

**UNCLASSIFIED**

PE NUMBER: 0305116F  
 PE TITLE: AERIAL TARGETS

<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	DATE <b>May 2009</b>
---	-------------------------

<b>BUDGET ACTIVITY</b> <b>07 Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0305116F AERIAL TARGETS</b>
--	--

Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	5.683	34.683	54.807	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5136 Target Systems Development	5.683	34.683	4.018	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5366 QF-16	0.000	0.000	50.789	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

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

Full-scale and subscale targets assure warfighters that weapon systems will perform effectively against real-world enemy fighters and cruise missiles. Aerial targets support adherence to public law Title 10, Section 2366, which requires major systems and munitions programs to conduct survivability and lethality testing before full-rate production. The Aerial Targets program provides drones to satisfy "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter operational flight program (OFP) updates. Target drones are also essential for developmental/operational testing for all air-to-air and ground-to-air missiles, and for the F-22A, F-35, F-16, F-15, etc., aircraft. This program element funds development, improvements, and updates of full-scale/subscale aerial targets and target control systems to ensure aerial targets represent enemy threat airborne systems. Specialized target payload subsystems are developed for requirements such as: missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

This program is in budget activity 7 - RDT&E Operational System Development because it provides aerial targets, target payloads, and target control systems in support of operational and developmental testing.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	7.329	34.777	51.753
(U) Current PBR/President's Budget	5.683	34.683	54.807
(U) Total Adjustments	-1.646	-0.094	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.094	
Congressional Increases			
Reprogrammings	-1.465		
SBIR/STTR Transfer	-0.181		
(U) <u>Significant Program Changes:</u>			
FY10 \$3.1M in additional funds			

Exhibit R-2a, RDT&E Project Justification

DATE  
May 2009

BUDGET ACTIVITY <b>07 Operational System Development</b>					PE NUMBER AND TITLE <b>0305116F AERIAL TARGETS</b>			PROJECT NUMBER AND TITLE <b>5136 Target Systems Development</b>		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5136 Target Systems Development	5.683	34.683	4.018	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

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

Full-scale and subscale targets assure warfighters that weapon systems will perform effectively against real-world enemy fighters and cruise missiles. The BQM-167A Air Force Subscale Aerial Target (AFSAT) is a jet powered drone aircraft measuring approximately 20 feet long with a mission to simulate threat aircraft for testing and evaluation of surface-to-air, ship-to-air, or air-to-air missiles. The target accomplishes this mission through the use of optional payloads including chaff and flare, electronic attack, and infrared devices.

The 691 ARSS, in consultation with the system operators and maintainers, has implemented a continuing system improvement process. Funding in FY10 will continue improvement of launch phase performance and overall reliability improvement efforts. In addition, efforts are on-going to determine ways to improve the efficiency of BQM-167A maintenance processes. Results of on-going system improvement efforts are evaluated to determine which improvements will be incorporated into the BQM-167A. Also funds development, improvements, and updates of target control systems and specialized target payload subsystems for requirements such as: missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

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

	FY 2008	FY 2009	FY 2010
(U) Continue Aerial Targets basic operating support.	0.661	0.759	0.782
(U) Continue system acquisition and engineering support to include studies, upgrades for the target control system, the weapon scoring system, payload systems and other aerial targets support systems.		0.100	0.100
(U) QF-16 Government Furnished Property	1.073	22.215	
(U) QF-16 Development Program - Government Support	2.392	6.840	
(U) Continue product improvement program for the Air Force Subscale Aerial Target (AFSAT) program to include payload and propulsion improvements, radar augmentation, alternate launch methods and other objective requirements/enhancements.	1.557	4.769	3.136
(U) Total Cost	5.683	34.683	4.018

Note: QF-16 program was a new start in FY08. FY10 is the first year that funds have been broken out into a separate BPAC.

(U) **C. Other Program Funding Summary (\$ in Millions)**

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) PE0305116F: Appn: Aircraft Procurement, AF(APAF), Program Title: Aerial Targets	77.079	70.364	78.511						Continuing	TBD
(U) Initial Spares	0.472	0.517	0.523						Continuing	TBD

Exhibit R-2a, RDT&E Project Justification

DATE

May 2009

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305116F AERIAL TARGETS

PROJECT NUMBER AND TITLE

5136 Target Systems Development

(U) **C. Other Program Funding Summary (\$ in Millions)**

(U) Munitions	3.685	4.095	4.131	Continuing	TBD
(U) Electronic Attack Pods	5.537	5.133	10.196	Continuing	TBD

(U) **D. Acquisition Strategy**

The acquisition strategy is competitive, with fixed price and time and materials contracts.

UNCLASSIFIED

**Exhibit R-3, RDT&E Project Cost Analysis**

DATE

**May 2009**

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE				
<b>07 Operational System Development</b>				<b>0305116F AERIAL TARGETS</b>					<b>5136 Target Systems Development</b>				
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
(U) <u>Product Development</u> AFSAT P3I Efforts	FFP, T&M, CPIF	Composite Engineering Inc., Sacramento CA	4.229	1.557		4.769	Jan-09	3.136	Nov-09		13.691		
QF-16 Risk Reduction activities	TBD	TBD	2.000	3.465		29.055					34.520		
Subtotal Product Development			6.229	5.022		33.824		3.136		0.000	48.211	0.000	
Remarks:	Pre-planned product improvements for the AFSAT Subscale Aerial Target												
(U) <u>Support</u> Mission Support	Various	Various	1.000	0.661		0.759		0.782			3.202		
Subtotal Support			1.000	0.661		0.759		0.782		0.000	3.202	0.000	
Remarks:	FY08 Mission Support Includes Withhold of \$1.646												
(U) <u>Test &amp; Evaluation</u> Continue system acquisition and engineering support to include studies, upgrades for the target control system, the weapon scoring system, payload systems and other aerial targets support systems			0.100			0.100		0.100			0.300		
Subtotal Test & Evaluation			0.100	0.000		0.100		0.100		0.000	0.300	0.000	
Remarks:													
(U) <u>Management</u> System Acq and Engineering Support	Various	Various	0.000	0.000		0.000		0.000			0.000		
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000	
Remarks:													
(U) Total Cost			7.329	5.683		34.683		4.018		0.000	51.713	0.000	

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

BUDGET ACTIVITY  
07 Operational System Development

PE NUMBER AND TITLE  
0305116F AERIAL TARGETS

PROJECT NUMBER AND TITLE  
5136 Target Systems Development

FOR OFFICIAL USE ONLY

# Program Schedule



691 ARSS

EFFORTS	FY08	FY09	FY10
AFSAT Future Efforts to evaluate and develop product improvements to provide enhancements, improve reliability and reduce costs	▲		
<b>FY08-10 PLANNED EFFORTS</b>			
Launch Improvements	▲		
Radar Augmentation RCS, IR, Towed Target			▲
Alternate Launch Methods			▲

FOR OFFICIAL USE ONLY

Exhibit R-4a, RDT&E Schedule Detail

DATE

May 2009

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305116F AERIAL TARGETS

PROJECT NUMBER AND TITLE

5136 Target Systems Development

(U) Schedule Profile

FY 2008

FY 2009

FY 2010

(U) Launch Improvement Study

1Q

(U) Radar Augmentation

1Q

(U) Alternate Launch Method Study

1Q

**Exhibit R-2a, RDT&E Project Justification**

DATE  
**May 2009**

BUDGET ACTIVITY <b>07 Operational System Development</b>					PE NUMBER AND TITLE <b>0305116F AERIAL TARGETS</b>			PROJECT NUMBER AND TITLE <b>5366 QF-16</b>		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5366 QF-16	0.000	0.000	50.789	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

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

Title 10 United States Code 2366 requires all new or improved weapons systems to demonstrate their lethality and survivability prior to production. Aerial targets with on-board payloads (like Electronic Counter Countermeasures (ECCM)) are the current mechanisms to support demonstration of these capabilities. The United States Air Force's (USAF) Air Superiority Modernization/Mission Area Plan has identified aerial targets as a capability shortfall. The QF-16 program's objective is to fulfill this requirement. FY10 funding supports continued development of the QF-16 full scale aerial target . Also funds development, improvements, and updates of target control systems and specialized target payload subsystems for requirements such as: missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems.

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) QF-16 Development Program - Contractor			27.721
(U) QF-16 Development Program - Government Furnished Property			15.453
(U) QF-16 Development Program - Government Support			7.615
(U) Total Cost	0.000	0.000	50.789

**(U) C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) PE0305116F: Appn: Aircraft Procurement, AF (APAF), Program Title: Aerial Targets	77.079	70.364	78.511	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Initial Spares	0.476	0.518	0.523	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Munitions	3.685	4.095	4.131	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
(U) Electronic Attack Pods	5.537	5.133	10.196	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

**(U) D. Acquisition Strategy**

The acquisition strategy is competitive with planned fixed price incentive and time and materials contracts.

UNCLASSIFIED

**Exhibit R-3, RDT&E Project Cost Analysis**

DATE

**May 2009**

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
<b>07 Operational System Development</b>				<b>0305116F AERIAL TARGETS</b>					<b>5366 QF-16</b>			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
Development of Drone Peculiar Equipment	TBD	TBD						27.721	Jan-10		27.721	
Airframe/Engine GFE	N/A	Government						15.453			15.453	
Subtotal Product Development			0.000	0.000		0.000		43.174		0.000	43.174	0.000
Remarks:												
(U) <u>Support</u>												
QF-16 Program Support								4.480			4.480	
Subtotal Support			0.000	0.000		0.000		4.480		0.000	4.480	0.000
Remarks:												
(U) <u>Test &amp; Evaluation</u>												
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
Subtotal Management	N/A	N/A	0.000	0.000		0.000		3.135		0.000	3.135	0.000
Remarks:												
(U) Total Cost			0.000	0.000		0.000		50.789		0.000	50.789	0.000

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

BUDGET ACTIVITY  
07 Operational System Development

PE NUMBER AND TITLE  
0305116F AERIAL TARGETS

PROJECT NUMBER AND TITLE  
5366 QF-16

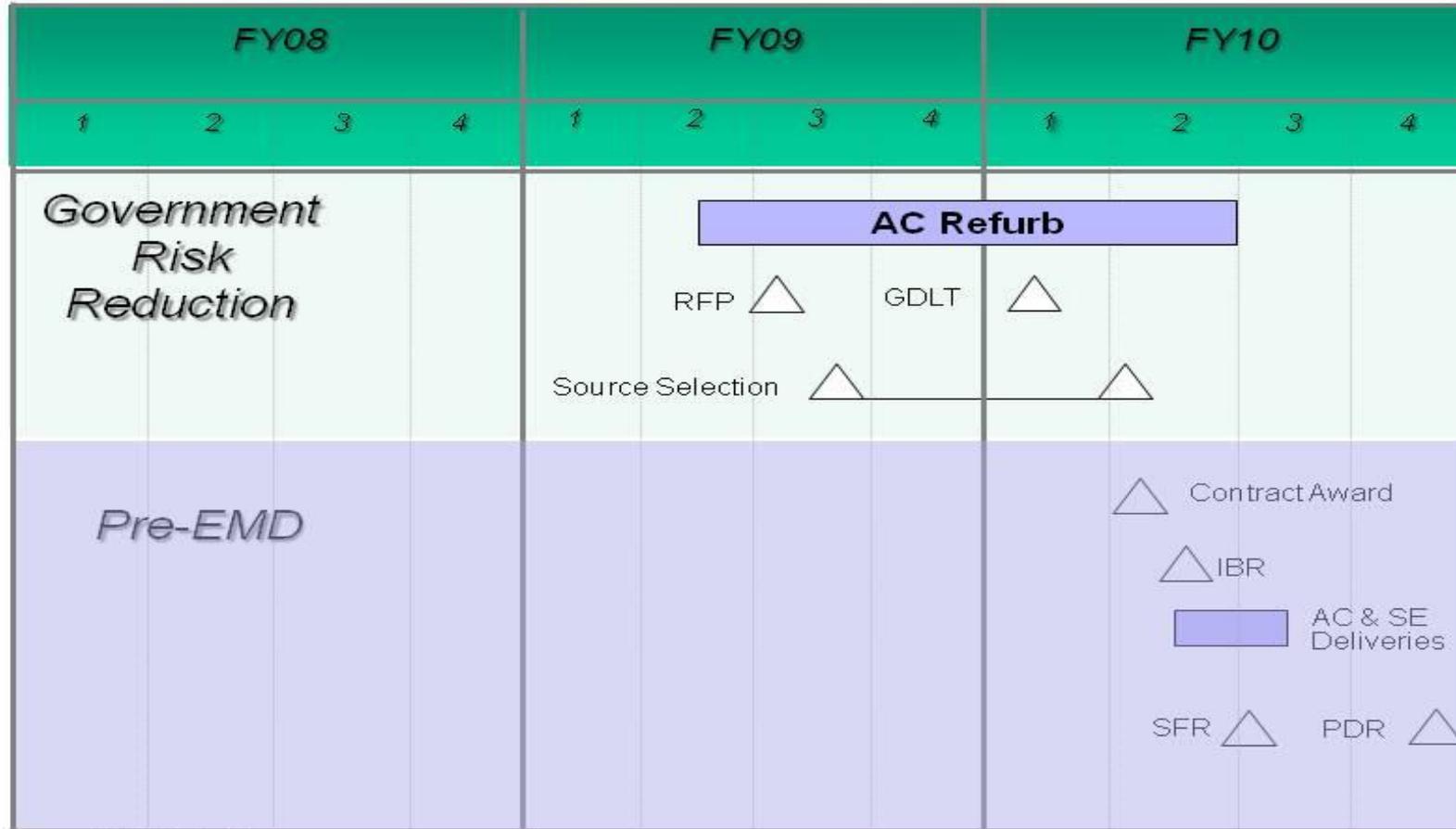
FOR OFFICIAL USE ONLY



# QF-16 Program Schedule



691 ARSS



R:\YAA\Common\AST\Schedules

FOR OFFICIAL USE ONLY

Current as of 24 Feb 09

1

Exhibit R-4a, RDT&E Schedule Detail

DATE

May 2009

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

0305116F AERIAL TARGETS

PROJECT NUMBER AND TITLE

5366 QF-16

(U) Schedule Profile

FY 2008

FY 2009

FY 2010

(U) QF-16 Development Contract

2Q