

UNCLASSIFIED

PE NUMBER: 0604327F

PE TITLE: Hardened Target Munitions

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2006

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0604327F Hardened Target Munitions

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	5.239	3.943	0.000	0.000	0.000	0.000	0.000	0.000	22.425
4641 Hard and Deeply Buried Target Defeat System (HDBTDS)	5.239	3.943	0.000	0.000	0.000	0.000	0.000	0.000	22.425

(U) **A. Mission Description and Budget Item Justification**

This program is an effort designed to hold at risk those highest priority assets essential to the enemy's war fighting ability, which are heavily defended and protectively hardened. The Air Force is improving capability to attack hardened and/or deeply buried targets during adverse environmental conditions. The performance of the current 4,700-lb BLU-122, used on the GBU-28 GPS/laser-guided bomb, is being greatly enhanced through the design modification of the BLU-122 warhead, improving its penetration, lethality, and survivability. This modification will increase the number of deeply buried targets held at risk. In addition, some existing targets held at risk will require fewer weapons, therefore reducing the number of missions necessary to defeat a target. The MIL-STD 1760 conduit will also be extended to connect the guidance system to the fuze to support a future in-flight fuze reprogramming capability. The existing GBU-28 B/B--B-2 interface will be maintained and the GBU-28 will also be integrated onto the F-15E through the Joint Direct Attack Munition (JDAM) Smart Unknown Weapon Interface. This program was a NEW START in FY03. The program is in Budget Activity 04 (BA 04) because the program will develop and demonstrate a hard target munition capability to defeat hard and deeply buried targets not currently held at risk. This program entered initial production during the last two quarters of FY05.

FY06 funding is provided in language from the Congressional Authorization Report that addresses a Penetrator Study. Hard and Deeply Buried Targets (HDBTs) pose a threat to the national security and currently the Air Force does not have the capability to hold many of these targets at risk. This study will evaluate the feasibility of various options for penetrator weapons or other concepts that could be used to hold HDBTs at risk. The study will include a sled test, an analysis of the physics of penetrating geologic media, and an analysis of critical weapon technologies and weapon components.

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Previous President's Budget	5.239	0.000	0.000
(U) Current PBR/President's Budget	5.239	3.943	0.000
(U) Total Adjustments	0.000	3.943	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.057	
Congressional Increases		4.000	
Reprogrammings			
SBIR/STTR Transfer			
(U) <u>Significant Program Changes:</u>			

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4641 Hard and Deeply Buried Target Defeat System (HDBTDS)

Cost (\$ in Millions)	FY 2005 Actual	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total
4641 Hard and Deeply Buried Target Defeat System (HDBTDS)	5.239	3.943	0.000	0.000	0.000	0.000	0.000	0.000	22.425
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) **A. Mission Description and Budget Item Justification**

This program is an effort designed to hold at risk those highest priority assets essential to the enemy's war fighting ability, which are heavily defended and protectively hardened. The Air Force is improving capability to attack hardened and/or deeply buried targets during adverse environmental conditions. The performance of the current 4,700-lb BLU-122, used on the GBU-28 GPS/laser-guided bomb, is being greatly enhanced through the design modification of the BLU-122 warhead, improving its penetration, lethality, and survivability. This modification will increase the number of deeply buried targets held at risk. In addition, some existing targets held at risk will require fewer weapons, therefore reducing the number of missions necessary to defeat a target. The MIL-STD 1760 conduit will also be extended to connect the guidance system to the fuze to support a future in-flight fuze reprogramming capability. The existing GBU-28 B/B--B-2 interface will be maintained and the GBU-28 will also be integrated onto the F-15E through the Joint Direct Attack Munition (JDAM) Smart Unknown Weapon Interface. This program was a NEW START in FY03. The program is in Budget Activity 04 (BA 04) because the program will develop and demonstrate a hard target munition capability to defeat hard and deeply buried targets not currently held at risk. This program entered initial production during the last two quarters of FY05.

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(U) **B. Accomplishments/Planned Program (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
(U) Design warhead, integrate explosive and upgrade case material	0.404		
(U) Weapon system and aircraft integration	0.925		
(U) Plan, prepare, and test for redesigned of warhead	3.383		
(U) Perform field agency activities, including project office and computer support to manage the Hardened Target Munitions program	0.260		
(U) System Engineering and Technical Analysis (SETA) support including independent analysis and evaluation of prototype warhead designs	0.267		
(U) Physics of Penetrating Geologic Media Study		3.943	
(U) Total Cost	5.239	3.943	0.000

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4641 Hard and Deeply Buried Target
Defeat System (HDBTDS)(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Procurement of Ammunition, Air Force (PE 0208030F)	18.815	32.000	32.000					0.000	82.815

(U) **D. Acquisition Strategy**

The warhead design contract was awarded competitively and the weapon system modification and integration contract was awarded sole source because the GBU-28 was developed at contractor expense and the government does not own the technical data package.

FY06 Congressional plus up will accomplish additional study efforts, to include hardware testing, to account for changes to assumptions, intelligence and technology since completion of the HDBT AoA in order to increase the target set held at risk. Also included will be the effort to accomplish a new capabilities development document (CDD) and integration office costs to coordinate and publish the CDD.

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Exhibit R-3, RDT&E Project Cost Analysis										DATE February 2006			
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)					PE NUMBER AND TITLE 0604327F Hardened Target Munitions					PROJECT NUMBER AND TITLE 4641 Hard and Deeply Buried Target Defeat System (HDBTDS)			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2005 Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
(U) <u>Product Development</u>													
General Dynamics Ordnance and Tactical Systems	CPFF/PI	Niceville, FL	5.052	0.139						0.000	5.191	5.720	
Raytheon Company	T&M	Tucson, AZ	0.332							0.000	0.332	0.332	
Raytheon Company	CPIF	Tucson, AZ	3.676	1.983							5.659	4.953	
Subtotal Product Development			9.060	2.122		0.000		0.000		0.000	11.182	11.005	
Remarks:	GD Contract was awarded in June 2003; Raytheon Contract awarded in January 2004.												
(U) <u>Support</u>													
Laboratory Support (AFRL Eglin AFB, FL)			0.475	0.000							0.475		
Air Armament Center SPO (AAC/YU)	MIPR	Various	0.482	0.260						0.000	0.742		
Warhead Pallets (AAC/YEC Eglin AFB, FL)	Various	Eglin AFB, FL	0.143	0.000						0.000	0.143		
Support Contracts	AFMC Form 277	Eglin AFB, FL	1.519	0.215	Oct-04					0.000	1.734		
Subtotal Support			2.619	0.475		0.000		0.000		0.000	3.094	0.000	
Remarks:													
(U) <u>Test & Evaluation</u>													
Eglin Ground Test Support			1.339	0.454							1.793		
Eglin Flight Test Support	AFMC Form 277	Eglin AFB, FL	0.494	1.213						0.000	1.707		
Defense Threat Reduction Agency (DTRA)	MIPR	White Sands Missile Range, NM	0.368	0.046	Dec-04					0.000	0.414		
Applied Research Associates - Test Design Support	MIPR	Albuquerque, NM	0.360	0.000							0.360		
B-2 Tests	MIPR	Edwards CA	0.874	0.000							0.874		
Naval Weapons Center - Arena and IM Testing	MIPR	China Lake, CA	0.305	0.044							0.349		
B-2 System Program Office (SPO)/SK Test Support	MIPR	Wright Patterson AFB, OH	0.577	0.885							1.462		
Subtotal Test & Evaluation			4.317	2.642		0.000		0.000		0.000	6.959	0.000	
Remarks:													
(U) <u>Capability Integration</u>													
Penetrator Study			0.000	0.000		3.943				0.000	3.943		
Subtotal Capability Integration			0.000	0.000		3.943		0.000		0.000	3.943	0.000	
Remarks:													
(U) Total Cost			15.996	5.239		3.943		0.000		0.000	25.178	11.005	

Project 4641

R-1 Shopping List - Item No. 57-4 of 57-6

Exhibit R-3 (PE 0604327F)

Exhibit R-4, RDT&E Schedule Profile

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04 Advanced Component Development and Prototypes (ACD&P)

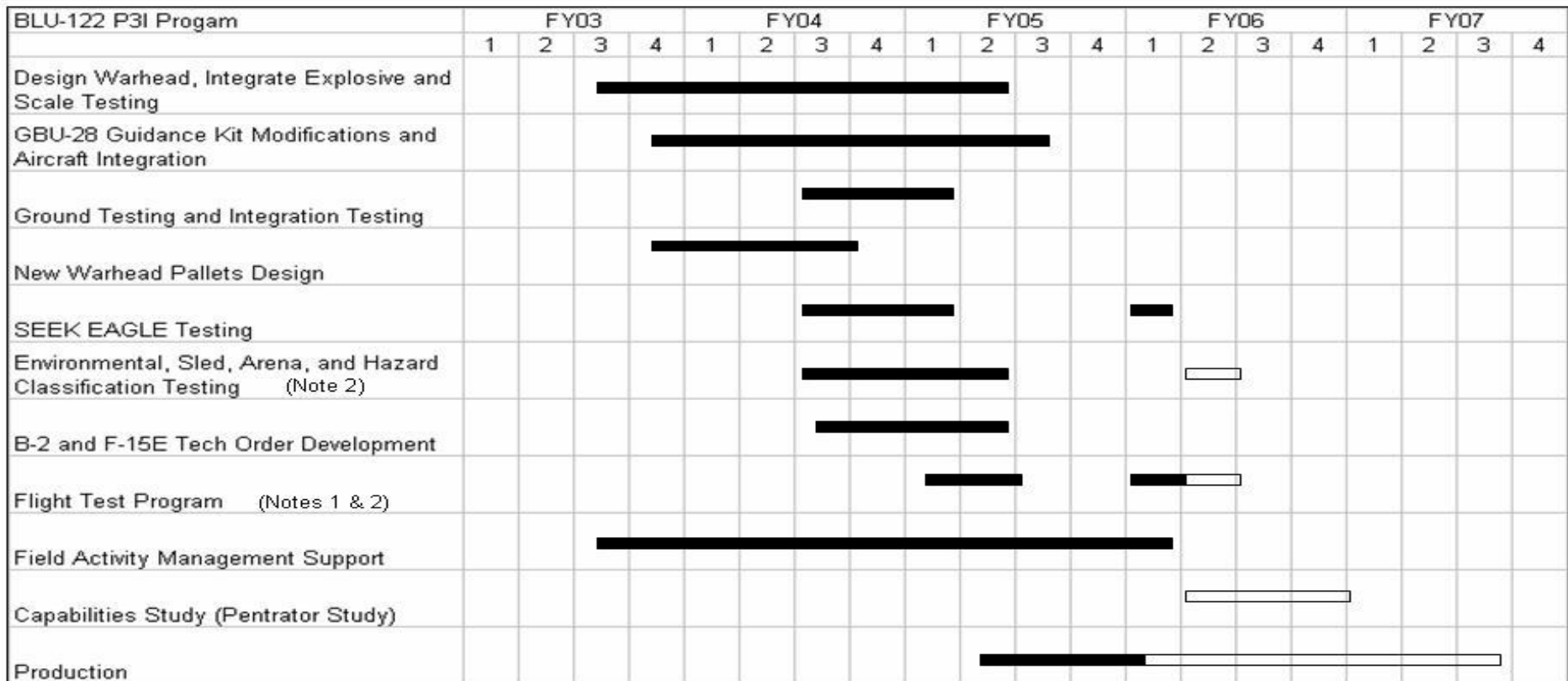
PE NUMBER AND TITLE

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PROJECT NUMBER AND TITLE

4641 Hard and Deeply Buried Target Defeat System (HDBTDS)

BLU-122 Program



As Of: JAN 06

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Exhibit R-4a, RDT&E Schedule Detail

DATE

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4641 Hard and Deeply Buried Target
Defeat System (HDBTDS)(U) Schedule ProfileFY 2005FY 2006FY 2007

(U) Design Warhead, Integrate Explosive and Scale Testing (3Q FY03)

1-2Q

(U) GBU-28 Guidance Kit Modifications and Aircraft Integration (4Q FY03)

1-3Q

(U) Ground Testing and Integration Testing

1Q

(U) SEEK EAGLE Testing

1Q

1Q

(U) Environmental, Sled, Arena, and Hazard Classification Testing (Note 2)

1-2Q

2Q

(U) B-2 and F-15E Tech Order Development

1-2Q

(U) Flight Test Program (Notes 1 and 2)

1-2Q

1-2Q

(U) Field Activity Management Support

1-4Q

1Q

(U) Penetrator Study

2-4Q

Production 3Q FY2005 through 4Q FY2007