

Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-424



MQ-9 UAS REAPER

As of December 31, 2010

Defense Acquisition Management Information Retrieval (DAMIR)

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Program Information

Designation And Nomenclature (Popular Name)

REAPER Unmanned Aircraft System (UAS)

DoD Component

Air Force

Responsible Office

Responsible Office

 Col. Christopher Coombs
 Phone
 937-904-6008

 2640 Loop Road West
 Fax
 937-904-7099

 Wright-Patterson AFB, OH 45433-7106
 DSN Phone
 674-6008

 DSN Fax
 674-7099

 christopher.coombs@wpafb.af.mil
 Date Assigned
 July 10, 2008

References

SAR Baseline (Production Estimate)

FY 2011 President's Budget dated February 1, 2010

Mission and Description

Mission:

The Reaper Unmanned Aircraft System (UAS) is a multi-mission Hunter-Killer and Intelligence, Surveillance and Reconnaissance (ISR) system, which provides the combat commander with a persistent capability to find, fix, track, target, engage and assess Time Sensitive Targets. In the Hunter-Killer mission, the Reaper offers the commander a choice of weapons including the Hellfire Air-to-Ground Missile, Laser Guided Bombs and Joint Direct Attack Munitions. In the ISR role, the Reaper's ability to fly for up to 14 hours at altitudes up to 25,000-30,000 feet while carrying up to 3,000 pounds on the wings make it the platform of choice for a number of ISR and strike missions. This ability to support a wide variety of operations results in a steady stream of requirements to develop new capabilities to support an expanding array of missions. As a result of the combat deployment of the developmental system, the Reaper is supported and maintained by contractor logistics support personnel under contract and managed by the Reaper program office.

Description:

A Reaper system consists of four aircraft, a Ground Control Station (GCS), a Satellite Communications terminal, support equipment, maintenance and operations personnel deployed for 24-hour operations. The aircraft is controlled by a pilot who is located in the GCS. Control commands are transmitted from the GCS to the aircraft by a groundbased datalink terminal. The GCS incorporates workstations that allow operators to plan missions, control and monitor the aircraft, reconnaissance sensors and weapons and exploit received images. The Reaper carries the Multi-spectral Targeting System which integrates electro-optical, infrared, laser designator, and laser illuminator into a single sensor package. The system is composed of four major components which can be deployed for worldwide operations. The Reaper aircraft can be disassembled and loaded into a container for travel. The GCS is transportable in a C-130 Hercules (or larger) transport aircraft or installed in a fixed facility. The Reaper can operate on a 5,000 by 75 feet (1,524 meters by 23 meters), hard surface runway with clear line-of-sight. The ground data terminal antenna provides line-of-sight communications for takeoff and landing. The satellite communication system provides over-the-horizon control of the aircraft. An alternate method of employment, Remote Split Operations, employs a mobile version of the ground control system for launch and recovery efforts. This system conducts takeoff and landing operations at the forward deployed location while the Continental United States based GCS conducts the mission via extended communication links.

In March 2006, COMACC (Commander of Air Combat Command) directed early fielding to meet operational needs. To meet the early fielding date, the program was broken into two blocks with Block 1 providing initial capability to meet the early fielding date and Block 5 completing the program to the Increment I requirements as described in the Capability Production Document (CPD). Consequently, the Reaper Increment I program is comprised of Block 1 and Block 5 with Block 1 aircraft upgraded to Block 5 configuration concurrently with the Block 5 deliveries. This Selected Acquisition Report (SAR) only includes Increment I requirements. An Increment II subprogram will be established in the future to incorporate additional capabilities into the MQ-9 UAS Reaper Weapon System. Increment II has a separate Capability Development Document and will have a separate CPD. Increment II aircraft (FY 2017 and beyond) are required to support the build up and sustainment of the 65 Combat Air Patrol (CAP) requirement. (Current build up to 65 CAP includes both MQ-1 Predator and MQ-9 Reaper Weapon Systems; however, the program will eventually transition to an all MQ-9 Reaper 65 CAP).

The Reaper's combat potential and demonstrated combat performance fueled the rapid growth of the program. By February 4, 2011, the Air Force contracted for a total of 111 Reapers which included 58 added by Congress to accelerate fielding in support of the overseas contingency operations. As of February 4, 2011, General Atomics-Aeronautical Systems Inc. (GA-ASI) delivered 65 of the 399 planned aircraft, 43 of which are operationally active. While the Reaper program was initially managed as a Quick Reaction Capability program, a separate program office was established in 2006 to restructure the program to support Air Combat Command's urgent request to field the system. The Reaper has been actively flying combat missions in Operation ENDURING FREEDOM and Operation IRAQI FREEDOM since September 2007.

The program is in concurrent capability development, procurement, combat operations and support. This situation

resulted from the Reaper's urgent beginnings in the weeks after September 11, 2001, its growth as a Hunter-Killer to support Operation ENDURING FREEDOM and IRAQI FREEDOM, and the Reaper's evolution into the platform of choice for both Intelligence Surveillance and Reconnaissance (ISR) and Hunter-Killer missions.

Executive Summary

Air Combat Command (ACC) stood up six Reaper Combat Air Patrols (CAPs) since the last SAR, bringing the total number to 16. This brings the total number of combined Predator and Reaper CAPs serving US and Allied warfighters to 48. These CAPs enabled the Reaper to accumulate 125,821 cumulative flight hours. The Program Office (PO) remains on track to provide the required 50 CAPs by the end of FY 2011 and 65 CAPs by FY 2013. Also, the Secretary of the Air Force and the Chief of Staff of the Air Force released their basing decision for the Predator and Reaper Ground Control Stations (GCS). The final approved bases are Whiteman AFB, MO, and Ellsworth AFB, SD.

Since the last SAR, the program office conducted both the Preliminary and Critical Design Reviews (PDR/CDR) on the Reaper Block 5. This stabilized the Block 5 design and began the integration and test phase of the program. The Air Force Technical Airworthiness Authority signed the Initial Tailored Airworthiness Certification Criteria (TACC) for the Reaper. The approved TACC establishes the initial airworthiness certification basis for the Reaper Block 1 system. The program office also provided the warfighter with additional Lynx Synthetic Aperture Radar capability; Selective Availability Anti-Spoofing Module Embedded Global Positioning System/Inertial Navigation System; updated Laser Altimeter/Pilot Heads Up Display cues for improved situational awareness during landing; Non-Nuclear Munitions Safety Board certified Reaper Stores Management System updates, and the BRU-71/A bomb rack.

The Under Secretary of Defense for Acquisition, Technology and Logistics signed the Acquisition Decision Memorandum giving the Reaper program cumulative obligation authority for Research, Development, Test and Evaluation, Procurement and Operations and Maintenance funding through May 2011. The program office is preparing the Acquisition Program Baseline (APB) which will be submitted prior to the Milestone C Low-Rate Initial Production decision and included in a June 2011 SAR.

The program office initiated a Business Case Analysis (BCA) in November 2009 for the purpose of determining the "best value" long term sustainment strategy. The expected outcome of the BCA is a Performance Based Logistics approach which embraces public and private partnership arrangements. The current schedule for completion of the BCA is September 2012.

There are no significant software issues with the program at this time.

Threshold Breaches

APB Breaches								
APBI	Breacnes							
Schedule								
Performance								
Cost	RDT&E							
	Procurement							
	MILCON							
	Acq O&M							
Unit Cost	PAUC							
	APUC							
Nunn-McC	urdy Breache	s						
Current UCR B	aseline							
	PAUC	None						
	APUC	None						
Original UCR B	Baseline							
	PAUC	None						
	APUC	None						

Schedule



Milestones	SAR Baseline Prod Est		nt APB /Threshold	Current Estimate	
Milestone B ACAT II	FEB 2004	N/A	N/A	FEB 2004	
Milestone C ACAT II Block 1	FEB 2008	N/A	N/A	FEB 2008	
IOT&E for Block 1	MAY 2008	N/A	N/A	MAY 2008	
RAA	SEP 2010	N/A	N/A	JUN 2011	(Ch-1)
Milestone C ACAT ID Increment 1, Block 5	MAR 2011	N/A	N/A	JUN 2011	(Ch-2)
IOT&E for Increment I Block 5	NOV 2012	N/A	N/A	APR 2013	(Ch-2)
FRP Decision for Increment I Block 1 and 5	MAR 2013	N/A	N/A	SEP 2013	(Ch-2)

Acronyms And Abbreviations

ACAT - Acquisition Category

FRP - Full Rate Production

IOT&E - Initial Operational Test and Evaluation

RAA - Required Assets Available

Change Explanations

(Ch-1) RAA changed from SEP 2010 to JUN 2011 due to Block 1 technical order development and fielding delays.

(Ch-2) The following current estimates changed in order to allow more time for Block 5 development, flight test, and preparation of ACAT ID documentation:

Milestone C ACAT ID Increment 1, Block 5, changed from MAR 2011 to JUN 2011

IOT&E changed from NOV 2012 to APR 2013

FRP Decision changed from MAR 2013 to SEP 2013

Memo

Required Assets Available (RAA): Two (2) fixed Ground Control Stations (GCS), two (2) mobile GCSs, six (6)

Primary Mission Aircraft Inventory (PMAI) Block 1 aircraft, technical orders, support equipment, initial and readiness spares packages, and logistics support.

Performance

Characteristics	SAR Baseline Prod Est		nt APB Threshold	Demonstrated Performance	Current Estimate
Hunter	The system's capability must allow a targeting solution at the weapon's maximum range.	N/A	N/A	DT ongoing for KPP; AFOTEC IOT&E did not evaluate KPP due to system availability; Full KPP evaluation deferred to future IOT&E	The system's capability must allow a targeting solution at the weapon's maximum range.
Killer	System must be capable of computing a weapon's release point, passing required information, at the required accuracy, to the weapon and reliably releasing the weapon upon command.	N/A	N/A	AFOTEC IOT&E found KPP operationally effective and suitable	System must be capable of computing a weapon's release point, passing required information, at the required accuracy, to the weapon and reliably releasing the weapon upon command.
Net Ready: The system must support Net-Centric military operations. The system must be able to enter and be managed in the network, and exchange data in a secure manner to enhance mission effectiveness. The system must continuously provide survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military	The System must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical	N/A	N/A	JITC certified KPP; JITC certifica- tion is renewed for each software update	The System must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical

capability.

requirements
for Net-
Centric
military
operations
to include 1)
DISR
mandated
GIG IT
standards
and profiles
identified in
the TV-1, 2)
DISR
mandated
GIG KIPs
identified in
the KIP
declaration
table, 3)
NCOW-RM
Enterprise
Services 4)
Information
assurance
requirements
including
availabil-ity,
integrity,
authenticat-
ion,
confidential-
ity, and
nonrepudiat-
ion, and
issuance of
an Approval
to Operate
by the
Designated
Approval
Authority
(DAA), and
5)
Óperationally
effective
information
exchanges;
and mission
critical
performance
and
information
assurance

requirements for Net-Centric military operations to include 1) DISR mandated **GIG IT** standards and profiles identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW-RM Enterprise Services 4) Information assurance requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuanceof an Approval to Operate by the Designated Approval Authority (DAA), and 5) Operationally effective information exchanges; and mission critical performance and information assurance

attributes, data correctness, data availability, and consistent
data processing specified in the applicable joint and system integrated
architecture views.

Acronyms And Abbreviations

AFOTEC - Air Force Operational Test and Evaluation Center

DISR - Department of Defense Information Technology Standards Registry

DT - Developmental Testing

GIG - Global Information Grid

IOT&E - Initial Operational Test and Evaluation

IT - Information Technology

JITC - Joint Interoperability Test Command

KIP - Key Interface Profile

KPP - Key Performance Parameter

NCOW-RM - Net-Centric Operations and Warfare Reference Model

TV-1 - Technical Standards Profile

Change Explanations

None

Track To Budget

General Memo

RDT&E Program Element (PE) 0305205F was shared by the MQ-1 Predator, MQ-9 Reaper and Global Hawk program offices from FY 2002 - FY 2004.

RDT&E PE 0305219F were shared by the MQ-1 Predator and MQ-9 Reaper program office from FY 2005 - FY 2007.

Procurement ICN's PRDTA1 and PRDT01 were shared by the MQ-1 Predator and MQ-9 Reaper program office from FY 2002 - FY 2007.

Other shared PEs include requirements for MQ-9 Reaper Increment I and Increment II.

RDT&E				
APPN 3600	BA 07	PE 0205219F	(Air Force)	
	Project 5246	MQ-9 Development and Fielding	(Shared)	
APPN 3600	BA 07	PE 0305205F	(Air Force)	
	Project 4755		(Shared)	(Sunk)
APPN 3600	BA 07	PE 0305219F	(Air Force)	
	Project 5143		(Shared)	(Sunk)
Procurement				
APPN 3010	BA 07	PE 0205219F	(Air Force)	
	ICN 000075	Organic Depot Activation	(Shared)	(Sunk)
APPN 3010	BA 06	PE 0205219F	(Air Force)	
	ICN 000999	Initial Spares	(Shared)	
APPN 3010	BA 05	PE 0305205F	(Air Force)	
	ICN PRDT01	Aircraft Modification	(Shared)	(Sunk)
APPN 3010	BA 04	PE 0305205F	(Air Force)	
	ICN PRDTA1	Aircraft Procurement	(Shared)	(Sunk)

APPN 3010	BA 04	PE 0205219F	(Air Force)
	ICN PRDTB1	Aircraft Procurement	
APPN 3010	BA 05	PE 0205219F	(Air Force)
	ICN PRDTB2	Aircraft Modification	
MILCON			
APPN 3300	BA 01	PE 0205219F	(Air Force)
	Project BHD000	MQ-9 Operations	

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

		BY \$M	BY2008 \$M		TY \$M	
Appropriation	SAR Baseline Prod Est	seline Objective/Threshold		SAR Baseline Prod Est	Current APB Objective	Current Estimate
RDT&E	778.8		865.9	809.9		904.0
Procurement	9824.0		10306.7	10866.0		11435.9
Flyaway	8038.7		7928.3	8943.4		8833.4
Recurring	8038.7		7928.3	8943.4		8833.4
Non Recurring	0.0		0.0	0.0		0.0
Support	1785.3		2378.4	1922.6		2602.5
Other Support	1109.0		774.9	1202.4		840.9
Initial Spares	676.3		1603.5	720.2		1761.6
MILCON	148.5		142.7	158.9		156.7
Acq O&M	0.0		0.0	0.0		0.0
Total	10751.3		11315.3	11834.8		12496.6

The current estimate is based on the FY 2012 President's Budget, Increment I costs only, through the Future Years Defense Program. The "to complete" estimate, quantified at the 90% confidence level, is based on the draft estimate that is being prepared for the June 2011 Milestone C decision. The Air Force Cost Analysis Agency (AFCAA) and OSD Cost Assessment and Program Evaluation (CAPE) have not completed their estimate. AFCAA and OSD CAPE are on schedule to complete their estimate in support of the Milestone C decision.

Quantity	SAR Baseline Prod Est	Current APB	Current Estimate
RDT&E	3	0	3
Procurement	388	0	396
Total	391	0	399

Procurement quantity is the number of Reaper aircraft. Ground Control Stations and other equipment costs are included, but not used as a unit of measure.

An additional eight aircraft were procured in FY 2008. Six were approved via congressional notification letter in accordance with section 2308 of title 10, United States Code, buy to budget provisions. The two additional aircraft were originally funded by the Overseas Contingency Operations appropriation.

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2012 President's Budget / December 2010 SAR (TY\$ M)

Appropriation	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
RDT&E	340.8	125.4	132.3	105.0	64.3	34.8	27.1	74.3	904.0
Procurement	2110.3	1232.2	1185.6	1378.8	1211.4	1211.9	1024.3	2081.4	11435.9
MILCON	47.2	11.7	0.0	47.8	0.0	0.0	0.0	50.0	156.7
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2012 Total	2498.3	1369.3	1317.9	1531.6	1275.7	1246.7	1051.4	2205.7	12496.6
PB 2011 Total	2533.0	1325.6	1440.8	1480.6	1200.7	1192.2	1148.4	1513.5	11834.8
Delta	-34.7	43.7	-122.9	51.0	75.0	54.5	-97.0	692.2	661.8

Quantity	Undistributed	Prior	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	To Complete	Total
Development	3	0	0	0	0	0	0	0	0	3
Production	0	108	48	48	48	48	48	48	0	396
PB 2012 Total	3	108	48	48	48	48	48	48	0	399
PB 2011 Total	3	100	48	48	48	48	48	48	0	391
Delta	0	8	0	0	0	0	0	0	0	8

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2002							7.8
2003							12.8
2004							20.9
2005							56.8
2006							10.1
2007							34.0
2008							55.9
2009							39.7
2010							102.8
2011							125.4
2012							132.3
2013							105.0
2014							64.3
2015							34.8
2016							27.1
2017							74.3
Subtotal	3				I		904.0

Annual Funding BY\$
3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 \$M	Non End Item Recurring Flyaway BY 2008 \$M	Non Recurring Flyaway BY 2008 \$M	Total Flyaway BY 2008 \$M	Total Support BY 2008 \$M	Total Program BY 2008 \$M
2002							8.9
2003							14.4
2004							22.9
2005							60.7
2006							10.5
2007							34.4
2008							55.5
2009							38.9
2010							99.7
2011							119.9
2012							124.7
2013							97.3
2014							58.6
2015							31.2
2016							23.9
2017							64.4
Subtotal	3						865.9

FY 2002 RDT&E includes \$7.8M (TY\$) of Defense Emergency Response Funds (DERF).

RDT&E includes Increment I Block 1 and Block 5 costs.

Increment II costs are not included.

Annual Funding TY\$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2002	4	60.4			60.4		60.4
2003	4	36.8			36.8		36.8
2004	5	65.9	1.8		67.7	2.8	70.5
2005	5	79.0	9.0		88.0	5.3	93.3
2006	2	94.6	10.5		105.1	4.8	109.9
2007	12	107.5	52.5		160.0	151.6	311.6
2008	28	210.7	54.6		265.3	81.0	346.3
2009	24	219.9	138.4		358.3	168.6	526.9
2010	24	244.9	123.9		368.8	185.8	554.6
2011	48	518.5	278.8		797.3	434.9	1232.2
2012	48	630.5	243.4		873.9	311.7	1185.6
2013	48	666.0	334.1		1000.1	378.7	1378.8
2014	48	643.3	337.4		980.7	230.7	1211.4
2015	48	680.1	300.1		980.2	231.7	1211.9
2016	48	684.2	249.0		933.2	91.1	1024.3
2017			518.9		518.9	192.8	711.7
2018			249.7		249.7	19.6	269.3
2019			194.4		194.4	13.9	208.3
2020			175.4		175.4	14.3	189.7
2021			165.7		165.7	13.9	179.6
2022			94.8		94.8	14.0	108.8
2023			105.8		105.8	15.2	121.0
2024			95.8		95.8	15.0	110.8
2025			89.2		89.2	15.0	104.2
2026		<u></u>	67.9		67.9	10.1	78.0
Subtotal	396	4942.3	3891.1		8833.4	2602.5	11435.9

Annual Funding BY\$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2008 \$M	Non End Item Recurring Flyaway BY 2008 \$M	Non Recurring Flyaway BY 2008 \$M	Total Flyaway BY 2008 \$M	Total Support BY 2008 \$M	Total Program BY 2008 \$M
2002	4	68.0			68.0		68.0
2003	4	40.8			40.8		40.8
2004	5	71.1	1.9		73.0	3.1	76.1
2005	5	82.9	9.4		92.3	5.6	97.9
2006	2	96.7	10.7		107.4	4.9	112.3
2007	12	107.1	52.3		159.4	150.9	310.3
2008	28	206.7	53.6		260.3	79.5	339.8
2009	24	212.7	133.8		346.5	163.1	509.6
2010	24	233.3	118.1		351.4	177.0	528.4
2011	48	486.6	261.7		748.3	408.1	1156.4
2012	48	582.2	224.7		806.9	287.8	1094.7
2013	48	604.7	303.4		908.1	343.8	1251.9
2014	48	574.3	301.3		875.6	205.9	1081.5
2015	48	597.0	263.5		860.5	203.4	1063.9
2016	48	590.6	215.0		805.6	78.6	884.2
2017			440.4		440.4	163.7	604.1
2018			208.4		208.4	16.4	224.8
2019			159.5		159.5	11.4	170.9
2020			141.5		141.5	11.6	153.1
2021			131.5		131.5	11.0	142.5
2022			73.9		73.9	11.0	84.9
2023			81.1		81.1	11.7	92.8
2024			72.3		72.3	11.3	83.6
2025			66.1		66.1	11.2	77.3
2026			49.5		49.5	7.4	56.9
Subtotal	396	4554.7	3373.6		7928.3	2378.4	10306.7

End-item related costs include aircraft, Multi-spectral Targeting System-B (MTS-B) and government furnished equipment.

Non-end item recurring flyaway costs include retrofit, Ground Control Stations (GCS), communications and Airborne Signals Intelligence Payload 2C (ASIP-2C) sensors requirements. Retrofits include Block I to Block 5 depot and field retrofits, MTS-B retrofits, GCS retrofits and other miscellaneous communications and sensor retrofits.

The estimate includes 307 ASIP-2C sensors from FY 2013-2026. ASIP-2C is procured as alternate mission equipment and included in non-end item flyaway.

The estimate assumes Increment I Block 1 to Block 5 aircraft procurement stops in FY 2016 with Increment II Block 10 aircraft procurement starting in FY 2017. Increment II Block 10 aircraft are not included in the totals above.

FY 2002 Procurement includes \$29.1M (TY\$) of Defense Emergency Response Funds (DERF).

FY 2008 includes eight additional aircraft. Six procured via congressional notification letter, section 2308 of title 10, United States Code, buy to budget provision. The two additional aircraft were originally funded by the Overseas Contingency Operations appropriation.

FY 2011 includes \$43.7(TY\$) for organic depot activation. The organic depot activation estimate will be completed in conjunction with the June 2011 Milestone C decision. The "to complete" cost for organic depot activation is not included in this Selected Acquisition Report (SAR) submission but will be submitted in a June 2011 SAR.

Annual Funding TY\$
3300 | MILCON | Military Construction, Air
Force

Fiscal Year	Total Program TY \$M
2009	44.5
2010	2.7
2011	11.7
2012	
2013	47.8
2014	
2015	
2016	
2017	50.0
Subtotal	156.7

Annual Funding BY\$ 3300 | MILCON | Military Construction, Air Force

Fiscal Year	Total Program BY 2008 \$M
2009	43.1
2010	2.6
2011	11.0
2012	
2013	43.5
2014	
2015	
2016	
2017	42.5
Subtotal	142.7

Low Rate Initial Production

There is no LRIP quantity for this program at this time.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Italy	11/20/2008	6	175.3	Purchase of six aircraft and assorted support equipment
United Kingdom	2/14/2007	6	247.7	Purchase of six aircraft and assorted support equipment

Nuclear Cost

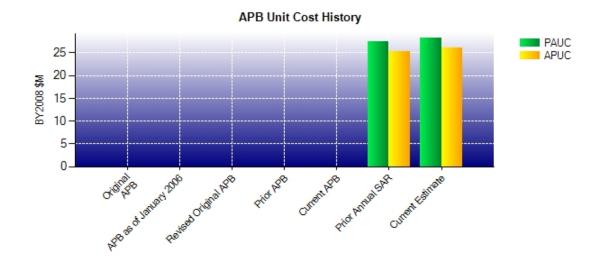
There are no Nuclear Cost data to display.

Unit Cost

Unit Cost Report

	BY2008 \$M	BY2008 \$M	
Unit Cost	Current UCR Baseline	Current Estimate (DEC 2010 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC	C)		
Cost		11315.3	
Quantity		399	
Unit Cost		28.359	
Average Procurement Unit Cost (APL	JC)		
Cost		10306.7	
Quantity		396	
Unit Cost		26.027	
	BY2008 \$M	BY2008 \$M	
Unit Cost	BY2008 \$M Original UCR Baseline	BY2008 \$M Current Estimate (DEC 2010 SAR)	BY % Change
Unit Cost Program Acquisition Unit Cost (PAU)	Original UCR Baseline	Current Estimate	
	Original UCR Baseline	Current Estimate	
Program Acquisition Unit Cost (PAUC	Original UCR Baseline	Current Estimate (DEC 2010 SAR)	
Program Acquisition Unit Cost (PAUC) Cost	Original UCR Baseline	Current Estimate (DEC 2010 SAR)	
Program Acquisition Unit Cost (PAUC Cost Quantity	Original UCR Baseline	Current Estimate (DEC 2010 SAR) 11315.3 399	
Program Acquisition Unit Cost (PAUC) Cost Quantity Unit Cost	Original UCR Baseline	Current Estimate (DEC 2010 SAR) 11315.3 399	
Program Acquisition Unit Cost (PAUC Cost Quantity Unit Cost Average Procurement Unit Cost (APL	Original UCR Baseline JC)	Current Estimate (DEC 2010 SAR) 11315.3 399 28.359	

Unit Cost History



		BY2008 \$M		TY	\$M
	Date	PAUC	APUC	PAUC	APUC
Original APB	N/A	N/A	N/A	N/A	N/A
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	N/A	N/A	N/A	N/A	N/A
Prior Annual SAR	DEC 2009	27.497	25.320	30.268	28.005
Current Estimate	DEC 2010	28.359	26.027	31.320	28.879

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC	Changes								PAUC
Prod Est	Econ	Econ Qty Sch Eng Est Oth Spt Total						Current Est	
30.268	-0.047	-0.307	-0.037	0.058	-0.325	0.000	1.710	1.052	31.320

Current SAR Baseline to Current Estimate (TY \$M)

Initial APUC	PUC Changes								
Prod Est	Econ	Econ Qty Sch Eng Est Oth Spt Total							Current Est
28.005	-0.047	-0.262	-0.038	0.000	-0.502	0.000	1.723	0.874	28.879

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	N/A	FEB 2004	FEB 2004
Milestone C	N/A	N/A	FEB 2008	FEB 2008
IOC	N/A	N/A	N/A	N/A
Total Cost (TY \$M)	N/A	N/A	11834.8	12496.6
Total Quantity	N/A	N/A	391	399
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	30.268	31.320

Cost Variance

Cost Variance Summary

Summary Then Year \$M									
	RDT&E	Proc	MILCON	Total					
SAR Baseline (Prod Est)	809.9	10866.0	158.9	11834.8					
Previous Changes									
Economic									
Quantity									
Schedule									
Engineering									
Estimating									
Other									
Support									
Subtotal									
Current Changes									
Economic	-0.6	-18.6	+0.3	-18.9					
Quantity		+119.6		+119.6					
Schedule		-14.9		-14.9					
Engineering	+23.3			+23.3					
Estimating	+71.4	-198.6	-2.5	-129.7					
Other									
Support		+682.4		+682.4					
Subtotal	+94.1	+569.9	-2.2	+661.8					
Total Changes	+94.1	+569.9	-2.2	+661.8					
CE - Cost Variance	904.0	11435.9	156.7	12496.6					
CE - Cost & Funding	904.0	11435.9	156.7	12496.6					

Summary Base Year 2008 \$M									
	RDT&E	Proc	MILCON	Total					
SAR Baseline (Prod Est)	778.8	9824.0	148.5	10751.3					
Previous Changes									
Economic									
Quantity									
Schedule									
Engineering									
Estimating									
Other									
Support									
Subtotal									
Current Changes									
Economic									
Quantity		+103.2		+103.2					
Schedule									
Engineering	+21.7			+21.7					
Estimating	+65.4	-213.6	-5.8	-154.0					
Other									
Support		+593.1		+593.1					
Subtotal	+87.1	+482.7	-5.8	+564.0					
Total Changes	+87.1	+482.7	-5.8	+564.0					
CE - Cost Variance	865.9	10306.7	142.7	11315.3					
CE - Cost & Funding	865.9	10306.7	142.7	11315.3					

Previous Estimate: December 2009

RDT&E	\$1	Л
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.6
Increase due to Engineering Change Proposals for Automatic Take-Off and Landing, Ground Control Stations High Definition and Lynx Synthetic Aperture Radar improvements. (Engineering)	+21.7	+23.3
Increase due to additional requirements for development of an Exportable MQ-9 UAS Reaper and multi-aircraft control capabilities. (Estimating)	+65.4	+71.4
RDT&E Subtotal	+87.1	+94.1

Procurement	\$1	Λ
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-18.6
Quantity variance resulting from an increase of eight MQ-9 UAS Reaper aircraft from 388 to 396. (Quantity)	+103.2	+119.6
Acceleration of procurement buy profile. Eight additional MQ-9 UAS Reaper aircraft were procured in FY 2008. (Six via congressional notification letter, section 2308 of title 10, United States Code, buy to budget provisions; two were funded by the Overseas Contingency Operations appropriation) (Schedule)	0.0	-14.9
Adjustment for current and prior escalation. (Estimating)	+2.0	+1.7
Increase due to depot activation funding received in FY 2011. (Estimating)	+41.0	+43.7
Decrease due to rescission of funds included in FY 2009. (Estimating)	-44.3	-45.2
Decrease in total flyaway costs due to efficiencies achieved in direct labor costs associated with aircraft, sensors and government furnished equipment. (Estimating)	-212.3	-198.8
Adjustment for current and prior escalation. (Support)	+0.5	+0.9
Decrease in Other Support. (Subtotal)	-334.6	-360.3
Increase in Other Support due to new support requirements for Airborne Signal Intelligence Payload 2C sensors and aircraft production support. (Support)	(+110.5)	(+118.1)
Decrease in Other Support costs due to realignment to Initial Spares. (Support)	(-445.1)	(-478.4)
Increase in Initial Spares. (Subtotal)	+927.2	+1041.8
Increase in Initial Spares due to requirement to support 65 Combat Air Patrol and the revised estimate including field reliability information and retrofit initial Spares. (Support)	(+482.1)	(+563.4)
Increase in Initial Spares due to realignment of costs from other support. (Support)	(+445.1)	(+478.4)
Procurement Subtotal	+482.7	+569.9

MILCON	\$M	
	Base	Then
Current Change Explanations	Year	Year
Revised escalation indices. (Economic)	N/A	+0.3
Decrease due to rephasing of MILCON requirement. (Estimating)	-5.8	-2.5
MILCON Subtotal	-5.8	-2.2

Contracts

Appropriation: RDT&E

Contract Name Block 50 Ground Control Station (GCS) Modernization

Contractor General Atomics Aeronautical Systems, Inc.

Contractor Location San Diego, CA 92065

Contract Number, Type FA8620-05-G-3028/30, CPFF

Award Date March 25, 2010
Definitization Date March 25, 2010

Initial Co	ntract Price	(\$M)	Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
17.2	N/A	N/A	85.2	N/A	N/A	85.2	85.2	

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/30/2010)	-3.1	-2.4
Previous Cumulative Variances		
Net Change	-3.1	-2.4

Cost And Schedule Variance Explanations

The net unfavorable cost variance was driven by the legacy program overrun. Overrun was realized and funded in November 2009.

The net unfavorable schedule variance was driven by delays in software development due to availability of software engineering personnel. Delays were encountered while training a large number of new hires. Delays and rework in computing, networking, and recording subsystems were caused by greater than anticipated complexity of key requirements.

Contract Comments

This is the initial report for this contract.

The difference between the initial and current price is due to contract rebaselining.

Contract Name MQ-9 Spares

Contractor General Atomics Aeronautical Systems, Inc.

Contractor Location San Diego, CA 92065

Contract Number, Type FA8620-05-G-3028/34, FFP

Award Date August 31, 2007
Definitization Date June 04, 2009

Initial Cor	ntract Price ((\$M)	Current Contract Price (\$M) Estimated Price At Completic			rice At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
61.4	N/A	N/A	78.9	N/A	N/A	78.9	78.9

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

The difference between Initial and Current Price is due to additional Overseas Contingency Operation (OCO) spares and support equipment requirements.

The change in current contract price and estimated price at completion from the December 2009 report (\$80.9M) and the December 2010 report (\$78.9M) was due to a part deletion and corresponding partial termination for convenience.

This contract is 90% complete and will no longer be reported.

Appropriation: RDT&E

Contract Name MQ-9 System Development and Demonstration Bridge DO 49

Contractor General Atomics Aeronautical Systems Inc

Contractor Location San Diego, CA 92127-1713 Contract Number, Type FA8620-05-G-3028/49, CPIF

Award Date July 17, 2009
Definitization Date July 17, 2009

	Initial Cor	ntract Price ((\$M)	Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
	Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
•	39.3	N/A	N/A	48.6	N/A	N/A	57.4	60.8	

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2011)	-0.1	-5.3
Previous Cumulative Variances		
Net Change	-0.1	-5.3

Cost And Schedule Variance Explanations

This is the initial report for this contract.

The net unfavorable cost variance was due to heavy-weight landing gear testing having to be re-accomplished due to test equipment failure and forward bay redesign.

The net unfavorable schedule variance was driven by the availability of mission control module/payload control computer hardware, lack of assigned resources for software development tasks based on requirements for concurrent software builds, and forward bay redesign requirements.

A large amount of schedule variance is expected to be recovered in early FY 2011 with the completion of the critical design review and release of software build Rev 904.4.

Contract Comments

Contract Name GWOT Aircraft

Contractor General Atomics Aeronautical Systems, Inc

Contractor Location San Diego, CA 92064

Contract Number, Type FA8620-05-G-3028/50, FFP

Award Date November 26, 2008
Definitization Date January 04, 2010

Initial Co	ntract Price	(\$M)	Current Contract Price (\$M) Estimated Price At Completic			rice At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
115.2	N/A	16	316.7	N/A	40	316.7	316.7

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

The initial price for this contract reported in the December 2009 Selected Acquisition Report was incorrect. The correct initial contract price is \$115.2M.

The difference between Initial and Current Price is due to contract definitization, award of various contract options for additional requirements, and a change in quantity.

Contract Name Multi-spectral Targeting System 2009 Production, Spares, Retrofits and Containers

Contractor Raytheon Company
Contractor Location McKinney, TX 75069

Contract Number, Type FA8620-06-G-4041/8, FFP/CPFF

Award Date September 17, 2008
Definitization Date February 26, 2010

Initial Co	ntract Price	(\$M)	Current Contract Price (\$M) Estimated Price At Completion			rice At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
25.4	N/A	N/A	76.2	N/A	N/A	76.2	76.2

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP/CPFF contract.

Contract Comments

The difference between additional and current contract price is due to contract modifications for additional lot buys.

This contract is 90% complete and will no longer be reported.

Contract Name Multi-spectral Targeting System Production and Modification

Contractor Raytheon Company
Contractor Location McKinney, TX 75069

Contract Number, Type FA8620-06-G-4041/10, FFP/CPFF

Award Date July 23, 2009
Definitization Date October 07, 2010

Initial Cor	ntract Price ((\$M)	Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
87.3	N/A	N/A	128.1	N/A	N/A	128.1	128.1

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP/CPFF contract.

Contract Comments

The difference between Initial and Current Contract Price is due to quantity increases as the result of exercising contract options in support of Overseas Contingency Operation requirements.

Contract Name MQ-9 FY10 Production Effort

Contractor General Atomics Aeronautical Systems, Inc.

Contractor Location San Diego, CA 92064

Contract Number, Type FA8620-10-G-3038/28, FFP

Award Date February 03, 2011
Definitization Date February 03, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)		Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
148.3	N/A	24	198.5	N/A	32	198.5	198.5

Cost And Schedule Variance Explanations

Cost and Schedule variance reporting is not required on this FFP contract.

Contract Comments

This is the initial report for this contract.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	3	3	3	100.00%
Production	64	62	396	15.66%
Total Program Quantities Delivered	67	65	399	16.29%

Expenditures and Appropriations (TY \$M)				
Total Acquisition Cost	12496.6	Years Appropriated	10	
Expenditures To Date	1332.2	Percent Years Appropriated	40.00%	
Percent Expended	10.66%	Appropriated to Date	3867.6	
Total Funding Years	25	Percent Appropriated	30.95%	

Operating and Support Cost

Assumptions And Ground Rules

The operating and support (O&S) costs reported in this Selected Acquisition Report (SAR) are from the program office (PO) estimate dated November 2009. The Contractor Logistics Support (CLS) costs are based upon actual costs.

The O&S estimate includes all Cost Analysis Improvement Group elements – Unit Personnel, Unit Operations, Maintenance, Sustaining Support, Continuing System Improvements, and Indirect Support. The MQ-9 UAS Reaper has been flying operations since 2002. Historical costs are attained from monthly CLS cost reports, Air Force Total Ownership Cost (AFTOC) actuals, and other data sources. Future costs are based on flying hour projects, manpower projections, the number of operating locations, and applicable rates and factors. Flying hours are based on the number of anticipated Combat Air Patrols (CAPs). Air Combat Command (ACC) defines a rate of 7,300 flying hours per year per CAP. The attrition rate is based upon the official Air Force Studies and Analysis MQ-9 UAS Reaper attrition model.

Unit Personnel costs are derived using the AFTOC database to determine an average cost per flying hour for operations, maintenance, and support personnel. Unit Operations cost factors include fuel, training munitions, and temporary duty costs. Maintenance costs include Operational-level (O-level), Depot-level (D-level), and Government Furnished Equipment (GFE) repair. Sustaining Support is derived from actual costs from previous years captured from the AFTOC database, and converted to a cost per flying hour. Continuing System Improvements costs include Reliability & Maintainability (R&M) Enhancements and Software Maintenance supported via the CLS contract. Indirect Support costs are based on factors from Air Force Instruction (AFI) 65-503 table A56-1, which were applied against manpower projections provided by Air Combat Command Air Regular Warfare Division.

O&S costs are split between Increment I (Block 1 and Block 5) and Increment II (Block 10) starting in FY 2019 by evaluating the configuration of the aircraft in the inventory at the end of each year. All costs are transitioned to Increment II by the end of FY 2029. Increment II costs are not included in this SAR. Total Increment I estimated flying hours for the MQ-9 UAS Reaper is 5.1 million over the program life cycle.

The cost per flying hour increased from the December 2009 SAR due to increases in CLS infrastructure, mishap repair, and Block 5 aircraft depot repair costs. The increase in infrastructure costs is a result of increased field engineering support requests, technical order maintenance changes, software maintenance, and other support activities resulting from the fielding of additional aircraft and ground control station configurations. The mishap repair costs were incorrectly omitted from last year's SAR. The mishap repair costs are required to support continental United States and outside continental United States aircraft incidents. The increase in depot repair costs results from the additional cost of the Block 5 aircraft configuration.

The PO recently received the draft MQ-9 Manpower Estimate Report (MER) and is currently updating the O&S estimate with Air Force Cost Analysis Agency and Office of the Secretary of Defense (OSD) Cost Assessment and Program Evaluation. The PO plans to submit updated O&S costs in an out of cycle SAR in June 2011. These updated O&S costs will be based on the updated MER and final OSD estimate as approved by the Milestone C decision.

Costs BY2008 \$K				
Cost Element	MQ-9 UAS REAPER Avg Cost per Flying Hour	MQ-1 Predator Avg Cost per Flying Hour		
Unit-Level Manpower	0.815	0.724		
Unit Operations	0.176	0.123		
Maintenance	1.714	1.265		
Sustaining Support	0.180	0.132		
Continuing System Improvements	0.066	0.000		
Indirect Support	0.100	0.791		
Other		<u></u>		
Total Unitized Cost (Base Year 2008 \$)	3.051	3.035		

Total O&S Costs \$M	MQ-9 UAS REAPER	MQ-1 Predator
Base Year	15444.9	7899.7
Then Year	18221.3	8559.9