

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY

6 - Management support

PE NUMBER AND TITLE

0605805A - Munitions Standardization, Effectiveness & Safety

COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
Total Program Element (PE) Cost	38042	37530	18726	18585	19199	19710	20136
296 PYROTECHNIC RELIABILITY & SAFETY	757	845	906	927	950	992	1006
297 Mun Survivability & Log	4458	4704	5054	5159	5384	5569	5693
857 DOD EXPLOSIVES SAFETY STANDARDS	667	720	1529	1601	1662	1703	1746
858 ARMY EXPLOSIVES SAFETY MANAGEMENT PROGRAM	405	403	445	404	468	479	492
859 LIFE CYCLE PILOT PROCESS	25740	18560	3162	3218	3276	3327	3381
862 FUZE TECHNOLOGY INTEGRATION	1656	1930	2062	2105	2149	2191	2235
F21 NATO SMALL ARMS EVAL	296	972	1013	515	528	548	560
F24 CONVENTION AMMO DEMIL	4063	9396	4555	4656	4782	4901	5023

A. Mission Description and Budget Item Justification: This Program Element supports continuing technology investigations. It provides a coordinated tri-service mechanism for the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear conventional munitions and weapons systems in a realistic operational environment. It provides for NATO interchangeability testing (F21); Joint munition effectiveness manuals used by all services; development of standardization agreements (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of demilitarization methods for existing conventional ammunition (F24); evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and improvement of explosives safety criteria for DOD munitions via the DOD Explosives Safety Board (857). Pyrotechnic Reliability and Safety (296) supports pyrotechnic research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of pyrotechnics. Project 296 will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions. Munitions Survivability and Logistics (297) will make Army units more survivable by applying technologies to reduce the sensitivity of munitions to unplanned stimuli (e.g. bullet impacts, fragment impacts, fast cook off, slow cook off, sympathetic detonation, shaped charge jets) and by testing and demonstrating munitions logistics system solutions that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Project 297 also supports the Army Insensitive Munitions (IM) Board's reviews. The Army Explosives Safety Management Program (858) was established in FY01. The U.S. Army Technical Center for Explosives Safety uses the funds in this project to evaluate current explosives safety standards and develop new, scientific and risk-based standards to meet U. S. Army explosives requirements. The Life Cycle Pilot Program (LCPP) (859) will assess production base capabilities and needs over the acquisition life cycle of various munitions and will address the producibility of ammunition including the transition to type classification and production, and the ability of the production base to cost effectively produce quality products on schedule. The Fuze Technology Integration program (862) will improve performance and lower the costs of existing proximity fuzes and enable new applications in submunitions and medium caliber fuzes, addressing advanced proximity fuze sensor technology, Micro-electromechanical Systems (MEMS), Safety and Arming (S&A) technology, and Electronic S&A (ESA) technology for smart munitions.

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BUDGET ACTIVITY 6 - Management support		PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety		
	FY 2005	FY 2006	FY 2007	
<u>B. Program Change Summary</u>				
Previous President's Budget (FY 2006)	38159	16922	19498	
Current BES/President's Budget (FY 2007)	38042	37530	18726	
Total Adjustments	-117	20608	-772	
Congressional Program Reductions		-164		
Congressional Rescissions		-378		
Congressional Increases		21150		
Reprogrammings	-117			
SBIR/STTR Transfer				
Adjustments to Budget Years			-772	
Change Summary Explanation: Funding: FY 2006: Congressional increases of +15.8M for Life Cycle Pilot Process efforts (Project 859) and +\$5.4M for Demil efforts (Project F24).				

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BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety			PROJECT 297	
COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
297 Mun Survivability & Log	4458	4704	5054	5159	5384	5569	5693
<p>A. Mission Description and Budget Item Justification: This project supports the Army Transformation by making Army units more survivable through the investigation, testing and demonstration of munitions logistics system improvements that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Key thrusts are munitions storage area survivability, insensitive munitions (IM) technology integration and compliance, weapon system rearm, munitions configured load enablers and advanced packaging and distribution system enhancements. Within each thrust, a broad array of solutions will be identified, tested, and evaluated against developed system measures of effectiveness. Optimum, cost effective solutions that enable the rapid projection of lethal and survivable forces will be demonstrated. The early stages of force deployment are especially critical. Theater ammunition storage areas are vulnerable and present the enemy with lucrative targets. These areas and distribution nodes contain the only available munitions stocks in theater. Loss of these munitions could cripple the force, jeopardize the mission, and result in high loss of life. This project mitigates vulnerabilities and ensures a survivable fighting force.</p>							
<u>Accomplishments/Planned Program</u>					<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Develop scoring patterns and techniques for munitions packaging that will create a venting system during propellant burning to reduce internal pressures and minimize explosive reactions. FY05-Developed improved venting design, conducted producibility and compatibility studies, and produced prototype cylindrical containers for rough handling test. FY06-Conduct IM test for prototype cylindrical containers, develop and produce prototype rectangular containers for rough handling test, and continue compatibility test. FY07-Complete IM and rough handling test on prototype rectangular containers, and transition.					266	410	300
Demonstrate a less sensitive high-performance, melt-castable explosive to replace Composition B explosive in mortars and other warheads for reduced sensitivity to unplanned stimuli. FY05-Developed Comp-B equivalent cast cured and Comp-A5 equivalent pressed IM explosive formulations, produced and tested cast cured IM explosive in mortar rounds. FY06-Continue refinement of the pressed explosive formulation, and development of a Comp-A equivalent cast cured explosive. FY07-Complete the development and evaluation of less sensitive pressed explosives and develop the next generation of cast cured IM explosive.					454	450	500
Demonstrate low temperature gas generating mixtures that when added to explosives reduce reaction to unplanned stimuli. As temperature rises during cook-off, this additive produces pressure to rupture the projectile resulting in a controlled burning rather than detonation. FY05-Evaluated several cast cured explosive additives to mitigate violent reactions of munitions in a cook-off environment. One potential additive solution, PBXN-9, was discovered. FY06-Complete PBXN-9 additive study and provide recommendation on implementation.					313	50	0
Conduct reviews of munitions in development and production to determine if they meet a DoD 5000.1 requirement to withstand unplanned stimuli, manage technology integration efforts to meet the requirement, update and maintain IM compliance status database, the IM waiver process for the Army, and the PEO Ammunition IM Strategic Plan. FY05-Assessed PEO Ammo munitions for IM compliance, identified technology to improve munitions IM performance, and supported IM Strategic Plan development, the Army IM Board, and IM technology development, integration and implementation. FY06-07-Continue to assess PEO Ammo munitions for IM compliance update the Army's IM Strategic Plan and support IM technology development, integration, and implementation.					600	712	911
Optimize munitions designs for IM compliance by modeling and simulating the reactions of these designs to unplanned stimuli in order to					216	197	197

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BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
6 - Management support	0605805A - Munitions Standardization, Effectiveness & Safety		297
characterize the behavior and performance of energetic materials. FY05-Surveyed IM Modeling and Simulation capability, assisted IM technology development programs by applying modeling and simulation. FY06-07-Continue to provide support to IM technology development programs utilizing modeling and simulation. Investigate opportunities for IM M&S improvements.			
Evaluate and demonstrate new explosive that could mitigate munitions violent reactions from Shaped Charge Jet Impact (SCJI). FY05-Selected chemicals that could reduce explosive reactions to shaped charge jet impact, and manufactured samples for evolution. FY06-Continue down select of chemicals and evaluation, manufacture sufficient quantity for in-house evaluation, make recommendations for further formulation development for application to specific munitions.	800	300	0
Develop standard test equipment and procedure to evaluate IM explosive candidates. This will ensure that generic Fragment Impact, Bullet Impact, Sympathetic Detonation, and Cook-off tests standardize rankings for new candidate IM explosives in a way consistent with their application in actual munitions. FY06 - Design and fabricate standardized test equipment and develop test procedures.	0	490	0
Conduct modeling and simulation to evaluate the effects of IM munitions vs. Non-IM munitions on selected weapon platforms to show the benefits of IM to system/soldier survivability. FY06 - 07 conduct M&S on four weapon systems each year.	0	177	177
Evaluate and demonstrate less sensitive materials for booster and lead for all fuzed munitions. FY07-Conduct subscale IM and reliability tests, and provide final report with implementation recommendation.	0	0	900
Redesign the rims/rings of current square rimmed cylindrical tank and artillery munitions containers to function as external cushioning (eliminating internal cushioning) and withstand stacking loads. Develop a lightweight, vented container cover. These improvements will reduce container weight and size and improve IM performance. FY05-Completed component engineering tests. FY06-Modify cover design, fabricate prototypes,conduct engineering testing, prepare final evaluation report, and transition.	475	80	0
Evaluate powder coating alternatives for painting ammunition/munitions containers to reduce hazardous waste and eliminate costly Volatile Organic Chemical (VOC) management associated with paints while insuring NBC survivability. FY06 - Conduct market survey of powder coating materials, procure test panels for Nuclear, Biological, and Chemical Contamination Survivability (NBCCS) testing. FY07 - Conduct NBCCS testing, assess results, evaluate implementation costs and benefits, prepare final analysis report and recommendations.	0	245	100
Analyze requirements and demonstrate ammunition packaging sub-modules incorporating advanced materials and features and sized to maximize space utilization in standardized inter-modal shipping containers. FY07 - Evaluate requirements and develop design concepts.	0	0	370
Evaluate and recommend alternative materials and methods for strapping ammunition loads to pallets at load plants, depots, contractor facilities and in field operations. FY06 - Identify performance requirements, conduct market survey of potential alternatives, procure and test materials. FY07 - Complete final report and transition.	0	175	30
Demonstrate a munitions storage area planning software tool that enables soldiers to quickly design a survivable and efficient in-theater storage area given known quantities and types of munitions and terrain features. FY04-Conducted field tests and modified software. FY05-Completed modifications, conducted final tests. FY06-Complete final demonstrations and transition.	848	84	0
Demonstrate standard sized inter-modal shipping modules for ammunition. The modules will interlock with each other, top to bottom, and cargo platforms to form a stable, palletized, mixed-supply class configured load. They are automation friendly and rapidly re-configurable to meet changing user needs. FY05 - Develop preliminary design for modules and design, fabricate and test prototype interlock devices. FY06-Finalize requirements, design interlocking modules, and provide support as part of the Joint Modular Intermodal Distribution System (JMIDS) Joint Capabilities Technology Demonstration (JCTD). FY07-Fabricate prototypes and participate in JMIDS JCTD Military Utility Assessments.	486	1334	1569

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6 - Management support	0605805A - Munitions Standardization, Effectiveness & Safety		297	
Total		4458	4704	5054

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)							February 2006
BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety				PROJECT 857
COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
857 DOD EXPLOSIVES SAFETY STANDARDS	667	720	1529	1601	1662	1703	1746
A. Mission Description and Budget Item Justification: This program supports the Research, Development, Test, and Evaluation efforts of the DoD Explosive Safety Standards Board. It supports explosive safety effects research and testing to quantify hazards and to develop techniques to mitigate those hazards in all DoD manufacturing, testing, transportation, maintenance, storage, disposal of ammunition and explosives operations, and also to develop risk based explosives safety standards. Results are essential to the development and improvement of quantity-distance standards, hazard classification procedures, cost effective explosion-resistant facility design procedures, and personnel hazard/protection criteria.							
<u>Accomplishments/Planned Program</u>					<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Collect and analyze airblast/fragment/thermal data for revising DoD, NATO hazard classification.					96	100	234
Develop improved tri-service design procedures and improved computer codes for explosion-resistant structures. Initiate preparation of revised tri-service manual TM-51300.					96	100	255
Develop improved explosives and munitions tests and characterization data. Specifically, develop improved gap tests for rocket motors.					91	100	306
Develop improved DoD and NATO explosives safety guidelines for munitions storage, explosives and field operation facilities. Prepared revised Dod 6055.9-STD and 4145.26M.					96	100	204
Conduct other hazards analyses and expand/automate explosives safety databases. Develop improved Explosives Safety Mishap Analysis Module with links to accident reports.					96	130	204
Develop and improve risk based analysis tools for explosives safety. Develop sequence of operations prototype.					192	190	326
Total					667	720	1529

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BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety			PROJECT 859	
COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
859 LIFE CYCLE PILOT PROCESS	25740	18560	3162	3218	3276	3327	3381
A. Mission Description and Budget Item Justification: This project supports the implementation of the Single Manager for Conventional Ammunition (SMCA) Industrial Base Strategic Plan through technology investigations, model based process controls, pilot prototyping, and industrial assessments. It will assess life cycle production capabilities required for all ammunition families, address design for manufacturability to facilitate economical production, identify industrial and technology requirements, and address the ability of the production base to rapidly and cost effectively produce quality products. Cost Reduction is an important part of the Life Cycle Pilot Process (LCPP). LCPP provides the resources to prototype critical technologies and develop the knowledge base to establish cost-effective, environmentally safe and modern production processes in support of the Munitions Industrial Base transformation.							
<u>Accomplishments/Planned Program</u>					<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Continue ongoing technology investigations. Develop concept designs and plans to transfer life cycle pilot process technology into the supplier base.					1160	1680	1400
Perform production base readiness assessments to analyze present capabilities and identify trends in munitions and industrial technology. Identify single points of failure and assess mitigation plans.					480	1380	462
Develop "pilot" prototype processes for critical ammunition end items and components necessary to establish quality, affordable, and environmentally safe production.					800	2500	1300
Establish framework and operations for the NJ Nanotechnology and Micro-Electromechanical Systems (MEMS) Consortium in support of ammunition production modernization.					1400	3000	0
Develop processes of operations for nanotechnology and manufacturing in support of ammunition production modernization. Develop process for nanoparticle manufacture using Radio Frequency (RF) Plasma technology.					4300	0	0
Under the Public Private Partnership program, establish and enhance prototype manufacturing utilizing commercially available off-the-shelf equipment in the area of energetics, sensors and seekers.					2500	0	0
Develop a new x-ray inspection system for munitions using a Cadmium Zinc Telluride (CZT) detector for automated munitions inspections and surveillance.					1050	0	0
Establish processes to eliminate safety concerns and achieve net-shape manufacturing of advanced cluster energetic materials by developing novel coating and handling processes to support Insensitive Munitions (IM) explosive fill and transfer those processes to the supplier base. Developed advanced coating technology to be transferred to the explosive manufacturing Industrial Base.					2500	2000	0
Develop generic Micro-Electromechanical Systems Inertial Measurement Unit (MEMS IMU) high volume manufacturing process for precision munitions.					2500	0	0
Continue established Government, Industry and Academia partnerships to support the development of aluminum Metal Matrix Composite (MMC) prototype technologies for munitions application. Established advanced casting capabilities for Metal Matrix Composites.					2500	1500	0

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BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
6 - Management support	0605805A - Munitions Standardization, Effectiveness & Safety		859
Establish an Advanced Technology Center to transition/market government owned intellectual property to the commercial sector prototype processes developed by the US Army.	1050	0	0
Develop and prototype new power source options for munitions utilizing advanced fuel cell technology.	1000	0	0
Define and develop processes to address munitions lifecycle improvements with application demonstration on the Mid-Range Munition.	4500	0	0
Rapidly prototpe and capture the manufacturing science of munition items utilizing nanotechnology.	0	1000	0
Provide advanced "ManTech" pilot part processing technology, in conjunction with ARDEC Center for Manufacturing Science, to support metal parts fabrication processes determined to be core capabilities for munitions production.	0	1000	0
Establish commercial partnership with ARDEC's Center for Manufacturing Science for the prototyping process and capturing production knowledge in the arena of forged and drawn metal parts.	0	1400	0
Assess manufacturing and alloy parameters that affect the performance of armor piercing ammunition and capture the knowledge that will allow new technology to be inserted into current ammunition.	0	1000	0
Address manufacturing issues on munitions products to insure manufacturing knowledge is available for transfer into the Industrial Base. Effort will include establishing pilot processes, technology, readiness assessments and support Single Point Failure assessments.	0	2100	0
Total	25740	18560	3162

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BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety				PROJECT 862
COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
862 FUZE TECHNOLOGY INTEGRATION	1656	1930	2062	2105	2149	2191	2235
<p>A. Mission Description and Budget Item Justification: This program investigates maturing technologies and seeks potential candidates for integration on current fuzing and safe and arm devices. This program will implement these technologies into fuzing systems to preclude obsolescence and enhance performance of existing munitions. The program addresses two major areas: (1) risk mitigation and (2) block upgrades. The first area is risk mitigation, which will evaluate a second source Monolithic Microwave Integrated Circuit (MMIC) for artillery and mortar fuzes and a second source signal processor for mortars. Risk mitigation efforts will evaluate and demonstrate second sources for fuzing systems that may reduce cost by providing competition, and maintain production when sources or parts are no longer available. It will also allow for the performance enhancement of current ammunition items by conducting aging studies of major fuze components to detect and identify latent defects. The second major area is block upgrades, which will evaluate and perform studies on improvements to the Bunker Defeat Munition (BDM) impact sensor, M213 & M228 fuze pull pins, medium caliber fuzing interface control document, a second environment safety using optics for mortars, armor protection system (APS) support by providing fuzes for 60mm mortar, to defeat rocket propelled grenades (RPG's), and inductive set capability for mortar fuzes. Block upgrades will enable the introduction of the latest technologies into fuzing, keep the fuzing design current to avoid obsolescence issues, and add capabilities.</p>							
<u>Accomplishments/Planned Program</u>				<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	
Risk Mitigation: Fabricated 1st wafer run on the second source Monolithic Microwave Integrated Circuits (MMIC) effort, evaluated prototype devices and collected data for input to a second wafer iteration. Fabricated and packaged 1st wafer run parts for the second source signal processor IC for the M734A1 application. Qualified new source for battery separator material in FY 05 for the M762A1/M767A1 fuzes. Purchased Non-Developmental Item (NDI) batteries for testing and battery aging study. Provided an interim battery aging report. Task order contracts awarded to University of Florida (U of F) for Mortar second source signal processor, and evaluation of optical sensor, and to MACOM for second source MMIC transceiver for mortars and artillery. Second source component designs are completed and in fabrication. Predict/evaluate fuze stockpile. Evaluate storage reliability of current artillery batteries/determine possible solutions to battery electrolyte storage instabilities and upgrade a battery spin-airgun. Evaluate improvements to stockpiled training and war reserve fuzes to enhance capabilities and/or address deficiencies. Evaluate tuning fork crystal for artillery time fuzes, new second sources for Monolithic Microwave Integrated Circuits (MMICs) used in artillery and mortar fuzes, evaluate new battery and electronics sources for current inventory fuzes. Evaluate second source for electronic safe and arm device (ESAD) components				1106	990	700	
Block Upgrades: Completed a study on 30mm airburst munitions for fuzing interface control and submitted a final report to PEO Ammunition. Conducted a study on inductive fuze set capability for mortars, wrote a statement of work (SOW) for contract modification (Mod.) to include inductive set in XM784. Field test performed for BDM impact sensor signature collection. Performed study on M228/M213 grenade pull pin for increased safety. Task order contract awarded to Alliant Techsystems (ATK) to provide electronics for APS support effort. Fabricated S&A's and electronics for APS program demonstration. Evaluate and provide upgrades for guided munitions fuzing and electronic time fuzes. Investigate drop in proximity upgrades for current airburst fuzing for mortar, artillery and other munitions. Complete breadboard design of new artillery processor. Evaluate proximity sensor upgrades for M734A1. Point detonating/delay fuze upgrades and insertion of inductive setting capability into mortars.				550	940	1362	
Total				1656	1930	2062	

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BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety			PROJECT F21	
COST (In Thousands)	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
F21 NATO SMALL ARMS EVAL	296	972	1013	515	528	548	560
<p>A. Mission Description and Budget Item Justification: This program assures complete interchangeability of small caliber and automated cannon-caliber ammunition and weapons among all NATO countries with all of the associated logistic, strategic and tactical advantages. Project involves development, maintenance and testing compliance of NATO standardization agreements (STANAGS) and staffing of the NATO North American Regional Test Center (NARTC).</p> <p>FY07 funds support the relocation and continued operation of the NARTC. These facilities will require additional technical facilitization to accommodate test and evaluation of new products such as non-lethal and air bursting munitions. Additionally, accuracy improvements to the 5.56mm M856 Trace round will be investigated and incorporated into the current design.</p> <p>FY06 funds maintain the NARTC and will support the NATO qualification of select ammunition types produced by LCAAP and second source manufacturers. Non-lethal standardization will be investigated and qualification of selected 12.7mm ammunition types will be initiated. Additionally, development of accuracy improvements related to M855 will be initiated and incorporated in prototype manufacturing equipment.</p> <p>FY05 funds maintain the NARTC and support continued standardization efforts associated with medium cal and 40mm (high and low velocity) ammo types. Additionally, funds support development of a multi-caliber manual of proof and inspection (MOPI) associated with maintaining standardization of qualified designs.</p>							
<u>Accomplishments/Planned Program</u>				<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	
40mm High/Low Velocity Standardization				65	60	40	
30mm Assessment Team				22	20	20	
Maintain standardization of Qualified designs				85	90	110	
New Ammo Design Qualification & NATO Nominated Weapon Evaluation				24	120	120	
NARTC Relocation and Equipment Purchase				0	50	50	
Staff, Equip, Maintain NARTC				100	126	147	
Aeroballistic Study of M856				0	0	155	
Design & Refine Models				0	75	75	
Design Optimal M855 Parameters				0	150	0	
Optimize Manufacturing Process				0	281	296	
Total				296	972	1013	

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BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605805A - Munitions Standardization, Effectiveness & Safety				PROJECT F24		
COST (In Thousands)			FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
F24	CONVENTION AMMO DEMIL		4063	9396	4555	4656	4782	4901	5023
A. Mission Description and Budget Item Justification: This project supports a continuing technology evaluation of demilitarization methods for all types of conventional ammunition in development, production, and storage, as well as conventional ammunition recovered from formerly used defense sites (FUDS). Project F24 will complete the development and demonstration of new, safe, and environmentally acceptable alternatives to open burning/open detonation (OB/OD), including recovery/recycle/reclamation equipment, and processes to reduce the extremely large stockpile of munitions in the resource recovery disposition account and munitions recovered from FUDS.									
<u>Accomplishments/Planned Program</u>						<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	
Prove-out prototype plasma arc technology for conventional ammunition and resource recovery potential.						2509	1000	0	
Install and prove-out cryofracture demilitarization process for anti-personnel landmines and other munitions.						376	450	0	
Development of integrated cryofracture/plasma arc technology on a mobile platform.						65	100	150	
Development of recycle/reuse technology for magnesium/aluminum.						769	2211	2606	
Develop, install and prove out of transportable alternative materials recovery capabilities for various energetic components.						94	0	0	
Multi-based propellant recovery technology application.						0	0	800	
Development of advanced resource recovery/reuse technology for explosives.						0	185	849	
Application of advanced, non-incinerative chemical reaction technology to demilitarization of non-recoverable energet materials and munitions items.						250	100	150	
This is a Congressional Add in support of Depletion Uranium Sensing and Treatment for Removal that was put in this project erroneously for this budget cycle. Will be reflected in Project 859 in the next budget cycle.						0	4000	0	
The purpose of this one year Congressional Add is to support recovery of critically needed propellant ingredients from obsolete and/or waste gun propellant formulations. No additional funds are required to complete this project.						0	1350	0	
Total						4063	9396	4555	