

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 6 - Management and Support	PE NUMBER AND TITLE 0605706A Materiel Systems Analysis
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COST <i>(In Thousands)</i>	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	27120	9617	8796	8718	6672	6582	6504	6829	Continuing	Continuing
M541 Materiel Systems Analysis	8715	9617	8796	8718	6672	6582	6504	6829	Continuing	Continuing
M542 Major Systems Test, Design and Evaluation	18405	0	0	0	0	0	0	0	0	18405

A. Mission Description and Budget Item Justification: The U.S. Army Materiel Systems Analysis Activity (AMSAA), as the Army's center for materiel systems analysis, provides the technical capability for the conduct of materiel systems analysis in support of Army decision makers throughout the materiel acquisition process. AMSAA responds with analyses required by the decision makers of the Army and the Department of Defense (DoD), the Program Executive Officers/Program Managers (PEO/PM), the Army's Independent Evaluator (Operational Test and Evaluation Command), and the Army analytical community.

In accomplishing its Materiel Systems Analysis Mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing systems. AMSAA conducts and supports systems analyses, such as: analyses of alternatives (AoAs), system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, and requirements analyses. These analyses are used by the Army Materiel Command (AMC) and Department of Army (DA) leadership in making acquisition, procurement, and logistic decisions in order to provide quality equipment and procedures to the soldiers. AMSAA provides Army-wide support in the development of methodologies, models, simulations, and databases for use in its and other Army agencies' analyses. AMSAA supports the Army modeling and simulation (M&S) community by providing item level performance methodology/data, and standardized algorithms. AMSAA is the Army's designated source of item level performance data and, as such, develops, maintains, and provides a diverse range of data for its and other Army and DoD agencies' analyses. AMSAA is the Army's executive agent for the verification, validation, and accreditation of item level performance models and for the Research, Development and Acquisition (RDA) domain as part of the Army's M&S Management Structure. AMSAA also develops reliability, availability, and maintainability (RAM) methodologies for use in its and other Army agencies' analyses.

FY 1998 funding in Project M542 supports the Army's independent technical evaluation role transferred from AMSAA to the Evaluation Analysis Center (EAC) under the U.S. Army Operational Test and Evaluation Command (OPTEC) as part of the Army consolidation of materiel evaluation. In the role of the independent technical evaluator, EAC provides the technical input to the single System Evaluation Report (SER) for Army acquisition programs. EAC provides technical evaluations for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive. EAC designs technical, developmental, and production tests to address factors pertinent to the decision process, such as: technical maturity, technical risk, technical system performance, producibility, supportability, etc. EAC conducts technical assessments for milestone acquisition evaluations of system tests (e.g. performance, reliability, availability, and maintainability assessments). EAC has a lead role in the planning and execution of the Army Live Fire Tests through its test design and evaluation responsibilities. The Operational Evaluation Command (OEC) under OPTEC transferred from the Operations and Maintenance, Army (OMA) appropriation into Project M542 in FY 1998. OEC plans and conducts independent operational evaluations to determine and report the effectiveness and suitability of Army systems in support of the OPTEC test and evaluation role in Army acquisition and force

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development. OEC is responsible for operational T&E and continuous evaluation of assigned Major Defense Acquisition Programs (MDAP), Major Automated Information Systems Review Council (MAISRC) programs, and In-Process Reviews (IPR).

B. Program Change Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (FY 1999 PB)	27755	9711	9736	11155
Appropriated Value	29707	9711		
Adjustments to Appropriated Value				
a. Congressional General Reductions	-1952	-94		
b. SBIR / STTR	-477			
c. Omnibus or Other Above Threshold Reductions	-158			
d. Below Threshold Reprogramming				
e. Rescissions				
Adjustments to Budget Years Since FY 1999 PB	-635		-940	-2437
Current Budget Submit (FY 2000 / 2001 PB)	27120	9617	8796	8718

Change Summary Explanation: Funding: FY2000 (-940) and FY2001 (-2437) reductions to the AMSAA mission were due to the funding of other higher priority Army requirements.

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COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
M541 Materiel Systems Analysis	8715	9617	8796	8718	6672	6582	6504	6829	Continuing	Continuing
<p>Mission Description and Justification: Project M541 funds the Army Materiel Systems Analysis Activity's (AMSAA) primary mission of materiel systems analysis. In accomplishing its Materiel Systems Analysis Mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing systems. AMSAA conducts and supports systems analyses, such as: analyses of alternatives (AoAs), system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, and requirements analyses. These analyses are used by the Army Materiel Command (AMC) and Department of Army (DA) leadership in making acquisition, procurement, and logistic decisions in order to provide quality equipment and procedures to the soldiers. AMSAA provides Army-wide support in the development of methodologies, models, simulations, and databases for use in its and other Army agencies' analyses. AMSAA supports the Army modeling and simulation (M&S) community by providing item level performance methodology/data, and standardized algorithms. AMSAA is the Army's designated source of item level performance data and, as such, develops, maintains, and provides a diverse range of data for its and other Army and DoD agencies' analyses. AMSAA is the Army's executive agent for the verification, validation, and accreditation of item level performance models and for the Research, Development and Acquisition (RDA) domain as part of the Army's M&S Management Structure. AMSAA also develops reliability, availability, and maintainability (RAM) methodologies for use in its and other Army agencies' analyses. This project funds the salaries of civilian employees assigned to the materiel system analysis mission.</p> <p>FY 1998 Accomplishments:</p> <ul style="list-style-type: none"> 8715 Developed and certified system performance data for U.S. and foreign systems used to support Army and Joint AoAs, force structure studies and theater level studies. Examples of programs where decisions were influenced: Army Tactical Missile System (ATACMS), Future Scout and Cavalry System (FSCS), and Follow-On-To-TOW (FOTT). Analyzed the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included were conduct of and support to: cost and operational effectiveness analyses, analyses of alternatives, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions were influenced: Grizzly, ATACMS, FOTT, Battlefield Identification, Military Operations in Urban Terrain (MOUT), Force XXI Battle Command Brigade and Below (FBCB2), and FSCS. Developed, modified, and maintained item level methodology used in tools to conduct systems analysis. Examples of such tools are: Ground Wars Model, Extended Air Defense Simulation, Virtual Proving Ground, and Close Combat Tactical Trainer. Developed methodologies (search and target acquisition) to characterize the performance and combat effectiveness of new technologies in force-on-force analyses. Performed verification and validation of item level performance models and methodologies which will be developed in-house. Funding supported approximately 100 civilians to include salary, benefits, and all other support costs (e.g., training, TDY, ...). <p>Total 8715</p>										
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<p>FY 1999 Planned Program:</p> <ul style="list-style-type: none"> • 9556 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint A0As, force structure studies and theater level studies. Examples of programs where decisions will be influenced: FSCS, Comanche, and Crusader. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions will be influenced: Future Combat System (FCS), Bradley Fighting Vehicle System A3 (BFVS A3), Crusader, PATRIOT Advanced Capability-3 (PAC-3), and Grizzly. Develop, modify, and maintain item level methodology used in tools to conduct systems analysis. Examples of such tools are: Ground Wars Model, Extended Air Defense Simulation, and Modular Semi-Automated Force (ModSAF). Develop methodologies (e.g., command, control, and communications (C3)) to characterize the performance and combat effectiveness of new technologies in force-on-force analyses. Perform verification and validation of item level performance models and methodologies which will be developed in-house. Funding will support approximately 106 civilians to include salary, benefits, and all other support costs (e.g., training, TDY, ...). • 61 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs <p>Total 9617</p> <p>FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • 8796 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint A0As, force structure studies and theater level studies. Examples of programs where decisions will be influenced: FSCS, Comanche, and Crusader. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions will be influenced: Land Warrior, FCS, FSCS, and Comanche. Develop, modify, and maintain item level methodology used in tools to conduct systems analysis. Examples of such models are: Ground Wars Model, Evaluation of Air Defense Effectiveness. Develop methodologies to characterize the performance and combat effectiveness of new technologies in force-on-force analyses. Perform verification and validation of item level performance models and methodologies which will be developed in-house. Funding will support approximately 90 civilians to include salary, benefits, and all other support costs (e.g., training, TDY, ...). <p>Total 8796</p> <p>FY 2001 Planned Program:</p> <ul style="list-style-type: none"> • 8718 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint A0As, force structure studies and theater level studies. Examples of programs where decisions will be influenced: FSCS and Comanche. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and 		
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	<p>support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions will be influenced: FCS, FSCS, and Comanche. Develop, modify, and maintain</p> <p>FY 2001 Planned Program: (continued) item level methodology used in tools to conduct systems analysis, such as, Ground Wars. Develop methodologies to characterize the performance and combat effectiveness of new technologies in force-on-force analyses. Perform verification and validation of item level performance models and methodologies which will be developed in-house. Funding will support approximately 88 civilians to include salary, benefits, and all other support costs (e.g., training, TDY, ...).</p>	
Total	8718	
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COST (In Thousands)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
M542 Major Systems Test, Design and Evaluation	18405	0	0	0	0	0	0	0	0	18405

Mission Description and Justification Project M542 supported the Army consolidation of the materiel evaluation function under the U.S. Army Operational Test and Evaluation Command (OPTEC), including the realignment of the Operational Evaluation Command (OEC) previously funded in the Operations and Maintenance, Army (OMA) appropriation. Beginning in FY 1999 this funding was restructured to PE 0605716A, Army Evaluation Center. This realignment completes the consolidation of Army evaluation. In FY 1998, Project M542 supported the OPTEC mission of evaluation and test design. This mission is shared by the Evaluation Analysis Center (EAC) and OEC, both subordinate commands to OPTEC. OPTEC provides integrated technical and operational evaluations and continuous evaluation of assigned Major Defense Acquisition Programs (MDAPs), Major Automated Information Systems Review Council (MAISRC), and In-Process Review (IPR) programs for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. OPTEC develops the evaluation strategy, designs technical and operational tests, and evaluates the test results to address the effectiveness, suitability, and survivability factors pertinent to the decision process, such as: Critical Operational Issues and Criteria (COIC), system performance, soldier survivability, performance in countermeasures, survivability, reliability, supportability, etc. OPTEC has a lead role in the planning and execution of the Army live fire tests through its evaluation and test design responsibilities. This project funded the salaries of civilian employees assigned to the evaluation and test design missions and associated costs including temporary duty, support contracts, supplies and equipment. This project did not finance test facility operations, test instrumentation or test equipment.

FY 1998 Accomplishments:

- 18405 Prepared integrated System Evaluation Plans (SEPs) and conducted integrated technical and operational evaluations and continuous evaluations of all Army weapon systems. Provided test designs and evaluations for weapon systems throughout the entire research and development of a system or those undergoing major materiel change. System evaluations provided input to program milestone decision reviews during FY 98. Developed test design and evaluation plans for tests to be conducted in FY 99 through FY 03. These efforts included evaluation and test design planning for systems projected to undergo live fire testing in FY 99-00. Early planning and analysis assured early identification of requirements for long lead procurement of experimental/prototype equipment or test instrumentation and integration of developmental and operational evaluations to support accelerated acquisition and technology transition programs. Major efforts included: Combat Service Support Control System (CSSCS); Force XXI Battle Command Brigade and Below (FBCB2); Army Tactical Missile System Block II (ATACMS Blk II); Bradley Fighting Vehicle System (BFVS); Extended Range – Multiple Launch Rocket System (ER-MLRS); Bradley Fire Support Team (BFIST); Command and Control Vehicle(C2V); Wide Area Munition (WAM) system; Army Tactical Missile System Block II/Brilliant Anti-armor Tank Pre-Planned Product Improvement (ATACMS BLK II/BAT-P3I); Search and Destroy Armor (SADARM); Advanced Field Artillery Tactical Data System (AFATDS); All Source Analysis System (ASAS); Battlefield Combat Identification System (BCIS); Close Combat Tactical Trainer (CCTT); Crusader; Forward Area Air Defense (FAAD-

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