Selected Acquisition Report (SAR)

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

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

As of FY 2016 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President’s Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

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

DoD Component

Air Force

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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 traditionally 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 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 MQ-9 Reaper Modernization program is being established in the future to incorporate additional capabilities. The MQ-9 Reaper Modernization program will have separate requirement documents.

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 Program Office (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

As of February 2015, the Air Force contracted with General Atomics Aeronautical Systems, Inc. (GA-ASI) for a total of 255 MQ-9 Reaper Unmanned Aircraft Systems (MQ-9 Reapers). There have been 199 aircraft delivered, which include test assets. Additionally, the MQ-9 Reaper has flown over 648,000 cumulative flight hours.

Based on the FY 2013 PB, the MQ-9 Reaper Program reached the baselined 65 combined MQ-1 Predator / MQ-9 Reaper Combat Air Patrols (CAP) on May 28, 2014. The current 60 CAP program, based on the FY 2016 PB, moves to an all MQ-9 Reaper fleet and divests the MQ-1 Predator within the FYDP. Since the December 2013 SAR, Air Combat Command (ACC) stood up six additional MQ-9 Reaper CAPs, bringing the total number of MQ-9 Reaper CAPs to 35.

In 2014, the Program Office (PO) successfully executed two Joint Urgent Operational Needs (JUON). The PO completed all modifications on the first JUON to Air Force Special Operations Command (AFSOC) and ACC MQ-9 Reaper systems to support on-time fielding of the Afghan Enabler JUON. On March 1, 2014, ACC began operational missions with Afghan Enabler, which achieved full operational capability in May 2014. The second JUON was received by the PO on December 16, 2013, for 38 Extended Range (ER) aircraft. The PO awarded the contract to deliver and field the aircraft on February 5, 2014. ER provides an extension of range and endurance of the current MQ-9 Reaper configuration, which allows for increased time on station and mission radius. As of February 2015, 30 ER aircraft have been delivered and the PO is on track to meet the required need date of March 31, 2015. Based on warfighter requirements the PO plans to retrofit the entire MQ-9 fleet with ER capability.

In April 2014, the PO was in the process of coordinating with the Air Force Cost Analysis Agency (AFCAA) to support an update of the APB. The program was redirected by the MDA during an Air Force acquisition review in order to meet warfighter requirements in an expedited manner. The MQ-9 Reaper PO was directed to develop an acquisition strategy that blends the rigor of a traditional acquisition program with the agility of a Quick Reaction Capability (QRC) program to make it more responsive to warfighter requirements. The Hybrid Acquisition concept was approved at the September 2014 Configuration Steering Board (CSB). The detailed acquisition strategy document is currently in final coordination and will be sent to the Air Force Senior Acquisition Executive for approval. The Hybrid Acquisition strategy is a schedule driven process fielding mature capabilities every 18-24 months. Once approved, the PO and AFCAA plan to update the cost estimate and APB reflecting this new strategy by 4th Quarter FY 2015.

On February 6, 2014, the PO conducted the 904.2 Software Configuration Board to establish 904.2 software as the baseline for all Ground Control Stations (GCS) and MQ-9 Reapers. 904.2 software fielded in April 2014.

In February 2015, the PO awarded the FY 2014 Block 5 production contract.

The PO continues to make progress on 904.6 Developmental Test with a planned completion date of February 2015. Flight testing for both MQ-9 Reaper Block 1 and Block 5 was completed on 904.6 Rev J on July 19, 2014. The PO has incorporated all category (CAT) I and CAT II urgent Deficiency Reports in the final 904.6 software release.

The Block 50 GCS development contract was awarded in April 2014, with a kickoff meeting held the same month. The combined government and contractor team instituted a robust requirements process culminating in a System Requirements Review (SRR) event in November 2014. Additionally, the combined team held a Pre-Integrated Baseline Review technical interchange meeting in December 2014. Finally in 2014, the Block 50 GCS prototype and a MQ-9 Reaper Block 1 aircraft completed a successful test demonstration in support of the Air Force Rapid Capability Office Common Mission Control Center program.

As reported in the December 2013 SAR, the PO received final approval on the revised schedule at the December 2013 CSB with the new FOT&E completion objective date of January 2016. The PO has slipped the FOT&E completion date by three months to April 2016 for resolution of a High-Outside Air Temperature issue. The resolution includes a new internal plenum to direct airflow from Ground Support Equipment cooling to key subsystems as well as procedural changes to streamline and shorten the pre-launch workflow. The planned solution requires the installation of a plenum into the aircraft's

avionics bay to provide cooling air to key avionics components. This approach coupled with optimized checklist procedures and cooling carts provides the needed margins to support ground, launch and recovery operations in extreme temperature conditions. The program is still within the approved threshold schedule.

Since the December 2013 SAR the PO finalized three additional Letters of Offer and Acceptance with Germany, Netherlands, and United Kingdom, totaling $31.4M.

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

Threshold Breaches

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

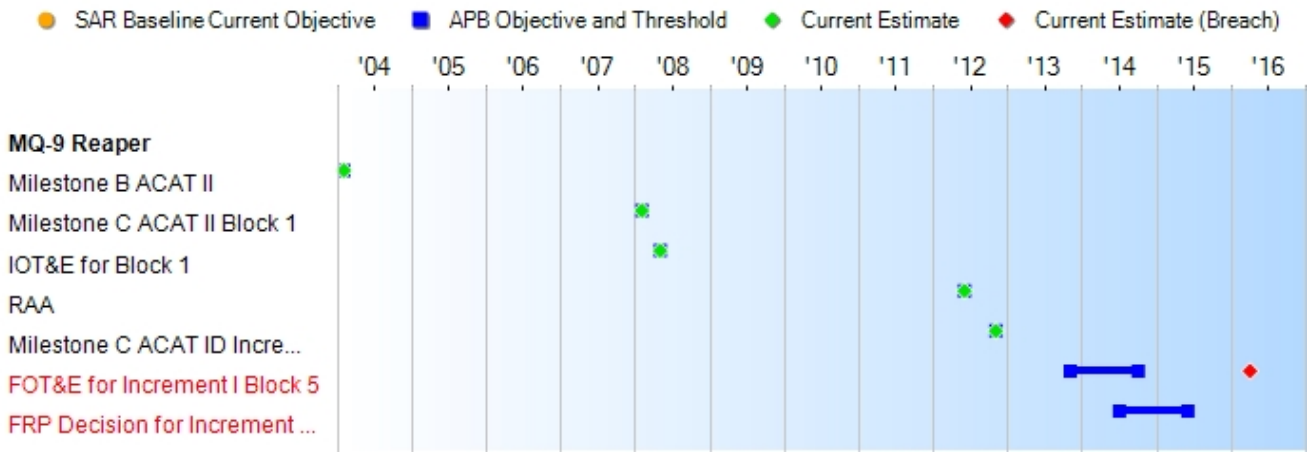
Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

The MILCON APPN breach was previously reported in the December 2012 SAR.

The Follow-On Test and Evaluation (FOT&E) and FRP schedule breaches were previously reported in the December 2013 SAR.

Schedule



Schedule Events					
Events	**SAR Baseline Production Estimate**	**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	**Apr 2016**[1]	(Ch-1)
FRP Decision for Increment I Block 1 and 5	Mar 2013	Jul 2014	Jun 2015	**TBD**[1]	

[1] *APB Breach*

Change Explanations

(Ch-1) The current estimate for FOT&E for Increment I Block 5 changed from January 2016 to April 2016 due to the MQ-9 aircraft experiencing difficulty conducting ground and launch operations in High Outside Air Temperature conditions. The Program Office is executing the resolution to this issue which includes a new internal plenum to direct airflow from Ground Support Equipment cooling to key subsystems.

Notes

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

FOT&E - Follow-On Test and Evaluation
GCS - Ground Control Station
IOT&E - Initial Operational Test and Evaluation
PMAI - Primary Mission Aircraft Inventory
RAA - Required Assets Available

Performance

Performance Characteristics				
SAR Baseline Production Estimate	**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 survivable, interoperable, secure, and operationally effective information exchanges to enable a Net-Centric military capability.				
The System must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical 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,	The System must fully support execution of all operational activities identified in the applicable joint and system integrated architectures and the system must satisfy the technical 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,	The System must fully support execution of joint critical operational activities identified in the applicable joint and system integrated 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	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 architec-tures and the system must satisfy the technical require-ments 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, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and information assurance attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	3) NCOW-RM Enterprise Services 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.	KIP declaration table, 3) NCOW-RM Enterprise Services 4) IA requirements including availability, integrity, authenticat-ion, confidential-ity, and nonrepudiat-ion, and issuance of an IATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.		3) NCOW-RM Enterprise Services 4) IA requirements including availability, integrity, authenti-cation, confiden-tiality, and nonrepu-diation, and issuance of an ATO by the DAA, and 5) Operationally effective information exchanges; and mission critical performance and IA attributes, data correctness, data availability, and consistent data processing specified in the applicable joint and system integrated architecture views.

Requirements Reference

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
NCOW-RM - Net-Centric Operations and Warfare Reference Model
TV-1 - Technical Standards Profile

Track to Budget

General Notes

Program Element 0205219F includes funds not associated with the MDAP. This report only reflects funds associated with the MDAP.

RDT&E

Appn	BA	PE
Air Force	3600 07	0205219F

Project	Name
675246	MQ-9 Development and Fielding

Appn	BA	PE
Air Force	3600 07	0305205F

Project	Name		
674755		(Shared)	(Sunk)

Appn	BA	PE
Air Force	3600 07	0305219F

Project	Name		
675143	PREDATOR	(Shared)	(Sunk)

Procurement

Appn	BA	PE
Air Force	3010 07	0205219F

Line Item	Name	
000075	Other Production Charges	(Shared)

Appn	BA	PE
Air Force	3010 06	0205219F

Line Item	Name	
000999	Initial Spares	(Shared)

Appn	BA	PE
Air Force	3010 05	0305205F

Line Item	Name		
PRDT01	MQ-1 Mods	(Shared)	(Sunk)

Appn	BA	PE
Air Force	3010 04	0305205F

Line Item	Name		
PRDTA1	Aircraft Procurement	(Shared)	(Sunk)

Appn	BA	PE
Air Force	3010 04	0205219F

Line Item	Name
PRDTB1	MQ-9

Appn	BA	PE
Air Force	3010 05	0205219F

Line Item	Name
PRDTB2	MQ-9 Mods

MILCON

Appn	BA	PE
Air Force	3300 01	0205219F

Project	Name	
BHD000	MQ-9 Operations	(Sunk)
KWRD143	RPA Fixed Ground Control Station Facility	
RKMF113	Add RPA Weapons School Facility	(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2008 $M			BY 2008 $M	TY $M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	778.8	1365.1	1501.6	1240.1	809.9	1488.8	1340.2
Procurement	9824.0	10175.3	11192.8	9467.2	10866.0	11765.5	10888.7
Flyaway	--	--	--	6951.1	--	--	8024.7
Recurring	--	--	--	6951.1	--	--	8024.7
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	2516.1	--	--	2864.0
Other Support	--	--	--	1020.3	--	--	1175.6
Initial Spares	--	--	--	1495.8	--	--	1688.4
MILCON	148.5	53.3	58.6	72.3[1]	158.9	55.6	77.3
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	10751.3	11593.7	N/A	10779.6	11834.8	13309.9	12306.2

[1] *APB Breach*

Confidence Level

Confidence Level of cost estimate for current APB: 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.

Cost Notes

This report only reflects funds associated with this MDAP.

Total Quantity			
Quantity	**SAR Baseline Production Estimate**	**Current APB Production**	**Current Estimate**
RDT&E	3	3	3
Procurement	388	401	361
Total	391	404	364

Quantity Notes

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 Summary									
FY 2016 President's Budget / December 2014 SAR (TY$ M)									
Appropriation	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
RDT&E	817.9	148.6	123.4	110.8	104.8	34.5	0.2	0.0	1340.2
Procurement	5058.5	718.3	889.7	919.3	895.2	660.1	387.4	1360.2	10888.7
MILCON	74.1	0.0	0.0	3.2	0.0	0.0	0.0	0.0	77.3
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2016 Total	5950.5	866.9	1013.1	1033.3	1000.0	694.6	387.6	1360.2	12306.2
PB 2015 Total	6069.7	705.7	835.0	811.0	996.4	954.3	499.5	994.8	11866.4
Delta	-119.2	161.2	178.1	222.3	3.6	-259.7	-111.9	365.4	439.8

Funding Notes

This report only reflects funds associated with this MDAP.

"To Complete" procurement costs in the table above primarily include retrofit costs and Ground Control Station (GCS) Block 50 costs.

Quantity Summary										
FY 2016 President's Budget / December 2014 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	Total
Development	3	0	0	0	0	0	0	0	0	3
Production	0	260	24	29	24	21	3	0	0	361
PB 2016 Total	3	260	24	29	24	21	3	0	0	364
PB 2015 Total	3	260	12	22	11	22	16	0	0	346
Delta	0	0	12	7	13	-1	-13	0	0	18

Cost and Funding

Annual Funding By Appropriation

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
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	--	--	--	--	--	--	104.0
2015	--	--	--	--	--	--	148.6
2016	--	--	--	--	--	--	123.4
2017	--	--	--	--	--	--	110.8
2018	--	--	--	--	--	--	104.8
2019	--	--	--	--	--	--	34.5
2020	--	--	--	--	--	--	0.2
Subtotal	3	--	--	--	--	--	1340.2

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
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	--	--	--	--	--	--	99.5
2013	--	--	--	--	--	--	119.9
2014	--	--	--	--	--	--	93.8
2015	--	--	--	--	--	--	132.4
2016	--	--	--	--	--	--	108.1
2017	--	--	--	--	--	--	95.3
2018	--	--	--	--	--	--	88.4
2019	--	--	--	--	--	--	28.5
2020	--	--	--	--	--	--	0.2
Subtotal	3	--	--	--	--	--	1240.1

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

Annual Funding 3010 | Procurement | Aircraft Procurement, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
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	515.4	177.8	--	693.2	211.6	904.8
2013	36	553.0	216.1	--	769.1	149.8	918.9
2014	20	305.8	74.6	--	380.4	132.9	513.3
2015	24	396.4	71.8	--	468.2	250.1	718.3
2016	29	511.8	157.9	--	669.7	220.0	889.7
2017	24	445.1	196.8	--	641.9	277.4	919.3
2018	21	446.2	209.0	--	655.2	240.0	895.2
2019	3	160.9	206.7	--	367.6	292.5	660.1
2020	--	75.8	214.0	--	289.8	97.6	387.4
2021	--	76.7	199.6	--	276.3	39.4	315.7
2022	--	163.6	114.2	--	277.8	32.4	310.2
2023	--	156.2	26.8	--	183.0	22.2	205.2
2024	--	195.4	9.3	--	204.7	23.2	227.9
2025	--	146.1	8.0	--	154.1	16.2	170.3
2026	--	36.8	5.0	--	41.8	0.8	42.6
2027	--	25.3	4.7	--	30.0	0.6	30.6
2028	--	--	4.2	--	4.2	0.1	4.3
2029	--	--	4.2	--	4.2	--	4.2
2030	--	--	4.3	--	4.3	--	4.3
2031	--	--	4.4	--	4.4	--	4.4
2032	--	--	4.6	--	4.6	--	4.6
2033	--	--	4.7	--	4.7	--	4.7
2034	--	--	4.8	--	4.8	--	4.8
2035	--	--	5.0	--	5.0	--	5.0
2036	--	--	5.1	--	5.1	--	5.1
2037	--	--	5.3	--	5.3	--	5.3
2038	--	--	5.4	--	5.4	--	5.4
2039	--	--	5.6	--	5.6	--	5.6
Subtotal	361	5722.9	2301.8	--	8024.7	2864.0	10888.7

Annual Funding 3010 | Procurement | Aircraft Procurement, Air Force							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
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	232.1	504.2
2011	48	399.7	48.3	--	448.0	130.4	578.4
2012	48	471.7	162.7	--	634.4	193.7	828.1
2013	36	494.9	193.4	--	688.3	134.0	822.3
2014	20	269.2	65.7	--	334.9	117.0	451.9
2015	24	344.0	62.3	--	406.3	217.0	623.3
2016	29	435.9	134.4	--	570.3	187.4	757.7
2017	24	371.8	164.4	--	536.2	231.7	767.9
2018	21	365.4	171.3	--	536.7	196.5	733.2
2019	3	129.2	166.0	--	295.2	234.8	530.0
2020	--	59.7	168.4	--	228.1	76.9	305.0
2021	--	59.2	154.0	--	213.2	30.4	243.6
2022	--	123.8	86.3	--	210.1	24.6	234.7
2023	--	115.9	19.8	--	135.7	16.5	152.2
2024	--	142.1	6.8	--	148.9	16.8	165.7
2025	--	104.2	5.7	--	109.9	11.5	121.4
2026	--	25.7	3.5	--	29.2	0.6	29.8
2027	--	17.3	3.3	--	20.6	0.4	21.0
2028	--	--	2.8	--	2.8	0.1	2.9
2029	--	--	2.8	--	2.8	--	2.8
2030	--	--	2.8	--	2.8	--	2.8
2031	--	--	2.8	--	2.8	--	2.8
2032	--	--	2.9	--	2.9	--	2.9
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	361	5007.0	1944.1	--	6951.1	2516.1	9467.2

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	68.0
2003	4	40.8
2004	5	73.1
2005	5	90.0
2006	2	32.8
2007	12	132.0
2008	28	257.0
2009	24	249.0
2010	24	418.6
2011	48	783.0
2012	48	733.0
2013	36	466.0
2014	20	259.0
2015	24	327.0
2016	29	397.7
2017	24	332.5
2018	21	300.0
2019	3	47.5
2020	--	--
2021	--	--
2022	--	--
2023	--	--
2024	--	--
2025	--	--
2026	--	--
2027	--	--
2028	--	--
2029	--	--
2030	--	--
2031	--	--
2032	--	--
2033	--	--
2034	--	--
2035	--	--
2036	--	--
2037	--	--
2038	--	--
2039	--	--
Subtotal	361	5007.0

Annual Funding 3300 | MILCON | Military Construction, Air Force	
Fiscal Year	**TY $M** **Total Program**
2009	44.5
2010	2.7
2011	8.4
2012	--
2013	--
2014	18.5
2015	--
2016	--
2017	3.2
Subtotal	77.3

Annual Funding 3300 | MILCON | Military Construction, Air Force	
Fiscal Year	**BY 2008 $M**
	Total Program
2009	43.0
2010	2.6
2011	7.8
2012	--
2013	--
2014	16.2
2015	--
2016	--
2017	2.7
Subtotal	72.3

Low Rate Initial Production

Item	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 the planned procurement of 169 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	Description
United Kingdom	12/10/2014	0	27.3	Agreement provides funding for Contractor Logistics Support (CLS).
Netherlands	9/30/2014	0	3.1	Agreement provides funding for airworthiness certification as well as a site survey.
Germany	12/26/2013	0	1.0	Agreement provides funding for airworthiness documents, manpower, and travel.
France	8/9/2013	3	188.0	Purchase of three aircraft, one Mobile Ground Control Station (MGCS), 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	181.5	Purchase of six aircraft, three MGCSs, CLS, and assorted support equipment.
United Kingdom	10/4/2007	4	69.1	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.

Notes

United Kingdom's Letter of Offer and Acceptance (LOA), dated December 10, 2014, is a FMS transaction, agreement number UK-D-GAY, and is in the operations and sustainment phase.

Netherlands LOA, dated September 30, 2014, is a FMS transaction, agreement number NE-D-GAO, and is in the operations and sustainment phase.

Germany's LOA, dated December 26, 2013, is a FMS transaction, agreement number GY-D-GAX, and provides funding for airworthiness documents, manpower as well as travel.

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, with the majority of the total value consisting of CLS. This agreement is in the operations and sustainment phase.

Nuclear Costs

None

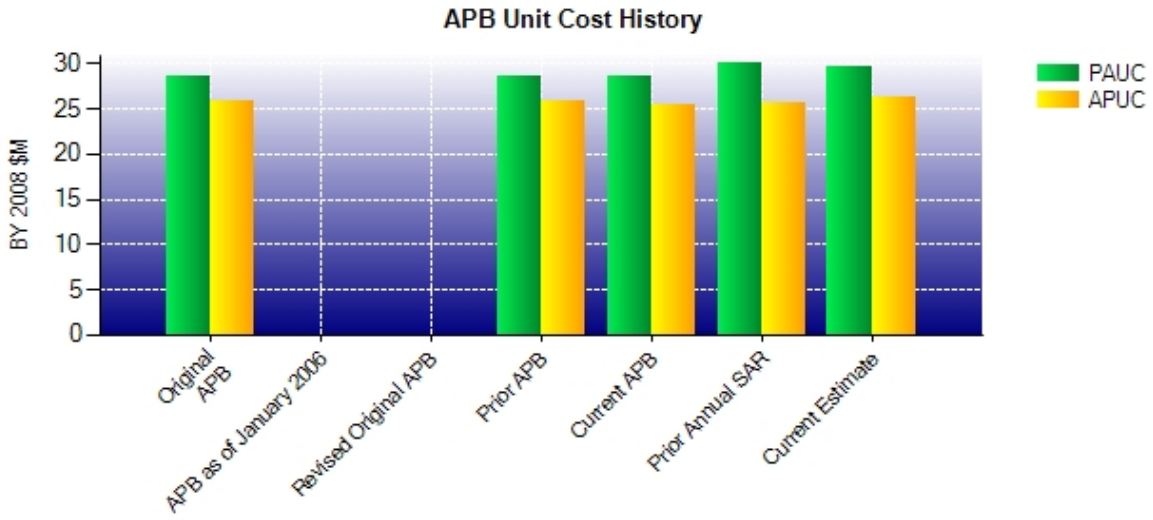
Unit Cost

Unit Cost Report

Item	BY 2008 $M Current UCR Baseline (Dec 2012 APB)	BY 2008 $M Current Estimate (Dec 2014 SAR)	% Change
Program Acquisition Unit Cost			
Cost	11593.7	10779.6	
Quantity	404	364	
Item	28.697	29.614	+3.20
Average Procurement Unit Cost			
Cost	10175.3	9467.2	
Quantity	401	361	
Unit Cost	25.375	26.225	+3.35

Item	BY 2008 $M Original UCR Baseline (Feb 2012 APB)	BY 2008 $M Current Estimate (Dec 2014 SAR)	% Change
Program Acquisition Unit Cost			
Cost	11541.3	10779.6	
Quantity	404	364	
Unit Cost	28.568	29.614	+3.66
Average Procurement Unit Cost			
Cost	10402.1	9467.2	
Quantity	401	361	
Unit Cost	25.940	26.225	+1.10

Unit Cost History



Item	Date	BY 2008 $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 2013	30.012	25.713	34.296	29.555
Current Estimate	Dec 2014	29.614	26.225	33.808	30.163

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
Initial PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
30.268	0.423	0.942	0.166	2.603	-3.021	0.000	2.427	3.540	33.808

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
28.005	0.435	0.780	0.168	1.148	-2.907	0.000	2.534	2.158	30.163

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	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	12306.2
Total Quantity	N/A	N/A	391	364
PAUC	N/A	N/A	30.268	33.808

The Milestone C schedule event above reflects the ACAT II Block 1 Milestone C decision. On November 21, 2012 the USD (AT&L) signed an ADM approving the ACAT ID Increment 1, Block 5 Milestone C and delegating MDA to the Air Force.

Milestone Required Assets Available is used in lieu of IOC and was completed on June 30, 2012.

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	809.9	10866.0	158.9	11834.8
Previous Changes				
Economic	+1.7	+223.1	+4.4	+229.2
Quantity	--	-759.8	--	-759.8
Schedule	--	+84.7	--	+84.7
Engineering	+518.4	-142.2	--	+376.2
Estimating	+323.3	-1047.2	-87.7	-811.6
Other	--	--	--	--
Support	--	+912.9	--	+912.9
Subtotal	+843.4	-728.5	-83.3	+31.6
Current Changes				
Economic	-9.1	-66.2	-0.1	-75.4
Quantity	--	+285.5	--	+285.5
Schedule	--	-24.1	--	-24.1
Engineering	+11.7	+556.5	+3.2	+571.4
Estimating	-284.4	-2.2	-1.4	-288.0
Other	--	--	--	--
Support	-31.3	+1.7	--	-29.6
Subtotal	-313.1	+751.2	+1.7	+439.8
Total Changes	+530.3	+22.7	-81.6	+471.4
CE - Cost Variance	1340.2	10888.7	77.3	12306.2
CE - Cost & Funding	1340.2	10888.7	77.3	12306.2

Summary BY 2008 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	778.8	9824.0	148.5	10751.3
Previous Changes				
Economic	--	--	--	--
Quantity	--	-580.8	--	-580.8
Schedule	--	-6.4	--	-6.4
Engineering	+447.2	-132.2	--	+315.0
Estimating	+267.9	-1027.9	-77.7	-837.7
Other	--	--	--	--
Support	--	+742.8	--	+742.8
Subtotal	+715.1	-1004.5	-77.7	-367.1
Current Changes				
Economic	--	--	--	--
Quantity	--	+233.1	--	+233.1
Schedule	--	--	--	--
Engineering	+10.3	+421.6	+2.7	+434.6
Estimating	-236.8	+5.0	-1.2	-233.0
Other	--	--	--	--
Support	-27.3	-12.0	--	-39.3
Subtotal	-253.8	+647.7	+1.5	+395.4
Total Changes	+461.3	-356.8	-76.2	+28.3
CE - Cost Variance	1240.1	9467.2	72.3	10779.6
CE - Cost & Funding	1240.1	9467.2	72.3	10779.6

Previous Estimate: December 2013

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-9.1
Additional requirements for the Ground Control Station (GCS). (Engineering)	+10.3	+11.7
Revised estimate due to Congressional reduction for FY 2015. (Estimating)	-19.0	-21.3
Revised estimate due to the transition of funds for the MQ-9 Reaper Modernization Program not associated with the MDAP. (Estimating)	-251.3	-301.8
Revised estimate for support costs. (Support)	-27.3	-31.3
Revised estimate due to overruns associated with the System Development and Demonstration Bridge contract. (Estimating)	+35.4	+40.9
Revised estimate due to Air Force funding adjustments in FY 2014 and FY 2015. (Estimating)	-3.4	-3.8
Adjustment for current and prior escalation. (Estimating)	+1.5	+1.6
RDT&E Subtotal	-253.8	-313.1

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-66.2
Quantity variance resulting from an increase of 18 aircraft from 343 to 361. (Quantity)	+233.1	+285.5
Acceleration of procurement buy profile, primarily due to the movement of 13 MQ-9 Reaper aircraft from FY 2019 to FY 2017. (Schedule)	0.0	-24.1
Increase due to additional requirement to retrofit all aircraft with Extended Range. (Engineering)	+250.2	+345.3
Revised estimate due to additional retrofit modifications to the GCS. (Estimating)	+33.4	+41.4
Increase based on the addition of Multi-Station Beyond Line of Sight Architecture Expansion (BLOS AE), Barrett Asymmetric Digital Datalink Computer (BADDC), BADDC GCS, and Air Handler Cheeks, identified by the lead Command. (Engineering)	+171.4	+211.2
Revised estimate due to the transition of funds for the MQ-9 Reaper Modernization Program not associated with the MDAP. (Estimating)	-106.9	-135.2
Adjustment for current and prior escalation. (Estimating)	+8.4	+9.4
Revised estimate due to the increase in quantity of GCSs purchased as a result of the aircraft buy increasing from 343 to 361. (Estimating) (QR)	+39.2	+48.5
Revised estimate to reflect prior year actuals for GCSs. (Estimating)	+30.9	+33.7
Adjustment for current and prior escalation. (Support)	+3.6	+4.2
Decrease in Other Support due to revised estimate in overall trainer requirements. (Support)	-173.3	-199.6
Increase in Initial Spares resulting from an increase of 18 aircraft. (Support) (QR)	+157.7	+197.1
Procurement Subtotal	+647.7	+751.2

(QR) Quantity Related

MILCON	$M	
Current Change Explanations	Base Year	Then Year

Revised escalation indices. (Economic)	N/A	-0.1
Addition of a Block 50 GCS facility at Holloman Air Force Base. (Engineering)	+2.7	+3.2
Revised estimate to reflect prior year actuals. (Estimating)	-1.3	-1.5
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
MILCON Subtotal	+1.5	+1.7

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: MQ-9 System Development and Demonstration Bridge DO 49
Contractor: GENERAL ATOMICS AERONAUTICAL SYSTEMS, INC.
Contractor Location: 14200 Kirkham Way
Poway, CA 92064
Contract Number: FA8620-05-G-3028/49
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: July 17, 2009
Definitization Date: July 17, 2009

Contract Price							
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	106.0	N/A	N/A	162.0	166.8

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.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2014)	-34.6	-4.4
Previous Cumulative Variances	-20.2	-1.0
Net Change	-14.4	-3.4

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to unplanned/unscheduled on-wing certification events and test and evaluation support to incorporate software change requests. Unrecoverable cost variances have been captured in three overrun modifications totaling $46.8M. They were awarded in November 2011 for $5.9M, February 2014 for $12.1M, and October 2014 for $28.8M. Total contract variance to date is $-34.6M.

The unfavorable net change in the schedule variance is due to an intentional delay of receipt of material in support of retrofit kits due to retrofit aircraft availability. The work has been rescoped which shifted retrofit completion from September 2014 to October 2015. The work will be replanned once contract modification has been definitized. Additional schedule variance driven by software testing delays; software testing expected to complete February 2015. The Program Office awarded a period of performance extension in October 2014 to align the contract to the revised Follow-On Test and Evaluation (FOT&E) schedule.

Contract Identification

Appropriation: Procurement
Contract Name: Block 30 GCS Retrofit
Contractor: GENERAL ATOMICS AERONAUTICAL SYSTEMS, INC.
Contractor Location: 14200 Kirkham Way
Poway, CA 92064
Contract Number: FA8620-10-G-3038/14
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: September 29, 2011
Definitization Date: September 29, 2011

Contract Price							
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	64.9	64.9

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.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2014)	+4.7	-0.5
Previous Cumulative Variances	+0.8	-4.1
Net Change	+3.9	+3.6

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to labor efficiencies in retrofit kit production. Contract is expected to complete with an underrun.

The favorable net change in the schedule variance is due to the replan of the Predator Mission Aircrew Training Systems (PMATS) retrofit kits. A contract modification awarded, extending the period of performance through September 2016. The work had been planned to be descoped, but due to customer (Air Combat Command) change of direction, stop work was lifted and work has been replanned.

Contract Identification

Appropriation: RDT&E

Contract Name: Multi-spectral Targeting System Target Location Accuracy, HD Video and Targeting Improvements DO12

Contractor: Raytheon (Space and Airborne Systems)

Contractor Location: 2501 W University Dr
McKinney, TX 75070

Contract Number: FA8620-06-G-4041/12

Contract Type: Cost Plus Fixed Fee (CPFF)

Award Date: October 13, 2010

Definitization Date: October 13, 2010

Contract Price							
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	99.3	N/A	N/A	103.2	107.7

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.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2014)	-4.2	-3.1
Previous Cumulative Variances	-1.8	-5.3
Net Change	-2.4	+2.2

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to delays in flight tests which are driving software rework, integration challenges, and discovery of performance issues that have driven additional work. Unrecoverable cost variances were captured in the overrun modification awarded August 2013 ($3.4M). An additional overrun has been submitted and is in government review.

The favorable net change in the schedule variance is due to delivery of eight Tri-Beam Emission and Receiver (TBEAR) lasers, which had previously been delayed.

Notes

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

Contract Identification

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: FA8620-10-G-3038/1

Contract Type: Firm Fixed Price (FFP)

Award Date: July 12, 2012

Definitization Date: July 12, 2012

Contract Price							
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	138.6	N/A	N/A	138.6	138.6

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 Identification

Appropriation: Procurement

Contract Name: FY13 MQ-9 Reaper Production

Contractor: GENERAL ATOMICS AERONAUTICAL SYSTEMS, INC.

Contractor Location: 14200 Kirkham Way
Poway, CA 92064

Contract Number: FA8620-10-G-3038/50

Contract Type: Fixed Price Incentive(Firm Target) (FPIF)

Award Date: October 15, 2013

Definitization Date: December 12, 2014

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
213.8	233.4	24	213.8	233.4	24	214.0	213.8

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2014)	+4.5	+8.9
Previous Cumulative Variances	--	--
Net Change	+4.5	+8.9

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to a material cost savings and savings in program management due to a slower ramp than anticipated.

The favorable cumulative schedule variance is due to early receipt of 20 Embedded Global Positioning System Inertial Navigation Systems (EGIs), six engines, six shipping containers, and other material.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: Procurement
Contract Name: FY14 MQ-9 Reaper Production
Contractor: GENERAL ATOMICS AERONAUTICAL SYSTEMS, INC.
Contractor Location: 14200 Kirkham Way
Poway, CA 92064
Contract Number: FA8620-10-G-3038/77
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: February 04, 2015
Definitization Date: February 04, 2015

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
221.0	237.1	24	221.0	237.1	24	221.0	221.0

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date	0.0	0.0
Previous Cumulative Variances	--	--
Net Change	+0.0	+0.0

Cost and Schedule Variance Explanations

None

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because EVM reporting has not yet commenced due to contract being awarded on February 4, 2015.

Notes

This is the first time this contract is being reported.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	3	3	3	100.00%
Production	196	196	361	54.29%
Total Program Quantity Delivered	199	199	364	54.67%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	12306.2	Years Appropriated	14
Expended to Date	4025.6	Percent Years Appropriated	36.84%
Percent Expended	32.71%	Appropriated to Date	6817.4
Total Funding Years	38	Percent Appropriated	55.40%

The above data is current as of February 23, 2015.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	January 16, 2015
Source of Estimate:	POE
Quantity to Sustain:	364
Unit of Measure:	Aircraft
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 2002 - FY 2044

The O&S costs are from the current 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 (GA-ASI), 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. Currently, the Air Force Sustainment Center has entered into a Public Private Partnership Agreement with GA-ASI and the Fleet Readiness Center-Southeast has entered into a Public Private Partnership Agreement with Raytheon for depot repair on certain components for the MQ-9 Reapers and Multi-Spectral Targeting System (MTS-B), respectively.

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 21 years, with a planned divestiture of the program within the FYDP.

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 $3.365K) by the total flying hours of the MQ-1 Predator program (2,195,778). The total MQ -1 Predator O&S figure increased from the figure reported in the December 2013 SAR due to the extension of the planned divestiture of the MQ-1 Predator to within the current FYDP. From a cost per flying hour perspective the MQ-9 Reaper's costs vary slightly from its antecedent program, the MQ-1 Predator.

Annual O&S Costs BY2008 $M		
Cost Element	**MQ-9 Reaper Average Annual Cost Per Aircraft**	**MQ-1 Predator (Antecedent) Avg Annual Cost Per Aircraft**
Unit-Level Manpower	0.710	0.429
Unit Operations	0.263	0.276
Maintenance	0.707	0.394
Sustaining Support	0.597	0.028
Continuing System Improvements	0.070	0.114
Indirect Support	0.311	0.071
Other	0.000	0.000
Total	2.658	1.312

The average cost per flying hour for a MQ-9 Reaper is $2.398K. 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.

Item	Total O&S Cost $M			
	MQ-9 Reaper			**MQ-1 Predator (Antecedent)**
	Current Production APB Objective/Threshold		**Current Estimate**	
Base Year	47215.4	51936.9	41626.0	7388.1
Then Year	65058.9	N/A	60374.5	N/A

The total O&S cost was derived through: i) analysis of manpower projections, and ii) actual historical data and estimated out year data.

Equation to Translate Annual Cost to Total 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. $41,626M (BY life cycle cost) / 364 (total aircraft) / 43 (years in operation) = $2.66M

O&S Cost Variance		
Category	**BY 2008 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2013 SAR	37897.8	
Programmatic/Planning Factors	2678.8	Combat Air Patrol (CAP) change from 55 to 60 increases total projected flying hours, and increases manpower, unit

		operation cost, organization and depot level maintenance and repair costs.
Cost Estimating Methodology	1049.4	Revised estimate based on inclusion of pay for Base Operations Support.
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	3728.2	
Current Estimate	41626.0	

Disposal Estimate Details

Date of Estimate: January 17, 2014

Source of Estimate: POE

Disposal/Demilitarization Total Cost (BY 2008 $M): Total costs for disposal of all Aircraft are 19.2

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.