Selected Acquisition Report (SAR)

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

MQ-9 Reaper Unmanned Aircraft System (MQ-9 Reaper)

As of December 31, 2012

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Program Information

Program Name

MQ-9 Reaper Unmanned Aircraft System (MQ-9 Reaper)

DoD Component

Air Force

Responsible Office

Responsible Office

Col. Christopher Coombs
2640 Loop Road West
Wright-Patterson AFB, OH 45433-7106

christopher.coombs@wpafb.af.mil

Phone 937-904-6008
Fax 937-904-7099
DSN Phone 674-6008
DSN Fax 674-7099
Date Assigned July 10, 2008

References

SAR Baseline (Production Estimate)

FY 2011 President's Budget dated February 1, 2010

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 12, 2012

Mission and Description

Mission:
The MQ-9 Reaper 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 MQ-9 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 MQ-9 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 MQ-9 Reaper is supported and maintained by Contractor Logistics Support (CLS) personnel under contract and managed by the MQ-9 Reaper Program Office (PO).

Description:
A MQ-9 Reaper system consists of four aircraft, a Ground Control Station (GCS), a Satellite Communications terminal, support equipment, and maintenance and operations personnel deployed for 24-hour operations. The aircraft is controlled by a pilot who is located in a GCS. Control commands are transmitted from the GCS to the aircraft by a ground based datalink terminal. The GCS incorporates workstations that allow operators to plan missions, control and monitor the aircraft, accomplish reconnaissance missions, control weapons and exploit received images. The MQ-9 Reaper carries the Multi-spectral Targeting System (MTS) 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 MQ-9 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 MQ-9 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 GCS 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, the Commander of Air Combat Command (COMACC) 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 MQ-9 Reaper Increment I program is comprised of Block 1 and Block 5 aircraft. This SAR only includes Increment I requirements. An Increment II subprogram may be established in the future to incorporate additional capabilities into the MQ-9 Reaper Weapon System. Increment II has a separate Capability Development Document and may have a separate CPD.

The MQ-9 Reaper's combat potential and demonstrated combat performance fueled the rapid growth of the program. The MQ-9 Reaper program was initially managed as a Quick Reaction Capability program, a separate PO was established in 2006 to restructure the program to support the Air Combat Command (ACC) urgent request to field the system. The MQ-9 Reaper has been actively flying combat missions in overseas contingency operations since September 2007.

The program is in concurrent capability development, procurement, combat operations and support. This situation resulted from the MQ-9 Reaper's urgent beginnings in the weeks after September 11, 2001, its growth as a Hunter-Killer to support overseas contingency operations, and the MQ-9 Reaper's evolution into the platform of choice for both ISR and Hunter-Killer missions.

Executive Summary

By April 2013, the Air Force contracted for a total of 207 MQ-9 Reapers which included 58 added by Congress to accelerate fielding in support of the overseas contingency operations. As of April 11, 2013, General Atomics-Aeronautical Systems Inc. (GA-ASI) delivered 109 of the 404 planned total aircraft, 93 of which are operationally active.

Air Combat Command (ACC) stood up three additional MQ-9 Reaper Combat Air Patrols (CAPs) since the last SAR, bringing the total MQ-9 Reaper to 25 CAPs. This brings the total number of combined MQ-1 Predator and MQ-9 Reaper CAPs serving the United States and Allied warfighters to 61. The MQ-9 Reaper has accumulated over 383,000 cumulative flight hours. The Program Office (PO) remains on track to support the Air Force required fielding of the required 65 CAPs (MQ-1 Predator and MQ-9 Reaper) by FY 2014.

Since the last SAR the MQ-9 Reaper program has completed several key technical milestones.

On May 24, 2012, the MQ-9 Reaper Block 5 aircraft conducted first flight.

On June 30, 2012, the MQ-9 Reaper program met the Required Assets Available (RAA) milestone.

On November 21, 2012 the Under Secretary of the Defense for Acquisition, Technology and Logistics (USD(AT&L)) signed an Acquisition Decision Memorandum which approved Milestone C Increment I, Block 5, directing the Air Force to fund the MQ-9 Reaper program to the Air Force's Service Cost Position (SCP), and delegated Milestone Decision Authority from USD(AT&L) to the Air Force.

In November 2012, in conjunction with the Milestone C decision, determination was made pursuant to section 2366b of title 10, United States Code by Defense Acquisition Executive (DAE) that waived two of the 2366b provisions. Due to the program scope changes included in the FY 2014 President's Budget and the associated Future Years Defense Program, the MQ-9 Reaper program continues to require waivers for the two waived provisions, (a)(1)(B) and (a)(1)(D). These provisions will continue to be reviewed annually.

On December 12, 2012 the PO received the signed Production Acquisition Program Baseline (APB).

On December 21, 2012, the Secretary of the Air Force approved ACC's recommendation to cancel production of the Block 30 Ground Control Station (GCS) and accelerate production of the Block 50 GCS. A minimal number of Block 15 GCSs will be retrofitted to the Block 30 GCS configuration to ensure no gaps in support of the initial fielding of the Block 5 aircraft and Follow-On Test and Evaluation (FOT&E).

As of March 2013, the Air Force Operational Test and Evaluation Center (AFOTEC) completed an Operational Assessment on the MQ-9 Reaper Block 5 system. The assessment report, due June 2013, will address FOT&E readiness for the Block 5 aircraft and the Block 30 GCS.

The PO is reporting a Military Construction (MILCON) appropriation breach in this SAR. The objective and threshold for the MILCON appropriation is $53.3M 2008 and $58.6M 2008, respectively. The current estimate is $70.6M 2008. The MILCON appropriation breach is due to the FY 2014 PB adding $20M for the stand-up of a weapons school; this new requirement was added after the current APB was approved.

A program deviation report has been submitted to the Milestone Decision Authority.

The PO does not believe it will meet the FOT&E or Full Rate Production (FRP) schedule milestone dates. The PO is

currently evaluating the FOT&E and FRP current estimate based upon an assessment of the MQ-9 Block 5 development program, and will report the updated estimates in a subsequent SAR.

The PO is experiencing software-related issues. The 904.2 (implements weapon handling and sensor upgrades) software fielding date has been delayed from April 2013 to December 2013. The PO is evaluating issues and potential schedule delays associated with the 904.6 (Block 5) software.

Threshold Breaches

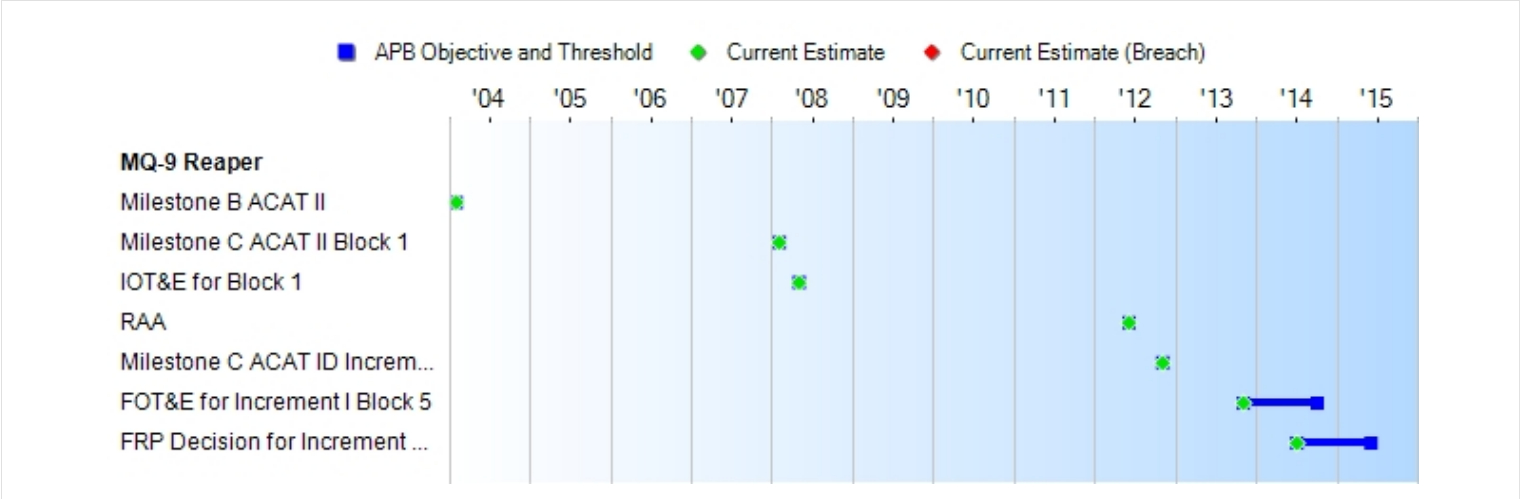
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☑
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

The FY 2014 President's Budget (PB) added $20M in MILCON for the stand-up of a weapons school. The addition of these funds caused a MILCON appropriation breach.

Schedule



Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	
Milestone B ACAT II	FEB 2004	FEB 2004	FEB 2004	FEB 2004	
Milestone C ACAT II Block 1	FEB 2008	FEB 2008	FEB 2008	FEB 2008	
IOT&E for Block 1	MAY 2008	MAY 2008	MAY 2008	MAY 2008	
RAA	SEP 2010	JUN 2012	JUN 2012	JUN 2012	
Milestone C ACAT ID Increment 1, Block 5	MAR 2011	NOV 2012	NOV 2012	NOV 2012	(Ch-1)
FOT&E for Increment I Block 5	NOV 2012	NOV 2013	OCT 2014	NOV 2013	
FRP Decision for Increment I Block 1 and 5	MAR 2013	JUL 2014	JUN 2015	JUL 2014	

Acronyms And Abbreviations

ACAT - Acquisition Category
FOT&E - Follow-On Test and Evaluation
FRP - Full Rate Production
IOT&E - Initial Operational Test and Evaluation
RAA - Required Assets Available

Change Explanations

(Ch-1) The current estimate for Milestone C ACAT ID Increment I, Block 5 changed from June 2012 to November 2012. On November 21, 2012 the Under Secretary of Defense for Acquisition, Technology and Logistics signed an Acquisition Decision Memorandum approving Milestone C ACAT ID Increment I, Block 5.

Memo

RAA includes two fixed Ground Control Stations (GCS), two mobile GCSs, six 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	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Hunter	The system's capability must allow a targeting solution at the weapon's maximum range.	The system's capability must allow a targeting solution at a direct attack weapon's maximum range	The system's capability must allow a targeting solution at a direct attack weapon's maximum range	DT ongoing for KPP; AFOTEC IOT&E did not evaluate KPP due to system availability; Full KPP evaluation deferred to future FOT&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.	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.	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.	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	The System must fully support execution of all operational activities identified in the applicable joint and system integrated	The System must fully support execution of all operational activities identified in the applicable joint and system integrated	The System must fully support execution of joint critical operational activities identified in the applicable joint and system integrated	JITC certified KPP; JITC certification is renewed for each software update	The System must fully support execution of all opera-tional activities identified in the applicable joint and system integrated

survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.	architectures and the system must satisfy the technical 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) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and	architectures and the system must satisfy the technical 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) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA	architectures and the system must satisfy the technical requirements for transition to 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) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance		architectures and the system must satisfy the technical 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) IA requirements including availability, integrity, authentication, confidentiality, and nonrepudiation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA

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

Requirements Source: Capability Production Document (CPD) dated January 29, 2007

Acronyms And Abbreviations

AFOTEC - Air Force Operational Test and Evaluation Center
ATO - Approval to Operate
DAA - Designated Approval Authority
DISR - Department of Defense Information Technology Standards Registry
DT - Developmental Testing
FOT&E - Follow-On Operational Test and Evaluation
GIG - Global Information Grid
IA - Information Assurance
IATO - Interim Approval to Operate
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

RDT&E				
APPN 3600	BA 07	PE 0205219F	(Air Force)	
	Project 5246	MQ-9 Development and Fielding		
APPN 3600	BA 07	PE 0305205F	(Air Force)	
	Project 4755		(Shared)	(Sunk)
APPN 3600	BA 07	PE 0305219F	(Air Force)	
	Project 5143		(Shared)	(Sunk)

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 was shared by the MQ-1 Predator and MQ-9 Reaper program office from FY 2005 - FY 2007.

Procurement				
APPN 3010	BA 07	PE 0205219F	(Air Force)	
	ICN 000075	Organic Depot Activation	(Shared)	
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		

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

MILCON

APPN 3300	BA 01	PE 0205219F	(Air Force)	
	Project BHD000	MQ-9 Operations		(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2008 $M			BY2008 $M	TY $M		
Appropriation	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	778.8	1365.1	1501.6	1432.5	809.9	1488.8	1579.3
Procurement	9824.0	10175.3	11192.8	9992.3	10866.0	11765.5	11663.3
Flyaway	8038.7	--	--	7221.5	8943.4	--	8472.5
Recurring	8038.7	--	--	7221.5	8943.4	--	8472.5
Non Recurring	0.0	--	--	0.0	0.0	--	0.0
Support	1785.3	--	--	2770.8	1922.6	--	3190.8
Other Support	1109.0	--	--	1082.4	1202.4	--	1254.5
Initial Spares	676.3	--	--	1688.4	720.2	--	1936.3
MILCON	148.5	53.3	58.6	**70.6** [1]	158.9	55.6	75.6
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	10751.3	11593.7	N/A	11495.4	11834.8	13309.9	13318.2

[1] ***APB Breach***

Confidence Level for Current APB Cost 50% -

The Service Cost Position, signed September 10, 2012, to support the MQ-9 Reaper program Milestone C decision is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and based on assumptions that are consistent with actual demonstrated contractor and government performance.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Programs (MDAPs). Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	3	3	3
Procurement	388	401	401
Total	391	404	404

Procurement quantity is the number of MQ-9 Reaper aircraft. Ground Control Stations (GCSs) and other equipment costs are included, but not used as a unit of measure.

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2014 President's Budget / December 2012 SAR (TY$ M)

Appropriation	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
RDT&E	584.0	148.0	128.3	194.6	191.3	147.1	92.9	93.1	1579.3
Procurement	3787.2	920.0	536.4	766.5	778.5	899.7	878.3	3096.7	11663.3
MILCON	55.6	0.0	20.0	0.0	0.0	0.0	0.0	0.0	75.6
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2014 Total	4426.8	1068.0	684.7	961.1	969.8	1046.8	971.2	3189.8	13318.2
PB 2013 Total	4549.5	1068.0	1154.6	1126.4	834.4	783.7	1182.8	2388.5	13087.9
Delta	-122.7	0.0	-469.9	-165.3	135.4	263.1	-211.6	801.3	230.3

Program funding and production quantities listed in this SAR are consistent with the FY 2014 President's Budget (PB). The FY 2014 PB did not reflect the enacted DoD appropriation for FY 2013, nor sequestration; it reflected the President's requested amounts for FY 2013.

Quantity	Undistributed	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
Development	3	0	0	0	0	0	0	0	0	3
Production	0	204	24	12	24	24	24	24	65	401
PB 2014 Total	3	204	24	12	24	24	24	24	65	404
PB 2013 Total	3	204	24	24	24	24	24	24	53	404
Delta	0	0	0	-12	0	0	0	0	12	0

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	--	--	--	--	--	--	38.6
2010	--	--	--	--	--	--	102.8
2011	--	--	--	--	--	--	136.7
2012	--	--	--	--	--	--	107.6
2013	--	--	--	--	--	--	148.0
2014	--	--	--	--	--	--	128.3
2015	--	--	--	--	--	--	194.6
2016	--	--	--	--	--	--	191.3
2017	--	--	--	--	--	--	147.1
2018	--	--	--	--	--	--	92.9
2019	--	--	--	--	--	--	63.7
2020	--	--	--	--	--	--	25.9
2021	--	--	--	--	--	--	3.5
Subtotal	**3**	**--**	**--**	**--**	**--**	**--**	**1579.3**

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	--	--	--	--	--	--	55.4
2009	--	--	--	--	--	--	37.8
2010	--	--	--	--	--	--	99.3
2011	--	--	--	--	--	--	129.5
2012	--	--	--	--	--	--	99.9
2013	--	--	--	--	--	--	134.4
2014	--	--	--	--	--	--	114.3
2015	--	--	--	--	--	--	170.2
2016	--	--	--	--	--	--	164.2
2017	--	--	--	--	--	--	123.9
2018	--	--	--	--	--	--	76.8
2019	--	--	--	--	--	--	51.7
2020	--	--	--	--	--	--	20.6
2021	--	--	--	--	--	--	2.7
Subtotal	**3**	**--**	**--**	**--**	**--**	**--**	**1432.5**

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

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	67.7	--	--	67.7	2.8	70.5
2005	5	85.8	2.2	--	88.0	5.3	93.3
2006	2	32.2	33.0	--	65.2	44.7	109.9
2007	12	109.4	50.6	--	160.0	151.6	311.6
2008	28	214.2	51.7	--	265.9	80.5	346.4
2009	24	212.3	138.4	--	350.7	186.4	537.1
2010	24	263.8	24.1	--	287.9	245.6	533.5
2011	48	426.5	79.2	--	505.7	230.9	736.6
2012	48	581.2	145.3	--	726.5	224.6	951.1
2013	24	464.9	239.8	--	704.7	215.3	920.0
2014	12	243.8	74.0	--	317.8	218.6	536.4
2015	24	371.7	114.8	--	486.5	280.0	766.5
2016	24	372.5	182.9	--	555.4	223.1	778.5
2017	24	430.1	246.8	--	676.9	222.8	899.7
2018	24	366.8	239.5	--	606.3	272.0	878.3
2019	24	419.0	250.2	--	669.2	229.9	899.1
2020	24	438.1	210.2	--	648.3	178.4	826.7
2021	17	356.5	216.9	--	573.4	123.3	696.7
2022	--	88.7	93.1	--	181.8	19.8	201.6
2023	--	91.3	35.7	--	127.0	13.4	140.4
2024	--	93.9	14.2	--	108.1	11.2	119.3
2025	--	90.1	9.9	--	100.0	10.1	110.1
2026	--	18.8	5.2	--	24.0	0.5	24.5
2027	--	17.8	4.1	--	21.9	--	21.9
2028	--	--	4.0	--	4.0	--	4.0
2029	--	--	4.1	--	4.1	--	4.1
2030	--	--	4.2	--	4.2	--	4.2

2031	--	--	4.4	--	4.4	--	4.4
2032	--	--	4.5	--	4.5	--	4.5
2033	--	--	4.6	--	4.6	--	4.6
2034	--	--	4.7	--	4.7	--	4.7
2035	--	--	4.9	--	4.9	--	4.9
2036	--	--	5.0	--	5.0	--	5.0
2037	--	--	5.2	--	5.2	--	5.2
2038	--	--	5.3	--	5.3	--	5.3
2039	--	--	5.5	--	5.5	--	5.5
Subtotal	**401**	**5954.3**	**2518.2**	**--**	**8472.5**	**3190.8**	**11663.3**

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	73.1	--	--	73.1	3.0	76.1
2005	5	90.0	2.3	--	92.3	5.6	97.9
2006	2	32.9	33.7	--	66.6	45.7	112.3
2007	12	108.9	50.4	--	159.3	150.8	310.1
2008	28	209.8	50.6	--	260.4	78.9	339.3
2009	24	204.3	133.3	--	337.6	179.4	517.0
2010	24	248.8	22.7	--	271.5	231.7	503.2
2011	48	394.8	73.3	--	468.1	213.8	681.9
2012	48	527.5	131.9	--	659.4	203.9	863.3
2013	24	410.6	211.8	--	622.4	190.1	812.5
2014	12	211.3	64.1	--	275.4	189.5	464.9
2015	24	316.1	97.6	--	413.7	238.2	651.9
2016	24	310.9	152.7	--	463.6	186.2	649.8
2017	24	352.3	202.2	--	554.5	182.4	736.9
2018	24	294.8	192.5	--	487.3	218.7	706.0
2019	24	330.5	197.4	--	527.9	181.3	709.2
2020	24	339.1	162.7	--	501.8	138.1	639.9
2021	17	270.8	164.9	--	435.7	93.6	529.3
2022	--	66.1	69.5	--	135.6	14.7	150.3
2023	--	66.8	26.1	--	92.9	9.8	102.7
2024	--	67.4	10.3	--	77.7	8.0	85.7
2025	--	63.5	7.0	--	70.5	7.1	77.6
2026	--	13.0	3.6	--	16.6	0.3	16.9
2027	--	12.1	2.8	--	14.9	--	14.9
2028	--	--	2.7	--	2.7	--	2.7
2029	--	--	2.7	--	2.7	--	2.7
2030	--	--	2.7	--	2.7	--	2.7

2031	--	--	2.8	--	2.8	--	2.8
2032	--	--	2.8	--	2.8	--	2.8
2033	--	--	2.8	--	2.8	--	2.8
2034	--	--	2.8	--	2.8	--	2.8
2035	--	--	2.9	--	2.9	--	2.9
2036	--	--	2.9	--	2.9	--	2.9
2037	--	--	2.9	--	2.9	--	2.9
2038	--	--	2.9	--	2.9	--	2.9
2039	--	--	3.0	--	3.0	--	3.0
Subtotal	**401**	**5124.2**	**2097.3**	**--**	**7221.5**	**2770.8**	**9992.3**

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

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

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 GCS and other miscellaneous communications and sensor retrofits.

Cost Quantity Information
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2008 $M
2002	4	70.3
2003	4	43.7
2004	5	87.3
2005	5	115.1
2006	2	43.9
2007	12	175.5
2008	28	362.5
2009	24	332.9
2010	24	353.7
2011	48	561.3
2012	48	597.8
2013	24	338.9
2014	12	155.5
2015	24	268.7
2016	24	284.5
2017	24	269.5
2018	24	276.5
2019	24	284.9
2020	24	292.9
2021	17	208.8
2022	--	--
2023	--	--
2024	--	--
2025	--	--
2026	--	--
2027	--	--
2028	--	--

2029	--	--
2030	--	--
2031	--	--
2032	--	--
2033	--	--
2034	--	--
2035	--	--
2036	--	--
2037	--	--
2038	--	--
2039	--	--
Subtotal	**401**	**5124.2**

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

Fiscal Year	Total Program TY $M
2009	44.5
2010	2.7
2011	8.4
2012	--
2013	--
2014	20.0
Subtotal	**75.6**

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

Fiscal Year	Total Program BY 2008 $M
2009	42.9
2010	2.6
2011	7.8
2012	--
2013	--
2014	17.3
Subtotal	**70.6**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/21/2012	11/21/2012
Approved Quantity	48	36
Reference	ADM	ADM
Start Year	2013	2013
End Year	2014	2014

The MQ-9 Reaper program was broken into two blocks; Block 1 aircraft, providing initial capability to meet the early fielding directed by Congress, and Block 5 aircraft. The program procured 200 Block 1 aircraft prior to Congressional direction to procure 204 Block 5 aircraft starting in FY 2013. The Low Rate Initial Production (LRIP) quantities reported in the table above reflect the procurement of Block 5 aircraft only. The current total LRIP quantity of 36 is more than 10% of the total production quantity of 204 Block 5 aircraft. The current total LRIP of 36 was derived from Congressional approval to procure 24 Block 5 aircraft in FY 2013 and 12 in FY 2014. This total was reduced from the initial LRIP decision of 48 based on DoD's decision to reduce the FY 2014 aircraft buy from 24 to 12.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost $M	Memo
United Kingdom	11/10/2011	5	70.0	Purchase of five aircraft, four Mobile Ground Control Stations (MGCS), and assorted sensors and support equipment.
Italy	11/20/2008	6	175.3	Purchase of six aircraft, three MGCSs, Contractor Logistics Support (CLS), and assorted support equipment.
United Kingdom	10/4/2007	4	62.8	Purchase of four aircraft, one MGCS, and spares.
United Kingdom	2/14/2007	2	366.8	Purchase of two aircraft, two MGCSs, CLS, and assorted support equipment.

During 2012 the United Kingdom's Letter of Offer and Acceptance (LOA), dated November 10, 2011, to acquire five additional MQ-9 Reaper's and four additional MGCSs was placed on contract and is now included in the table above. This Foreign Military Sales (FMS) effort is in the production phase.

Italy's LOA, dated November 20, 2008, is a FMS transaction, agreement number IT-DSAG, and is in the operations and sustainment phase.

United Kingdom's LOA, dated October 4, 2007, is a FMS transaction, agreement number UK-D-SMJ, and is in the operations and sustainment phase.

United Kingdom's LOA, dated February 14, 2007, is a FMS transaction, agreement number UK-D-SMI, and is in the operations and sustainment phase.

Nuclear Cost

None

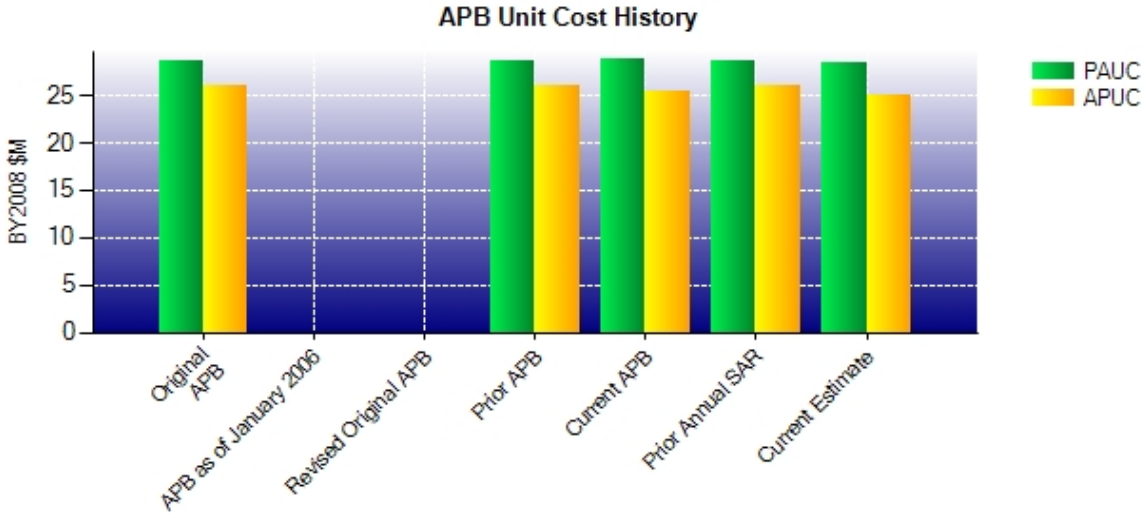
Unit Cost

Unit Cost Report

	BY2008 $M	BY2008 $M	
Unit Cost	**Current UCR Baseline (DEC 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	11593.7	11495.4	
Quantity	404	404	
Unit Cost	28.697	28.454	-0.85
Average Procurement Unit Cost (APUC)			
Cost	10175.3	9992.3	
Quantity	401	401	
Unit Cost	25.375	24.918	-1.80

	BY2008 $M	BY2008 $M	
Unit Cost	**Original UCR Baseline (FEB 2012 APB)**	**Current Estimate (DEC 2012 SAR)**	**BY % Change**
Program Acquisition Unit Cost (PAUC)			
Cost	11541.3	11495.4	
Quantity	404	404	
Unit Cost	28.568	28.454	-0.40
Average Procurement Unit Cost (APUC)			
Cost	10402.1	9992.3	
Quantity	401	401	
Unit Cost	25.940	24.918	-3.94

Unit Cost History



		BY2008 $M		TY $M	
	Date	PAUC	APUC	PAUC	APUC
Original APB	FEB 2012	28.568	25.940	32.396	29.604
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	FEB 2012	28.568	25.940	32.396	29.604
Current APB	DEC 2012	28.697	25.375	32.945	29.340
Prior Annual SAR	DEC 2011	28.556	25.932	32.396	29.604
Current Estimate	DEC 2012	28.454	24.918	32.966	29.086

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
30.268	0.752	-0.473	0.247	1.555	-2.367	0.000	2.984	2.698	32.966

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
28.005	0.717	-0.403	0.249	0.382	-2.870	0.000	3.006	1.081	29.086

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	SEP 2010	JUN 2012
Total Cost (TY $M)	N/A	N/A	11834.8	13318.2
Total Quantity	N/A	N/A	391	404
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	30.268	32.966

Schedule Milestone C above reflects the Acquisition Category (ACAT) II Block 1 Milestone C decision. On November 21, 2012 the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) signed an Acquisition Decision Memorandum approving the ACAT ID Increment 1, Block 5 Milestone C and delegated Milestone Decision Authority from USD(AT&L) to the Air Force.

Milestone Required Assets Available (RAA) is used in lieu of Initial Operating Capability (IOC) and was completed on June 30, 2012.

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	809.9	10866.0	158.9	11834.8
Previous Changes				
Economic	+7.1	+123.1	+2.2	+132.4
Quantity	--	+202.3	--	+202.3
Schedule	--	+73.1	--	+73.1
Engineering	+88.5	--	--	+88.5
Estimating	+157.7	-255.4	-7.7	-105.4
Other	--	--	--	--
Support	--	+862.2	--	+862.2
Subtotal	+253.3	+1005.3	-5.5	+1253.1
Current Changes				
Economic	+4.8	+164.3	+2.4	+171.5
Quantity	--	--	--	--
Schedule	--	+26.7	--	+26.7
Engineering	+386.6	+153.0	--	+539.6
Estimating	+124.7	-895.4	-80.2	-850.9
Other	--	--	--	--
Support	--	+343.4	--	+343.4
Subtotal	+516.1	-208.0	-77.8	+230.3
Total Changes	+769.4	+797.3	-83.3	+1483.4
CE - Cost Variance	1579.3	11663.3	75.6	13318.2
CE - Cost & Funding	1579.3	11663.3	75.6	13318.2

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	--	+167.5	--	+167.5
Schedule	--	-0.7	--	-0.7
Engineering	+81.4	--	--	+81.4
Estimating	+143.9	-299.8	-15.0	-170.9
Other	--	--	--	--
Support	--	+707.9	--	+707.9
Subtotal	+225.3	+574.9	-15.0	+785.2
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+329.4	+126.7	--	+456.1
Estimating	+99.0	-810.9	-62.9	-774.8
Other	--	--	--	--
Support	--	+277.6	--	+277.6
Subtotal	+428.4	-406.6	-62.9	-41.1
Total Changes	+653.7	+168.3	-77.9	+744.1
CE - Cost Variance	1432.5	9992.3	70.6	11495.4
CE - Cost & Funding	1432.5	9992.3	70.6	11495.4

Previous Estimate: December 2011

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+4.8
Increase due to new requirement for enhanced aircraft and Ground Control Station (GCS) capabilities (905.0 software). (Engineering)	+124.9	+147.9
Increase due to addition of Anti-Ice and Extended Range, which were not a part of the MQ-9 Reaper's original program of record. (Engineering)	+73.1	+82.6
Increase due to engineering changes and additional scope for System Development and Demonstration Bridge effort. (Engineering)	+85.4	+102.4
Increase due to revised requirements associated with the GCS Block 50 development. (Engineering)	+46.0	+53.7
Revised estimate for Lynx Synthetic Aperture Radar development. (Estimating)	+23.2	+27.0
Increase due to additional funding for other government costs, and test associated with extended development period of performance. (Estimating)	+25.7	+38.6
Increase due to addition of Multi-Spectral Targeting System-B (MTS-B) development requirements to include additional MTS-B assets for developmental testing. (Estimating)	+51.5	+60.6
Adjustment for current and prior escalation. (Estimating)	-1.4	-1.5
RDT&E Subtotal	+428.4	+516.1

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+164.3
Procurement buy profile was extended due to the decision to reduce FY 2014 aircraft buy from 24 to 12 and increase FY 2021 from 5 to 17. (Schedule)	0.0	+26.7
Increase due to addition of Anti-Ice and Extended Range, which were not a part of the MQ-9 Reaper's original program of record. (Engineering)	+126.7	+153.0
Adjustment for current and prior escalation. (Estimating)	-14.0	-15.6
Decrease due to reduction in planned quantities purchased of more advanced versions of MTS-Bs, and Airborne Signals Intelligence Payload 2Cs procured, and other retrofit requirement changes. (Estimating)	-796.9	-879.8
Adjustment for current and prior escalation. (Support)	-5.8	-6.5
Increase in Other Support based on Air Combat Command's increase in training system requirements, rephasing of organic depot activation and an adjustment to prior year cost classification from end item to other support. (Support)	+88.5	+121.8
Increase in Initial Spares to support additional requirements and the extension of the retrofit program from FY 2028 to FY 2039. (Support)	+194.9	+228.1
Procurement Subtotal	-406.6	-208.0

MILCON	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+2.4

Decrease in FY 2018 due to the Air Force's decision to beddown MQ-9 Reapers at existing continental United States (CONUS) operating locations and not establish a new CONUS operating location. (Estimating)	-80.2	-100.2
The FY 2014 President's Budget added $20M to fund the stand-up of a weapons school. (Estimating)	+17.3	+20.0
MILCON Subtotal	-62.9	-77.8

Contracts

Appropriation: RDT&E

Contract Name	**Advanced Cockpit Increment 2**
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 Contract 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	92.2	N/A	N/A	97.2	95.8

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	-13.0	-6.1
Previous Cumulative Variances	-7.7	-8.1
Net Change	-5.3	+2.0

Cost And Schedule Variance Explanations

The unfavorable net change in the cost variance is due to delays in subcontractor software delivery which caused delays to integration and test of the overall system. The Program Office (PO) continues to evaluate the cost variance and has planned and budgeted for the additional costs required, which were included in the December 12, 2012 Acquisition Program Baseline (APB).

The favorable net change in the schedule variance is due to the completion of the baselined period of performance; therefore, additional work performed represents a positive schedule variance.

Contract Comments

This contract is more than 90% complete; therefore, this is the final report for this contract.

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to engineering change orders and contract modifications.

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 Contract 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	86.1	N/A	N/A	87.3	85.7

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	-4.9	-5.8
Previous Cumulative Variances	-5.2	-4.5
Net Change	+0.3	-1.3

Cost And Schedule Variance Explanations

The favorable net change in the cost variance is due to efficiencies within the program management control account. Staffing levels for program management are lower than originally baselined.

The unfavorable net change in the schedule variance is due to System Integration Lab (SIL) unavailability, which is constrained by personnel and equipment resources causing delays in development testing. The PO is working with the contractor to mitigate the schedule variance. The Program Office (PO) is currently evaluating impacts to overall program schedule.

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract overruns, rebaselining and contract modifications.

Appropriation: Procurement

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	210.8	N/A	30	210.8	210.8

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the planned and baselined exercise of contract options for aircraft and Ground Maintenance Trainer devices.

Appropriation: Procurement

Contract Name	**MQ-9 FY09/10 Spares and Support Equipment**
Contractor	General Atomics - Aeronautical Systems Inc.
Contractor Location	San Diego, CA 92127
Contract Number, Type	FA8620-10-G-3038/35, FFP
Award Date	September 27, 2011
Definitization Date	September 27, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
120.6	N/A	N/A	123.6	N/A	N/A	123.6	123.6

Cost And Schedule Variance Explanations

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

Contract Comments

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications.

Appropriation: Procurement

Contract Name	**Ground Control Stations - Advanced Cockpit**
Contractor	GA-ASI
Contractor Location	San Diego, CA 92127-1713
Contract Number, Type	FA8620-05-G-3028/25, CPFF
Award Date	September 28, 2009
Definitization Date	September 28, 2009

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
15.9	N/A	N/A	81.9	N/A	N/A	75.2	74.2

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	+4.7	-6.5
Previous Cumulative Variances	--	--
Net Change	+4.7	-6.5

Cost And Schedule Variance Explanations

The favorable cumulative cost variance is due to less labor hours, lower labor rates and increased efficiency on core tasks, and processors delivering under budget due to increased efficiencies in production.

The unfavorable cumulative schedule variance is due to kits that were planned to deliver on time; however, in an effort to reduce storage costs the Government contractually delayed delivery dates and the contractor subsequently delayed production. A negative schedule variance will continue until the kits are delivered by third quarter of FY 2013. This negative variance will not impact the overall program schedule as the use of these kits is contingent on the delivery of software also planned for third quarter of FY 2013.

Contract Comments

This is the first time this contract is being reported.

This contract is more than 90% complete; therefore, this is the final report for this contract.

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to engineering change orders and contract modifications.

Appropriation: Procurement

Contract Name	**Block 30 GCS Retrofit**
Contractor	GA-ASI
Contractor Location	San Diego, CA 92127-1713
Contract Number, Type	FA8620-10-G-3038/14, CPIF
Award Date	September 29, 2011
Definitization Date	September 29, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
65.0	N/A	N/A	67.5	N/A	N/A	67.0	69.0

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/28/2013)	-0.5	-13.6
Previous Cumulative Variances	--	--
Net Change	-0.5	-13.6

Cost And Schedule Variance Explanations

The unfavorable cumulative cost variance is due to higher than anticipated material prices. As production increases, trend will reverse due to labor efficiencies, resulting in a total program underrun.

The unfavorable cumulative schedule variance is due to engineering changes on the prototype Block 30 Ground Control Station (GCS). In order to reduce rework and minimize additional costs, kit assembly was delayed. This delay will not impact the overall program because the retrofit kits are not on the critical path for fielding with the Block 5 aircraft.

Contract Comments

This is the first time this contract is being reported.

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to engineering change orders and contract modifications.

Deliveries and Expenditures

Deliveries To Date	Plan To Date	Actual To Date	Total Quantity	Percent Delivered
Development	3	3	3	100.00%
Production	134	106	401	26.43%
Total Program Quantities Delivered	137	109	404	26.98%

Expenditures and Appropriations (TY $M)			
Total Acquisition Cost	13318.2	Years Appropriated	12
Expenditures To Date	2711.7	Percent Years Appropriated	31.58%
Percent Expended	20.36%	Appropriated to Date	5494.8
Total Funding Years	38	Percent Appropriated	41.26%

The above data is current as of 4/11/2013.

Late deliveries are due to delinquencies in completing technical data, support equipment and spares, and fuel tank issues. In regards to the fuel tank issue, a root cause analysis and an appropriate course of action is complete; contract negotiations are complete and aircraft deliveries are projected to restart no later than June 2013.

Operating and Support Cost

MQ-9 Reaper

Assumptions and Ground Rules

Cost Estimate Reference:

The Operating and Support (O&S) costs are from the approved cost estimate used in the Acquisition Program Baseline (APB) dated December 2012. The O&S estimate is the Program Office (PO) estimate which is based on both actual and historical costs and estimated future costs through 2044. 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 Reaper has been flying operations since 2006. Historical costs are attained from monthly Contract Logistical Support (CLS) cost reports, Air Force Total Ownership Cost (AFTOC) actuals, and other data sources. Future costs are based on flying hour projections, manpower projections, 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 range of 5,840 - 8,760 flying hours per year per CAP. The total MQ-9 Reaper life cycle flying hours are based on the ACC MQ-9 Reaper standup plan, ACC projected flight hours per CAP, and the defined MQ-9 Reaper life cycle. The attrition rate is based upon the official Air Force Studies and Analysis MQ-9 Reaper attrition model. Quantity of aircraft per CAP will continue to vary based on mission requirements and future operations.

Unit Personnel costs are estimated using the MQ-9 Reaper Manpower Estimate Report (MER). 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 includes D-level sustaining engineering and program management and system specific training 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 ACC.

Sustainment Strategy:

Sustainment of the MQ-9 Reaper systems is currently provided through CLS contracts with General Atomics, Aeronautical Systems Incorporated (GA-ASI), L-3 Communication Systems, West (L-3 CSW) and Raytheon. The CLS contracts include program management, immediate repairs and services, logistics support, configuration management, operational level technical manuals, software maintenance, engineering technical services, contractor field service representative support, contractor inventory control point, spares management, depot repair, flight operations support, reliability and maintainability studies, maintenance data collection/entry and depot field maintenance. Supported organizations include ACC, Air National Guard, Air Force Special Operations Command, Air Education and Training Command and various Outside the Continental United States (OCONUS) locations. The PO is working to transition from a CLS to organic sustainment strategy. The future strategy will include a public and a private partnership that leverages original equipment manufacturer and organic capabilities.

The total quantity of MQ-9 Reapers to be procured is 404. The MQ-9 Reaper has a planned service life of 43 years and will be operated and maintained through 2044.

Antecedent Information:

The antecedent program for the MQ-9 Reaper is the MQ-1 Predator. The MQ-1 Predator utilized the same methodology and process for the unitized cost.

Unitized O&S Costs BY2008 $M		
Cost Element	**MQ-9 Reaper Avg Annual Cost per Aircraft**	**MQ-1 Predator (Antecedent) Avg Annual Cost per Aircraft**
Unit-Level Manpower	0.6	0.4
Unit Operations	0.2	0.1
Maintenance	0.9	0.6
Sustaining Support	0.6	0.1
Continuing System Improvements	0.1	0.0
Indirect Support	0.3	0.1
Other	0.0	0.0
Total	2.7	1.3

Unitized Cost Comments:

The average cost per flying hour for a MQ-9 Reaper is $2.691K. The PO utilized a bottoms-up cost estimating approach to estimate the MQ-9 Reaper life cycle cost. The average annual cost per aircraft is derived by dividing the total life cycle cost by the number of aircraft and number of years the program is in operation. The cost per flying hour decreased from the December 2011 SAR due to increased flying hour projections and decreased costs in Unit Personnel, Maintenance, Sustaining Support and Indirect Support. The increased flying hour projection is based on the updated flying hour profile received from ACC. Decreases in cost estimates are the result of updated historical program costs and updated rates and factors utilized throughout the estimate.

	Total O&S Cost $M			
	Current Production APB Objective/Threshold		Current Estimate	
	MQ-9 Reaper		MQ-9 Reaper	MQ-1 Predator (Antecedent)
Base Year	47215.4	51936.9	47215.4	8395.5
Then Year	65058.9	N/A	65058.9	9707.4

Total O&S Costs Comments:

The total O&S cost was derived through: i) analysis of the MQ-9 Reaper MERs, ii) actual historical data and estimated out year data, and iii) inputs received from the Air Force Cost Analysis Agency and Office of Secretary of Defense Cost Assessment and Program Evaluation during the program's November 2012 Milestone C decision. The total Base Year (BY) O&S figure may be computed by multiplying the average cost per flying hour for each cost element category (totaling $2.691K) by the total flying hours of the program (17,545,983).

The MQ-1 Predator total BY O&S figure may be computed by multiplying the average cost per flying hour for each cost element category (totaling $2.542K) by the total flying hours of the MQ-1 Predator program (3,302,692). From a cost per flying hour perspective the MQ-9 Reaper's costs vary slightly from its antecedent program, the MQ-1 Predator.

Current BY O&S costs decreased by $4,705.5M from the December 2011 SAR. This decrease was based on: i) updated manpower projections, ii) a revised estimate based on actual costs and reconciliation with Air Force Cost Analysis Agency (AFCAA) during the MQ-9 Reaper Milestone C review, and iii) a reduction to the MQ-9 Reaper flight hour profile.

Disposal Costs

The PO is currently working a disposal estimate for the MQ-9 Reaper.