



U.S. ARMY

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



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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

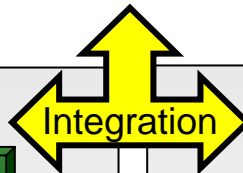
Near-Term

TRADOC
STRAC, POI, CBT Loads

CAA
QWARM

ATEC
TEST

OTHER CMDTS
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

- Modernization of conventional munitions stocks is well underway; missile stocks are approaching obsolescence.
- 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. 2.75” flechette rockets, Blast/Frag Hellfire).
- Anti-armor does not always equal anti-personnel.
- Phase IV Operations and “Persistent Conflict” require more than small arms (e.g. demo, precision-guided munitions, non-lethals, etc.)
- Joint and Coalition munitions 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.



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)



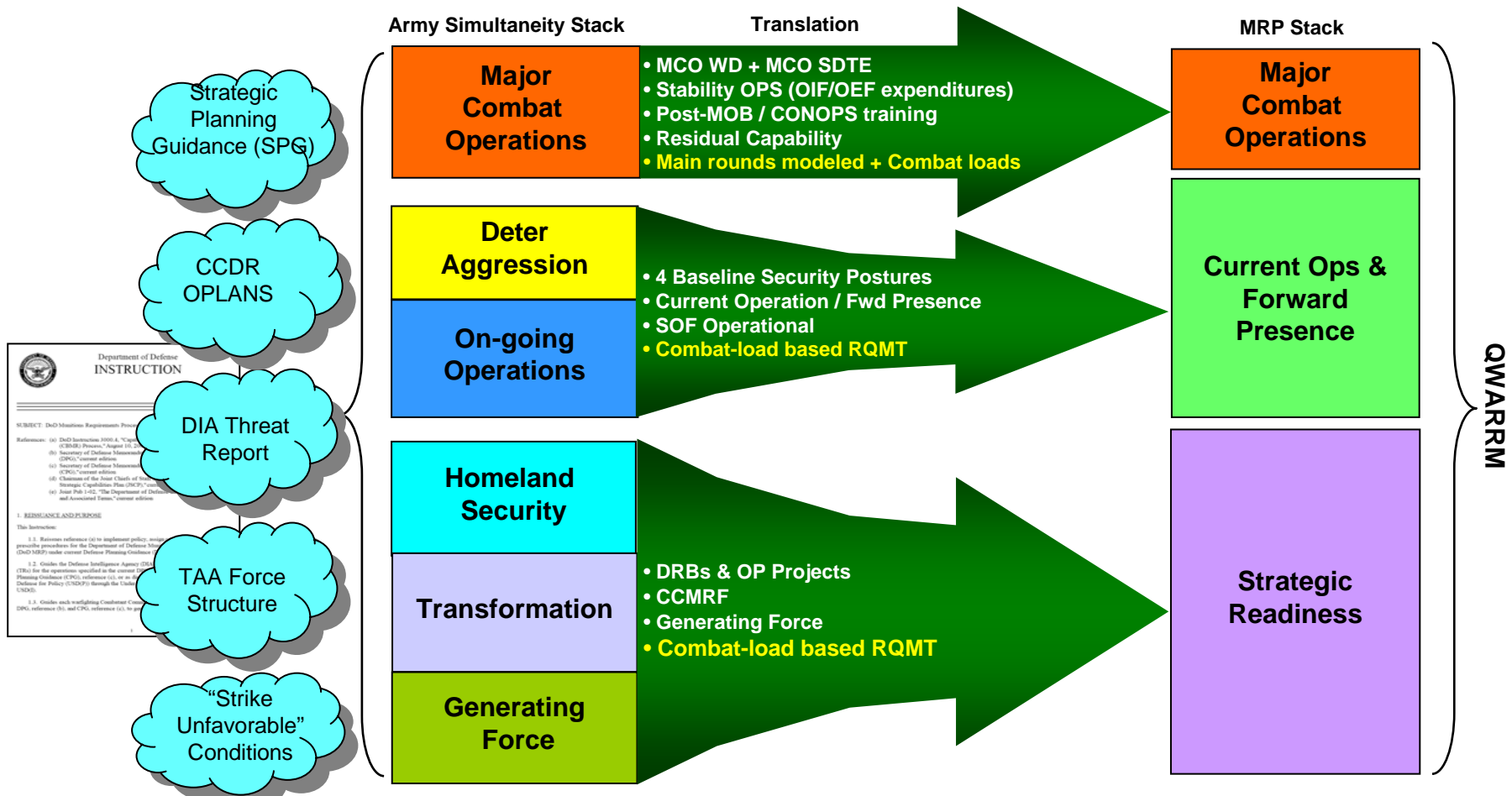
Munitions Requirements Process (MRP)

- DoD Instruction 3000.4, Munitions Requirements Process (MRP), directs all Services to develop munitions requirements biennially.
- The MRP is a deliberate planning process that supports long-range POM planning and investments.
- As part of the deliberate planning process, we use the “Quantitative War Reserve Requirements for Munitions” (QWARRM) process to develop War Reserve / Operational requirements.
- The 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 (CL)
 - Munitions / system performance data
- Training and test requirements are developed separately from the QWARRM process.



QWARRM Development

Account for Everything; Double-count Nothing





Munitions Requirements Process (MRP)

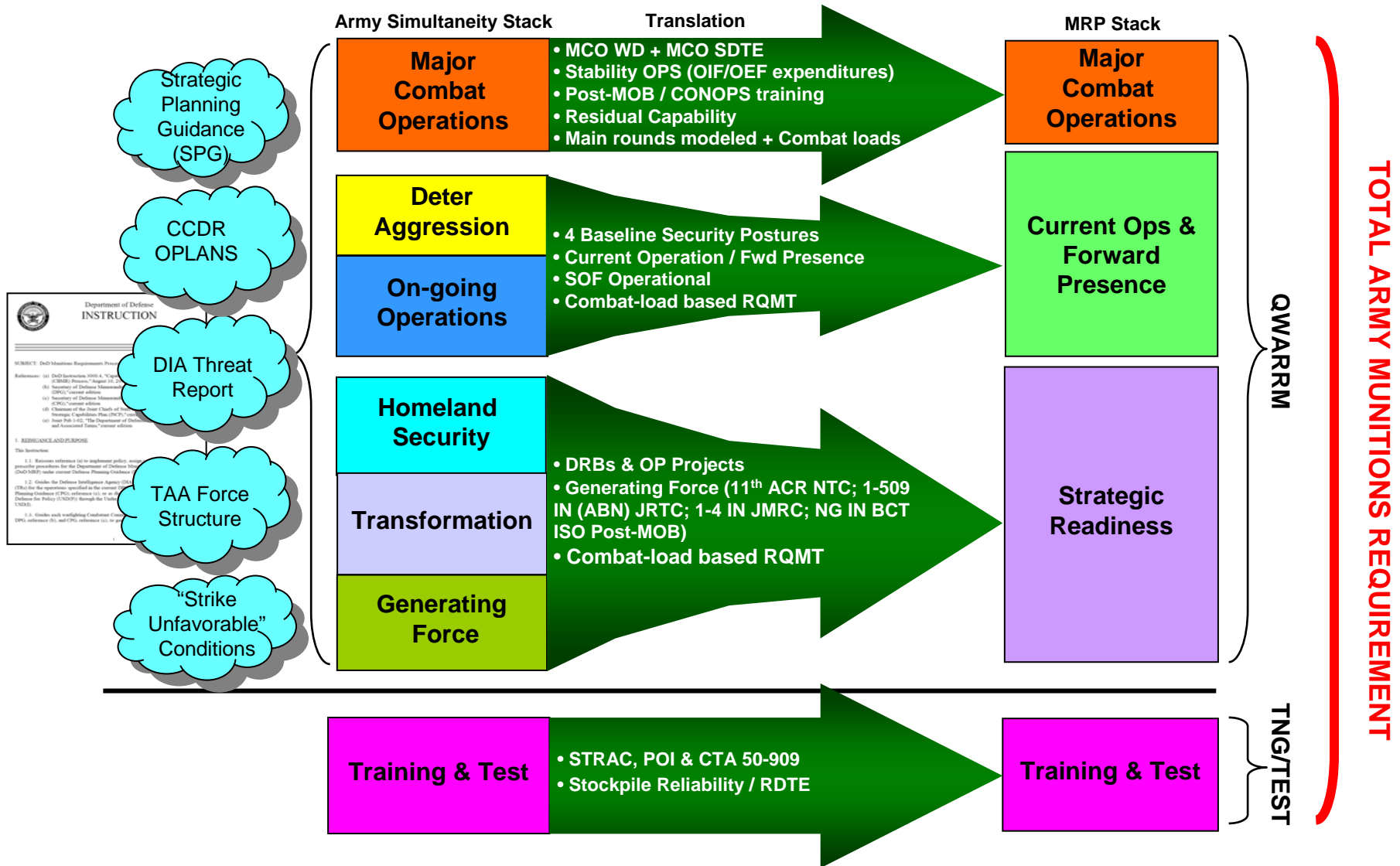
Continued...

- 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



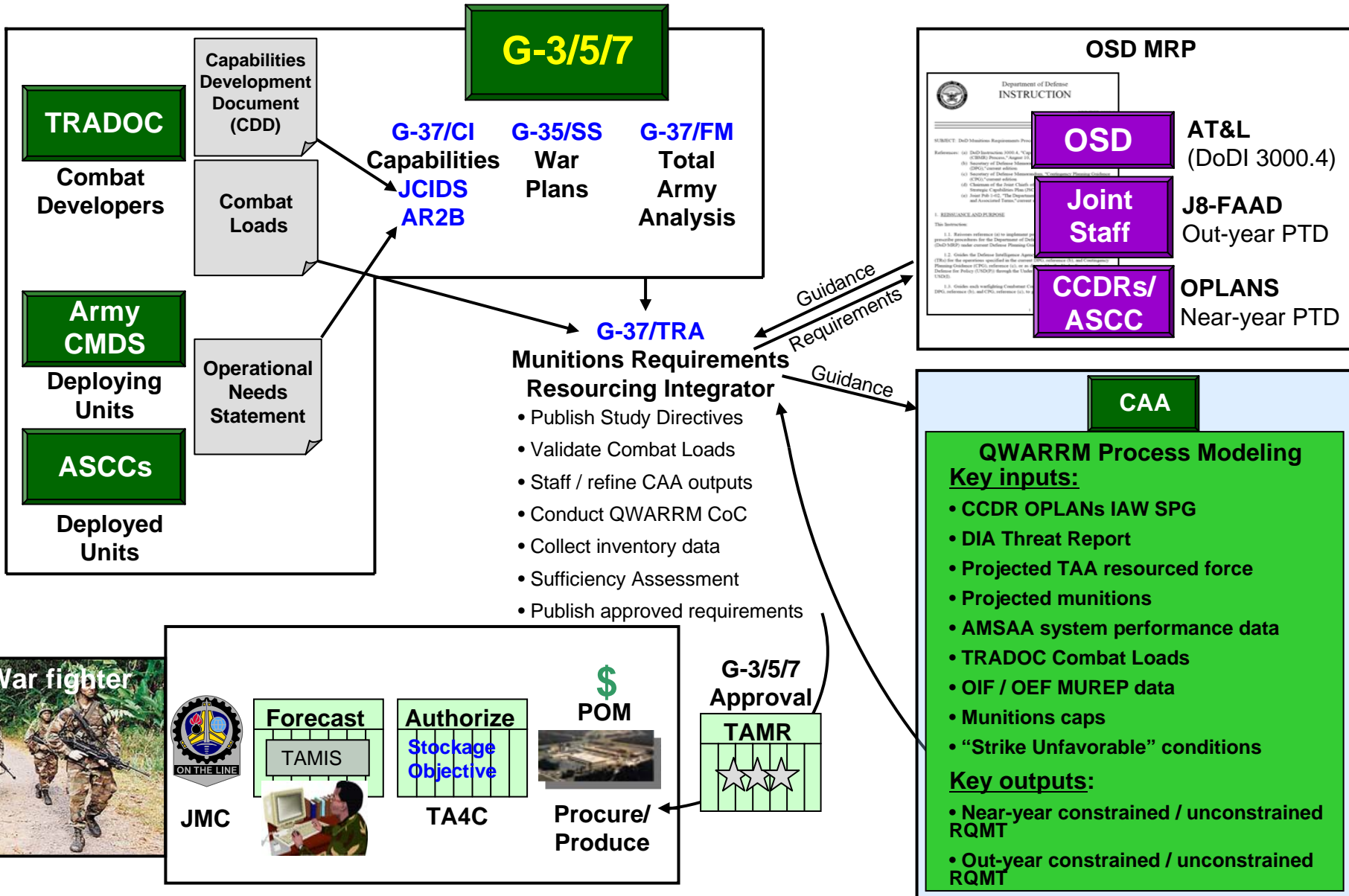
Total Army Munitions Requirements (TAMR)

Account for Everything; Double-count Nothing



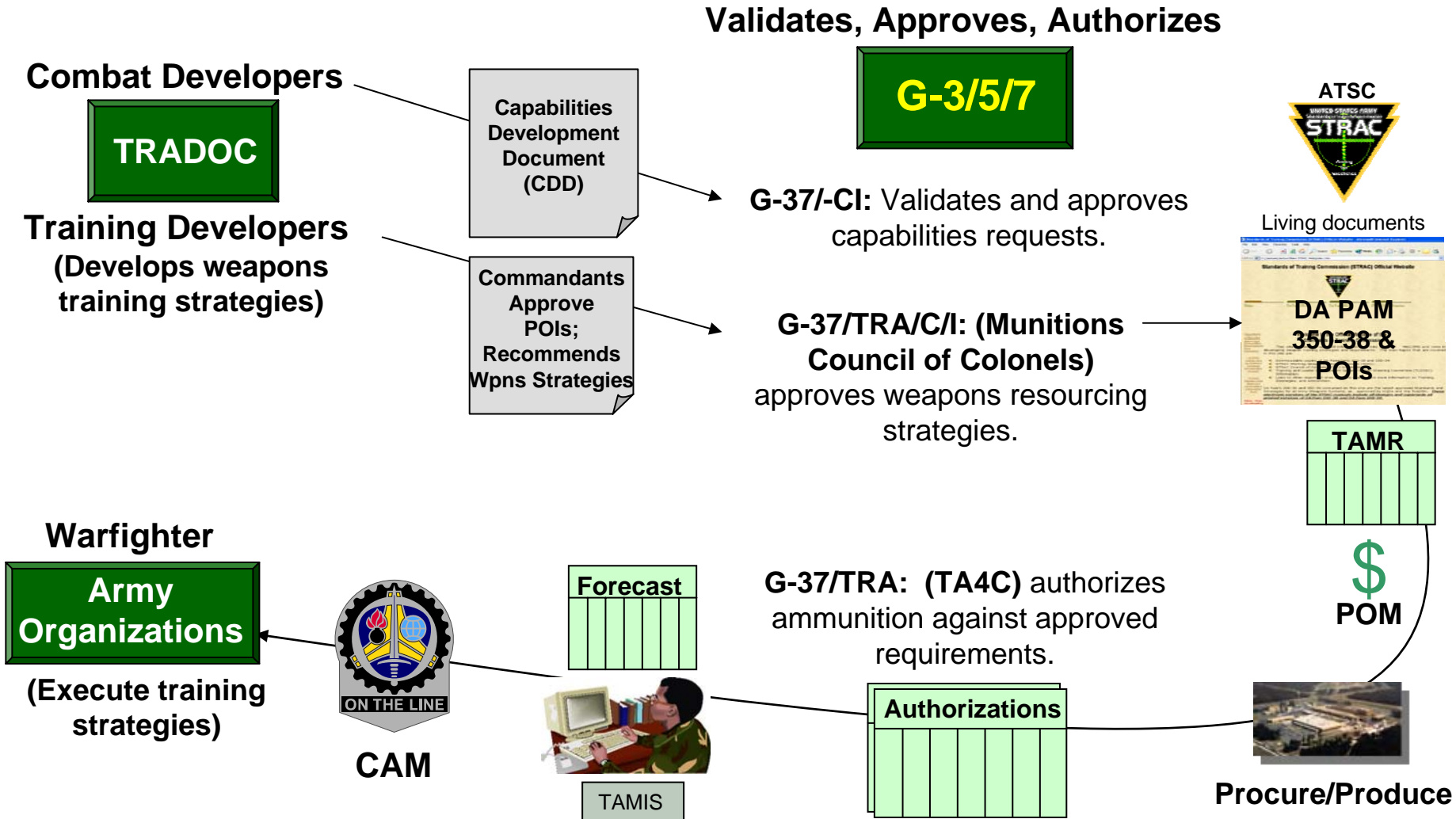


Army War Reserve / Operational MRP





Training Munitions Requirements Process





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

- Equipment

- Training

- Organizations

- Strategic reach back

Chief of Ordnance initiative
Committed to fixing knowledge gap



Don Chrans DA G8 Programming and Budgeting

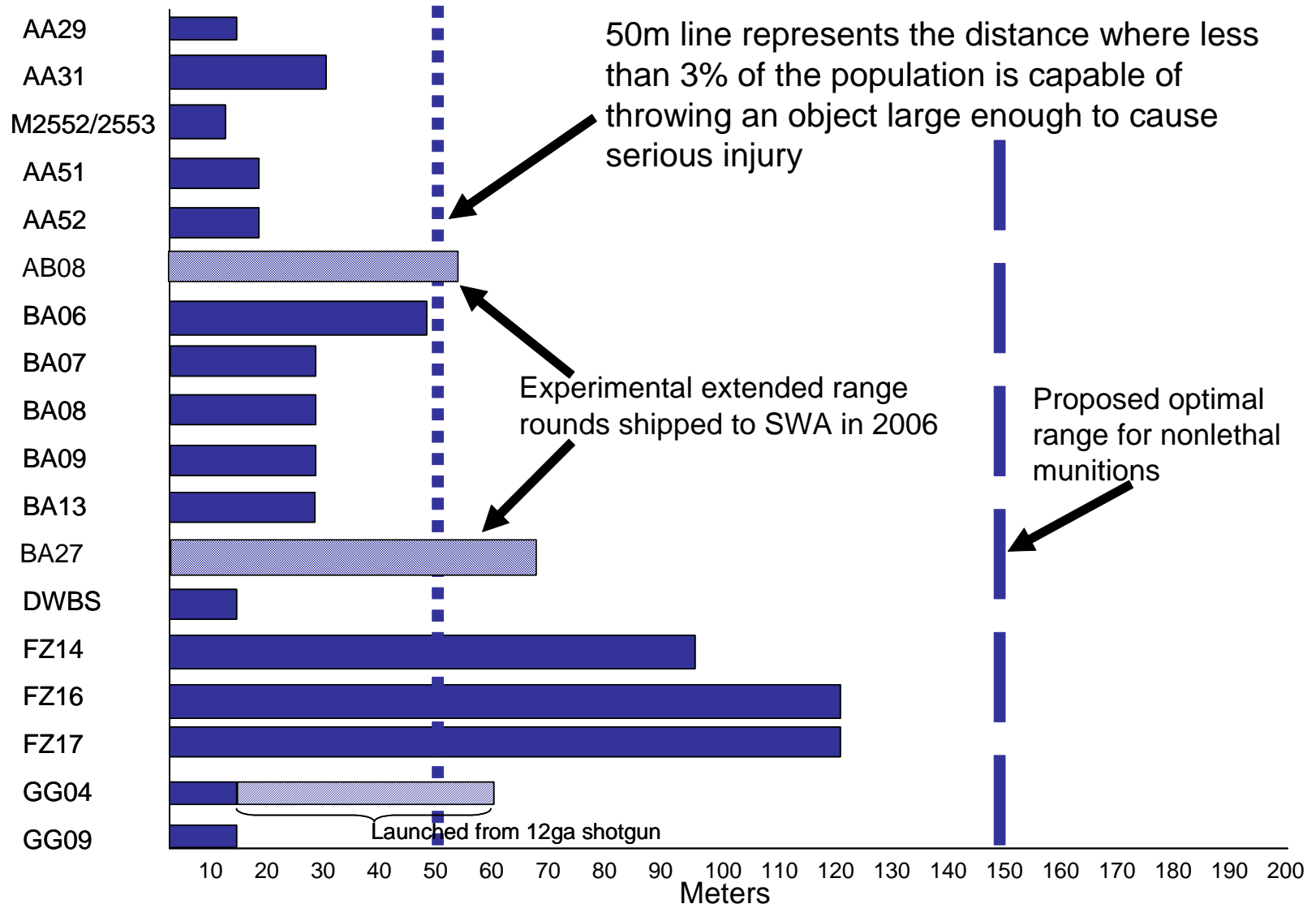


Backup



Non-Lethal Munitions Today

Nonlethal Munition Maximum Effective Ranges





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:

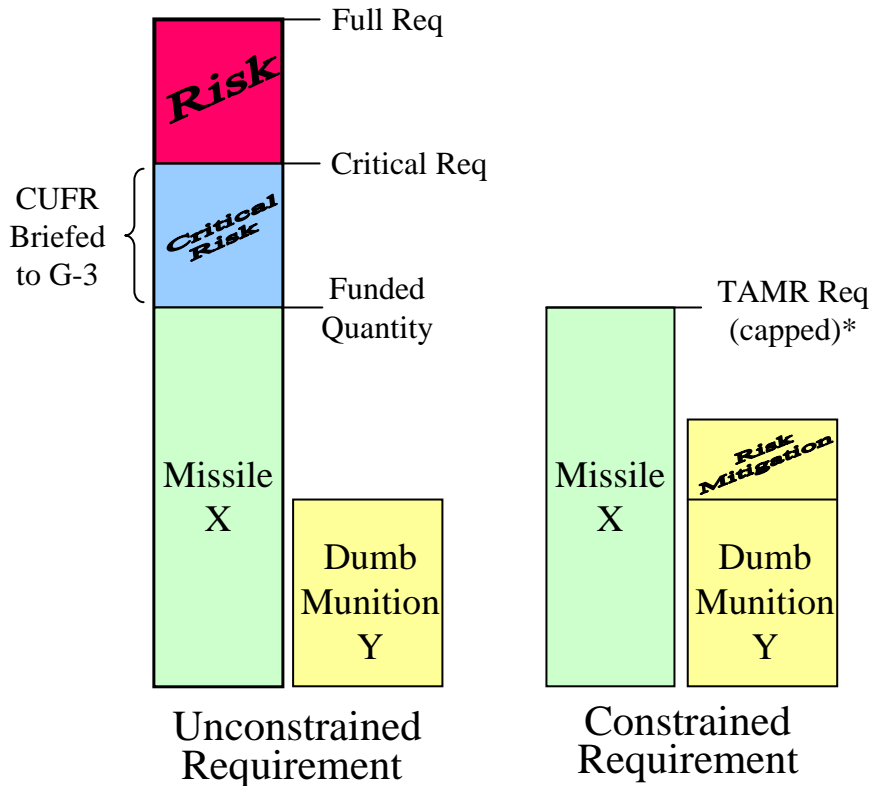
- No change.

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

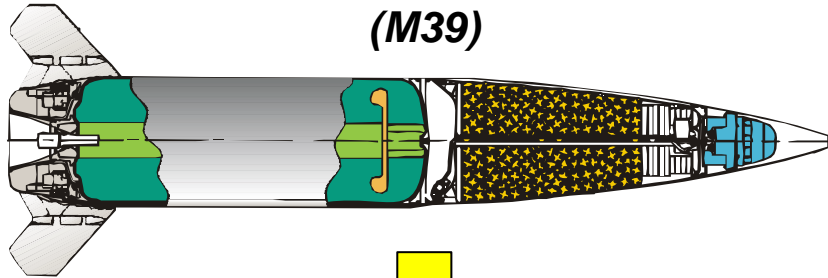
- G-37/TRA uses the CAA generated unconstrained requirement to develop an operations based Critical Requirement
- EE PEG provides assessment of how much of the RQMT it intends to fund
- Critical Requirement is briefed to G-3/5/7 leadership for approval
- CAA models programmed quantities provided by EE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



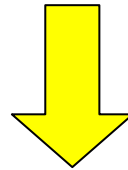
ATACMS SLEP Process

**ATACMS Block I
(M39)**

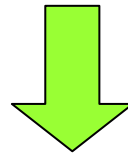
Expired Missile



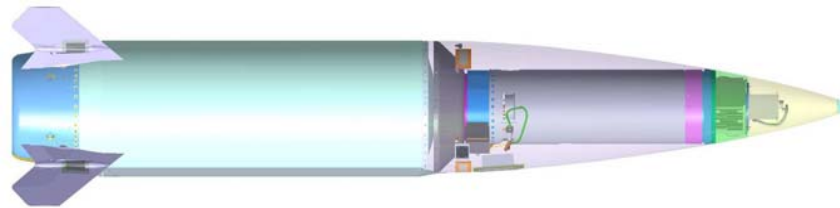
- 950 APAM Sub-munitions
- 165 KM Range
- Inertial Guidance



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

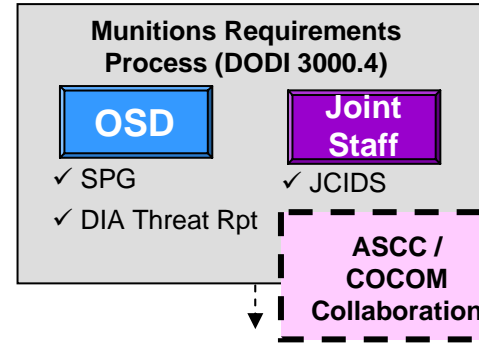
• **DAMO-CI:**
Validate capabilities

G-3/5/7

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

• **DAMO-TRA:**
Validate resourcing

✓ Combat Loads (CoC)
✓ Other Army inputs.



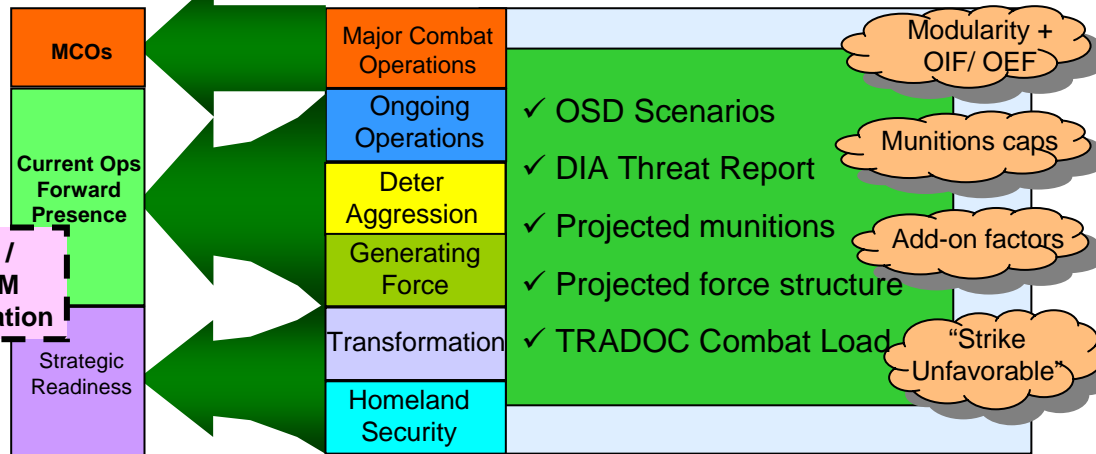
Total Army MRP



JICM Model

Quantitative War Reserve Requirements for Munitions (QWARRM)

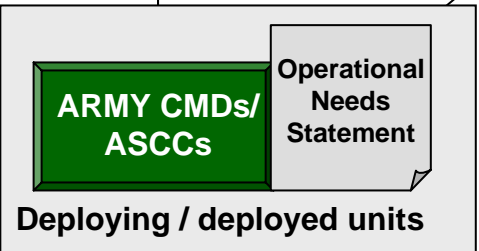
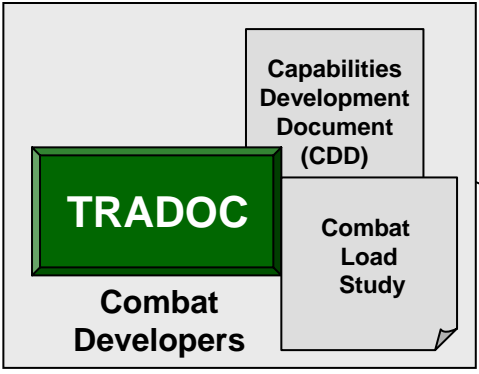
REQUIREMENTS



ASCC / COCOM Collaboration

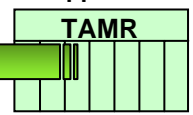
Long-term
Near-term

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).