



Selected Acquisition Report (SAR)

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



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

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

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

DoD Component

Air Force

Responsible Office

Responsible Office

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Date Assigned	September 1, 2013

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 Unmanned Aircraft System (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 and organic Air Force personnel.

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 March 2014, the Air Force contracted for a total of 231 MQ-9 Reapers. As of March 2014 General Atomics Aeronautical Systems, Inc. delivered 163 aircraft, 143 of which are operationally active. Additionally, as of March 2014, the MQ-9 Reaper has accumulated approximately 493,000 cumulative flight hours.

Air Combat Command stood up four additional MQ-9 Reaper Combat Air Patrols (CAP) since the last SAR, bringing the total number of MQ-9 Reaper CAPs to 29. Currently, the total number of combined MQ-1 Predator (34) and MQ-9 Reaper (29) CAPs serving the United States and Allied warfighters is 63.

Since the previous SAR the MQ-9 Reaper Program has experienced programmatic changes as well as accomplished critical tasks.

The most significant changes from the previous SAR are the MQ-9 Reaper 65 to 55 CAP requirement reduction (404 to 346 aircraft) and the elimination of the Airborne Signals Intelligence Payload 2C requirement. The CAP and associated aircraft reduction was the primary driver of unit cost growth in both the PAUC and APUC; however, it did not create significant or critical unit cost breaches to the program. The remaining unit cost growth is due to delays associated with Follow-On Test and Evaluation (FOT&E), Ground Control Station (GCS) requirement changes and other miscellaneous changes. The current 55 CAP program moves to an all MQ-9 Reaper fleet and divests the MQ-1 Predator within the Future Years Defense Program.

In May 2013, the Program Office (PO) declared a MILCON APPN breach and schedule breach for the FOT&E and Full Rate Production (FRP) milestones in the APB. The MILCON APPN breach was caused by a \$20M add in the FY 2014 PB for a Weapons School House at Creech Air Force Base reported in the December 2012 SAR. The MILCON APPN breach equates to a total program increase of less than 0.1 percent. The FOT&E and FRP schedule breaches were due to realized risks such as software maturity, quality of technical orders, and flight test delays. The schedule breach delays fielding of the 904.6 operational flight software, Block 5 aircraft, and Block 30 GCS. The delays will not impact meeting CAP requirements.

On June 4, 2013, the Under Secretary of Defense for Acquisition, Technology and Logistics certified that the MQ-9 Reaper program met the certification requirement for provisions (a)(1)(B) and (a)(1)(D) pursuant to section 2366b of title 10, United States Code. There are no remaining 2366b waivers associated with this program.

The PO gained concurrence on the revised MQ-9 Block 5 schedule at the August 2013 Air Force Review Board (AFRB) and received final approval at the December 2013 Configuration Steering Board (CSB). The new FOT&E completion objective date is January 2016. The program is currently in Developmental Test and tracking to the objective schedule. Additionally, the AFRB and CSB approved the removal of the FRP milestone and replaced it with an In Progress Review following FOT&E. The FRP milestone was removed because the program reached maximum production rate in FY 2011. In addition, the program will already have delivered and contracted for the majority of production aircraft at the time of the baselined FRP date. The PO and the Air Force Cost Analysis Agency are updating the cost estimate, and once this task is completed the PO will revise the APB, which is anticipated to be finalized in June 2014.

On September 10, 2013, the contractor delivered 904.6 operational flight software to begin formal Development Test.

As of September 2013, the PO completed the 75 percent In Process Review on the Block 5 technical orders.

The Air Force Operational Test and Evaluation Center completed an Operational Assessment on the MQ-9 Reaper Block 5 system. The assessment report, delivered in October 2013, addressed FOT&E readiness for the Block 5

aircraft and the Block 30 GCS. The PO is addressing issues identified during the assessment to ensure readiness for FOT&E.

On October 15, 2013, the PO awarded the FY 2013 Block 5 production contract to deliver 24 Block 5 aircraft in 2015. Additionally, the PO delivered the first two Block 5 aircraft in November and December 2013 respectively.

On November 8, 2013, the PO received a Joint Urgent Operational Need (JUON) for Afghan Enablers capabilities. The PO successfully awarded the last contract associated with this JUON on January 9, 2014 and has met the required need date of March 1, 2014.

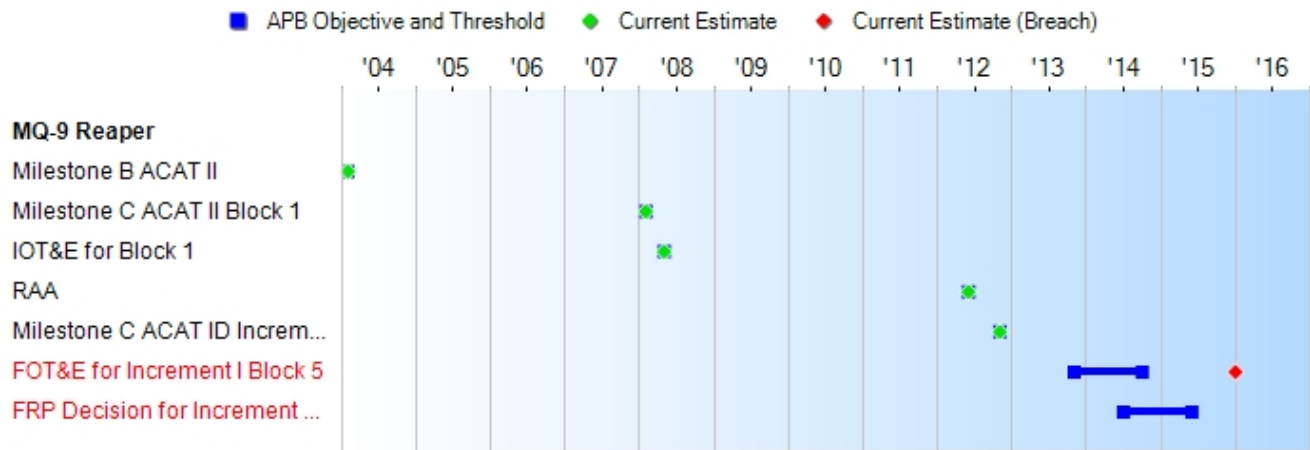
On December 16, 2013, the PO received a JUON for 38 Extended Range aircraft. On February 5, 2014, the PO awarded the contract to deliver and field these 38 Extended Range aircraft and is on track to meet the required need date of March 31, 2015.

In December 2013, the 904.2 software completed Operational Test. The PO approved 904.2 software for release as the baseline software with fielding in April 2014.

Threshold Breaches

APB Breaches			Explanation of Breach
Schedule		<input checked="" type="checkbox"/>	
Performance		<input type="checkbox"/>	
Cost	RDT&E	<input type="checkbox"/>	
	Procurement	<input type="checkbox"/>	
	MILCON	<input checked="" type="checkbox"/>	
	Acq O&M	<input type="checkbox"/>	
O&S Cost		<input type="checkbox"/>	
Unit Cost	PAUC	<input type="checkbox"/>	
	APUC	<input type="checkbox"/>	
Nunn-McCurdy Breaches			
Current UCR Baseline			
	PAUC	None	
	APUC	None	
Original UCR Baseline			
	PAUC	None	
	APUC	None	

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	
FOT&E for Increment I Block 5	NOV 2012	NOV 2013	OCT 2014	JAN 2016 ¹	(Ch-1)
FRP Decision for Increment I Block 1 and 5	MAR 2013	JUL 2014	JUN 2015	TBD ¹	(Ch-2)

¹APB Breach

Change Explanations

(Ch-1) The current estimate for FOT&E changed from November 2013 to January 2016 due to realized risks such as software maturity, quality of technical orders, and flight test delays. A Program Deviation Report was submitted to the Milestone Decision Authority documenting this breach. The PO gained concurrence for the objective and threshold FOT&E dates at the August 2013 AFRB and final approval at the December 2013 Configuration Steering Board. The PO and the Air Force Cost Analysis Agency are updating the cost estimate, and once completed the PO will revise the APB, which is anticipated to be finalized in June 2014.

(Ch-2) The current estimate for FRP changed from July 2014 to TBD based on the AFRB decision to remove this milestone and replace it with an In Progress Review. The FRP milestone was removed because the program reached maximum production rate in FY 2011. In addition, the program will already have delivered and contracted for the majority of production aircraft at the time of the baselined FRP date. The updated APB will reflect this milestone change.

Memo

RAA includes two fixed GCSs, two mobile GCSs, six PMAI Block 1 aircraft, technical orders, support equipment, initial and readiness spares packages, and logistics support.

Acronyms and Abbreviations

ACAT - Acquisition Category

AFRB - Air Force Review Board

FOT&E - Follow-On Test and Evaluation

FRP - Full Rate Production

GCS - Ground Control Station

IOT&E - Initial Operational Test and Evaluation

PMAI - Primary Mission Aircraft Inventory

PO - Program Office

RAA - Required Assets Available

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 a direct attack 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 operational activities identified in the applicable joint and system integrated

<p>survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.</p>	<p>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</p>	<p>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</p>	<p>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</p>		<p>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</p>
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	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.
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Requirements Source

Capability Production Document (CPD) dated January 29, 2007

Change Explanations

None

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

Track to Budget

RDT&E

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

Procurement

Appn	BA	PE		
Air Force	3010	07	0205219F	
	Line Item		Name	
	000075		Organic Depot Activation	(Shared)
Air Force	3010	06	0205219F	
	Line Item		Name	
	000999		Initial Spares	(Shared)
Air Force	3010	05	0305205F	
	Line Item		Name	
	PRDT01		Aircraft Modification	(Shared) (Sunk)
Air Force	3010	04	0305205F	
	Line Item		Name	
	PRDTA1		Aircraft Procurement	(Shared) (Sunk)
Air Force	3010	04	0205219F	
	Line Item		Name	
	PRDTB1		Aircraft Procurement	
Air Force	3010	05	0205219F	
	Line Item		Name	
	PRDTB2		Aircraft Modification	

MILCON

Appn	BA	PE		
Air Force	3300	01	0205219F	
	Project		Name	

BHD000

MQ-9 Operations

(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2008 \$M			BY2008 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold	Current Estimate	Current Estimate	SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	778.8	1365.1	1501.6	1493.9	809.9	1488.8	1653.3
Procurement	9824.0	10175.3	11192.8	8819.5	10866.0	11765.5	10137.5
Flyaway	--	--	--	6291.4	--	--	7257.9
Recurring	--	--	--	6291.4	--	--	7257.9
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	2528.1	--	--	2879.6
Other Support	--	--	--	1191.2	--	--	1382.2
Initial Spares	--	--	--	1336.9	--	--	1497.4
MILCON	148.5	53.3	58.6	70.8 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	10384.2	11834.8	13309.9	11866.4

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.

Program funding and production quantities listed in this SAR are consistent with the FY 2015 PB.

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E	3	3	3
Procurement	388	401	343
Total	391	404	346

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

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	713.9	107.3	170.4	124.3	140.0	175.5	145.7	76.2	1653.3
Procurement	4626.0	546.9	535.3	710.7	671.0	820.9	808.6	1418.1	10137.5
MILCON	55.6	20.0	0.0	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 2015 Total	5395.5	674.2	705.7	835.0	811.0	996.4	954.3	1494.3	11866.4
PB 2014 Total	5494.8	684.7	961.1	969.8	1046.8	971.2	962.8	2227.0	13318.2
Delta	-99.3	-10.5	-255.4	-134.8	-235.8	25.2	-8.5	-732.7	-1451.8

Program funding and production quantities listed in this SAR are consistent with the FY 2015 PB.

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	3	0	0	0	0	0	0	0	0	3
Production	0	240	20	12	22	11	22	16	0	343
PB 2015 Total	3	240	20	12	22	11	22	16	0	346
PB 2014 Total	3	228	12	24	24	24	24	24	41	404
Delta	0	12	8	-12	-2	-13	-2	-8	-41	-58

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	--	--	--	--	--	--	136.6
2012	--	--	--	--	--	--	106.7
2013	--	--	--	--	--	--	130.9
2014	--	--	--	--	--	--	107.3
2015	--	--	--	--	--	--	170.4
2016	--	--	--	--	--	--	124.3
2017	--	--	--	--	--	--	140.0
2018	--	--	--	--	--	--	175.5
2019	--	--	--	--	--	--	145.7
2020	--	--	--	--	--	--	76.2
Subtotal	3	--	--	--	--	--	1653.3

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	--	--	--	--	--	--	99.4
2011	--	--	--	--	--	--	129.6
2012	--	--	--	--	--	--	99.4
2013	--	--	--	--	--	--	119.8
2014	--	--	--	--	--	--	96.6
2015	--	--	--	--	--	--	150.7
2016	--	--	--	--	--	--	107.8
2017	--	--	--	--	--	--	119.1
2018	--	--	--	--	--	--	146.3
2019	--	--	--	--	--	--	119.1
2020	--	--	--	--	--	--	61.1
Subtotal	3	--	--	--	--	--	1493.9

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

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	429.8	51.9	--	481.7	140.3	622.0
2012	48	521.4	127.0	--	648.4	293.8	942.2
2013	36	554.1	210.6	--	764.7	197.6	962.3
2014	20	309.8	36.1	--	345.9	201.0	546.9
2015	12	297.5	54.1	--	351.6	183.7	535.3
2016	22	404.2	96.5	--	500.7	210.0	710.7
2017	11	306.7	133.1	--	439.8	231.2	671.0
2018	22	427.5	201.2	--	628.7	192.2	820.9
2019	16	337.9	177.9	--	515.8	292.8	808.6
2020	--	156.8	166.6	--	323.4	99.9	423.3
2021	--	127.1	139.6	--	266.7	61.3	328.0
2022	--	126.7	110.4	--	237.1	29.6	266.7
2023	--	128.3	16.8	--	145.1	15.2	160.3
2024	--	76.0	8.8	--	84.8	8.0	92.8
2025	--	50.8	7.2	--	58.0	4.6	62.6
2026	--	14.6	5.0	--	19.6	1.3	20.9
2027	--	0.6	4.2	--	4.8	0.1	4.9
2028	--	--	4.2	--	4.2	0.1	4.3
2029	--	--	4.2	--	4.2	--	4.2
2030	--	--	4.4	--	4.4	--	4.4

2031	--	--	4.5	--	4.5	--	4.5
2032	--	--	4.6	--	4.6	--	4.6
2033	--	--	4.8	--	4.8	--	4.8
2034	--	--	4.9	--	4.9	--	4.9
2035	--	--	5.1	--	5.1	--	5.1
2036	--	--	5.2	--	5.2	--	5.2
2037	--	--	5.4	--	5.4	--	5.4
2038	--	--	5.5	--	5.5	--	5.5
2039	--	--	5.7	--	5.7	--	5.7
Subtotal	343	5352.4	1905.5	--	7257.9	2879.6	10137.5

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	150.9	310.2
2008	28	209.8	50.6	--	260.4	79.0	339.4
2009	24	204.5	133.3	--	337.8	179.5	517.3
2010	24	249.3	22.8	--	272.1	232.0	504.1
2011	48	399.5	48.2	--	447.7	130.4	578.1
2012	48	476.6	116.1	--	592.7	268.6	861.3
2013	36	494.0	187.8	--	681.8	176.2	858.0
2014	20	271.2	31.6	--	302.8	176.0	478.8
2015	12	255.5	46.5	--	302.0	157.7	459.7
2016	22	340.3	81.2	--	421.5	176.9	598.4
2017	11	253.2	109.9	--	363.1	190.8	553.9
2018	22	346.0	162.7	--	508.7	155.6	664.3
2019	16	268.1	141.1	--	409.2	232.3	641.5
2020	--	122.0	129.6	--	251.6	77.7	329.3
2021	--	96.9	106.4	--	203.3	46.8	250.1
2022	--	94.7	82.6	--	177.3	22.1	199.4
2023	--	94.0	12.3	--	106.3	11.2	117.5
2024	--	54.6	6.4	--	61.0	5.7	66.7
2025	--	35.8	5.0	--	40.8	3.3	44.1
2026	--	10.1	3.4	--	13.5	0.9	14.4
2027	--	0.4	2.8	--	3.2	0.1	3.3
2028	--	--	2.8	--	2.8	0.1	2.9
2029	--	--	2.7	--	2.7	--	2.7
2030	--	--	2.8	--	2.8	--	2.8

2031	--	--	2.8	--	2.8	--	2.8
2032	--	--	2.8	--	2.8	--	2.8
2033	--	--	2.9	--	2.9	--	2.9
2034	--	--	2.9	--	2.9	--	2.9
2035	--	--	2.9	--	2.9	--	2.9
2036	--	--	2.9	--	2.9	--	2.9
2037	--	--	3.0	--	3.0	--	3.0
2038	--	--	3.0	--	3.0	--	3.0
2039	--	--	3.0	--	3.0	--	3.0
Subtotal	343	4690.2	1601.2	--	6291.4	2528.1	8819.5

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

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) and communications. 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	68.1
2003	4	43.1
2004	5	87.5
2005	5	115.6
2006	2	44.2
2007	12	176.7
2008	28	365.3
2009	24	335.4
2010	24	363.0
2011	48	673.7
2012	48	686.2
2013	36	418.6
2014	20	234.4
2015	12	170.1
2016	22	284.0
2017	11	148.6
2018	22	273.4
2019	16	202.3
2020	--	--
2021	--	--
2022	--	--
2023	--	--
2024	--	--
2025	--	--
2026	--	--
2027	--	--
2028	--	--

2029	--	--
2030	--	--
2031	--	--
2032	--	--
2033	--	--
2034	--	--
2035	--	--
2036	--	--
2037	--	--
2038	--	--
2039	--	--
Subtotal	343	4690.2

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	43.0
2010	2.6
2011	7.8
2012	--
2013	--
2014	17.4
Subtotal	70.8

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/21/2012	11/21/2012
Approved Quantity	48	56
Reference	Milestone C ADM	Milestone C ADM
Start Year	2013	2013
End Year	2014	2014

The Current Total LRIP Quantity is more than 10% of the total production quantity due to Congressional approval to procure 36 Block 5 aircraft in FY 2013 and 20 in FY 2014. The change from the initial LRIP quantity to current LRIP quantity is due to eight aircraft added by Congress in FY 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 which provides additional power, a redesigned avionics bay, and encrypted communications. The program procured 195 Block 1 aircraft prior to procuring 151 Block 5 aircraft starting in FY 2013. The LRIP quantities reported in the table above reflect the procurement of Block 5 aircraft only.

Foreign Military Sales

Country	Date of Sale	Quantity	Total Cost \$M	Memo
Germany	12/26/2013	0	0.6	Agreement provides funding for airworthiness documents, manpower, and travel.
France	8/9/2013	2	143.5	Purchase of two aircraft, one Mobile Ground Control Station (MGCS), Contractor Logistics Support (CLS), and support equipment.
United Kingdom	11/10/2011	5	70.0	Purchase of five aircraft, four MGCSs, and assorted sensors and support equipment.
Italy	11/20/2008	6	175.3	Purchase of six aircraft, three MGCSs, CLS, and assorted support equipment.
United Kingdom	10/4/2007	4	69.0	Purchase of four aircraft, one MGCS, and spares.
United Kingdom	2/14/2007	2	374.9	Purchase of two aircraft, two MGCSs, CLS, and assorted support equipment.

France's Letter of Offer and Acceptance (LOA), dated August 9, 2013, is a FMS transaction, agreement number FR-D-STE, and is in the production phase.

United Kingdom's LOA, dated November 10, 2011, is a FMS transaction, agreement number UK-D-SMK, and is in the operations and sustainment phase.

Italy's LOA, dated November 20, 2008, is a FMS transaction, agreement number IT-D-SAG, 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 Costs

None

Unit Cost

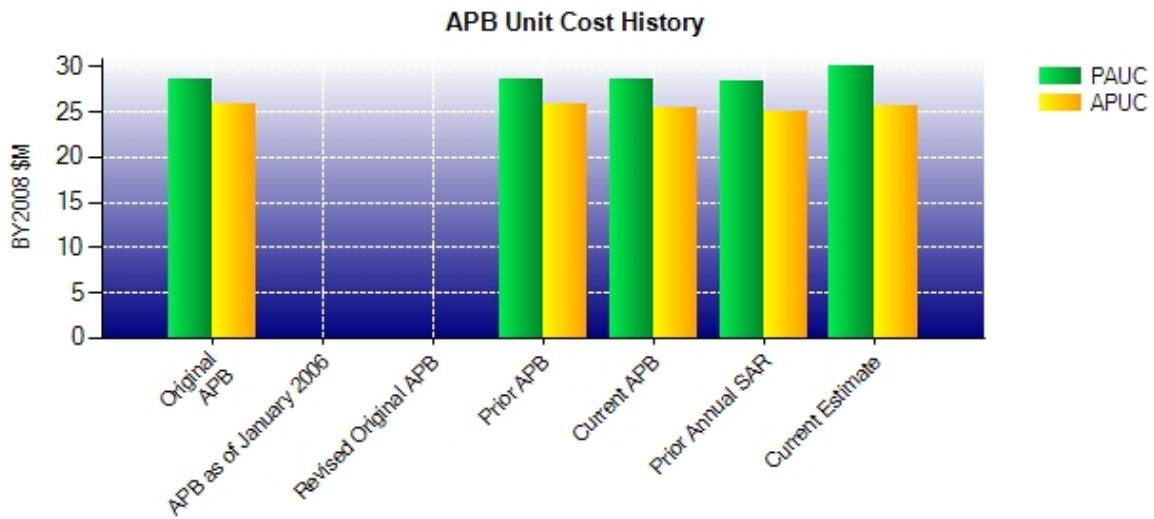
Unit Cost Report

	BY2008 \$M	BY2008 \$M	
Unit Cost	Current UCR Baseline (DEC 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	11593.7	10384.2	
Quantity	404	346	
Unit Cost	28.697	30.012	+4.58
Average Procurement Unit Cost (APUC)			
Cost	10175.3	8819.5	
Quantity	401	343	
Unit Cost	25.375	25.713	+1.33

	BY2008 \$M	BY2008 \$M	
Unit Cost	Original UCR Baseline (FEB 2012 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	11541.3	10384.2	
Quantity	404	346	
Unit Cost	28.568	30.012	+5.05
Average Procurement Unit Cost (APUC)			
Cost	10402.1	8819.5	
Quantity	401	343	
Unit Cost	25.940	25.713	-0.88

The FY 2015 PB reduced the Combat Air Patrol (CAP) requirement from 65 to 55 (404 to 346 aircraft) and eliminated the Airborne Signals Intelligence Payload 2C requirement. The CAP and associated aircraft reduction was the primary driver of unit cost growth in both the PAUC and APUC; however, it did not create significant or critical unit cost breaches to the program. The remaining unit cost growth is due to delays associated with Follow-On Test and Evaluation, Ground Control Station requirement changes, and other miscellaneous changes.

Unit Cost History



	Date	BY2008 \$M		TY \$M	
		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 2012	28.454	24.918	32.966	29.086
Current Estimate	DEC 2013	30.012	25.713	34.296	29.555

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	0.662	1.742	0.245	1.087	-2.346	0.000	2.638	4.028	34.296

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	0.650	1.459	0.247	-0.415	-3.053	0.000	2.662	1.550	29.555

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	11866.4
Total Quantity	N/A	N/A	391	346
Prog. Acq. Unit Cost (PAUC)	N/A	N/A	30.268	34.296

The Milestone C schedule event above reflects the Acquisition Category 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 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	+11.9	+287.4	+4.6	+303.9
Quantity	--	+202.3	--	+202.3
Schedule	--	+99.8	--	+99.8
Engineering	+475.1	+153.0	--	+628.1
Estimating	+282.4	-1150.8	-87.9	-956.3
Other	--	--	--	--
Support	--	+1205.6	--	+1205.6
Subtotal	+769.4	+797.3	-83.3	+1483.4
Current Changes				
Economic	-10.2	-64.3	-0.2	-74.7
Quantity	--	-962.1	--	-962.1
Schedule	--	-15.1	--	-15.1
Engineering	+43.3	-295.2	--	-251.9
Estimating	+40.9	+103.6	+0.2	+144.7
Other	--	--	--	--
Support	--	-292.7	--	-292.7
Subtotal	+74.0	-1525.8	--	-1451.8
Total Changes	+843.4	-728.5	-83.3	+31.6
CE - Cost Variance	1653.3	10137.5	75.6	11866.4
CE - Cost & Funding	1653.3	10137.5	75.6	11866.4

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	+410.8	+126.7	--	+537.5
Estimating	+242.9	-1110.7	-77.9	-945.7
Other	--	--	--	--
Support	--	+985.5	--	+985.5
Subtotal	+653.7	+168.3	-77.9	+744.1
Current Changes				
Economic	--	--	--	--
Quantity	--	-748.3	--	-748.3
Schedule	--	-5.7	--	-5.7
Engineering	+36.4	-258.9	--	-222.5
Estimating	+25.0	+82.8	+0.2	+108.0
Other	--	--	--	--
Support	--	-242.7	--	-242.7
Subtotal	+61.4	-1172.8	+0.2	-1111.2
Total Changes	+715.1	-1004.5	-77.7	-367.1
CE - Cost Variance	1493.9	8819.5	70.8	10384.2
CE - Cost & Funding	1493.9	8819.5	70.8	10384.2

Previous Estimate: December 2012

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-10.2
Adjustment for current and prior escalation. (Estimating)	+3.0	+3.2
Requirement changes / clarifications for Ground Control Station (GCS) Block 50. (Engineering)	+36.4	+43.3
Increase due to anticipated delays in the System Development and Demonstration Bridge contract and associated Follow On Test and Evaluation delays. (Estimating)	+22.0	+37.7
RDT&E Subtotal	+61.4	+74.0

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-64.3
Total Quantity variance resulting from a decrease of 58 MQ-9 Reaper aircraft from 401 to 343. (Subtotal)	-696.3	-895.2
Quantity variance resulting from a decrease of 58 MQ-9 Reaper aircraft from 401 to 343. (Quantity)	(-748.3)	(-962.1)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(-5.7)	(-7.3)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-8.9)	(-11.5)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+66.6)	(+85.7)
Procurement buy profile was accelerated due to the Congressional decision to increase the FY 2014 aircraft buy from 12 to 20. (Schedule)	0.0	-7.8
Increase due to change in warfighter requirement for Extended Range retrofits and communication requirements. (Engineering)	+111.6	+138.9
Removal of Airborne Signals Intelligence Payload 2C (ASIP-2C) requirement. (Engineering)	-230.4	-280.1
Sequestration reductions met via reduced user requirements associated with the Ground Control Station fielding plan. (Engineering)	-131.2	-142.5
Adjustment for current and prior escalation. (Estimating)	+16.2	+17.9
Adjustment for current and prior escalation. (Support)	+6.7	+7.5
Increase in Other Support to include production line shut down cost not previously estimated. (Support)	+105.7	+132.7
Decrease in Initial Spares and support equipment due to the reduction of 58 MQ-9 Reaper aircraft and cancelation of ASIP-2C. (Support) (QR)	-355.1	-432.9
Procurement Subtotal	-1172.8	-1525.8

(QR) Quantity Related

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.2
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2

MILCON Subtotal	+0.2	0.0
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Contracts

Appropriation: RDT&E

Contract Name MQ-9 System Development and Demonstration Bridge DO 49
Contractor General Atomics - Aeronautical Systems Inc.
Contractor Location 16761 Via Del Campo Court
 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	99.4	N/A	N/A	131.8	133.0

Target Price Change Explanation

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

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-20.2	-1.0
Previous Cumulative Variances	-4.9	-5.8
Net Change	-15.3	+4.8

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to unplanned/unscheduled on-wing certification events, test and evaluation support due to the incorporation of software change requests identified in testing, and schedule delays extending the contract period of performance. An overrun proposal has been received and was awarded February 7, 2014.

The favorable net change in the schedule variance is due to a program rebaseline aligning the schedule with the updated Follow-On Test and Evaluation date.

Appropriation: Procurement

Contract Name MQ-9 FY09/10 Spares and Support Equipment
Contractor General Atomics - Aeronautical Systems Inc.
Contractor Location 16761 Via Del Campo Court
 San Diego, CA 92127-1713
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	125.5	N/A	N/A	125.5	125.5

Target Price Change Explanation

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

Cost and Schedule Variance Explanations

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

Contract Comments

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

Appropriation: RDT&E

Contract Name **Multi-spectral Targeting System Target Location Accuracy, HD Video and Targeting Improvements DO12**
 Contractor Raytheon
 Contractor Location 2501 W Univerity Dr
 McKinney, TX 75070
 Contract Number, Type FA8620-06-G-4041/12, CPFF
 Award Date October 13, 2010
 Definitization Date October 13, 2010

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
11.5	N/A	N/A	97.8	N/A	N/A	99.1	100.2

Target Price Change Explanation

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

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/24/2014)	-1.8	-5.3
Previous Cumulative Variances	--	--
Net Change	-1.8	-5.3

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to cost growth within the Tri-Beam Emission and Receiver (TBEAR) laser development and production due to challenges integrating the laser that affected design and production. Unrecoverable cost variances were captured in the overrun modification awarded August 2013.

The unfavorable cumulative schedule variance is due to the delays in development and production of the TBEAR laser. Issues have been resolved and no impact to contract period of performance is expected.

Contract Comments

This is the first time this contract is being reported.

Appropriation: Procurement

Contract Name **MQ-9 CY11 Spares & Support Equipment**
 Contractor General Atomics - Aeronautical Systems, Inc.
 Contractor Location 14200 Kirkham way
 Poway, CA 92064
 Contract Number, Type FA8620-10-G-3038/1, FFP
 Award Date July 12, 2012
 Definitization Date July 12, 2012

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	136.1	N/A	N/A	136.1	136.1

Target Price Change Explanation

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

Cost and Schedule Variance Explanations

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

Contract Comments

This is the first time this contract is being reported.

Appropriation: Procurement

Contract Name MQ-9 FY10 Production Effort
Contractor General Atomics Aeronautical Systems, Inc.
Contractor Location 16761 Via Del Campo Court
 San Diego, CA 92127-1713
Contract Number, Type FA8620-10-G-3038/28, FFP
Award Date January 31, 2011
Definitization Date January 31, 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	22	210.8	N/A	30	210.8	210.8

Target Price Change Explanation

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.

Cost and Schedule Variance Explanations

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

Contract Comments

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

Contract award date, definitization date, and quantity were erroneously reported in previous SARs and have been corrected.

Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	3	3	3	100.00%
Production	160	160	343	46.65%
Total Program Quantity Delivered	163	163	346	47.11%

Expended and Appropriated (TY \$M)

Total Acquisition Cost	11866.4	Years Appropriated	13
Expended to Date	3481.5	Percent Years Appropriated	34.21%
Percent Expended	29.34%	Appropriated to Date	6069.7
Total Funding Years	38	Percent Appropriated	51.15%

The above data is current as of 3/24/2014.

Operating and Support Cost

MQ-9 Reaper

Assumptions and Ground Rules

Cost Estimate Reference:

The O&S costs are from the current Program Office Estimate (POE) which is based on historical costs and estimated future costs through 2044. The O&S estimate includes all Cost Analysis and Program Evaluation elements as detailed in the table on the following page. The MQ-9 Reaper has been flying operations since 2006. Historical costs are obtained from monthly Contractor Logistics 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). The total MQ-9 Reaper life cycle flying hours are based on the Air Combat Command (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-Level Manpower costs are estimated using manpower projections. Unit Operations cost factors include fuel, training munitions, and temporary duty costs. Maintenance costs include Operational-level, Depot-level (D-level), and Government Furnished Equipment repair. Sustaining support includes D-level sustaining engineering and program management and system specific training derived from actual costs from the AFTOC database, and converted to a cost per flying hour. Continuing System Improvements costs include Reliability & Maintainability 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.

Sustainment Strategy:

Sustainment of the MQ-9 Reaper systems is currently provided through CLS contracts with General Atomics, Aeronautical Systems Incorporated, L-3 Communication Systems, West and Raytheon. The CLS contracts include program management, logistics support, configuration management, 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 locations. The Program Office (PO) is working to transition from a CLS to organic sustainment strategy. The future strategy will include a public private partnership that leverages original equipment manufacturer and organic capabilities.

The total quantity of MQ-9 Reapers to be procured is 346. 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 O&S costs are based on the current POE which utilizes the same methodology as the MQ-9 Reaper O&S estimate. The MQ-1 Predator O&S costs are based on 268 aircraft and a service life of 20 years, with a planned divestiture of the program within the Future Years Defense Program (FYDP). Disposal costs for the MQ-1 Predator are estimated at BY 2008 \$7.3M.

The MQ-1 Predator total BY 2008 O&S figure may be computed by multiplying the average cost per flying hour for each cost element category (totaling \$2.648K) by the total flying hours of the MQ-1 Predator program (2,152,866). The total MQ-1 Predator O&S figure decreased from the figure reported in the December 2012 SAR based on the planned divestiture of the MQ-1 Predator within the FYDP. From a cost per flying hour perspective the MQ-9 Reaper's costs vary slightly from its antecedent program, the MQ-1 Predator.

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	0.724	0.408	
Unit Operations	0.232	0.054	
Maintenance	0.737	0.462	
Sustaining Support	0.536	0.032	
Continuing System Improvements	0.061	0.038	
Indirect Support	0.256	0.069	
Other	0.000	0.000	
Total	2.546	1.063	

Unitized Cost Comments:

The average cost per flying hour for a MQ-9 Reaper is \$2.617K. The flying hour projection is based on the updated flying hour profile received from ACC. 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.

	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	37897.8	5700.4
Then Year	65058.9	N/A	55959.9	6015.0

Total O&S Costs Comments:

The total O&S cost was derived through: i) analysis of manpower projections, and ii) actual historical data and estimated out year data. The total BY 2008 O&S figure may be computed by multiplying the average cost per flying hour for each cost element category (totaling \$2.617K) by the total flying hours of the program (14,479,698).

O&S Cost Variance		
Category	BY 2008 \$M	Change Explanation
Prior SAR Total O&S Estimate December 2012	47,215.4	
Cost Estimating Methodology	-553.207	Revised methodology for reliability and maintainability, sustaining engineering and software maintenance. Revised methodology is a more applicable cost estimating relationship based on historical costs.
Cost Data Update	0.000	
Labor Rate	0.000	

Energy Rate	0.000	
Technical Input	-2,910.324	Reduction in Field Service Representatives and the removal of Airborne Signals Intelligence Payload 2C (ASIP-2C) requirement.
Programmatic/Planning Factors	-5,854.084	Revised manpower projections and flying hours based on reduction from 65 to 55 CAPs.
Other	0.000	
Total Changes	-9,317.615	
Current Estimate	37,897.8	

Current BY 2008 O&S costs decreased by \$9,317.6M from the December 2012 SAR primarily due to a decrease in the CAP requirement from 65 CAPs to 55 CAPs and the elimination of ASIP-2C, decreasing costs in Maintenance, Sustaining Support, Continuing System Improvements, and Indirect Support.

Disposal Costs:

The MQ-9 Reaper disposal cost estimate is based on the current POE and assumes cold storage. The estimate utilizes various factors such as aircraft quantity and weights to calculate shipping costs, demolition costs, and disposal of hazardous materials. The total disposal cost for the MQ-9 Reaper is BY 2008 \$19.2M.