Audit Report

OFFICE OF THE INSPECTOR GENERAL

ARMY'S PROCESSES FOR DETERMINING QUANTITATIVE REQUIREMENTS FOR ANTI-ARMOR SYSTEMS AND MUNITIONS

Report No. 95-157 March 29, 1995

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Acronyms

ATACMS	Army Tactical Missile System
BAT	Brilliant Anti-Armor
CAA	U.S. Army Concepts Analysis Agency
CBMR	Capabilities-Based Munitions Requirements
DCSOPS	Deputy Chief of Staff for Operations and Plans
DIA	Defense Intelligence Agency
GAO	General Accounting Office
HMMWV	High Mobility Multipurpose Wheeled Vehicle
MDSQ	Minimum Distribution System Quantity
MLRS	Multiple Launch Rocket System
mm	millimeter
MRC	Major Regional Contingency
NLOS-CA	Non-Line of Sight-Combined Arms
PWE	Projected Wartime Expenditures
SADARM	Sense and Destroy Armor
TOW	Tube-Launched, Optically Tracked, Wire-Guided

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INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON, VIRGINIA 22202-2884

March 29, 1995

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION AND TECHNOLOGY
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Army's Processes for Determining Quantitative Requirements for Anti-Armor Systems and Munitions (Report No. 95-157)

We are providing this report for your review and comments. This report is the fifth of six reports addressing anti-armor systems and associated munitions. This report addresses matters concerning the Army's methodology for determining requirements for anti-armor systems and munitions. Comments on a draft of this report were considered in preparing this report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. Therefore, we request that the Army provide additional comments on Recommendations A.1. through A.3., B.1., B.2., and D. by May 30, 1995.

We appreciate the courtesies extended to the audit staff. A list of audit team members is inside the back cover. If you have questions on this audit, please contact Mr. Rayburn H. Stricklin, Program Director, at (703) 604-9051 (DSN 664-9051) or Mr. William D. Van Hoose, Project Manager, at (703) 604-9034 (DSN 664-9034). The distribution of this report is listed in Appendix J.

David K. Steensma

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Deputy Assistant Inspector General
for Auditing

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Office of the Inspector General, DoD

Report No. 95-157 **March 29, 1995**
(Project No. 3AL-0046.04)

ARMY'S PROCESSES FOR DETERMINING QUANTITATIVE REQUIREMENTS FOR ANTI-ARMOR SYSTEMS AND MUNITIONS

EXECUTIVE SUMMARY

Introduction. This report is the fifth in a series of six reports resulting from our audits of anti-armor weapon systems and associated munitions. This report addresses matters concerning the Army's processes for determining requirements for anti-armor systems and munitions. The Army used both force-oriented and threat-oriented processes in determining the quantitative requirements for anti-armor munitions to defeat armored targets.

Objectives. The audit's overall objective was to evaluate the reasonableness of the quantitative requirements for anti-armor weapon systems and associated munitions. The audit also evaluated internal controls related to the functions being audited.

Audit Results. The Army's processes for determining quantitative requirements for seven anti-armor munitions were not fully effective. As a result, the munition requirements were overstated, as specified below.

o The 120-millimeter munition for the M1A1/A2 main battle tank's main gun system; the Tube-Launched, Optically Tracked, Wire-Guided missile; the Javelin missile; the Non-Line of Sight-Combined Arms missile; and the Hellfire series of missiles were overstated by $10.7 billion (Finding A).

o The Army Tactical Missile System Block II missiles and the Brilliant Anti-Armor submunitions were overstated by $1.1 billion (Finding B).

o The Sense and Destroy Armor munitions were overstated by $502.5 million (Finding C).

In addition, the Army planned to issue command-launch units for the Javelin to organizations that did not need them. As a result, the Army may spend $36.6 million for unneeded command-launch units for the Javelin (Finding D).

Potential Benefits of the Audit. The potential benefits to be realized by implementing the recommendations in this report will be more realistic quantitative requirements for anti-armor systems and munitions. Further, with more accurate requirements, the Army should be able to put $5.3 billion of funds to better use ($1.2 billion in FY 1996 through FY 2001 procurement appropriations and another $4.1 billion after FY 2001). The calculation of monetary benefits for specific munitions is detailed in Appendix C. The potential benefits are detailed in Appendix H.

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Summary of Recommendations. We made recommendations to the Under Secretary of Defense for Acquisition and Technology and the Army's Deputy Chief of Staff for Operations and Plans. We recommended that the Under Secretary convene the Defense Acquisition Board to determine the continued cost-effectiveness and affordability of the Sense and Destroy Armor Weapon System. We recommended that the Army's Deputy Chief of Staff for Operations and Plans recalculate quantitative requirements for specific anti-armor munitions and re-evaluate the need for the Javelin in certain Army organizations. We also recommended that the Deputy Chief adjust the Army's acquisition objectives and planned procurement quantities based on the recalculations of requirements and determine the cost-effectiveness of retaining or disposing of munitions determined to be excessive to requirements.

Management Comments. The Director, Strategic and Tactical Systems, provided comments for the Under Secretary of Defense for Acquisition and Technology. He concurred with the recommendation addressed to the Under Secretary. The Director of Requirements, Office of the Deputy Chief of Staff for Operations and Plans, provided comments for the Army. The Director of Requirements either nonconcurred with or did not comment on the recommendations. He maintained that the Army's processes for determining munition requirements were proper and that the Army does adjust acquisition objectives and planned procurement quantities based on recalculation of requirements. Also, the Director stated that the Army has a program for determining the cost-effectiveness of retaining or disposing of munitions determined to be excessive to requirements. See Part II for a full discussion of management's comments and Part IV for the full text of the comments.

Audit Response. No further comments are required on the recommendation to the Under Secretary of Defense for Acquisition and Technology. After evaluating the comments from the Director of Requirements, Office of the Army's Deputy Chief of Staff for Operations and Plan, we remained convinced that our recommendations to the Army are still valid because the Army seldom used a threat-oriented method to determine its quantitative requirements for munitions, did not comply with the Capabilities-Based Munitions Requirements process, or did not use accurate and current data. Additionally, the value of quantitative requirements for munitions resulting from the Army's processes exceeded the value of munitions required to defeat the threat by more than $10 billion. See Part II for a full discussion of our response. We requested the Army's Chief of Staff to provide additional comments on the report by May 30, 1995.

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This unclassified version of the report was prepared by the Acquisition Management Directorate, IG, DoD.

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Part I - Introduction

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Background

The Army used both force-oriented and threat-oriented processes to determine its quantitative requirements for anti-armor munitions. The force-oriented process was called the Minimum Distribution System Quantity (MDSQ) method and was based on providing each weapon system in the force structure with a minimum number of combat loads. The threat-oriented process was based on the quantity of munitions needed to defeat the identified threat. The anti-armor systems that the Army had fielded or planned to field included the Advanced Anti-Tank Weapon System-Medium (Javelin); Armored Gun System; Brilliant Anti-Armor (BAT) submunition; Bunker Defeat Munition; Dragon Anti-Tank Weapon; Hellfire series of missiles; Lightweight Multipurpose Weapon; Line of Sight Anti-Tank; main battle tank munitions; Multi-Purpose Individual Munition; Non-Line of Sight-Combined Arms (NLOS-CA); Sense and Destroy Armor (SADARM) munition; Tube-Launched, Optically Tracked, Wire-Guided (TOW) missile; and Wide Area Mine. See Appendix A for a short description of each system.

Objectives

The audit's overall objective was to evaluate the reasonableness of the quantitative requirements for anti-armor weapon systems and associated munitions. The audit also evaluated internal controls related to the functions audited.

Scope and Methodology

This performance audit was conducted from April 1993 through June 1994. This audit was made in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and included tests of internal controls as were considered necessary. Accordingly, the scope of our audit included reviewing relevant documents dated from February 1986 through June 1994 concerning the Army's processes for determining requirements for anti-armor munitions. We also interviewed Army officials involved in determining munition requirements. We did not make a comprehensive review of computer-generated data that the Army used in computing its requirements for anti-armor munitions. Therefore, any inaccuracies in that data would be reflected in the overstatements calculated and detailed in Findings A, B, and C. A list of organizations visited or contacted is in Appendix I.

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Internal Controls

We evaluated internal controls over the requirements determination processes for anti-armor munitions. In assessing the internal controls, we reviewed the vulnerability assessments that the Assistant Deputy Chief of Staff for Operations and Plans (Force Development) made of his organization's functional responsibilities to determine the level of risk that his responsible official assigned for determining quantitative requirements for munitions. The vulnerability assessments showed the official did not include the function of determining quantitative requirements in the vulnerability assessments. We also reviewed the last annual certifications on internal controls of the Assistant Deputy Chief of Staff to determine whether he reported material weaknesses related to the requirements determination processes to the Secretary of the Army. He did not report any deficiencies related to the requirements determination process.

Our audit identified material internal control weaknesses as defined by DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987. Controls were not established to ensure that the Army established adequate processes for determining quantitative requirements for anti-armor weapon systems and associated munitions. Also, controls were not established to ensure that accurate and current data was used for determining quantitative requirements for anti-armor weapon systems and associated munitions. We believe that those weaknesses existed because the function of determining munition requirements was not included in the vulnerability assessment. Recommendations A.1. through A.5., B.1.a., B.1.b., B.1.c., B.2., C.1.a., C.1.b., C.1.c., and D. will correct the weaknesses. If implemented, the Army can put to better use about $5.3 billion. We will provide a copy of our final report to the senior official responsible for internal controls in the Army.

Prior Audits and Other Reviews

The General Accounting Office (GAO); the Office of the Inspector General, DoD; the Army Audit Agency; and the Rand Corporation, under contract with the DoD, performed five audits and a review of the Army's processes for determining quantitative requirements for anti-armor munitions. The audits and review are summarized in Appendix B.

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Part II - Findings and Recommendations

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Finding A. Minimum Distribution System Quantity Method for Determining Quantitative Requirements for Anti-Armor Munitions

The Army's process for determining quantitative requirements for specific anti-armor munitions was not fully effective. The process was not based on the specific types and quantities of anti-armor munitions needed to defeat the Army's portion of the identified threat. As a result, the Army overstated its quantitative requirements for specific anti-armor munitions by $10.7 billion.

Background

The MDSQ was one method that the Army used in determining quantitative requirements for specific anti-armor munitions. Upon the dissolution of the former Soviet Union, the Army adopted the MDSQ process for computing munition requirements because the reduced threat caused combat simulation models to compute requirements that raised doubts about force structure sustainment and operational flexibility. The MDSQ method consisted of the following calculation: number of weapon systems in the force times the number of combat loads times the number of munitions in a combat load. The number of combat loads and number of munitions in a combat load varied by weapon system.

The Army used the MDSQ method in determining the quantitative requirements for the 120-millimeter (mm) munition for the M1A1/A2 main battle tank's main gun system; the TOW missile; Javelin missile; NLOS-CA missile; and the Hellfire series of missiles.

The Army's Use of Combat Loads in Determining Quantitative Requirements for Anti-Armor Munitions

The Army, when using the MDSQ method, based its quantitative requirements for anti-armor munitions on an arbitrary number of combat loads per weapon system. A combat load was defined as the quantity of munitions a weapon system carried to initiate combat operations. In the MDSQ process, the

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Army used three combat loads for the M1A1/A2 main battle tank's main gun system, TOW ground systems, Javelin systems, and NLOS-CA systems. The Army used two combat loads for helicopters equipped with TOW and Hellfire missiles. The Army reduced the quantity of combat loads by 50 percent when it calculated the requirements for the part of the force designated as the strategic reserve and not committed to a Major Regional Contingency (MRC). The quantity of munitions in a combat load for each platform or system is shown in Table 1.

Table 1. System Combat Load Quantity

Platform or System	Combat Load
M1A1/A2 Main Battle Tank	40 120-mm tank munitions
M2A1 Infantry Fighting Vehicle	7 TOW missiles
M3A1 Cavalry Fighting Vehicle	12 TOW missiles
High Mobility Multipurpose Wheeled Vehicle (HMMWV)	6 TOW missiles
AH-1 Cobra Helicopter	8 TOW missiles
Javelin	2 missiles
NLOS-CA	6 missiles
AH-64 Apache Helicopter	16 Hellfire series missiles
RAH-66 Comanche Helicopter (attack version)	14 Hellfire series missiles
RAH-66 Comanche Helicopter (armed reconnaissance version)	6 Hellfire series missiles
OH-58D Kiowa Helicopter	4 Hellfire series missiles

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The Army established combat loads per weapon system based on very limited analysis. In spite of several requests by auditors, representatives of the Deputy Chief of Staff for Operations and Plans (DCSOPS) did not produce any analysis or study results, information papers, or records of discussion that supported the number of combat loads. During ********** loads.

Further, we questioned applying an identical combat load planning factor of three combat loads for ground systems when fundamental differences existed among them, such as number of munitions in a combat load (see Table 1), rate of fire, and the quantity of weapon systems in the current or planned force structure. Nevertheless, representatives of DCSOPS still maintained that the planning factor of three combat loads was a reasonable and valid quantitative requirement.

The Army's Use of Target Shares in Determining Quantitative Requirements for Anti-Armor Munitions

The Army, when using the MDSQ method, did not consider the number of armored targets the Army was responsible for destroying. According to Field Manual 100-5, "Operations," June 1993, the Army would not operate alone. The Army would fight in cooperation with the Navy, the Air Force, the Marine Corps, and sometimes allied forces. Therefore, the Army must consider the contributions of other United States forces and possibly allied forces in determining quantitative requirements for anti-armor munitions. The Army, when using a threat-oriented method for determining quantitative requirements for anti-armor munitions, estimated the contributions of others to the battle; however, this consideration was not part of the MDSQ method.

Recognizing the need for an allocation of the threat to the Military Departments, the Office of the Joint Chiefs of Staff initiated a project to develop a DoD instruction that provides guidance for determining quantitative requirements for munitions. This proposed draft DoD instruction, "Capabilities-Based Munitions Requirements (CBMR) Development," stated that the commanders of the Unified Commands shall develop and publish, for use by the Military Departments, a distribution of threat among their forces. Further, it stated that the threat distributions by the Commanders in Chief of Central Command and of the Combined Forces Command, Korea (the Commanders in Chief), were critical components of determining combat requirements for a theater.

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The Army's Use of Weapon System Shares in Determining Quantitative Requirements for Anti-Armor Munitions

The MDSQ method did not provide for an allocation of targets to weapon systems. The MDSQ method considered each system separately without consideration of each weapon system's contribution to the defeat of the total threat. The Army, when using a threat-oriented method for determining quantitative requirements for anti-armor munitions, estimated the contributions of other Army weapon systems to the battle; however, this consideration was not part of the MDSQ method.

Projected Wartime Expenditures

The Army's acquisition objective for munitions for anti-armor weapon systems was ********** ********** threat. The excess totalled more than $10.7 billion. Of this $10.7 billion, $1.2 billion and $2.5 billion are for planned procurements in FY 1996 through FY 2001 and FY 2002 and beyond, respectively (Appendix C). The following figure compares the MDSQ requirement with the Army's Projected Wartime Expenditures (PWE) ******** ********** as calculated by the U.S. Army Concepts Analysis Agency (CAA). Details of the MDSQ requirements, PWE requirements, and calculation of the acquisition objective overstatement are shown in Appendix D.

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Classified Figure Removed

Retention or Disposal of Munitions

The quantities of the TOW 2B and Laser Hellfire missiles in current inventory **********. Inventory levels of the TOW 2B and Laser Hellfire missiles **********, respectively. As indicated in Appendix C, Table C.2., PWE were ********** for TOW 2B and ***** for Laser Hellfire missiles. This calculation shows ********** ********** Laser Hellfire missiles ******** **********. Therefore, the Army should review and determine the cost-effectiveness of retaining or disposing of these missiles.

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Conclusion

The Army's process for determining quantitative requirements for anti-armor munitions should be a threat-oriented process. The threat-oriented process should consider the Army's shares of armored targets, an allocation of the Army's shares of armored threat targets to the Army's anti-armor weapon systems, and the munitions needed to defeat those targets. Also, the Army should determine the cost-effectiveness of retaining or disposing of munitions inventories that are determined to be excessive.

Recommendations, Management Comments, and Audit Response

We recommend that the Army Chief of Staff:

1. Implement threat-oriented processes in the requirements determination process for the 120-millimeter tank munition; the Tube-Launched, Optically Tracked, Wire-Guided missile; the Javelin missile; the Non-Line of Sight-Combined Arms missile; and the Hellfire series of missiles.

Management Comments. The Director of Requirements (the Director), Office of the Deputy Chief of Staff for Operations and Plans, nonconcurred with the recommendation. The full text of his comments is in Part IV. The Director stated that:

> The Army already uses the "threat oriented process" PWE and it uses the "capabilities based" MDSQ system to determine its war reserve requirements to be in-compliance with the DPG [Defense Planning Guidance] and CBMR.

Also, the Director stated that the Army had asked its Concepts Analysis Agency (CAA) to evaluate the adequacy of factors that the Army uses in its MDSQ process.

The Director also stated that the audit finding provided no logic to explain why the Army should use the PWE, except that it produces a lower requirement and results in a cost savings.

Audit Response. The Director's comments to Recommendation A.1. were inaccurate. We redirected Recommendations A.1. through A.5. to the Army Chief of Staff because we did not believe that the Deputy Chief of Staff for

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Operations and Plans properly considered the impact of the recommendations. In the draft of this report, we had directed the five recommendations to the Deputy Chief of Staff for Operations and Plans.

o The Army seldom used a threat-oriented process to determine its requirements for the munitions discussed in this finding. The Army used the threat-oriented process to determine the quantitative requirements for only 1 of the 12 weapon systems that we discussed in this finding. That munition was the TOW missile for the Cobra helicopter. On the other 11 weapon systems, the Army used its MDSQ process. The Army's MDSQ process was not a threat-oriented process. The MDSQ process was based on three components. Those three components were the number of weapon systems in the force structure, the number of combat loads per weapon system, and the number of munitions in a combat load.

o The Army's MDSQ process also was not in compliance with the CBMR process. The CBMR process was described in Draft DoD Instruction 4100.XX. That Instruction stated that total munitions requirements consisted of four major components. Those components were combat requirements, strategic readiness requirements, residual readiness requirements, and training and testing requirements. The Instruction further explains that combat requirements should consist of three components: shots fired to win the wars, munitions required to maintain operational flexibility, and munitions necessary to equip the force structure to its designed military capability. The MDSQ process contained only one of the three components of the combat requirements, and the MDSQ process greatly overstated that component. That component was the munitions necessary to equip the force structure. Therefore, the Army did not comply with Draft DoD Instruction 4100.XX when it used its MDSQ process to calculate the quantitative requirements for the 11 weapon systems discussed in this finding. Also, even for the one weapon system for which the Army used the threat-oriented process to calculate quantitative requirement, the Army did not comply with Draft DoD Instruction 4100.XX. The Army based its requirement for the munition solely on shots fired to win the wars. Draft DoD Instruction 4100.XX required that other factors be considered in calculating the requirement.

o As for the Army's action to have its CAA evaluate the adequacy of factors that the Army uses in its MDSQ process, that study will not satisfy the actions that we recommended unless it addresses the quantity of munitions required to win the wars.

o Cost savings were not the basis for our conclusion that the Army should use a threat-oriented process rather than its MDSQ process to calculate quantitative requirements for the munitions addressed in this finding. We based our conclusion on facts showing that the Army's MDSQ process generated munitions requirements many times greater than the quantities of munitions needed to win near concurrent wars.

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o We agree with Draft DoD Instruction 4100.XX that the Army needed more munitions than the quantities needed to ********** wars. However, we believe that the difference between the Army's total munitions requirements and the Army's calculated PWE quantities were excessive. As shown in the figure on page 10 of this report, the Army calculated that approximately ********** ********** process. However, the Army's MDSQ process resulted in a requirement for ********** missiles. As such, the Army's total munitions requirement was ********** ********** wars. This excessive amount consisted of about $10.7 billion of munitions.

In summary, the issue is how far above the PWE quantities should the Joint Chiefs of Staff and the Office of the Secretary of Defense allow the Army to set its total munitions requirements. If this additional quantity was ********** ********** would exist. As such, we believe that our recommendation to implement a threat-oriented process is still valid. However, we consider that some reasonable additional quantities above the PWE quantities to be appropriate. We request that the Army's Chief of Staff reconsider the Director's position on Recommendation A.1. and provide comments on the recommendation in response to this report.

2. Recalculate the quantitative requirements for anti-armor munitions.

3. Adjust acquisition objectives and procurement plans based on the recalculation of requirements.

4. Determine the cost-effectiveness of retaining or disposing of any munitions determined in excess to the recalculated quantitative requirements.

5. Retain or dispose of munitions in accordance with the results of Recommendation 4.

Management Comments. The Director provided comments for the Army on Recommendations A.2. through A.5. and nonconcurred with the recommendations. The Director's comments follow.

o Regarding Recommendation A.2., the Director stated that the Army will recalculate its war reserve munitions requirements if an on-going study that was being conducted by the Army's Concepts Analysis Agency of the Army's MDSQ process indicates that adjustments are appropriate.

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o Regarding Recommendation A.3., the Director stated that the Army will adjust requirements based on updated calculations, if necessary. The Director added that the Army will adjust procurement plans based on priorities and available funds.

o Regarding Recommendations A.4., and A.5., the Director stated that the Army had an on-going procedure to retain or dispose of munitions that it no longer needed. He added that older models of munitions were used for training, Foreign Military Sales, and other programs.

Audit Response. The Director's comments to Recommendations A.2. and A.3. were not fully responsive. The Director only addressed what actions the Army will take on the results of the CAA study. He did not address what actions the Army would take based on the implementation of Recommendation A.1. As such, we ask that the Army Chief of Staff provide comments on Recommendations A.2. and A.3. in response to this report. We accept the Army's comments on Recommendations A.4. and A.5.

Other Management Comments and Audit Response to the Comments

The Director disagreed with many conclusions and statements in the finding. Specifics on the Director's comments and our responses to his comments are in Appendix E.

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Finding B. Quantitative Requirements for Army Tactical Missile System Missiles and Brilliant Anti-Armor Submunitions

The Army's process for determining the quantitative requirements for the Army Tactical Missile System (ATACMS) Block II missiles and BAT submunitions was not fully effective. The Army used inaccurate data, as well as factors that were not coordinated with the other Military Departments, to calculate requirements. As a result, the Army may procure **********, valued at $1.1 billion, that were not needed.

Background

The BAT is a terminally guided submunition that is delivered and dispensed over armored targets by an ATACMS Block II missile. Thirteen BAT submunitions are carried in an ATACMS Block II missile. The primary targets of the BAT submunition are moving armored vehicles.

The Army calculated the requirements for the ATACMS Block II missiles and BAT submunitions using a threat-oriented process. Those requirements were for ********** requirements.

Evaluation of Army's Calculation of Quantitative Requirements for ATACMS Block II Missiles and BAT Submunitions

We estimated that the Army's quantitative requirements for ATACMS Block II missiles and BAT submunitions were overstated ********** **********. The basis for our calculation is explained in Appendix F. This condition resulted from the Army's use of inaccurate data and uncoordinated factors. Those data and factors included number of threat targets, share of threat targets, and defeat criteria.

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Use of the Number of Threat Targets in Determining Quantitative Requirements. The number of ********** ********** that the Army used in determining its quantitative requirements was overstated. The Army used ********** for determining its quantitative requirements for ATACMS missiles and BAT submunitions. The Army should have used ********* targets. The Defense Intelligence Agency's (DIA) "Outyear Threat Report," March 1994, showed that ********** ********** countries. Those ********** ********** ********** SADARM. Therefore, the BAT requirements should have been based on **********. This overstatement of the number of armored targets contributed to the overstated quantitative requirements.

Use of Factors for Share of Threat Targets in Determining Quantitative Requirements. For its calculation of quantitative requirements, the Army used factors for its field artillery's share of the threat targets that had not been coordinated with the other Military Departments. The Office of the Joint Chiefs of Staff initiated a project during 1992 to coordinate the target shares among the Military Departments. In January 1994, the Commanders in Chief approved target shares for the Military Departments to use in determining their munition requirements. This data was not available to the Army when it calculated the quantitative requirements for the ATACMS missiles and BAT submunitions; however, those approved shares do affect the Army's calculation of quantitative requirements. The Army, for its calculation of quantitative requirements for ATACMS missiles and BAT submunitions, used an ********** **********. However, the Commanders in Chief approved the target share that allocated ********** ********** ********** **********. Those revised share factors contributed to the Army's overstatement of quantitative requirements.

Use of Factors for Defeat Criteria in Determining Quantitative Requirements. Defeat criteria is the number of threat systems that must be destroyed to achieve victory. The Army used a defeat criteria factor of ********** in determining the quantitative requirements for ATACMS missiles and BAT submunitions in ********** scenarios. This criteria had not been coordinated with the other Military Departments. During January 1994, the Commanders in Chief approved defeat criteria factors for the Military Departments to use in determining quantitative requirements for munitions. The Commanders in Chief assigned ********** ********** **********. For ********** ********** ***** tanks. Those increased defeat criteria factors reduced the amount of the Army's overstatement of its quantitative requirements.

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Conclusion

The Army should recalculate its requirements for the ATACMS Block II missiles and BAT submunitions. The recalculation should consider the threat targets identified in the DIA's "Outyear Threat Report," the threat targets that were used in the calculation of quantitative requirements for SADARM, and the target allocations and defeat criteria the Commanders in Chief approved.

Recommendations, Management Comments, and Audit Response

We recommend that the Army Chief of Staff:

1. Recalculate the quantitative requirements for the Army Tactical Missile System Block II missiles and Brilliant Anti-Armor submunitions:

a. Using threat targets from the Defense Intelligence Agency's "Outyear Threat Report."

b. Adjusting threat targets to account for targets that were designated for other weapon systems.

c. Using target allocations and defeat criteria the Commanders in Chief approved.

2. Adjust the acquisition objectives and procurement plans for the Army Tactical Missile System Block II missiles and the Brilliant Anti-Armor submunitions based on the above calculation.

Management Comments. The Director of Requirements (the Director), Office of the Deputy Chief of Staff for Operations and Plans, provided comments for the Army on this report. The Director did not comment on Recommendations B.1. and B.2. However, the Director made a series of statements on this finding. Those statements are discussed below and shown in their entirety in Part IV.

o The auditors did not include self-propelled artillery systems as ATACMS/BAT targets in their calculation of quantitative requirements, although the systems were included in the DIA's "Outyear Threat Report" as a validated target set.

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o The auditors used the January 1994 Commanders' in Chief target shares in their calculation, although the Army did not possess the shares when it computed its quantitative requirements.

o The January 1994 Commanders' in Chief target shares were determined without consideration of the capabilities of future weapon systems such as the ATACMS/BAT.

o The auditors did not consider a reconstitution rate for enemy forces.

Audit Response. We consider the Director's comments to the finding to be inaccurate for the following reasons.

o We did not include self-propelled artillery systems in our calculation of quantitative requirements because we and the Army considered those systems as targets for the SADARM Weapon System. We stated this fact in the finding on page 16. We could agree with the Army distributing the target set of self-propelled artillery systems among anti-armor weapon systems but not the use of the same targets for determining quantitative requirements for more than one system.

o We recognized on page 16 of the finding that the January 1994 Commanders' in Chief target shares were not available to the Army when the Army computed its quantitative requirements. Our intentions were to calculate quantitative requirements with data current at the time of our calculations, not to reconstruct a requirements calculation with data that was available when the Army computed its quantitative requirements.

o The Joint Staff approved the January 1994 Commanders' in Chief target shares. Therefore, the Military Departments must use those target shares in determining their quantitative requirements for munitions or ask the Joint Staff to revise the shares.

o We used the same reconstitution rate as the Army used in its calculation of quantitative requirements, as stated on page 46 of the report.

Recommendations B.1. and B.2. are still valid. We request that the Army Chief of Staff provide comments to the recommendations in response to this report.

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Finding C. Quantitative Requirements for Sense and Destroy Armor Munitions

The Army's process for determining the quantitative requirements for SADARM munitions was not fully effective. The Army used inaccurate data, as well as factors that were not coordinated with the other Military Departments, for determining the quantitative requirements for SADARM munitions. As a result, the Army may spend $502.5 million for unneeded munitions.

Background

The SADARM is a smart submunition that is carried to the target by either a 155-mm howitzer projectile or a Multiple Launch Rocket System (MLRS) rocket. The 155-mm howitzer projectile (155-mm projectile) carries two submunitions and the MLRS rocket carries six submunitions. The targets for the SADARM are self-propelled howitzers. The Army calculated the quantitative requirements for SADARM using a threat-oriented process.

During 1989, based on combat operations in ********** **********, the Army calculated quantitative requirements for MLRS-SADARM rockets and 155-mm SADARM projectiles of **********, respectively.

From June 1991 through April 1992, we audited the SADARM program and its quantitative requirements. Our Audit Report No. 93-046, "Acquisition of the Sense and Destroy Armor Weapon System," January 27, 1993, reported that the SADARM quantitative requirements were overstated. This report stated that 155-mm projectiles were overstated by ********** ********** rockets. Such a reduction would have resulted in quantitative requirements of ****** 155-mm projectiles and ***** MLRS rockets. This report recommended that the Army recalculate its quantitative requirements for SADARM munitions.

During 1993, the Army recalculated its quantitative requirements for SADARM based on **********, as directed in the FY 1994-1999 Defense Planning Guidance. However, the Army calculated ranges of quantitative requirements based on various assumptions. The acquisition objective for MLRS-SADARM ranged from ********** ******* rockets, and for 155-mm SADARM ranged from ********** ********** projectiles. The major reason for the range of quantitative requirements was the projectiles or rockets per kill factors that the Army used in

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its calculations. The Army computed ********** ********** ********** kill. The quantitative requirements that the Army established in ********** ********** 1993; therefore, the Army felt that it could support those quantitative requirements at the ********** level. Other factors affecting the calculation of quantitative requirements were the number of threat targets; the defeat criteria; the allocation of threat targets to be destroyed by SADARM; the allocation of targets between 155-mm SADARM and MLRS-SADARM; the factors to account for the ability of an enemy to repair damaged systems and return them to the battle; and other factors to account for weather, ammunition losses, and an operational reserve.

Evaluation of Army's Calculation of Quantitative Requirements for SADARM Munitions

We estimated that the Army's quantitative requirements for SADARM were overstated by ********** rockets. This condition resulted from the Army's use of inaccurate data and uncoordinated factors. Those data and factors included number of threat systems, defeat criteria, and share of threat targets.

Use of the Number of Threat Targets in Determining Quantitative Requirements. The number of ********** that the Army used in determining quantitative requirements for SADARM munitions was overstated in comparison to the DIA's "Outyear Threat Report," March 1994. The Army used ********** for determining its quantitative requirements for SADARM. However, the DIA's "Outyear Threat Report" showed that ********** **********. This overstatement of the number ********** ********** contributed to overstated quantitative requirements. The DIA's "Outyear Threat Report" ********** ********** the Army used in determining quantitative requirements for SADARM munitions.

Use of the Number of Kills of Enemy Systems Required to Achieve Victory in Determining Quantitative Requirements. The Army used a defeat criteria of ********** calculation of the SADARM acquisition objective. However, in January 1994, the Commanders in Chief determined that the defeat criteria ********** ********** percent. We used the revised criteria in our calculation of SADARM munition requirements.

Use of Factors for the Military Departments' Shares of Threat Targets in Determining Quantitative Requirements. The Army, for both the 1989 and 1993 calculations of quantitative requirements, used factors for the Army Field

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Artillery's shares of the threat targets that had not been coordinated with the other Military Departments. In January 1994, the Commanders in Chief approved target shares for ********** for the Military Departments to use in determining their munition requirements. This data was not available to the Army when its 1993 quantitative requirements were calculated. For its 1993 calculation for SADARM, the Army computed a range of quantitative requirements using an Army Field Artillery's share factor range of **********. However, in January 1994, the Commanders in Chief allocated the Army target shares of ********** **********. The reduced share factor for ********** resulted in the overstatement of the Army's 1993 calculation of SADARM quantitative requirements.

Use of Factors for Rounds-Per-Kill in Determining Quantitative Requirements. The Army's factors for rounds-per-kill indicated that the SADARM weapon system may not always be cost-effective. The Army has used various factors for rounds-per-kill for the SADARM program as shown in Table 2.

Table 2. Rounds-per-Kill for SADARM Munitions

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Using the Army's rounds-per-kill factors for ********** the Army's 1993 requirements calculation, we computed cost-per-kill of ********** rocket. For our calculation of the quantitative requirements, we accepted the Army's factors for rounds per kill.

Audit's Calculation of Quantitative Requirements

We estimated that the quantitative requirements for SADARM were overstated by ********** valued at $502.5 million. The Army planned to procure the projectiles and rockets during FY 1999 through FY 2008. Details of audit's calculation are in Appendix G.

U.S. Army Concepts Analysis Agency's Estimation of Wartime Requirements for SADARM Munitions

The CAA completed, in February 1994, a Wartime Requirements Analysis for FY 2001 for combat operations in **********. The projected wartime expenditures were generated from computer models that simulated combat for a theater of operations. This simulation showed a wartime requirements of ********** ********** ********** rockets. These numbers support even lower quantitative requirements for the SADARM munitions.

Conclusions

The Army should recalculate its quantitative requirements for SADARM munitions. The recalculation should use the number of threat self-propelled howitzers shown in the latest edition of the DIA's "Outyear Threat Report" and the target shares the Commanders in Chief approved. Also, the Army should re-evaluate the rounds-per-kill factors used for determining quantitative requirements for SADARM munitions. If the Army determines that the rounds-per-kill factors used in the Army's 1993 calculation of requirements are valid, then the Under Secretary of Defense for Acquisition and Technology should convene the Defense Acquisition Board to re-evaluate the cost-effectiveness of SADARM.

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Recommendations, Management Comments, and Audit Response

1. We recommend that the Army Chief of Staff:

a. Recalculate the quantitative requirements for the Sense and Destroy Armor Weapon System using the number of threat self-propelled howitzers shown in the Defense Intelligence Agency's latest "Outyear Threat Report" and the defeat criteria and shares of targets that the Commanders in Chief established in January 1994.

b. Re-evaluate the rounds-per-kill data used in the Army's 1993 calculation of acquisition objectives.

c. Adjust the acquisition objectives and procurement plans for the Sense and Destroy Armor Weapon System based on the above recalculation of quantitative requirements.

Management Comments. The Director of Requirements (the Director), Office of the Deputy Chief of Staff for Operations and Plans, did not comment on Recommendation C.1. However, the Director made a series of statements on this finding. Those statements are discussed below and shown in their entirety in Part IV.

o The audit report does not reflect the Army's current acquisition plan for SADARM because the Army eliminated the MLRS as a carrier of SADARM submunitions.

o The Army recalculated its quantitative requirements for SADARM submunitions ********** ********** submunitions. This recalculation resulted in a quantitative requirement of ********** ********** recommended.

o The Army will continue to recalculate its quantitative requirements for SADARM submunitions at the intervals required by DoD Regulation 5000-series, based on the threat data that is current at the time, and use approved methods to determine defeat criteria and shares of target allocation.

o The audit positions in the draft report on munitions for the SADARM exceed current requirements.

Audit Response. Although the Director did not specify concurrence or nonconcurrence with the recommendations, we considered his comments to be fully responsive to Recommendations C.1.a., C.1.b., and C.1.c. Therefore, no further comments are required from the Army on those three recommendations.

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2. We recommend that the Under Secretary of Defense for Acquisition and Technology convene the Defense Acquisition Board to review data resulting from the Army's implementation of Recommendations C.1.a. and C.1.b. and to determine the continued cost-effectiveness and affordability of the Sense and Destroy Armor Weapon System.

Management Comments. The Director, Strategic and Tactical Systems, responded to Recommendation C.2. for the Under Secretary of Defense for Acquisition and Technology. He concurred and stated that a Defense Acquisition Board meeting is being planned for March 1995 to review SADARM's readiness to enter low-rate initial production.

Audit Response. We consider his comments to Recommendation C.2. to be responsive. Therefore, no further comments are required on the recommendation.

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Finding D. High Mobility Multipurpose Wheeled Vehicle Scout Platoons Equipped With Javelins

The Army's process for determining the quantitative requirements for the Javelin was not fully effective. The Army planned to issue the Javelin to High Mobility Multipurpose Wheeled Vehicle (HMMWV) Scout Platoons that did not have a need for the Javelin. As a result, the Army may spend $36.6 million for unneeded Javelin systems.

Background

The Javelin is a man-portable, anti-armor weapon system consisting of two major components: a re-usable command launch unit and a disposable launch tube assembly that includes the missile. The Javelin is a fire-and-forget weapon that has a range of 2,000 meters. The missile has both top attack and direct attack trajectories and will penetrate advanced armor. The Javelin is transportable for both air assault and airborne operations. The Army plans to employ the Javelin in both light and heavy forces to replace the Dragon, an anti-tank weapon system. Also, the Army DCSOPS approved the issuance of Javelins to HMMWV Scout Platoons.

Evaluation of Javelin Requirement for HMMWV Scout Platoons

The HMMWV Scout Platoons did not need the fire power capability of the Javelin because the HMMWV Scout Platoons did not have the mission of destroying heavily armored vehicles. According to Field Manual 7-20, "The Infantry Battalion," April 6, 1992, the mission of the scout platoon was to perform reconnaissance and surveillance, to provide limited security, and to help control movement of the battalion elements. Scouts were finders, not fighters. They were the eyes and ears of the battalion, not the fists. Further, Field Manual 17-98, "Scout Platoon," October 7, 1987, stated that if the scouts were permitted to attack an enemy, they should only attack light armored or unarmored reconnaissance vehicles. Attacking more heavily armored vehicles was generally an unacceptable risk.

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Although the scout platoon's primary mission was to find, not fight, the Army planned to equip HMMWV Scout Platoons with 2-1/2 times the quantity of Javelins that was planned to be issued to an air assault or airborne infantry rifle platoon. These HMMWV Scout Platoons will require 415 Javelin systems valued at $36.6 million. Of this $36.6 million, $13.2 million and $21.9 million are for planned procurements in FY 1996 through FY 2001 and FY 2002 and beyond, respectively. This figure does not include the cost of associated missiles. Javelin missiles are addressed in Finding A.

The HMMWV Scout Platoon can already attack light-armored vehicles with the Lightweight Multipurpose Weapon. This shoulder-fired recoilless weapon weighs 14.6 pounds and is used against light armor. Also, the Lightweight Multipurpose Weapon has a weight advantage over the 49.5-pound Javelin. This weight advantage could be beneficial for a scout platoon.

Conclusion

The HMMWV Scout Platoons do not have a mission to destroy heavily armored vehicles; therefore, they do not need the anti-tank capability of the Javelin. The Lightweight Multipurpose Weapon has adequate capability against light-armored vehicles.

Recommendation, Management Comments, and Audit Response

We recommend that the Army Chief of Staff reduce the acquisition objective for the Javelin by eliminating the requirement for Javelins to be issued to High Mobility Multipurpose Wheeled Vehicle Scout Platoons.

Management Comments. The Director of Requirements (the Director), Office of the Deputy Chief of Staff for Operations and Plans, did not comment on Recommendation D. However, the Director made a series of statements indicating that the Army disagreed with the finding. Those statements are discussed below and shown in their entirety in Part IV.

o Equipping HMMWV Scout Platoons with Javelins is consistent with Army doctrine. Three tasks in the Army Training and Evaluation Program 17-57-10, "Mission Training Plan for the Scout Platoon," December 1988,

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support this position. Those tasks are to execute actions on contact, support a hasty attack, and conduct a screen. These tasks require that the scout platoon have the capability to engage and destroy threat tank and armored forces.

o The auditor's comparison of a Javelin-equipped air assault or airborne infantry rifle platoon with a Javelin-equipped HMMWV Scout Platoon was inappropriate. A comparison of a Javelin-equipped air assault or airborne infantry rifle company with a Javelin-equipped HMMWV scout platoon would be more appropriate. Such an analysis reveals that an air assault or airborne rifle company possesses more Javelins and, therefore, more combat power than a HMMWV scout platoon.

o The finding suggests that the Javelin's primary target is light armor and that the Lightweight Multipurpose Weapon may be employed as a substitute for the Javelin. However, the primary target for the Javelin is advanced armor systems, such as tanks. The Javelin is the only man-portable system capable of defeating all known armor threats. Consequently, the Lightweight Multipurpose Weapon is not an acceptable substitute.

Audit Response. Our recommendation is based on the following Army doctrine.

o Scouts should not become involved in battles. Field Manual 17-98, "Scout Platoon," October 7, 1987, is the doctrinal guide for the scout platoon in an armor battalion and mechanized infantry battalion. This field manual provides the principles and techniques used by the platoon to exploit its reconnaissance and screening capabilities, to minimize its vulnerabilities, and to survive and win on the battlefield. The field manual provides guidance for battalion commanders and staff officers in the employment of the scout platoons. It defines the capabilities and limitations of the platoon and techniques for mission accomplishment. Chapter 3 of this field manual, "Reconnaissance," states that the scout's accurate and timely reporting of enemy locations and strengths make the difference between winning and losing the main battle. It is very important that scouts do not lose sight of their reconnaissance priorities and become involved in battles that invariably wear down reconnaissance forces.

o Scouts should fight only as a last resort. Field Manual 17-98-1, "Scout Leader's Handbook," September, 1990, Chapter 5, "Scouting Techniques," states that scouting techniques may require some modification at section level due to mission, enemy, troops, terrain and weather, and time available. However, one rule that remains constant is to fight as a last resort only. A scout's most effective weapons are his eyes, ears, and radio.

o The Army Training and Evaluation Program No. 17-57-10-MPT that the Director referenced was a generic document, which was also applicable to scout platoons that had greater tank-destroying capability than HMMWV

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Scout Platoons. The Army Training and Evaluation Program was designed for scouts platoons equipped with M3 Cavalry Fighting Vehicles armed with the TOW anti-tank missile system. Scout platoons so equipped have the capability to destroy heavily armored vehicles. The Army Training and Evaluation Program was also applicable to scout platoons not equipped with M3 Cavalry Fighting Vehicles; however, the tasks described were guidance. Actual training would depend upon the missions of the particular scout platoon. Therefore, the tasks (Execute Actions on Contact, Support a Hasty Attack, and Conduct a Screen) that the Director referenced could have only been applicable to the scout platoons equipped with M3 Cavalry Fighting Vehicles armed with the TOW anti-tank missile system, because HMMWV Scout Platoons did not have the capability to destroy heavily armored vehicles. The Javelin would give this capability to HMMWV Scout Platoons; however, we are not aware of any changes in the mission of these platoons.

o We compared an air assault or airborne rifle platoon to a HMMWV Scout Platoon to emphasis the fact that a platoon of "fighters" would have 2-1/2 times fewer Javelins than a platoon of "finders." Even the Army's comparison of an air assault or airborne rifle company to a HMMWV Scout Platoon revealed that a rifle company of "fighters" (which is equipped with six Javelins) would have only one more Javelin than a HMMWV Scouts Platoon (which is equipped with five Javelins).

o The Javelin was effective against advanced heavy armor and the Lightweight Multipurpose Weapon was effective only against light-armored vehicles, as we clearly stated on pages 27 and 28 of the report, respectively. Doctrine calls for HMMWV Scout Platoons to attack only light armored or unarmored reconnaissance vehicles; the Lightweight Multipurpose Weapon already provides that capability. Army Field Manual 17-98 states that during counterreconnaissance operations, the scout platoon will acquire and maintain contact with the enemy; however, it must be augmented with infantry or armor to provide a destruction force to kill the enemy's reconnaissance elements. Also, as stated in our finding, the 14.6-pound Lightweight Multipurpose Weapon has a weight advantage over the 49.5-pound Javelin. This weight advantage could be beneficial for scout platoons, especially during actions on enemy contact where scouts must first strive to avoid enemy contact but, if necessary, react quickly to break contact with the enemy, reorganize, and continue the mission.

Recommendation D. is still valid. We request that the Army Chief of Staff provide comments on the recommendation in response to the final report.

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Part III - Additional Information

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Appendix A. Army Anti-Armor Weapons and Associated Munitions

The following list is of Army anti-armor weapon systems and associated munitions.

Advanced Anti-Tank Weapon System-Medium (Javelin): a portable fire-and-forget weapon employed at the infantry level so the dismounted soldier can defeat modern armor. It replaces the Dragon.

Armored Gun System: a light-armored tracked vehicle capable of low velocity airdrop with a 105-mm main gun to provide capability to defeat hard targets with direct fire systems. It is an infantry support system, not a tank.

Brilliant Anti-Armor (BAT) Submunition: terminally-guided, top attack submunition, which will be dispensed from the ATACMS Block II Missile and is designed to locate, attack, and kill moving armored vehicles.

Bunker Defeat Munition: a lightweight, man-portable weapon, which will be capable of penetrating earthen and wooden bunkers from 150 meters. Its acquisition was halted in favor of the Short-Range Anti-Armor Weapon using the warhead of the Multi-Purpose Individual Munition.

Dragon Missile System: a medium-range anti-tank/assault weapon, which consists of a missile in a disposable launcher and a reusable tracker and can be used against both stationary and moving targets. It is not capable of defeating the future generation of tanks.

Hellfire Modular Missile System: an airborne anti-armor weapon, which is the main armament of the Apache helicopter. The four versions of the Hellfire Missile are:

- **Basic** - uses semi-active laser seeker.
- **Improved** - adds precursor for reactive armor.
- **Optimized Missile System** - is lethal against future threat.
- **Longbow** - is millimeter wave seeker that provides fire-and-forget capability.

Lightweight Multipurpose Weapon: a shoulder-fired recoilless weapon, which incorporates a disposable launcher and a cartridge case containing a fin-stabilized high-explosive-shaped charge and is used against light armor and materiel targets. It is to be replaced by the Short-Range Anti-Armor Weapon with the Multi-Purpose Individual Munition.

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Line of Sight Anti-Tank: a program consisting of a Kinetic Energy Missile mounted on a modified Bradley Vehicle and providing enhanced long-range dedicated anti-armor weapon performance under day, night, adverse weather, and obscured battlefield conditions. Its secondary mission is self-defense against attacking helicopters.

Multi-Purpose Individual Munition: a shoulder-launched, lightweight disposable munition with a maximum effective range between 200 and 300 meters. It is intended to incapacitate personnel within earth and timber bunkers, behind walls, and future light armored vehicles

Non-Line of Sight - Combined Arms (NLOS-CA): a system to provide day, night, and adverse weather engagement of high-value armored targets and helicopters with man-in-the-loop operation from launch to impact to include in-flight corrections. It will be capable of non-line of sight precision fires while being masked from the enemy's direct fire systems.

Sense and Destroy Armor (SADARM) Munition: a target-sensing submunition, which will be dispensed from its carrier over the target area and is capable of detecting the appropriate targets using a combined millimeter wave and infrared sensing mechanism to fire an explosively formed penetrator at the top of the target vehicles. It will be delivered by both the 155-mm howitzer and the Multiple Launch Rocket System.

Short Range Anti-Armor Weapon with the Multi-Purpose Individual Munition: a lightweight, man-portable weapon with a munition capable of defeating lightly armored vehicles, earthen bunkers, and urban targets and with a propulsion system that will meet the "fire from enclosure" criteria. It is a joint program with the Marine Corps and the Army, with the Marine Corps as the lead Service.

120-mm Tank Main Gun Ammunition: ammunition that supports the main gun on the M1A1/M1A2 Main Battle Tank and is fired from the smoothbore M256 cannon.

- **M829A1** - an armor-piercing fin-stabilized round with tracer and a one-piece depleted uranium penetrator.

- **M829A2** - an improved version of the M829A1.

- **M830** - a high explosive with tracer anti-tank round with a multi-action fuzing and a shaped charge warhead used against armored targets and bunkers.

- **M830A1** - an improved version of the M830 with an anti-air capability to defeat low-flying hovering aircraft.

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o **XM943** - a smart, target-activated, fire-and-forget round that engages enemy tanks from a top angle and penetrates the armor with an explosively formed projectile.

105-mm Tank Ammunition: ammunition fired from the M1 and M60 tanks and the Armored Gun System.

Tube-Launched, Optically Tracked, Wire-Guided (TOW) Missile: an anti-tank weapon launched from combat vehicles, helicopters, or tripods that uses a computer in the launcher to correct any deviation of missile from the aim point and sends the corrections via two wires that deploy in flight. The five versions of the TOW are the Basic, Improved, TOW 2, TOW 2A, and TOW 2B. The TOW 2B is the only version to use fly over, shoot down technology.

Wide Area Mine: an autonomous top-attack, anti-tank/anti-vehicle mine that will selectively destroy high payoff targets from a distance to cause the enemy to be turned, blocked, or disrupted. The three versions of the Wide Area Mine will include hand-emplaced, helicopter-dispensed, and Multiple Launch Rocket System/Tactical Missile System-launched.

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Appendix B. Prior Audits and Other Reviews

General Accounting Office (GAO), Report No. GAO/NSIAD 93-49 (Office of the Secretary of Defense Case No. 9096), "Anti-armor Weapons Acquisitions," March 1993. The GAO concluded that the Services based their needs for anti-armor weapon systems on an outdated threat. Also, it determined that the assessments supporting anti-armor acquisitions were limited in scope since the assessments did not address all viable alternatives. The GAO concluded that the DoD used a process that did not ensure the long-term affordability of the anti-armor acquisitions. The GAO recommended that the Secretary of Defense assess the continued need for anti-armor acquisitions in light of significant changes in the threat, ensure the Military Departments are not acquiring systems that duplicate existing capabilities, and require the Military Departments to comply with the DoD 5000 regulations for conducting assessments of the long-term affordability of anti-armor acquisitions. The DoD partially concurred with the report. The DoD stated that each major anti-armor program is reviewed in relation to annual threat projection updates and is formally updated at each major milestone review. All alternatives that are logically feasible are considered before programs are approved. Further, the Office of the Director for Program Analysis and Evaluation has begun a 2-year assessment that will identify potential trade-offs among the Services' anti-armor programs and will include a comparison of the force effectiveness, cost, and affordability of each program.

Inspector General, DoD, Report No. 94-129, "Coordination of Quantitative Requirements for Anti-Armor Munitions," June 14, 1994. The report stated that the Military Departments used inconsistent methods for determining their quantitative requirements for anti-armor munitions. Specifically, the Military Departments used three different methods for determining quantitative requirements; incorporated different threat estimates into their processes; decided upon their share of the targets with little or no coordination among the Military Departments; applied different defeat criteria to specify the enemies' systems that needed to be defeated to achieve victory; and used inconsistent factors to account for enemy systems that would be repaired and returned to battle.

The report recommended that the Joint Staff include in its proposed DoD instruction guidance providing for the Military Departments to coordinate the methodologies, threat estimates, target shares, and defeat criteria that they use to determine requirements for anti-armor munitions. The report also recommended that the DoD instruction provide for the Military Departments to use factors that have been validated by the DIA in calculating damaged enemy systems that could be repaired and returned to battle. The Joint Staff concurred except with the recommendation for using factors that the DIA has validated to calculate enemy systems that could be repaired and returned to battle. The Joint Staff proposed that these factors be developed by the Military Departments and coordinated with the Joint Staff and the DIA. We accepted the Joint Staff's proposed alternative action and considered all issues resolved.

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Inspector General, DoD, Report No. 94-015, "Acquisition of the Longbow Apache System," November 9, 1993. The report had five findings, one of which pertained to requirements for the Longbow missiles. The report concluded that the quantitative requirements for the Longbow Hellfire Modular Missile System were overstated, potentially resulting in the expenditure of $2.6 billion for unnecessary munitions. The Army had shifted from a threat-based requirements methodology to a force-based requirements methodology that did not consider the size of the force needed to defeat a potential threat. The report recommended that the Army use a threat-based methodology to determine the requirements and recalculate the requirements for the Longbow Hellfire Modular Missile System. The Army concurred with recalculating its missile requirements; however, the Army nonconcurred with the use of a threat-based methodology. This issue is addressed again in Finding A of this report.

Inspector General, DoD, Report No. 93-046, "Acquisition of the Sense and Destroy Armor Weapon System," January 27, 1993. The report had five findings, one of which pertained to requirements determination. The report concluded that the Army could spend more than $1.8 billion for unnecessary munitions. The Army had based its requirements on an overstated number of self-propelled artillery systems in the threat forces, applied inappropriate performance factors, and made an invalid adjustment for the capability of the threat forces to reconstitute its systems. Also, the Army had envisioned warfare against the Warsaw Pact's forces and determined its acquisition objectives accordingly. The Army recomputed its quantitative requirements for the SADARM munitions; however, the results of the recomputation were unreasonable. We decided not to pursue that matter further because we decided that we would revisited the issue of requirements for SADARM munitions requirements with the Army during this audit of anti-armor weapon systems and associated munitions. The issue is addressed in Finding C of this report.

Army Audit Agency, Audit Report No. CR 93-208, "Audit of Air-to-Ground Missile Systems," February 26, 1993. The report stated that the authorized acquisition objectives for the Longbow Hellfire Modular Missile System (Longbow) and Hellfire missiles were overstated. The report recommended that the Army reduce the authorized acquisition objective for the Longbow and Hellfire missiles because the threat was reduced and the battle scenarios were unrealistic. The Army Audit Agency did not examine the methodology the Army used to calculate the requirements for the Longbow missile. The Army disagreed with the postulated requirement for the Hellfire missiles and indicated that a final authorized acquisition objective for the Hellfire missiles (laser and Longbow) would be developed once aviation modernization plans have been determined. The authorized acquisition objective would be revised in the interim to include requirements that were not previously included for training and testing.

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Rand Corporation, Report No. R-3872-P&L, "Conventional Munitions Requirements Estimation - Overview and Issues," July 1991. This report stemmed from a project the Assistant Secretary of Defense for Production and Logistics sponsored in which the Rand Corporation reviewed the individual Military Department's processes for determining requirements for munitions. The Rand Corporation determined that all models the Military Departments used had certain strengths and weaknesses. Major weaknesses in all Military Departments' models included:

o the inability of the models to reflect the operational, weapon system, and logistical uncertainties of combat that the Rand Corporation believed affect the ability of the Military Departments to determine the strength of their munitions stockpiles;

o the lack of consideration by the models of the supply systems of the munitions where the Rand Corporation felt that many relevant tradeoffs among the munitions could have been made; and

o the use of biased analytical methods.

The report did not contain any formal recommendations but rather suggestions for near-term and long-term improvement. The suggestions for near-term included shortening the timeframe for completing requirement estimates, ensuring greater consistency of methodology across the Military Departments, and implementing correct least cost-to-kill processes. The long-term suggestions included recognizing explicitly a variety of uncertainties about combat, considering logistic support for requirements determination, and relating requirements to measures of effectiveness that can be compared across the Military Departments. Some of the suggestions were considered in the Joint Chiefs of Staff initiative and an Anti-Armor Area Analysis.

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Appendix C. Calculation of Monetary Benefits

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Appendix D. Comparison of Minimum Distribution System Quantity and Projected Wartime Expenditures

Table D.1. Calculation of Minimum Distribution System Quantity

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Table D.2. Calculation of Projected Wartime Expenditures

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Table D.3. Calculation of Overstated Requirement

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Appendix E. Army's Comments on Finding A. and Audit Responses

Army Comments. The Director of Requirements (the Director), Office of the Deputy Chief of Staff for Operations and Plans, provided comments for the Army on Finding A. The full text of his comments is in Part IV. On Finding A. overall, the Director stated that:

> The Army non-concurs with the audit. The Army currently uses the Capabilities-Based Munitions Requirements (CBMR) process as established by the Joint Staff in determining its war reserve requirements. Projected Wartime Expenditures (PWE) alone does not provide for the operational flexibility needed to support combat operations. PWE does not ensure the logistics required to sustain the force, and provide for residual ammunition after the conflict. The focus of the report targets the Army use of MDSQ (Minimum Distribution System Quantity).

Audit Responses. We disagree that the Army used the CBMR process to determine its quantitative requirements for munitions. As discussed on page 12 of the report, the Army used the MDSQ process and that process did not comply with the CBMR process addressed in Draft DoD Instruction 4100.XX.

We agree that PWE alone does not provide adequate stocks of munitions. We also agree that the Army's MDSQ process was the primary issue in Finding A.

Army Comments. Regarding the finding statement that the Army's process for determining quantitative requirements for specific anti-armor munitions was not fully effective, the Director made the following statements.

> 1) The Army does not concur with the logic that requirements should be based on reducing costs. The audit identified a false savings in that requirements do not equal procurements.
>
> 2) The audit overstates quantitative requirements at $10.7 billion; whereas the Army concludes the difference between the PWE (the amount to fight the war-fight) and the MDSQ quantities (amount needed to fight and sustain the force) at [sic] $5.61 billion. Spread sheet is included to show the associated calculations.
>
> 3) The Army believes its CBMR process is effective and supports the Army's requirements IAW [In Accordance With] the DPG [Defense Planning Guidance].

Audit Responses. Our report did not state that the Army's quantitative requirements for munitions should be based on reducing costs. We addressed the need for the Army to use a threat-oriented process that would result in realistic quantitative requirements for munitions. Further, those resulting

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realistic requirements could result in either reduced costs or increased costs. We recognized in Finding A. that quantitative requirements do not equal planned procurements.

The Army was incorrect in stating that the $10.7 billion in our report should be $5.6 billion. Based on our review of the spread sheet that the Army provided with its comments, the Army erroneously added quantities for a Strategic Reserve to its PWE quantities in calculating its overstatement of $5.6 billion, thereby reducing the overstatement by $5.1 billion.

As discussed previously in this Appendix, the Army's process for determining quantitative requirements for the munitions discussed in Finding A. was not in compliance with the CBMR process. Also, the Army's process for determining quantitative requirements for the munitions discussed in Finding A. did not agree with the directions in the Defense Planning Guidance in regards to preparing to defeat specific identified threats. The requirements were based on force size and estimates of combat loads, not the threat identified in the Defense Planning Guidance.

Army Comments. Regarding the finding statement that the Army used the MDSQ method to determine the quantitative requirements for specific anti-armor munitions, the Director made the following statements.

> 1) The Army does not concur with that it only used MDSQ in determining requirements.
>
> 2) The CBMR process includes both the PWE and the MDSQ in building the War Reserve munitions requirement.
>
> 3) NLOS-CA and COMANCHE are not planned for or budgeted in the Army's War Reserve munitions requirements and therefore should not be included in the audit.
>
> 4) The Army believes its CBMR process satisfies both threat based and capabilities based requirements IAW [In Accordance With] the DPG [Defense Planning Guidance].

Audit Responses. As explained on page 12 of the report, the Army's quantitative requirements for 11 of the 12 weapon systems discussed in Finding A. were based only on the Army's MDSQ process.

Again, we disagree that the Army MDSQ process complies with the CBMR process. A detailed discussion of this issue is on page 12 of the report.

According to documents obtained from the Office of the Deputy Chief of Staff for Operations and Plans, the Army has established quantitative requirements for the NLOS-CA and Comanche Programs. However, we agree that those requirements have not yet been included in the Future Years Defense Plan.

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Army Comments. Regarding the finding statement that the Army, when using the MDSQ method, based its quantitative requirement for anti-armor munitions on an arbitrary number of combat loads per weapon system and established combat loads per weapon system on very limited analysis, the Director made the following statements.

> 1) The Army does not concur with the logic that its combat loads were based on an arbitrary number and based on limited analysis.
>
> 2) The Army planners used both professional judgment and historical experience to establish current Minimum Distribution System Quantities (MDSQ) planning factors. Combat loads planning factors data was staffed both within the Army Staff and the Training and Doctrine Command (TRADOC) prior to publishing the latest requirements (18 April 94). Recognizing the need for further study, the Army ODCSOPS initiated a logistics study by the Army Concepts Analysis Agency (CAA) to evaluate the adequacy of these factors. This study is planned for completion beginning CY [Calendar Year] 95.
>
> 3) DODIG [Inspector General, DoD] auditors do not appear to completely understand the Capabilities-Based Munitions Requirements (CBMR) process as established by the Joint Staff. The recent draft Joint Staff directive on the CBMR process answers most of the Army issues raised in this report. It appears the auditors did not include this document in its analysis. Projected Wartime Expenditures (PWE) does not provide for the operational and logistical flexibility needed to support a combat operation.
>
> 4) The Army acknowledges that further analysis is needed on refining MDSQ. As stated above, CAA is currently evaluating the adequacy of the factors.

Audit Responses. The Army did not have any documentary evidence showing that the planning factors that it used in its MDSQ process were based on professional judgment and historical experiences. Officials in the Army told us that "10 smart men" determined the Army's factors for combat loads, however, those officials did not document the basis of their conclusions. Also, the fact that official in the Army coordinated the planning factors with various offices in the Army does not make the factors more credible and defensible. As for the study that the Army asked its Concepts Analysis Agency (CAA) to perform, we found little direct benefit stemming from that study. As we discussed on page 12 of the report, the Army's MDSQ process did not comply with the CBMR process.

Army Comments. Regarding the finding statement that the Army did not consider, as part of its MDSQ process, the number of armored targets that the Army was responsible for destroying, the Director made the following statements.

> 1) The Army does not concur with the logic that it did not consider all available threat information in its combat simulation study done by CAA.

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> 2) PWE is the method which is based on target shares. When MDSQ is selected as the determining factor, PWE has already been considered in the equation. The PWE data produced by CAA takes into consideration the current intelligence information and threat distribution.
>
> 3) CAA did take into consideration Initial CINC Threat Distribution information for the FY 2001 combat simulation. The threat distribution data generated as an output of Army combat simulation studies are generally consistent with the published CINC Threat Distribution documents. The Army considers the analysis done by CAA to be sufficient.

Audit Responses. We did not state that the combat simulation that CAA conducted failed to consider all available threat information. The results of CAA's combat simulation were the PWE quantities, and we recommended that the Army should use those quantities for determining quantitative requirements for munitions.

We disagree that the Army considered target shares in its calculations of quantitative requirements for munitions. As discussed on page 9 of the report, the fact that the CAA considered target shares in calculating PWE quantities does not mean that the Army considered target shares in calculating its requirements with the MDSQ process. The Army only compared the PWE quantities with the MDSQ quantities and selected the larger quantities to represent its quantitative requirements for munitions. Therefore, for the 11 weapon systems that the Army selected MDSQ quantities, the Army could not have considered target shares because the MDSQ quantities were based totally on force structure and combat loads.

As for the Director's comments on Threat Distribution, the finding did not take exception to any part of the method that CAA used to develop PWE quantities.

Army Comments. Regarding the finding statement that the MDSQ method did not provide for allocation of targets to weapon systems, the Director made the following statements.

> 1) The Army does not concur with the logic that it didn't consider all available weapons contribution information in its combat simulation study done by CAA. The response is the same as the response provided for the above audit finding for targets.
>
> 2) The PWE data produced by CAA takes into consideration the contributions of other Army and other services' weapon systems information and target distribution. The Army considers the analysis done by CAA to be sufficient.
>
> 3) This indicates the auditors did not fully understand the Capabilities-Based Munitions Requirements (CBMR) process. The Army uses both threat-on-threat combat simulation (PWE) and MDSQ combat load calculations to determine war reserve ammunition

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> requirements; both methods are consistent with the approved CBMR process. MDSQ considers U.S. force structure, weapons densities and logistical capabilities; thus providing the minimum amount of ammunition necessary to resource the logistic distribution system and provide operational flexibility. Therefore, the combat requirement for a specific munition is always the larger of the PWE or MDSQ. The CBMR process requires the services to provide sufficient munitions to give each system a full combat load and to allow for readiness and sustainment stocks.

Audit Responses. We disagree with the Director's comments for the same reasons that we provided above on target shares. Also, we disagree that the Army's MDSQ process satisfies the CBMR process.

Army Comments. Regarding the finding statement that the Army's acquisition objectives for munitions for anti-armor weapon systems was 503 percent more than what would be needed to defeat the Army's portion of the assigned threat, the Director made the following statements.

> 1) The Army does not concur with the logic that requirements should be based on reducing costs.
>
> 2) NLOS-CA and COMANCHE are not planned for or budgeted in the Army's War Reserve munitions requirements and therefore should not be included in the audit.
>
> 3) The Army's analysis of its war reserve requirements provides enough ammunition to decisively fight and win two near simultaneous MRC IAW the current DPG, Army doctrine, the Commander's intent and the uncertainties of the battlefield; therefore the Army stands by its requirements.

Audit Responses. As we discussed previously, our report did not state that the Army's quantitative requirements for munitions should be based on reducing costs. We addressed the need for the Army to use a threat-oriented process that would result in realistic quantitative requirements for munitions. Further, those resulting realistic requirements could result in either reduced costs or increased costs.

As discussed previously, according to documents obtained from the Office of the Deputy Chief of Staff for Operations and Plans, the Army has established quantitative requirements for the NLOS-CA and Comanche Programs. However, we agree that those requirements have not yet been included in the Future Years Defense Plan.

We agree that the Army's munition requirements are more that adequate to win the wars. Based on our analysis, the Army's requirements provide for enough munitions to win the wars five times.

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Army Comments. Regarding the finding statement that the quantities of TOW 2B and Laser Hellfire missiles in current inventory exceed their PWE, the Director made the following statements.

> 1) The Army does not concur with the logic.
>
> 2) The inventory includes older models or versions of these systems that the Army already uses as training rounds and candidates for foreign military sales (FMS).
>
> 3) There is an ongoing plan to retain or dispose of munitions no longer needed by the Army. This is managed by AMC [Army Materiel Command], DCS [Deputy Chief of Staff] Munitions in conjunction with AMCCOM [Armament, Munitions, and Chemical Command] and MICOM [Army Missile Command]. The Army maintains this program is sufficient to manage the munitions stockpile.

Audit Responses. The TOW 2B is the latest model of TOW missiles; the previous model was the TOW 2A. Our comparison of inventory quantity to PWE quantities was based only on the TOW 2B, not previous models.

Finally, we applaud the Army's ongoing plan to retain or dispose of munitions no longer needed; however, Recommendations A.4. and A.5. were directed to those munitions determined to be excess upon implementation of our Recommendations A.1., A.2., and A.3.

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Appendix F. Audit's Estimate of Quantitative Requirements for Army Tactical Missile System Block II Missiles and Brilliant Anti-Armor Submunitions

We estimated that the Army's quantitative requirements for ATACMS Block II missiles and BAT submunitions were overstated by ********** ********** valued at $1.1 billion. The calculation of our estimate is explained in the following steps.

o **Step No. 1.** We obtained the number of threat systems in North Korea and Iraq from the DIA's "Outyear Threat Report," March 1994. The threat systems used in our computation were tanks and armored combat vehicles. We excluded self-propelled howitzers because the Army used these targets for calculating SADARM quantitative requirements. The Army obtained the number of threat systems from Army sources.

o **Step No. 2.** During January 1994, the Commanders in Chief allocated ********** **********. The Commanders in Chief assigned the ********** ********** ********** **********. We used those factors in our estimation. Since this allocation was for the total Army, we estimated BAT submunitions would ********** target. The Army estimated that BAT submunitions would ********** **********.

o **Step No. 3.** In January 1994, the Commanders in Chief established defeat criteria to be used by the Military Departments in calculating requirements. The Commanders in Chief assigned ********** ********** **********. For ********** ********** ******** tanks. The Army, however, ********** ********** requirements.

o **Step No. 4.** The Army used ********** ********** ********** in computing a high and low range requirement for the ATACMS missile. We used that same reconstitution factor in our calculation. The formula used by the Army to calculate reconstitution was (required kills times defeat criteria times reconstitution) plus required kills. For example, **********

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********** ********** However, the Army's acquisition objective of ********** did not include any adjustments for reconstitution. The Army's calculation as shown below resulted in a requirement for ***** missiles.

o **Step No. 5.** Through modeling, the Army determined that one ATACMS missile ********** targets. The Army divided the required kills with reconstitution ********** **********.

o **Step No. 6.** We used the Army's ********** **********, respectively, for long-range missiles in our calculation.

o **Step No. 7.** The Army overstated the quantitative requirements for the ATACMS missile **********, resulting in an overstatement of ***** **** submunitions. ********** submunitions ********** missile.

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Audit's Estimate of Quantitative Requirements for ATACMS Block II Missiles and BAT Submunitions

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Appendix G. Comparison of Estimations for Sense and Destroy Armor Munitions Requirements

We calculated the SADARM munitions requirement using the same methodology used in the Army's calculation and the same data and factors that the Army used except for the total number of threat systems, defeat criteria, and the allocation of threat systems to the field artillery. We performed this calculation for 155-mm SADARM projectiles in North Korea and Iraq (Table E.1) and MLRS SADARM in North Korea and Iraq (Table E.2).

o **Step No. 1.** We obtained the number of threat self-propelled howitzers from the DIA's "Outyear Threat Report," March 1994.

o **Step No. 2.** The Army determined that ********** ********** **** victory. However, in January 1994, the Commanders in Chief determined that ********** ********** victory. We used ********** ********** calculation.

o **Step No. 3.** The Army determined that the U. S. Forces would be responsible for ********** ********** ****. We incorporated this portion of the calculation into Step No. 5.

o **Step No. 4.** The Army determined that the Army's field artillery would ********** ********** destroying. We incorporated this portion of the calculation into Step No. 5.

o **Step No. 5.** We used the share of artillery targets that the Commanders in Chief allocated to the Army in January 1994. We assumed that all of the ********** **********, which is a conservative position when calculating quantitative requirements for munitions. The Commanders in Chief allocated ********** ********** ********** to the Army.

o **Step No. 6.** The Army allocated ********** ********** MLRS. We used those same factors in our calculation.

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o **Step No. 7.** The Army used factors showing the number of rounds required ********** ********** targets. The ********** ********** countermeasures. We used the Army's factors in our calculation, although we neither agree nor disagree with those factors.

o **Step No. 8.** The Army determined ********** ********** ********** ********** battle. We used the same factor as the Army.

o **Step No. 9.** The Army determined that the weather conditions may degrade SADARM's performance and developed a factor to account for this potential performance degradation. We used the same factor as the Army.

o **Step No. 10.** The Army determined that some munitions would be lost due to enemy action and developed a factor to account for this potential loss. We used the same factor as the Army.

o **Step No. 11.** The Army determined that an operational reserve was required and developed a factor to account for this operational reserve. We used the same factor as the Army.

o **Step No. 12.** We concluded that the enemy would not always employ severe countermeasures. Therefore, we calculated an estimate using the average of the requirements for severe countermeasures and for no countermeasures.

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Table G.1. SADARM 155-mm

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Table G.2. SADARM MLRS

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Appendix H. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
A.1. - A.2.	Economy and Efficiency and Internal Controls. Will provide more realistic quantitative requirements for anti-armor munitions.	Nonmonetary.
A.3.	Economy and Efficiency and Internal Controls. Will result in reduced acquisition objectives and planned procurement quantities.	$1.2 billion of the Army Procurement Appropriation for FY 1996 through FY 2001 could be put to better use.[1]
A.4. - A.5.	Economy and Efficiency and Internal Controls. Will provide for the most cost-effective action in regard to excessive munitions.	Nonquantifiable monetary benefits because benefits cannot be calculated until the recommendation is implemented.
B.1.a. - B.1.c.	Economy and Efficiency and Internal Controls. Will provide more realistic quantitative requirements for anti-armor munitions.	Nonmonetary.[2]

[1] We are not claiming monetary benefits for FY 2002 and beyond. However, the Army should identify funds that can be put to better use through reduced costs of $2.5 billion in the Army's Procurement Appropriation for munitions for FY 2002 and beyond.

[2] We are not estimating monetary benefits for FY 2002 and beyond. The Army should identify funds that can be put to better use through reduced cost of $1.1 billion in the Army's Procurement Appropriation for FY 2002 and beyond.

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Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
B.2.	Economy and Efficiency and Internal Controls. Will provide for the most cost-effective action in regard to excessive munitions.	Nonquantifiable monetary benefits because benefits cannot be calculated until the recommendation is implemented.
C.1.a. - C.1.c.	Economy and Efficiency and Internal Controls. Will provide more realistic quantitative requirements for anti-armor munitions.	Nonmonetary.[3]
C.2.	Economy and Efficiency. Will provide the most cost-effective action in regard to this munition.	Nonmonetary.
D.	Economy and Efficiency and Internal Controls. Will result in reduced acquisition objectives and planned procurement quantities.	$13.2 million of the Army Procurement Appropriation for FY 1996 through FY 2001 could be put to better use.[4]

[3] We are not estimating monetary benefits for FY 2002 and beyond. The Army should identify funds that can be put to better use through reduced cost of $502.5 million in the Army's Procurement Appropriation for FY 2002 and beyond.

[4] We are not estimating monetary benefits for FY 2002 and beyond. The Army should identify funds that can be put to better use through reduced costs of $21.9 million in the Army's Procurement Appropriation for FY 2002 and beyond.

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Appendix I. Organizations Visited or Contacted

Office of the Secretary of Defense

Office of the Under Secretary of Defense for Acquisition and Technology, Washington, DC
Office of the Director, Defense Procurement, Washington, DC
Office of the Director, Program Analysis and Evaluation, Washington, DC
Office of the Director, Strategic and Space Systems, Washington, DC
Office of the Director, Tactical Warfare Programs, Washington, DC

Office of the Joint Chiefs of Staff

Office of the Director for Force Structure, Resources and Assessment, Washington, DC
Office of the Director for Operational Plans and Interoperability, Washington, DC
Office of the Director for Operations, Washington, DC

Department of the Army

Office of the Assistant Secretary of the Army (Research, Development and Acquisition), Washington, DC
Office of the Deputy Chief of Staff for Logistics, Washington, DC
Office of the Deputy Chief of Staff for Operations and Plans, Force Development, Washington, DC
Army Armament, Munitions and Chemical Command, Rock Island, IL
Army Missile Command, Redstone Arsenal, AL
Army Training and Doctrine Command, Fort Monroe, VA
- Army Field Artillery School, Fort Sill, OK
- Army Armor Center, Fort Knox, KY
- Army Combined Arms Center, Fort Leavenworth, KS
  - Training and Doctrine Command Analysis Center, Fort Leavenworth, KS
  - Training and Doctrine Command Analysis Center, White Sands Missile Range, NM
  - Army Infantry Center, Fort Benning, GA

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Department of the Army (Continued)

Program Executive Office for Armaments, Picatinny Arsenal, NJ
Army Concepts Analysis Agency, Bethesda, MD

Non-DoD Activity

U.S. General Accounting Office, Washington, DC

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Appendix J. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
Under Secretary of Defense (Comptroller)
Director, Program Analysis and Evaluation
Director, Tactical Warfare Programs

Office of the Joint Chiefs of Staff

Chairman, Joint Chiefs of Staff
Director for Force Structure, Resources and Assessment

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Research, Development and Acquisition)
Deputy Chief of Staff for Operations and Plans, Force Development
Auditor General, Department of the Army
Commander, Army Field Artillery School

Non-Defense Organizations

Chairman and Ranking Minority Member of Each of the Following Congressional Committees and Subcommittees:

Senate Committee on Appropriations
Senate Committee on Armed Services
Senate Committee of Foreign Relations
Senate Select Committee on Intelligence
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on National Security

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Non-Defense Organizations (Continued)

House Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
House Permanent Select Committee on Intelligence

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Part IV - Management Comments

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Under Secretary of Defense for Acquisition and Technology Comments

OFFICE OF THE UNDER SECRETARY OF DEFE'

3000 DEFENSE PENTAGON
WASHINGTON DC 20301-3000

ACQUISITION AND TECHNOLOGY

NOV 1 5 19.

MEMORANDUM FOR INSPECTOR GENERAL-DOD (AUDITING), 400 ARMY NAVY DRIVE, ARLINGTON, VA 22202-2884

SUBJECT: Army's Processes for Determining Quantitative Requirements for Anti-Armor Systems and Munitions (Project No. 3AL-0046.04)

In its recommendations for corrective action, the DoDIG recommended that the Under Secretary of Defense for Acquisition and Technology convene the Defense Acquisition Board (DAB) to review the Sense And Destroy Armor (SADARM) program. Specifically, the DoDIG recommended that the DAB review data resulting from an Army recalculation of quantitative requirements for SADARM and determine the continued cost effectiveness and affordability of the program. The Department concurs.

A DAB is currently being planned for March 1995 to review SADARM's readiness to enter low rate production. Recent testing successes and a restructuring of the program to 155mm only (the MLRS variant being held in abeyance pending the conclusion of a detailed study) have indicated that SADARM should be considered at this time for procurement. Appropriate funding has been secured in this fiscal year to initiate production should that be the decision of the DAB.

George R. Schneiter
Director
Strategic and Tactical Systems

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Deputy Chief of Staff for Operations and Plans Comments

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS
WASHINGTON, DC 20310-0400

REPLY TO ATTENTION OF

DAMO-FDL

04 NOV 1994

MEMORANDUM THRU ~~DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS~~
~~DIRECTOR OF THE ARMY STAFF~~
~~ASSISTANT SECRETARY OF THE ARMY~~ (RESEARCH AND DEVELOPMENT)

FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE (auditing), SAAG-PRE-E

SUBJECT: The Army's Processes for Determining Quantitative Requirements for Anti-Armor Systems and Munitions.

1. Non-Concur with comments on the DODIG Audit Report on Army's Processes for Determining Quantitative Requirements for Anti-Armor Munitions, project number 3AL-0046000 dated September 15, 1994. Members of the Army Staff met with the audit team prior to publication without achieving agreement on the issues. The "cost savings" associated with the audit will be individually addressed.

2. DODIG auditors do not completely understand the Capabilities-Based Munitions Requirements (CBMR) process as established by the Joint Staff. The recent draft Joint Staff directive on the CBMR process answers most of the Army issues raised in this report. The Projected Wartime Expenditure (PWE) alone does not provide for the operational flexibility needed to support combat operations. PWE does not provide the ammunition required to sustain the force, nor provide for residual ammunition after the conflict. The focus of the report targets the Army use of Minimum Distribution System Quantity (MDSQ). The report recommends that only PWE be used in determining the war reserve requirement. By utilizing only the PWE method, the audit produces the "large savings" identified.

3. There continues to be questions as to the correctness of the data and references used by the auditors.

4. Each finding will be addressed in the attachments(Tabs A-D).

5. DAMO-FD POC for this action is MAJ Ted Kornhoff, DAMO-FDL, DSN 224-0554 or (703) 614-0554.

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SUBJECT: The Army's Processes for Determining Quantitative Requirements for Anti-Armor Systems and Munitions.

REGRADED UNCLASSIFIED WHEN SEPARATED FROM CLASSIFIED INCLOSURES

4 ATTACHMENTS

JOHN M. RIGGS
Brigadier General, GS
Director of Requirements

MAJ Kornhoff/40554

Attachment A-Minimum Distribution System Quantity for Determining Quantitative Requirements for Anti-Armor Munitions.
Attachment B-Quantitative Requirements for Army Tactical Missile Systems Missiles and Brilliant Anti-Armor Sub munitions.
Attachment C-Quantitative Requirements for Sense and Destroy Armor Munitions.
Attachment D-High Mobility Multipurpose Wheeled Vehicle Scout Platoons Equipped With Javelins.

MAJ Kornhoff/40554

SECRET

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DOWNGRADED UNCLASSIFIED WHEN SEPARATED FROM CLASSIFIED ENCLOSURES

DAMO-FDL 3 NOV 1994

MEMORANDUM FOR DODIG

SUBJECT: Response to DODIG Report on Finding A, Minimum Distribution System Quantity Method for Determining Quantitative Requirements for Anti-Armor Munitions.

1. Reference DODIG Report on the Army's Process for Determining Quantitative Requirements for Anti-Armor Systems and Munitions, 15 Sep 94.

2. The ARMY non-concurs with the audit. The Army currently uses the Capabilities-Based Munitions Requirements (CBMR) process as established by the Joint Staff in determining its war reserve requirements. Projected Wartime Expenditures (PWE) alone does not provide for the operational flexibility needed to support combat operations. PWE does not ensure the logistics required to sustain the force, and provide for residual ammunition after the conflict. The focus of the report targets the Army use of MDSQ (Minimum Distribution System Quantity). The following comments address specific areas:

A) PAGE 6 Opening paragraph
AUDIT FINDING: THE ARMY'S PROCESS FOR DETERMINING QUANTITATIVE REQUIREMENTS FOR SPECIFIC ANTI-ARMOR MUNITIONS WAS NOT FULLY EFFECTIVE.

1) The Army does not concur with the logic that requirements should be based on reducing costs. The audit identified a false savings in that requirements do not equal procurements.
2) The audit overstates quantitative requirements at $10.7 billion; whereas the Army concludes the difference between the PWE (the amount to fight the war-fight) and the MDSQ quantities (amount needed to fight and sustain the force) at $5.61 billion. Spread sheet is included to show the associated calculations.
3) The Army believes its CBMR process is effective and supports the Army's requirements IAW the DPG.

B) PAGE 6 Background
AUDIT FINDING: THE ARMY USED THE MDSQ METHOD IN DETERMINING THE QUANTITATIVE REQUIREMENTS FOR SPECIFIC ANTI-ARMOR MUNITIONS.

1) The Army does not concur with that it only used MDSQ in determining requirements.
2) The CBMR process includes both the PWE and the MDSQ in building the War Reserve munitions requirement.

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SECRET

REGRADED UNCLASSIFIED WHEN SEPARATED FROM CLASSIFIED INCLOSURES.

SUBJECT: Response to DODIG Report on Finding A, Minimum Distribution System Quantity Method for Determining Quantitative Requirements for Anti-Armor Munitions.

3) NLOS-CA and COMANCHE are not planned for or budgeted in the Army's War Reserve munitions requirements and therefore should not be included in the audit.
4) The Army believes its CBMR process satisfies both threat based and capabilities based requirements IAW the DPG.

C) PAGES 6 & 8 The Army's Use of Combat Loads in Determining Quantitative Requirements for Anti-Armor Munitions
AUDIT FINDING: THE ARMY, WHEN USING THE MDSQ METHOD, BASED ITS QUANTITATIVE REQUIREMENT FOR ANTI-ARMOR MUNITIONS ON AN ARBITRARY NUMBER OF COMBAT LOADS PER WEAPON SYSTEM, AND ESTABLISHED COMBAT LOADS PER WEAPON SYSTEM BASED ON VERY LIMITED ANALYSIS.

1) The Army does not concur with the logic that its combat loads were based on an arbitrary number and based on limited analysis.
2) The Army planners used both professional judgment and historical experience to establish current Minimum Distribution System Quantities (MDSQ) planning factors. Combat loads planning factors data was staffed both within the Army Staff and the Training and Doctrine Command (TRADOC) prior to publishing the latest requirements (18 April 94). Recognizing the need for further study, the Army ODCSOPS initiated a logistic study by the Army Concepts Analysis Agency (CAA) to evaluate the adequacy of these factors. This study is planned for completion beginning CY 95.
3) DODIG auditors do not appear to completely understand the Capabilities-Based Munitions Requirements (CBMR) process as established by the Joint Staff. The recent draft Joint Staff directive on the CBMR process answers most of the Army issues raised in this report. It appears the audit did not include this document in its analysis. Projected Wartime Expenditures (PWE) does not provide for the operational and logistical flexibility needed to support a combat operation.
4) The Army acknowledges that further analysis is needed on refining MDSQ. As stated above, CAA is currently evaluating the adequacy of the factors.

PAGE 8 The Army's Use of Target Shares in Determining Quantitative Requirements for Anti-Armor Munitions.
AUDIT FINDING: THE ARMY, WHEN USING THE MDSQ METHOD, DID NOT CONSIDER THE NUMBER OF ARMORED TARGETS THE ARMY WAS RESPONSIBLE FOR DESTROYING.

1) The Army does not concur with the logic that it did not consider all available threat information in its combat simulation study done by CAA.

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SUBJECT: Response to DODIG Report on Finding A, Minimum Distribution System Quantity Method for Determining Quantitative Requirements for Anti-Armor Munitions.

2) PWE is the method which is based on target shares. When MDSQ is selected as the determining factor, PWE has already been considered in the equation. The PWE data produced by CAA takes into consideration the current intelligence information and threat distribution.
3) CAA did take into consideration Initial CINC Threat Distribution information for the FY 2001 combat simulation. The threat distribution data generated as an output of Army combat simulation studies are generally consistent with the published CINC Threat Distribution documents. The Army considers the analysis done by CAA to be sufficient.

PAGE 9 The Army's Use of Weapons Systems Shares in Determining Quantitative Requirements.
AUDIT FINDING: THE MDSQ METHOD DID NOT PROVIDE FOR ALLOCATION OF TARGETS TO WEAPON SYSTEMS.

1) The Army does not concur with the logic that it didn't consider all available weapons contribution information in its combat simulation study done by CAA. The response is the same as the response provided for the above audit finding for targets.
2) The PWE data produced by CAA takes into consideration the contributions of other Army and other services' weapon systems information and target distribution. The Army considers the analysis done by CAA to be sufficient.
3) This indicates the auditors did not fully understand the Capabilities-Based Munitions Requirements (CBMR) process. The Army uses both threat-on-threat combat simulation (PWE) and the MDSQ combat load calculations to determine war reserve ammunition requirements; both methods are consistent with the approved CBMR process. MDSQ considers U. S. force structure, weapons densities and logistical capabilities; thus, providing the minimum amount of ammunition necessary to resource the logistic distribution system and provide operational flexibility. Therefore, the combat requirement for a specific munition is always the larger of the PWE or MDSQ. The CBMR process requires the services to provide sufficient munitions to give each system a full combat load and to allow for readiness and sustainment stocks.

PAGE 9 Projected Wartime Expenditures
AUDIT FINDING: THE ARMY'S ACQUISITION OBJECTIVE FOR MUNITIONS FOR ANTI-ARMOR WEAPON SYSTEMS WAS 503 PERCENT(%) MORE THAN WHAT WOULD BE NEEDED TO DEFEAT THE ARMY'S PORTION OF THE ASSIGNED THREAT.

1) The Army does not concur with the logic that requirements should be based on reducing costs.
2) NLOS-CA and COMANCHE are not planned for or budgeted in the Army's War Reserve munitions requirements and therefore should not be included in the audit.

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SUBJECT: Response to DODIG Report on Finding A, Minimum Distribution System Quantity Method for Determining Quantitative Requirements for Anti-Armor Munitions.

3)The Army's analysis of it's war reserve requirements provides enough ammunition to decisively fight and win two near simultaneous MRC IAW the current DPG, Army doctrine, the Commander's intent and the uncertainties of the battlefield; therefore the Army stands by its requirements.

PAGE 10 Retention or Disposal of Munitions
AUDIT FINDING: THE QUANTITIES OF TOW2B AND LASER HELLFIRE MISSILES IN CURRENT INVENTORY EXCEED THEIR PWE.

1) The Army does not concur with the logic.
2) The inventory includes older models or versions of these systems that the Army already uses as training rounds and candidates for foreign military sale (FMS).
3) There is an ongoing plan to retain or dispose of munitions no longer needed by the Army. This is managed by AMC, DCS Munitions in conjunction with AMCCOM and MICOM. The Army maintains this program is sufficient to manage the munitions stockpile.

PAGE 11 Recommendations for Corrective Actions
AUDIT FINDING: IMPLEMENT THREAT-ORIENTED PROCESSES IN THE REQUIREMENTS DETERMINATION PROCESS. (RECOMMENDATION 1)

1) The Army does not concur with the audit findings.
2) The Army already uses the "threat oriented process" PWE and it uses the "capability based" MDSQ system to determine its war reserve requirements to be in-compliance with the DPG and CBMR.
3) The audit findings provide no logic to explain using PWE except it produces a lower requirement which in turn generates a "cost savings."

AUDIT FINDING: RECALCULATE THE QUANTITATIVE REQUIREMENT. (RECOMMENDATION 2)
1) The Army does not concur with the audit findings.
2) If the CAA study results indicate adjustments are appropriate, the Army will recalculate its war reserve munitions requirements after the CAA MDSQ study is completed.

AUDIT FINDING: ADJUST ACQUISITION OBJECTIVES AND PROCUREMENT PLANS BASED ON THE RECALCULATION OF REQUIREMENTS. (RECOMMENDATION 3)

1) The Army does not concur with the audit findings.
2) The Army will adjust requirements on updated calculations if necessary. Procurement plans will be adjusted based on Army priorities and available funds.

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SUBJECT: Response to DODIG Report on Finding A, Minimum Distribution System Quantity Method for Determining Quantitative Requirements for Anti-Armor Munitions.

AUDIT FINDING: DETERMINE THE COST-EFFECTIVENESS OF RETAINING OR DISPOSING ANY MUNITIONS DETERMINED TO BE EXCESS. (RECOMMENDATION 4)

1) The Army does concur with the audit findings.
2) There is an ongoing plan to retain or dispose of munitions no longer needed by the Army. This is managed by AMC, DCS Munitions in conjunction with AMCCOM and MICOM.
3) Currently older models of munitions are used in training, FMS, and other programs.

AUDIT FINDING: RETAIN OR DISPOSE OF MUNITIONS IAW THE RESULTS OF RECOMMENDATION 4. (RECOMMENDATION 5)

1) The Army does concur with the audit findings.
2) There is an ongoing plan to retain or dispose of munitions no longer needed by the Army. This is managed by AMC, DCS Munitions in conjunction with AMCCOM and MICOM.

3. The audit did not consider the full CBMR process in determining the War Reserve munitions requirement. The Army War Reserve requirement for an individual round is determined by comparing the PWE and the MDSQ and choosing the larger amount, therefore PWE is always considered in the equation. The audit provided for the use of the "PWE only" methodology as a cost savings. The Army recognizes the War Reserve process is evolving with the on-going changes to the National Strategy. The current MDSQ study being conducted by CAA is a step in the refinement of this process.

4. FDL POC for this action is MAJ Ted Kornhoff, DSN 224-0554, (703) 614-0554.

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Chief, Combat Service Support, Combat Service Support, Common Systems Division

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DAMO-FDG 28 SEP 94

MEMORANDUM FOR DODIG

SUBJECT: Response to DODIG Report on Finding B, Quantitative Requirements for Army Tactical Missile System Missiles (ATACMS) and Brilliant Anti-Tank (BAT) Submunitions (U)

1. Reference DODIG Report on the Army's Process for Determining Quantitative Requirements for Anti-Armor Systems and Munitions, 15 Sep 94.

2. The following comments address specific areas:

A) PAGE 6 **Opening paragraph** p. 15
The audit states that the Army used inaccurate data and uncoordinated factors to calculate requirements. The Army followed the guidance within the DOD 5000 series of publications to calculate its requirements for ATACMS and BAT.

B) PAGE 13 **Use of the Number of Threat Targets in Determining Quantitative Requirements** p. 16
The DODIG stripped away enemy self-propelled artillery systems as ATACMS/BAT targets. Validated DIA target sets include enemy SP artillery.

C) PAGE 13 **Use of Factors for Share of Threat Targets in Determining Quantitative Requirements** p. 16
The DODIG used the January 1994 Commander-in-Chief approved target shares for the Military Departments to use in determining their munitions requirements. The Army did not possess this document as requirements were arrived at prior to 1994. Also, the CINC guidance only looked at ATACMS Block I, a weapon substantially different (Anti Personnel, Anti Materiel submunitions (APAM) instead of BAT) from ATACMS Block II and considered the TPFDD as of April 1993 along with the DIA Outyear Threat Report 1994-99 instead of the DIA approved STAR threat support plan that projects to 1996. The DODIG did not consider a reconstitution rate for enemy forces and that a percentage of those would be re-attacked by ATACMS.

3. FDG POC for this action is LTC Davidson, x34873.

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COL, GS
CHIEF, FIRE SUPPORT DIVISION

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DAMO-FDG 28 SEP 94

MEMORANDUM FOR DODIG

SUBJECT: Response to DODIG Report on Finding C, Quantitative Requirements for Sense and Destroy Armor Munitions (U)

1. Reference draft DODIG Report on the Army's Process for Determining Quantitative Requirements for Anti-Armor Systems and Munitions, 15 Sep 94.

2. Due to program changes in 1993-1994, the quantitative requirements for SADARM munitions have changed, and the DODIG Report no longer reflects the Army's current acquisition plan.

a. The DODIG Report recommends a reduction of 14,964 155mm SADARM projectiles and 1,891 MLRS rockets, or a total reduction of 41,272 SADARM munitions. This would reduce the Army acquisition objective to 24,054 155mm projectiles and 21,821 MLRS rockets, or a total acquisition objective of 179,034 SADARM munitions.

b. The current Army quantitative requirement, based on a 155mm only program, is 73,612 155mm SADARM projectiles, or 147,224 SADARM munitions. This is 31,810 fewer SADARM munitions than the DODIG Report recommends. Beside the additional savings due to the procurement of fewer SADARM munitions, cost is also significantly reduced due to the elimination of the MLRS rocket as a carrier.

3. The Army will continue to recalculate its quantitative requirements for SADARM at the intervals required by DOD Regulation 5000-series, based on the threat data that is current at the time, and using approved methods to determine defeat criteria and shares of target allocation. The recommendations contained in the DODIG Report exceed these requirements.

4. FDG POC for SADARM is MAJ Rachel Piehler, DSN 225-0119.

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DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR OPERATIONS AND PLANS
400 ARMY PENTAGON
WASHINGTON DC 20310-0400

REPLY TO ATTENTION OF

DAMO-FDD

2 November 1994

MEMORANDUM FOR DODIG

SUBJECT: Response to DODIG Report on HMMWV Scout Platoons Equipped with JAVELIN

1. Reference DODIG Report on the Army's Processes for Determining Quantitative Requirements for Anti-Armor Systems and Munitions, 15 Sep 94.

2. The following comments address specific findings in the referenced report.

a. Page 21, "Evaluation of JAVELIN Requirement for Scout Platoons Equipped with HMMWV." p. 25

DODIG Finding: That equipping the HMMWV Scout Platoons was unneccessary and inconsistent with Army doctrine as articulated in FM 7-20, "The Infantry Battalion," and FM 17-98, "Scout Platoon."

Response: Equipping HMMWV Scout Platoons is consistent with Army doctrine. ARTEP 17-57-10 MTP, "Mission Training Plan for the Scout Platoon," identifies the following collective missions that require the Scout Platoon to prepare for and engage in direct fire tactical operations against tanks and armored forces.

(1) "Execute Actions on Contact," Task # 17-3-1021. A scout platoon is moving and encounters a Threat platoon occupying hasty defensive positions. The Threat platoon consists of tanks and armored personnel carriers. If engaged by the Threat platoon, the Scouts return fire.

(2) "Support a Hasty Attack," Task # 17-3-1022. The Scout platoon has identified a Threat tank or motorized rifle platoon occupying hasty defensive positions and is ordered to support a hasty attack. The Scout Platoon assists maneuver elements by establishing a base of fire and suppressing the Threat with indirect and long-range direct, i.e., TOW and JAVELIN, fires.

(3) "Conduct a Screen," Task # 17-3-1023. The Scout Platoon is ordered to screen a larger force. Threat situation is unknown but may be up to a company/team in size. The Scout Platoon may be required to engage in direct fire if other forces are unavailable, but this is the least desirable role for Scouts in the counterreconnaissance fight.

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DAMO-FDD
SUBJECT: Response to DODIG Report on HMMWV Scout Platoons Equipped with JAVELIN

p. 25

b. Page 22, "Evaluation of JAVELIN Requirement for Scout Platoons Equipped with HMMWV."

DODIG Finding: That the Army planned to equip the HMMWV Scout Platoon with 2-1/2 times the quantity of JAVELIN that was planned to be issued an air assault or airborne infantry rifle platoon.

Response: The DODIG finding implies that there is a disparity in the planned fielding of JAVELIN systems to air assault and airborne infantry rifle platoon in comparison with the HMMWV scout platoon. The quantity of JAVELIN systems authorized for the HMMWV scout, air assault, and airborne infantry rifle platoon is consistent with Army warfighting doctrine. A comparison of these organizations concerning the JAVELIN is inappropriate for the following reasons:

(1) Air assault and airborne infantry platoons execute tactical operations as part of a combined arms company/team. Unlike scout platoons, rifle platoons do not operate as independent entities on the battlefield. Only in rare occasions will a rifle platoon conduct independent operations. For this reason, an assessment of infantry platoon anti-armor combat power in comparison to the HMMWV scout platoon is inappropriate.

(2) The HMMWV scout platoon mission requires independent, long-range operations forward of and on the flanks of the main force. In addition, the scout platoon often conducts operations along a wide front which prevents the scout teams from providing mutually supporting fires. Because of this employment technique and the realization that the scout platoon operates beyond infantry and armor supporting fires, each scout team must have an organic anti-armor capability.

(3) An appropriate comparison of anti-armor combat power would be to evaluate the HMMWV scout platoon and the air assault and airborne infantry rifle company. Such an analysis reveals that the rifle company possess more JAVELIN systems and therefore more combat power than the scout platoon. This situation is consistent with doctrine since a rifle company has a primary mission of executing offensive and defensive operations against Threat tank and armored forces.

p. 25

c. Page 22, "Evaluation of JAVELIN Requirement for Scout Platoons Equipped with HMMWV."
DODIG Finding: That the HMMWV scout platoon can already attack light-armored vehicles with the Lightweight Multipurpose Weapon and therefore does not require the JAVELIN.

Response: The DODIG finding suggests that the JAVELIN's primary target set is light armor and that the Lightweight Multipurpose Weapon may be employed as a substitute for JAVELIN.

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To the contrary, the primary target set for the JAVELIN is advanced armor systems, i.e., tanks. JAVELIN is the only system capable of defeating all known armor threats. Consequently, the Lightweight Multipurpose Weapon is not an acceptable substitute.

d. Page 22, "Evaluation of JAVELIN Requirement for Scout Platoons Equipped with HMMWV (Conclusion)." p. 25

DODIG Finding: That the HMMWV scout platoon does not require an anti-tank capability.

Response: The HMMWV scout platoon does require an organic anti-tank (JAVELIN) capability. Unlike the M3 scout platoon, the HMMWV scout platoon has no other anti-tank capability. The HMMWV scout platoon conducts independent, long range operations forward of or on the flanks of the main force. These missions, e.g., screen, support a hasty attack, and actions on contact, which are normally beyond infantry and armor supporting fires, require that the scout platoon have the capability to engage and destroy Threat tank and armored forces.

3. DAMO-FDD POC for this action is MAJ Garrett, DSN 224-2332 or commercial (703) 614-2332.

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