ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**

	COST (In Thousands)	FY 2□4 Actual	FY 2□5 Estimate	FY 2□6 Estimate	FY 2□7 Estimate	FY 2□8 Estimate	FY 2□9 Estimate	FY 2□1□ Estimate	FY 2□11 Estimate
	Total Program Element (PE) Cost	36934	38159	16922	19498	18367	18967	19473	1989□
296	PYROTECHNIC RELIABILITY & SAFETY	1104	758	858	894	915	937	979	992
297	MUN SURVIVABILITY & LOG	4881	4460	4772	4989	5092	5312	5495	5616
857	DOD EXPLOSIVES SAFETY STANDARDS	760	667	730	1509	1580	1640	1680	1722
858	ARMY EXPLOSIVES SAFETY MANAGEMENT PROGRAM	605	405	409	439	399	462	473	485
859	LIFE CYCLE PILOT PROCESS	21142	25752	3028	3139	3195	3252	3304	3359
862	FUZE TECHNOLOGY INTEGRATION	1909	1656	1957	2035	2078	2120	2162	2205
F21	NATO SMALL ARMS EVAL	464	396	986	1011	513	526	545	556
F24	CONVENTION AMMO DEMIL	6069	4065	4182	5482	4595	4718	4835	4955

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 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. It 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 testing and demonstrating munitions logistics system solutions that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. The Army Explosives Safety Management Program (858) was established in FY□1. 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 ammunitions, address the producibility of ammunition, transition to type classification and production, and address 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 cost for 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.

B. Program Change Summary	FY 2□□5	FY 2□□6	FY 2□□7
Previous President's Budget (FY 2□□5)	14611	14558	17□19
Current Budget (FY 2□□6/2□□7 PB)	38159	16922	19498
Total Adjustments	23548	2364	2479
Net of Program/Database Changes			
Congressional Program Reductions	-559		
Congressional Rescissions			
Congressional Increases	252□□		
Reprogrammings			
SBIR/STTR Transfer	-1□93		
Adjustments to Budget Years		2364	2479

FY 2□□5 Adjustment: $25.2M Congressional increase.($24.7M for Life Cycle Pilot Process (LCPP) efforts and $□5M for Munitions Survivability & Logistics efforts)

FY 2□□6/2□□7 Adjustments: Funds increased to support multiple efforts to include Life Cycle Pilot Process (LCPP), NATO Small Arms Evaluation, Army Explosive Safety Management, DoD Explosive Safety Standards, Conventional Ammo Demil, Fuze Technology Integration, Pyrotechnic Reliability and Safety, and Munitions Survivability & Logistics.

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**297**

COST (In Thousands)		FY 2004 Actual	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	4881	4460	4772	4989	5092	5312	5495	5616

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.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Demonstrate a Guided Multiple Launch Rocket System (GMLRS) Grenade High Explosive Replacement by substituting PAX2A IM explosive (a less sensitive HE replacement for Comp-A in the M85 Grenade) to enable munitions to burn rather than detonate in cook-off environments. FY04-Conducted reloaded grenade study and Comp A5-PAX 2A compatibility study, completed IM tests and transitioned.	200	0	0	0
Evaluate the chemical and mechanical properties of various foreign produced less sensitive RDX explosives. Modify US developed RDX to reduce its sensitivity based on the findings. FY04 - Completed baseline evaluation of alternative foreign produced RDX explosives, developed lab scale crystallization process and developed HMX reduction process.	279	0	0	0
Replace current High Explosive (HE) fill with a less sensitive HE to make the 40mm M430A1 HE Dual Purpose cartridge less sensitive. FY04-Determined best IM explosive solution, fabricated tested cartridges and conducted arena lethality test.	285	0	0	0

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
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. FY04 - Conducted additional IM and rough handling tests of a full-scale prototype scored Modular Artillery Charge System MACS) container. FY05-Improve venting design and producibility, conduct structural and IM tests on vented MACS containers. FY06 – Conduct full scale square rim container venting design test and evaluation. FY07 - Conduct full scale rectangular container venting design test and evaluation.	195	183	410	300
Demonstrate a less sensitive high-performance, melt-castable explosive to replace Composition B explosive in mortars, 2.75" rockets/APKWS, and other warheads for reduced sensitivity to unplanned stimuli. FY04-Developed pressed and melt pour explosives, conducted small scale IM testing, refined formulation. FY05-Continue formulation development, conduct IM tests, and refine design. FY06-Conduct large scale IM testing and performance and safety testing on specific munitions. FY07-Complete large scale IM testing and performance and safety testing on specific munitions.	956	354	500	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. FY04-Evaluated explosive and additive formulations, tested to determine percentage of additive in selected high explosive warhead, developed new additive formulation. FY05-Complete additive formulation development and conduct evaluation testing. FY06-Conduct bursting warhead demonstration and IM tests on selected warhead with existing explosive.	389	241	350	350
Conduct reviews of munitions in development and production to determine if they meet DoD 5000.2-R requirement to withstand unplanned stimuli, recommend technical approaches to meet the requirement, update and maintain IM compliance status database. Manage the IM waiver process for the Army. Update and maintain the Ammunition IM Strategic Plan and database. FY04-Conducted quarterly IM reviews, updated IM database. FY05- Conduct quarterly IM program technical reviews, provide advisory support to the Army Executive Agent for IM, provide administrative support to the Army IM Board, update and maintain the ammunition IM strategic plan and database. FY06- Conduct quarterly IM program technical reviews, provide advisory support to the Army Executive Agent for IM, provide administrative support to the Army IM Board, update and maintain the ammunition IM strategic plan and database. FY07- Conduct quarterly IM program technical reviews, provide advisory support to the Army Executive Agent for IM, provide administrative support to the Army IM Board, update and maintain the ammunition IM strategic plan and database.	676	574	750	750

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Optimize munitions designs for IM compliance by modeling and simulating the reactions of these designs to unplanned stimuli in order to characterize the behavior and performance of energetic materials. FY04 through FY07 – Conduct modeling of IM technologies	62	155	423	423
Evaluate and demonstrate new explosive that could mitigate munitions violent reactions from Shaped Charge Jet Impact (SCJI). FY05 - Identify explosive candidates, perform subscale testing, and conduct sensitivity and processing evaluations for SCJI resistance. FY06 – Conduct process, performance, and IM verification testing of best SCJI resistant explosive in a selected munition.	0	800	400	0
Evaluate and demonstrate barriers made from emerging lightweight material structures like super-strong fibers and nano-technology for sympathetic detonation mitigation. FY07 - Conduct testing and demonstration of prototype advanced materials containers and barriers for specific munitions.	0	0	0	317
Evaluate and demonstrate less sensitive materials for booster and lead for all fuzed munitions. FY07 - Complete IM testing and demonstration on specific munitions.	0	0	0	300
Demonstrate an M2A1 single container consolidator device that will eliminate the wirebound wood overwrap currently used to package two containers together. This will reduce the weight, size, and cost of the overall configuration. FY04 – Completed design, fabricated prototypes, conducted engineering tests and transitioned.	94	0	0	0
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. FY04-Designed and fabricated rims/rings, fabricated covers and conducted rough handling tests. FY05-Complete component engineering tests and modify designs. FY06-Integrate components and fabricate prototype containers using advanced materials, conduct engineering testing, complete user evaluation and final report, transition.	341	475	500	0
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	0	500
Demonstrate robotic capability for truck or, flatrack-mounted modular cranes to enable the rapid in-theater building of mission configured munition loads for improved distribution velocity and mission transition agility. FY04-Completed development of software based controller, conducted automated munitions handling demonstration and transitioned.	173	0	0	0

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Demonstrate a pallet/individual munition level environmental sensor suite (shock, temperature, humidity, etc.) and reader system, integrated with Ammunition Surveillance Information System (ASIS) software, that will monitor and predict munitions reliability to ensure that only fully ready munitions move forward through the logistics system to the warfighter. Benefits include reduced logistics footprint, improved surveillance methodology and reduce surveillance operations and support costs. FY04-Conducted field prototype demonstrations and transition.	67	0	0	0
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-Complete modifications, conduct final tests. FY06-Complete final demonstration and transition.	951	533	87	0
Demonstrate multiple sized standardized shipping modules for ammunition. The modules will interlock with each other 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. FY04 – Developed Sustainment Module requirements and concepts. FY05 – Develop preliminary design for modules and interlock devices and fabricate pre-prototypes. FY06-Finalize requirements and design interlocking modules. FY07-Fabricate prototypes and conduct qualification testing	213	665	1352	1549
Conduct safety certification testing of the Omega 60 Battlefield Effects Simulator and associated airburst and Stinger pyrotechnic cartridges and complete safety certification documentation. FY05 – Conduct a series of safety certification tests. Complete test, safety assessment, human factors, and final program reports.	0	480	0	0
Totals	4881	4460	4772	4989

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**857**

COST (In Thousands)		FY 2□□4 Actual	FY 2□□5 Estimate	FY 2□□6 Estimate	FY 2□□7 Estimate	FY 2□□8 Estimate	FY 2□□9 Estimate	FY 2□1□ Estimate	FY 2□11 Estimate
857	DOD EXPLOSIVES SAFETY STANDARDS	760	667	730	1509	1580	1640	1680	1722

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.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Collect and analyze airblast/fragment/thermal data for revising DoD, NATO hazard classification.	100	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.	100	96	100	255
Develop improved explosives and munitions tests and characterization data. Specifically, develop improved gap tests for rocket motors.	90	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.	100	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.	130	96	130	204
Develop and improve risk based analysis tools for explosives safety. Develop sequence of operations prototype.	240	192	200	306
Totals	760	667	730	1509

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**859**

COST (In Thousands)		FY 2004 Actual	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	21142	25752	3028	3139	3195	3252	3304	3359

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.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Continue ongoing technology investigations. Develop concept designs and plans to transfer life cycle pilot process technology into the supplier base.	1648	1172	1348	1418
Perform production base readiness assessments to analyze present capabilities and identify trends in munitions and industrial technology.	444	480	480	421
Develop "pilot" prototype processes for critical ammunition end items and components necessary to establish quality, affordable, and environmentally safe production.	700	800	1200	1300
Establish framework and operations for NJ Nanotechnology Manufacturing RDE Center in support of ammunition production modernization.	1400	0	0	0
Establish framework and operations for NJ Nanotechnology and Micro-Electromechanical Systems (MEMS) consortium in support of ammunition production modernization.	2000	1400	0	0
Establish operations and prove-out for Nanotechnology and Manufacturing in support of ammunition production modernization.	0	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	3150	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.	2400	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 castable propellant grains.	2100	2500	0	0

Accomplishments/Planned Program (continued)	FY 2004	FY 2005	FY 2006	FY 2007
Develop generic Micro-Electromechanical Systems Inertial Measurement Unit (MEMS IMU) high volume manufacturing process for precision munitions.	1800	2500	0	0
Establish Government, Industry and Academia partnership to support the development of Aluminum Metal Matrix Composite (MMC) prototype Technologies for Munitions application.	5500	2500	0	0
Establish an Advanced Technology Center to transition to the commercial sector prototype processes developed by the US Army.	0	1050	0	0
Develop and prototype new power source options for munitions utilizing advanced fuel cell technology.	0	1000	0	0
Define and develop processes to address munitions lifecycle improvements with application demonstration on the Mid-Range Munition.	0	4500	0	0
Totals	21142	25752	3028	3139

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**862**

COST (In Thousands)		FY 2004 Actual	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	1909	1656	1957	2035	2078	2120	2162	2205

A. Mission Description and Budget Item Justification: This program supports technology investigations and potential insertions in the areas of munition fuzing and safe and arming (S&A). The program addresses two major areas: Risk Mitigation; including a battery separator material source development, a second source Monolithic Microwave Integrated Circuit (MMIC) for artillery and mortar fuzes and a second source signal processor for mortars, battery aging studies, upgrades to reserve battery spin airgun apparatus, improvements to BDM impact sensor and M213 & M228 fuze pull pins, and studies for medium caliber fuzing interface control. Block upgrades; including a second environmental safety for non-spinning projectiles, a gun hardened electronic S&A for mortars, and inductive set capability for mortar fuzes. Risk mitigation efforts to develop and demonstrate second sources for fuzing systems will reduce cost by providing competition, update components with the latest technology advances 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 and weak designs. Block upgrades will enable the introduction of the latest technologies into fuzing, keep the fuzing design current to avoid obsolescence issues, and add capabilities.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Risk Mitigation: Predict/evaluate fuze stockpile, conduct fuze dud reduction effort, develop self destruct fuze alternatives. Evaluate storage reliability of current artillery batteries/determine possible solutions to battery electrolyte storage instabilities and develop an upgraded battery spin-airgun. Develop improvements to stockpiled training and war reserve fuzes to enhance capabilities and/or address deficiencies. Develop new sources for battery separator material, tuning fork crystal for artillery time fuzes, new source for Monolithic Microwave Integrated Circuits (MMICs) used in artillery and mortar fuzes, develop new battery and electronics sources for legacy fuzes. Purchased Non-Developmental Item (NDI) batteries for testing and battery aging study. Task order contracts awarded to University of Florida for Mortar second source signal processor and to MACOM for second source MMIC transceiver for mortars and artillery.	1109	1106	850	700
Block Upgrades: Develop drop in proximity upgrades for current airburst fuzing for mortar, artillery and other munitions. Complete breadboard design of new artillery processor. Conduct a study on inductive fuze set capability for mortars and a study on 30mm airburst munitions for fuzing interface control. Develop and provide upgrades for guided munitions fuzing and electronic time fuzes. Task order contract awarded to University of Florida to conduct designs and experiments on UWB and clutter resistant air target sensors. Develop second safety sensors for non-spinning projectiles. Radio frequency sensors fabricated and tested on mortars. Contract awarded for testing of new magnetic sensor, additional magnetic sensor contract to be awarded in FY03. Develop proximity sensor upgrades for M734A1 and gun hardened Electronic Safety and Arming Devices (ESADs) for mortars. ESAD parts being purchased and assembled for FY03 firing tests. Micro-Electromnechanical Systems (MEMS) impact sensor development, point detonating/delay fuze upgrades and insertion of inductive setting capability into mortars.	800	550	1107	1335
Totals	1909	1656	1957	2035

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February 2005

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**F21**

COST (In Thousands)		FY 2004 Actual	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	464	396	986	1011	513	526	545	556

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).

FY 07 funds maintain and support the expansion/relocation of the NARTC as well as establishment and opertion of the National Test Center. These facilities will require additional technical facilitization to accommodate test and evaluation of new products such as non-lethal, air bursting munitions, and an expanded mission to perform qualification testing.

FY 06 funds maintain the NARTC and will initiate expansion/relocation of the NARTC to a site that can accommodate all current NATO calibers and new designs such as self-destruct and air burst. Additionally, non-lethal standardization will be investigated and NATO qualification of selected 12.7mm ammunition types will be completed.

FY 05 funds maintain the NARTC and support NATO qualification of select ammunition types produced by second source manufacturers. Additionally, funds support development of STANAG and Manual of Proof and Inspection for infantry systems.

FY 04 funds maintain the NARTC and support development of STANAG and Manual of Proof and Inspection on lead 4 mm x 46mm low velocity standardization. Additionally, funds support development of the Multi-caliber test manual.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
40mm x 46mm Low Velocity Standardization	144	61	50	30
Infantry Systems Standardization	120	90	80	40
Maintain standardization of Qualified designs	100	100	140	160
New Ammo Design Qualification	0	40	321	241
NARTC relocation and Equipment Purchase	0	0	190	325
Staff, Equip, Maintain NARTC	100	105	205	215
Totals	464	396	986	1011

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605805A - Munitions Standardization, Effectiveness & Safety**	**F24**

COST (In Thousands)		FY 2004 Actual	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	6069	4065	4182	5482	4595	4718	4835	4955

A. Mission Description and Budget Item Justification: This project supports a continuing technology evaluation of demilitarization methods for existing conventional ammunition and conventional ammunition recovered from formerly used defense sites (FUDS). It will complete the development and demonstration of new, safe, and environmentally acceptable alternatives to open burning/open detonation (OB/OD) of recovery/recycle/reclamation equipment, and processes to reduce the extremely large stockpile of munitions in the resource recovery disposition account and munitions from FUDS.

Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Prove-out prototype plasma arc technology for conventional ammunition and resource recovery potential.	2363	1544	1000	0
Install and prove-out Cryofracture demilitarization process for Anti-Personnel Landmines and other munitions.	1260	1320	0	0
Development of integrated cryofracture/plasma arc technology on a mobile platform.	526	0	0	1476
Development of recycle/reuse technology for magnesium/aluminum.	808	571	2697	2000
Development of enhanced flexible energetic material handling automation upgrade capabilities sized to real time requirements.	0	0	0	606
Develop, install and prove out of transportable alternative materials recovery capabilities for various energetic components.	1112	630	0	0
Multi-based propellant recovery technology application.	0	0	300	800
Development of advanced resource recovery/reuse technology for explosives.	0	0	185	600
Totals	6069	4065	4182	5482