ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY
2 - Applied Research

PE NUMBER AND TITLE
0602623A - JOINT SERVICE SMALL ARMS PROGRAM

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
Total Program Element (PE) Cost		5506	11273	5703	6024	6277	6348	6403	6450
H21	JT SVC SA PROG (JSSAP)	5506	5521	5703	6024	6277	6348	6403	6450
S50	SMALL ARMS APPLIED RESEARCH (CA)	0	5752	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This Program Element (PE) researches and designs individual and crew-served weapon technologies that will enhance the fighting capabilities and survivability of dismounted battlefield personnel in support of all Services. The technology enhancement efforts of this PE will assure that the next generation of small arms weapons systems will continue to overmatch the evolving threat and address the needs of the Future Combat Systems (FCS) and the Future Force, and, where practical enhance Current Force capabilities. Funded efforts in Project H21 include component technologies for: the Lightweight Machine Gun and Ammunition (LMGA) and Lightweight 5.56mm Ammunition (LWA). The LMGA efforts, complementing both the Objective Individual Combat Weapon (OICW) and the Objective Crew Served Weapon (OCSW), will offer significantly reduced weight over the currently fielded M249 Machine Gun and its associated ammunition. LMGA will lighten the Soldier's load, provide improved battlefield mobility and reduced logistics burden to maximize operational utility and survivability, while maintaining or improving current levels of performance. The LWA effort, which completed in FY04, sought to determine the feasibility of replacing 5.56mm ammunition brass cartridge cases with lighter weight materials such as aluminum or polymers. Project S50 funds Congressional special interest items. All Joint Service Small Arms Program (JSSAP) efforts are based upon the Joint Service Small Arms Master Plan (JSSAMP), the Joint Capabilities Integration Development System's Small Arms Analyses, and the resulting Capabilities Development Documents of the Services. The cited work is consistent with the Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP) and the Defense Technology Area Plan (DTAP). This program is managed by the U.S. Army Armament Research, Development and Engineering Center (ARDEC), Picatinny, NJ. Work in this PE is related to, and fully coordinated with, efforts in PE 0602624A (Weapons and Munitions Technology), and PE 0603607A (Joint Service Small Arms Program). Transition paths have been established in coordination with Program Executive Officer (PEO) Soldier, Project Manager Soldier Weapons, Product Manager (PM) Crew Served Weapons, PM Individual Weapons, USMC PM Infantry Weapons and PEO Special Programs, U.S. Special Operations Command (SOCOM).

B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	5739	5932	6205
Current Budget (FY 2006/2007 PB)	11273	5703	6024
Total Adjustments	5534	-229	-181
Net of Program/Database Changes			
Congressional program reductions	-166		
Congressional rescissions			
Congressional increases	6000		
Reprogrammings			
SBIR/STTR Transfer	-300		
Adjustments to Budget Years		-229	-181

Change Summary Explanation:

Two FY05 Congressional adds totaling $6000 were added to this PE.

FY05 Congressional Adds with no R-2A:
($3117) Anti-Material Sniper Rifle (AMSR), Project S50: The purpose of this one year Congressional add is to fund research on an anti-material sniper rifle. No additional funds are required to complete this project.

($2637) New Metal Coating Technology for Greaseless Weapons, Project S50: The purpose of this one year Congressional add is to investigate new metal coating technologies for greaseless weapons. No additional funding is required to complete this project.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
2 - Applied Research	**0602623A - JOINT SERVICE SMALL ARMS PROGRAM**	**H21**

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
H21	JT SVC SA PROG (JSSAP)	5506	5521	5703	6024	6277	6348	6403	6450

A. Mission Description and Budget Item Justification: This Program Element (PE) researches and designs individual and crew-served weapon technologies that will enhance the fighting capabilities and survivability of dismounted battlefield personnel in support of all the Services. The technology enhancement efforts of this PE will assure that the next generation of small arms weapons systems will continue to overmatch the evolving threat and address the needs of the Future Combat Systems (FCS) and the Future Force, and, where practical enhance Current Force capabilities. The main efforts in Project H21 are component technologies for the Lightweight Machine Gun and Ammunition (LMGA). The LMGA efforts, complementing both the Objective Individual Combat Weapon (OICW) and the Objective Crew Served Weapon (OCSW), will offer significantly reduced weight over the currently fielded M249 Machine Gun and its associated ammunition. LMGA will lighten the Soldier's load, provide improved battlefield mobility and reduced logistics burden to maximize operational utility and survivability, while maintaining or improving current levels of performance. All Joint Service Small Arms Program (JSSAP) efforts are based upon the Joint Service Small Arms Master Plan (JSSAMP), the Joint Capabilities Integration Development System's Small Arms Analyses, and the resulting Capabilities Development Documents of the Services. The cited work is consistent with the Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP) and the Defense Technology Area Plan (DTAP). This program is managed by the U.S. Army Armament Research, Development and Engineering Center (ARDEC), Picatinny, NJ. Work in this PE is related to, and fully coordinated with, efforts in PE 0602624A (Weapons and Munitions Technology), and PE 0603607A (Joint Service Small Arms Program). Transition paths have been established in coordination with Program Executive Officer (PEO) Soldier, Project Manager Soldier Weapons, Product Manager (PM) Crew Served Weapons, PM Individual Weapons, USMC PM Infantry Weapons and PEO Special Programs, U.S. Special Operations Command (SOCOM).

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Accomplishments/Planned Program	FY 2004	FY 2005	FY 2006	FY 2007
Lightweight Machine Gun and Ammunition (LMGA): In FY04, developed and used 3-D modeling; designed and assessed mechanisms to reduce weight and provide component commonality across a family of weapons; assessed potential of placing traditional weapon function on the Soldier and placing other Soldier system controls on the weapon; for the LWA program evaluated 5.56mm polymer, aluminum, and hybrid cased ammunition concepts to achieve 20% ammunition weight reduction. In FY05, use 3-D models developed previously to continue refining designs for weapon and ammunition components; fabricate limited quantities of the components and evaluate merit on an individual basis for weight and feasibility in a machine gun application. In FY06, will conduct component testing to validate models and populate database with actual values for chamber pressure, muzzle velocity, material strength, and functionality; and update models as necessary. In FY07, will integrate weapon and ammunition component designs, including 3-D models, into weapon system; maximize modularity of components to facilitate future improvements or upgrades; document program processes, models, and simulations to reflect current design status.	5506	5521	5703	6024
Totals	5506	5521	5703	6024