planning process that supports long-range POM planning and investments
- As part of deliberate planning process, we use the “Quantitative War Reserve Requirements for Munitions” (QWARRM) process to develop War Reserve / Operational requirements
- Center for Army Analysis (CAA) conducts theater-level modeling based on input from multiple sources including;
 - Strategic Planning Guidance
 - COCOM OPLANS
 - DIA Threat reports
 - Projected Force Structure
 - Approved/projected munitions
 - Munitions caps
 - Approved Combat Loads
 - Munitions/system performance



QWARRM Development

Account for Everything; Double-count Nothing





Munitions Requirements Process (MRP)

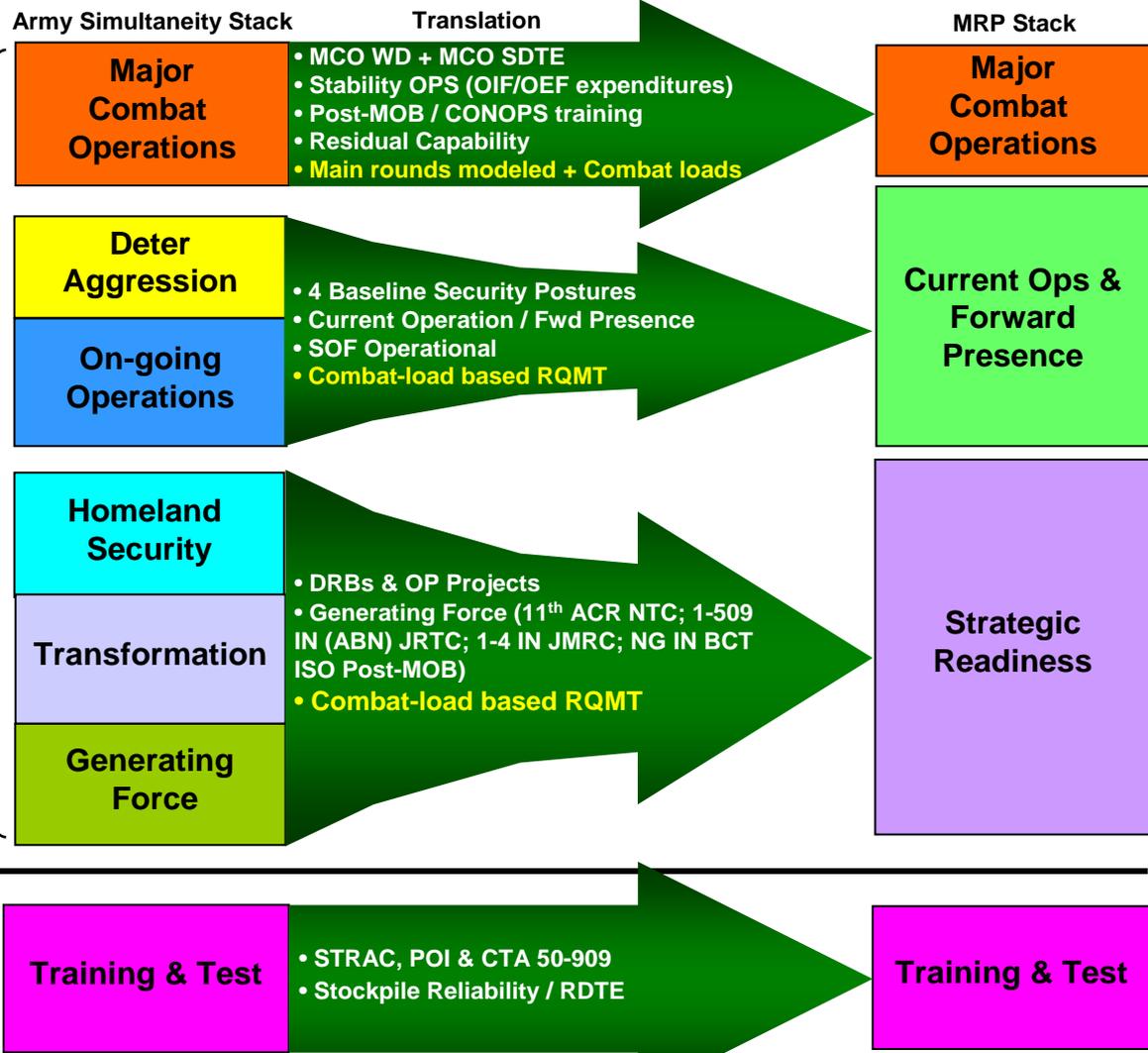
Continued...

- QWARRM does not address immediate operational needs. These are approved and resourced through the Army Requirements and Resourcing Board (AR2B) via Operational/Urgent Needs Statements (ONS/UNS) (e.g. Pen Flares)
- QWARRM requirements + training (6 years) + testing (6 years) = Total Army Munitions Requirements (TAMR)
- FY10-15 TAMR provided to OSD o/a 1 Jan 08



Total Army Munitions Requirements (TAMR)

Account for Everything; Double-count Nothing

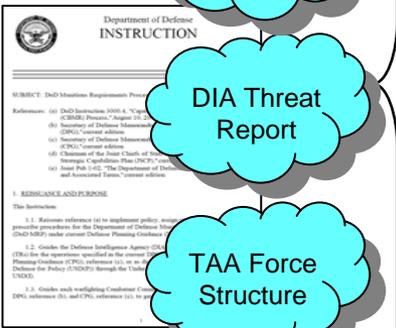


QWARRM

TNG/TEST

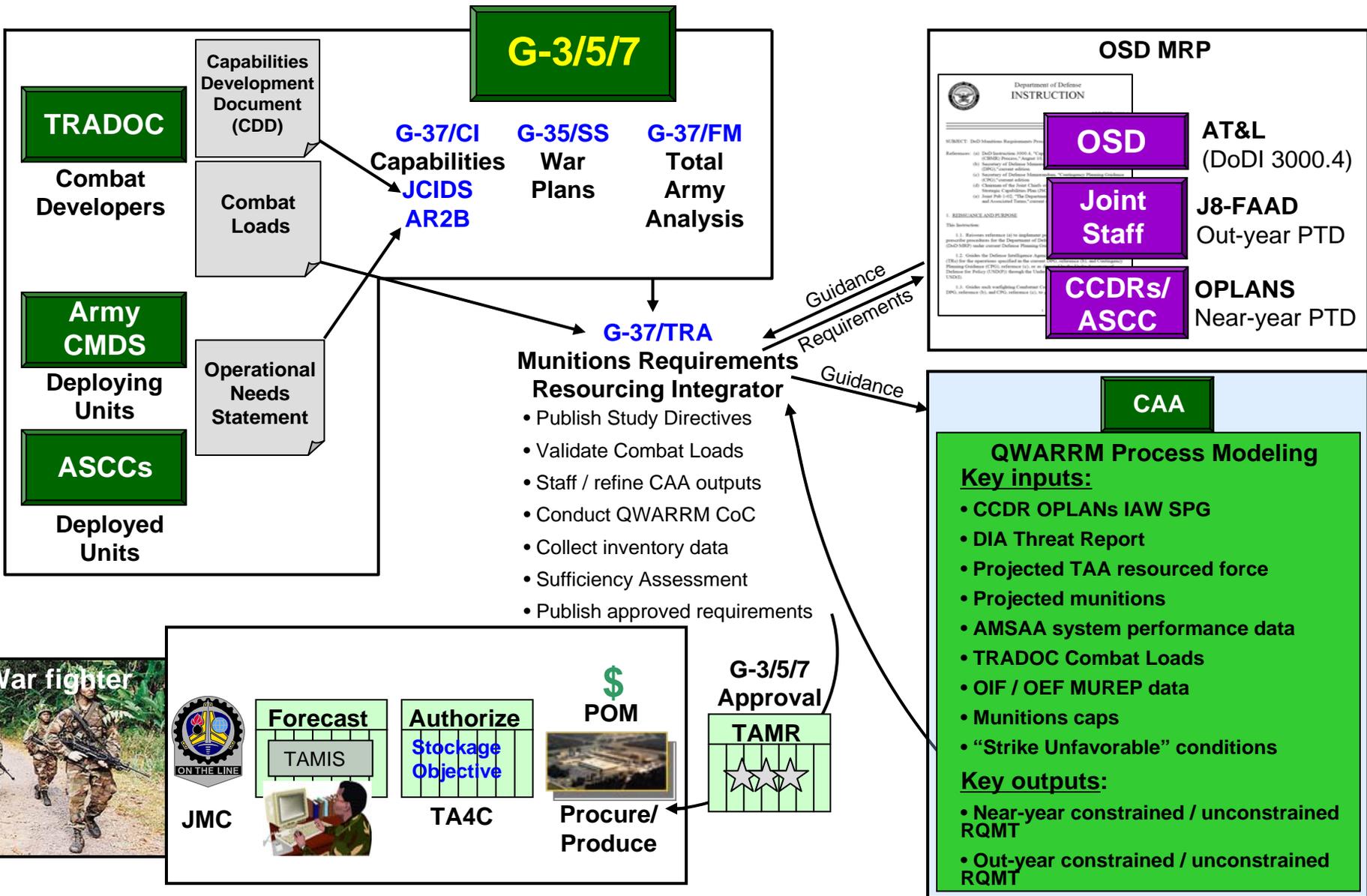
TOTAL ARMY MUNITIONS REQUIREMENT

- Strategic Planning Guidance (SPG)
- CCDR OPLANS
- DIA Threat Report
- TAA Force Structure
- "Strike Unfavorable" Conditions





Army War Reserve / Operational MRP





On-going Actions/Initiatives



Ongoing Actions/Initiatives

➤ Sustain the Warfight

- Hellfire (AP/AT)

- 2.75" rockets (HE, flechette)

- 30mm

- Fast Obscurant Grenade (FOG)

- Unitary Guided MLRS

- Excalibur

- 12ga breaching rounds

- Non-lethal (40mm, CS, 12ga)

- Escalation of Force (EOF)

➤ Manage Army Munitions Requirements and Prioritization

- Green Ammo

- COCOM missile distribution

- ATACMS shelf life extension program (SLEP)

- Operational Needs Statements (e.g. PGMM, Thermo LAW, PGK)

➤ Army Munitions Strategy

- Overarching Army Munitions Strategy

- Highlight current and pending shortfalls

- Munitions/Missile Industrial Base

- Support Reposture/Reset of munitions stockpile

- Joint Materiel Release Process

- Currently Working DRAFT

➤ FY10-15 POM / Total Army Munitions Requirements (TAMR)

- QWARRM is our war reserve munitions requirements development process

- Developed IAW Department of Defense Instruction 3000.4, Munitions Requirement Process (MRP)

- OSD AT&L Implementation Guidance dictates Defense Planning Scenarios for use in MRP

- Training Ammunition requirements developed IAW STRAC and TRADOC POI's

➤ Army Ammunition Vision- 2030

- Soldiers/Civilians

- Training

- Strategic reach back

- Equipment

- Organizations

Chief of Ordnance initiative
Committed to fixing knowledge gap



Don Chrans DA G8 Programming and Budgeting

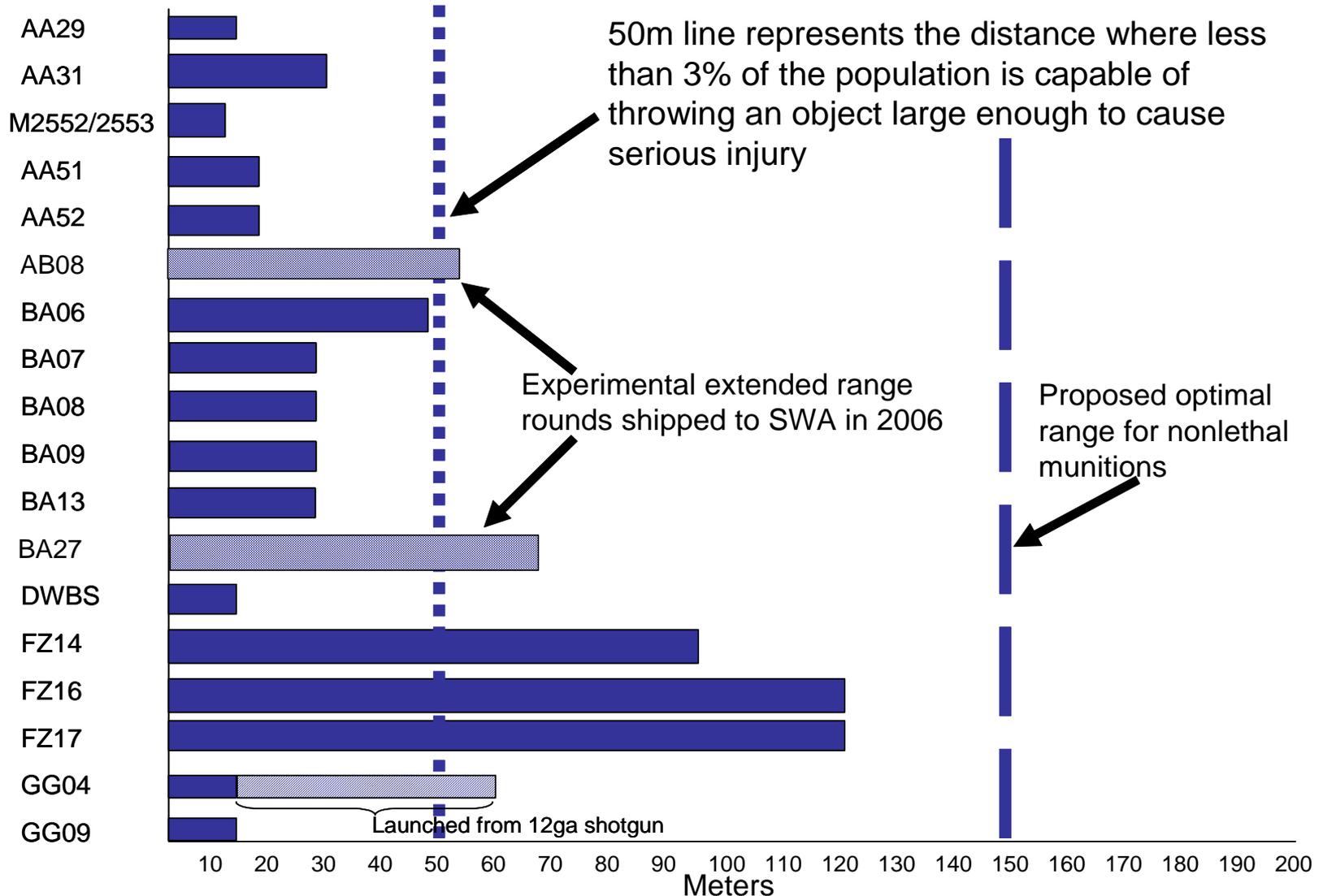


Backup



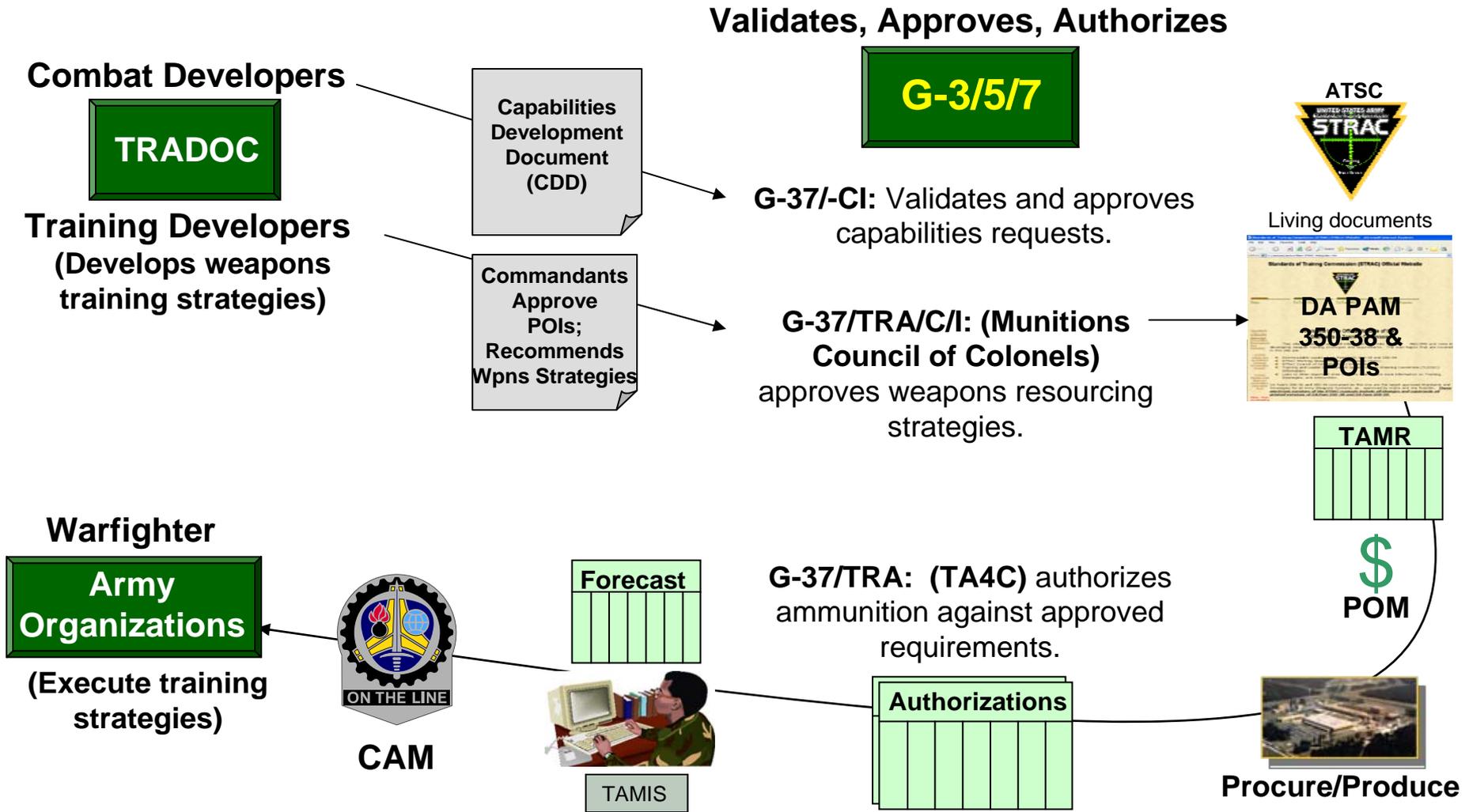
Non-Lethal Munitions Today

Nonlethal Munition Maximum Effective Ranges





Training Munitions Requirements Process





Modeling Guidance to CAA

- Model OSD-directed Major Combat Operations.
- Develop constrained / unconstrained near- and out-year requirements.
- Use MUREP to develop PH IV requirement.
- Develop Strategic Readiness requirements, to include Homeland Defense, treaty obligations, etc.
- Update the Theater Sustainment Model to reflect munitions needed to support a modular force.
- Special emphasis items include: FCS systems, Patriot, ATACMS, Hellfire, DPICM (all types), 30mm, 25mm, and Precision Guidance Kit (PGK) requirements.



FY10-15 POM Missile Requirements Methodology

- Previous missile requirements process was fiscally driven vice operations-based.
- G-3/5/7 can't determine where he may have risk.

OLD PROCESS

G8 develops missile requirements

Unconstrained:

- CAA model allowed to fight theater war fight without constraint.
- Model defaults to the most lethal, suitable weapon / munition available for the target set.

Constrained:

- Requirements based on programmed quantities.
- Provided by EE PEG BOS reps.
- No missile UFRs. Procurement = requirement.

Note: OSD directs each Service to provide unconstrained and constrained requirements.

NEW PROCESS

G3/5/7 develops missile requirements

Unconstrained:

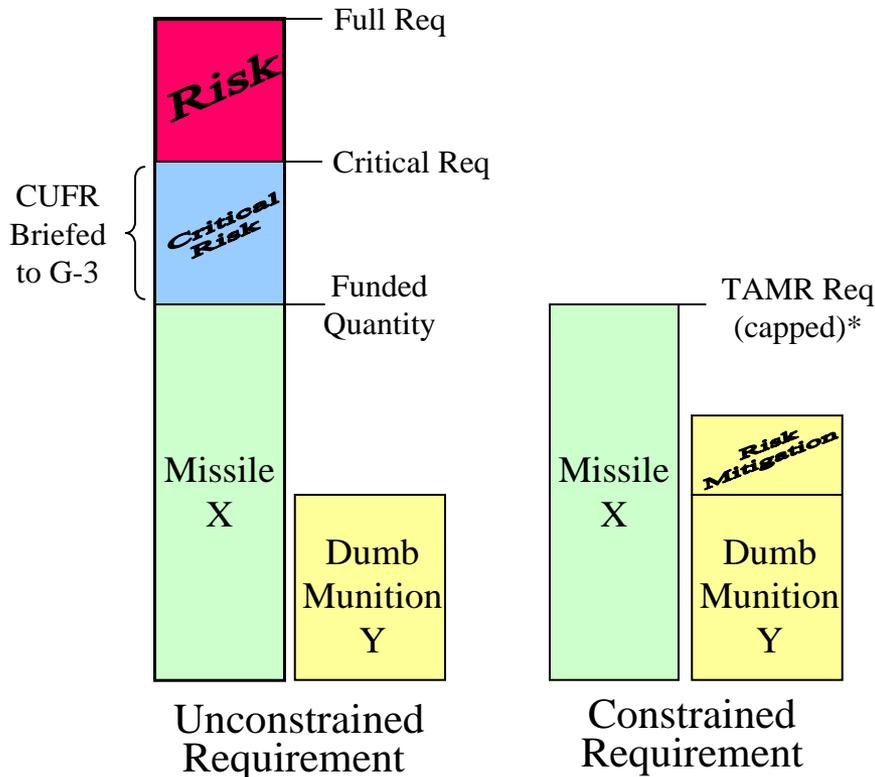
- No change.

Constrained:

- CAA models unconstrained requirement.
- **G3 (DAMO-TRA) develops operations-based critical requirement.**
- **DAMO-TRA briefs proposed RQMT to G-3/5/7 for approval.**
- **EE PEG provides assessment of how much of the RQMT it intends to fund.**
- CAA models programmed quantities provided by EE PEG BOS reps.
- **Funding < critical RQMT = CUFR.**
- **Funding > CUFR but < full RQMT = UFR.**



Constrained Requirement Development



* Missile X TAMR requirement will be the capped qty, but show the Full and Critical Requirements for reference

Unconstrained Requirement

- CAA model is allowed to fight theater level war fight without constraints
- This is the very top level munitions requirements estimate, by DODIC

Constrained Requirement

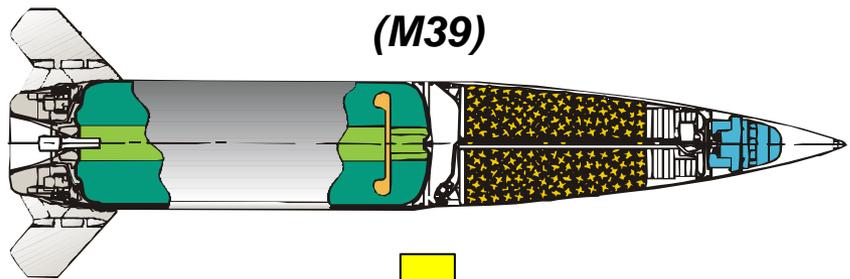
- G-37/TRA uses the CAA generated unconstrained requirement to develop an operations based Critical Requirement
- EE PEG provides assessment of how much of the RQMT it intends to fund
- Critical Requirement is briefed to G-3/5/7 leadership for approval
- CAA models programmed quantities provided by EE PEG BOS
- CUFR = Funding < Critical Requirement
- UFR = Funding > CUFR but < Full Requirement



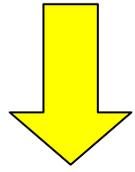
ATACMS SLEP Process

**ATACMS Block I
(M39)**

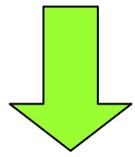
Expired Missile



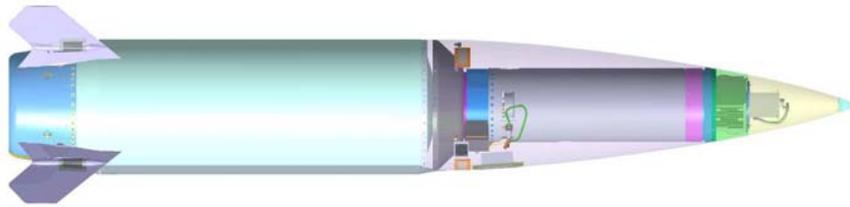
- 950 APAM Sub-munitions
- 165 KM Range
- Inertial Guidance



SLEP PROCESS
(New Warhead, New Electronics, New Guidance System)



*New Missile
10 Year Shelf Life*



**ATACMS Unitary
(M57)**

- 500# Unitary Warhead
- 270 KM Range
- Vertical Attack capability
- GPS-aided Inertial Guidance



War Reserve Requirements Process

Validate, Prioritize

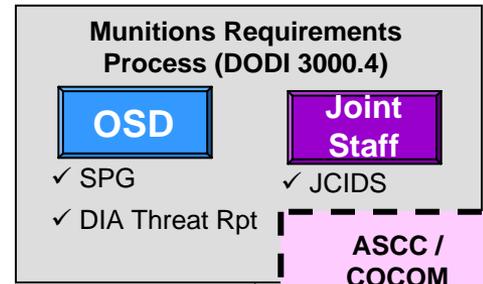
• **DAMO-CI:**
Validate capabilities

G-3/5/7

• **SSW:** War Plans
• **FM:** Force Structure

• **DAMO-TRA:**
Validate resourcing

✓ Combat Loads (CoC)
✓ Other Army inputs.



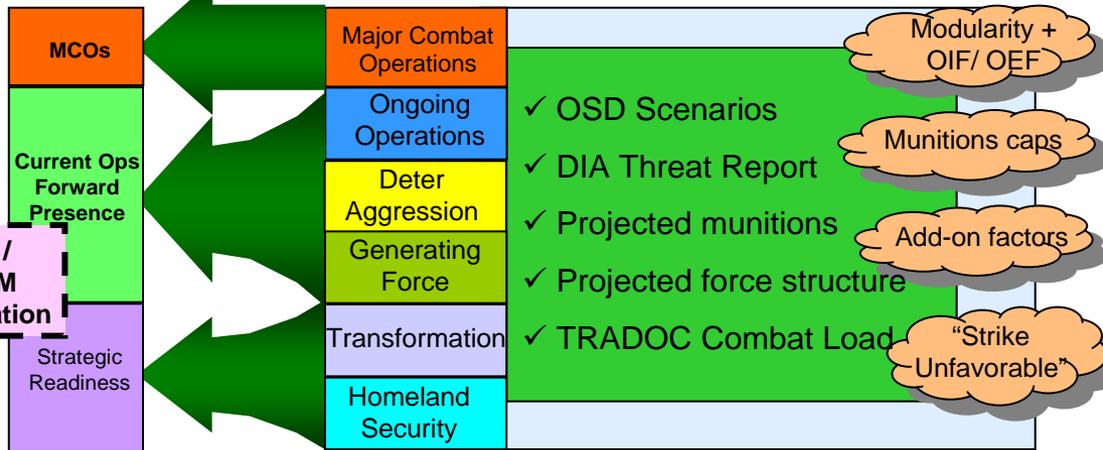
Total Army MRP



JICM Model

Quantitative War Reserve Requirements for Munitions (QWARRM)

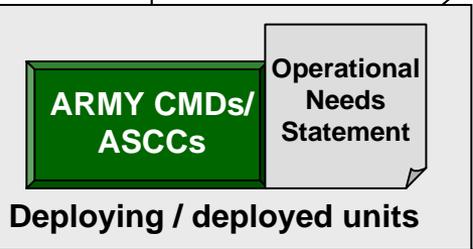
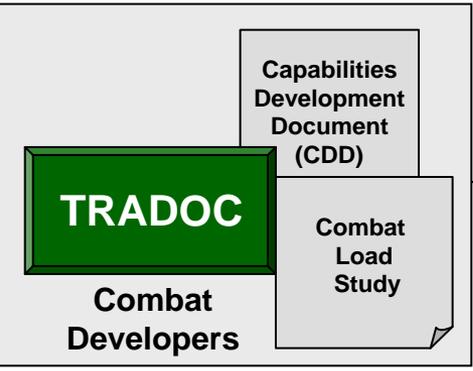
REQUIREMENTS



ASCC / COCOM Collaboration

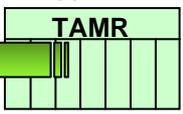
Long-term
Near-term

Validated inputs
Study results



G-3/5/7 Approval

POM \$ (RE06)



Procure/Produce



Summary - Requirements Characteristics

The Army's QWARRM process produces a Requirements Estimate that:

- Reflects the quantities of munitions the Army needs to successfully execute ground-based maneuver force Campaign Plans (versus achieving specific target attrition goals).
- Considers the objectives and munitions demand for each phase of the campaign plan.
- Is derived from detailed functional analysis of Division/BCT-level performance of opposing force weapons systems in an environment representative of the theater.
 - Uses approved shooter / munitions / target probability-of-kill data from AMSAA.
 - Reflects appropriate doctrine and tactics for employment of the weapons systems.
- Provides a comprehensive theater / scenario-specific, auditable estimate of munitions requirements throughout a campaign.



Validation of Campaign Results

- CAA's Campaign Analysis Review (munitions):
 - Rounds per Tube per Day
 - Inventory caps
 - Tonnage
 - Kills and hits
 - Phasing
 - Quantities Expended vs Carrying Capacity
 - Sequence of Expenditures
- Only after validation is complete are study results briefed to the Director, CAA, for release to the Army G-3 (DAMO-TRA).
- Army G-3 (DAMO-TRA) conducts Council of Colonels to further validate QWARRM outputs, leveraging input from "Team of Teams."
- Outputs approved by DA G-3 before release to OSD



QWARRM Summary

- The QWARRM process has evolved over time, as the Army and CAA have refined it to meet the demands of the munitions requirements process and the OSD MRP.
- CAA's OPLAN analysis support to ASCCs that are associated with major Defense Planning Scenarios significantly enhances the Army's ability to faithfully represent the ASCCs' intent during the campaign.
- The Army is confident that scenario based munitions requirements accurately reflect what the Army needs to successfully execute a specified theater campaign plan (vice the estimated munitions required to kill a specific number of targets).