RCS: DD-A&T(Q&A)823-462

MQ-25 Stingray (MQ-25)

As of FY 2021 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)
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name
MQ-25 Stingray (MQ-25)

DoD Component
Navy

Responsible Office

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Date Assigned: November 21, 2017

References

SAR Baseline (Development Estimate)

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated August 24, 2018

Approved APB

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated August 24, 2018

Mission and Description

The MQ-25 program rapidly develops an unmanned capability to embark on CVNs as part of the Carrier Air Wing (CVW) to conduct aerial refueling as a primary mission and provide Intelligence, Surveillance, Reconnaissance (ISR) capability as a secondary mission. MQ-25 extends CVW mission effectiveness range, partially mitigates the current Carrier Strike Group (CSG) organic ISR shortfall and fills the future CVW-tanker gap, mitigating Strike Fighter deficiencies and preserving F/A-18E/F Fatigue Life. As the first carrier-based group 5 Unmanned Aircraft System (UAS), MQ-25 will pioneer the integration of manned and unmanned operations, demonstrate mature complex sea-based C4I UAS technologies, and pave the way for future multifaceted multi-mission UAS to outpace emerging threats. MQ-25 requirements address the need for carrier-based refueling and persistent Intelligence, Surveillance, and Reconnaissance capabilities. The Joint Requirements Oversight Council (JROC's) guidance, delineated in the validated Initial Capabilities Documents and subsequent JROC Memorandums, was to establish a requirement for a versatile platform that supports a myriad of organic Naval missions such as aerial refueling and ISR to support the CSG.

Executive Summary

Program Highlights Since Last Report

The MQ-25 program is an ACAT IB program managed by Program Executive Office, Unmanned Aviation & Strike Weapons Unmanned Carrier Aviation (UCA) Program Office. Pursuant to 10 U.S.C. 2430(d) (l), the MDA is Assistant Secretary of the Navy, Research, Development and Acquisition (ASN (RD&A)).

MQ-25 is designated a Maritime Accelerated Acquisition (MAA) program to accelerate the introduction of needed warfighting capabilities. The MQ-25 program will use event-driven "Knowledge Points" (KP) at key program inflection points to brief progress to the Accelerated Acquisition Board of Directors and other stakeholders throughout the program life-cycle. MQ-25 uses the Unmanned Mission Control Station (UMCS) program to develop the control station and integrates it with the MQ-25 AS. The UMCS program also integrates with multiple networks and systems both afloat and on shore. MQ-25 and UMCS program are synchronized to provide complete capability to the CVN.

The program awarded a fixed price incentive fee contract to the Boeing Company in August 2018. The contract included four Engineering Development Model air vehicles and a priced option for three System Demonstration Test Article (SDTA) air vehicles. Following contract award, the contractor declared a loss position on the contract. The government's cost is fixed at the contract ceiling. Federal Acquisition Regulations require all work and termination liability to be funded, but also require reduction to progress payments that causes the program to lag expenditure benchmarks.

In the August 24 2018 Memorandum for the Record, Milestone B Certification and Determination for the MQ-25 Carrier Based Unmanned Air System, the program was granted two (2) waivers to 2366b. The first waiver was to the requirement for Preliminary Design Review and a formal post-preliminary design review assessment. The second waiver was to the requirement for technology in the program be demonstrated in a relevant environment based on an independent review and assessment. Both of these waivers have been closed as of August 2019.

The Integrated Design Review 1 was held in March 2019. The Boeing-owned Test Article (T1) completed first flight on September 19, 2019. As of January 10, 2020, T1 has completed eight test flights for a total of 19.2 flight hours. Test flights will continue until January 29, 2020, when T1 will commence planned modifications in support of MQ-25 requirements and return to test flight later this fiscal year. The program is incorporating design changes learned from T1 flights before flight test begins with Navy-owned Engineering Development models in FY 2021.

The Program's next KP (KP3 System Design Review) is scheduled for 2Q FY 2020. The program intends to exercise the option for three SDTA air vehicles in 3Q FY 2020 upon determination of sufficient design maturity. These air vehicles will support the test program to ensure early operational learning and will eventually be transferred to the Fleet for the first MQ-25 deployment. The Program incurred an $8.0M budget mark in FY 2020 RDT&E. Additionally an associated program, UMCS, incurred a $14.2M budget mark in FY 2020 RDT&E and a $15.1M budget mark in FY 2020 OPN. The risk to the program from these combined marks is a potential ten-month schedule slide due to carrier availability.

The MQ-25 will pursue a LRIP decision (KP 6) in FY 2023 to procure up to eleven air vehicles in support of the Department of the Navy fielding plan. Following successful Initial Operational Test and Evaluation, the program will pursue a Full Rate Production (FRP) decision. A single sustainment contract will also be awarded to support deployed operations (spares, peculiar support equipment). Total production quantity, including LRIP air vehicles, is estimated to be 76 air vehicles.

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

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	**Significant Development Description**
July 2017	MQ-25 Carrier Based Unmanned Air System CDD
October 2017	Request for Proposals for EMD released
August 2018	ADM/KP-2 approved Milestone B entry into EMD
August 2018	EMD Contract Awarded
February 2019	Integrated Baseline Review
March 2019	Program Deviation Report for MILCON Breach
March 2019	Integrated Design Review 1
September 2019	First Flight of Boeing-owned Test Article (T1)

Threshold Breaches

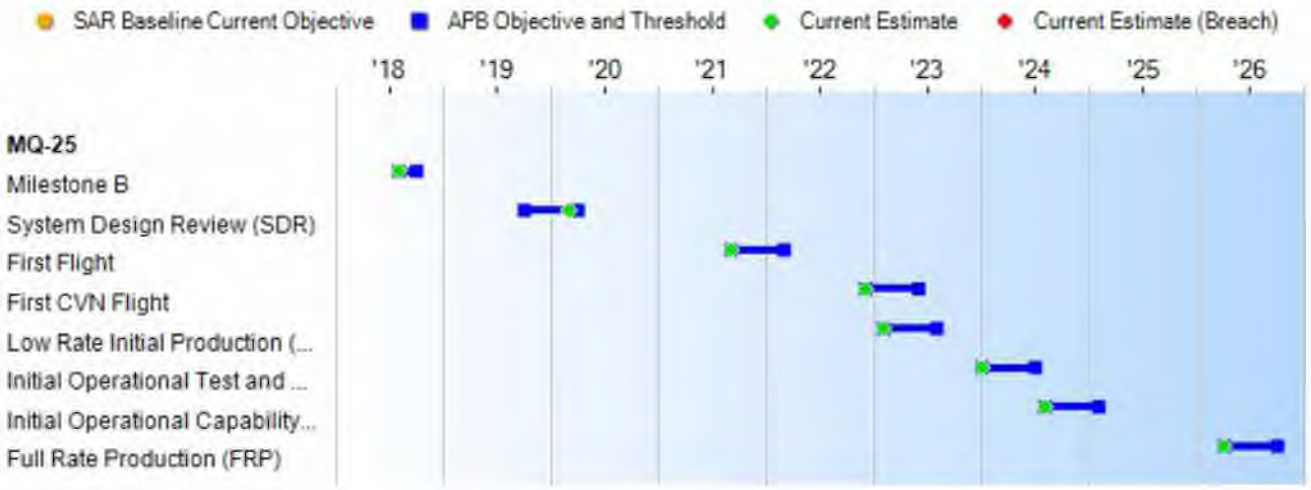
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☑
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

Explanation of Breach

MILCON cost increases are a result of Navy basing determination post MS-B that align MQ-25 with the Navy E2 community and the resulting new construction required to support MQ-25 at those bases.

Schedule



Schedule Events					
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	
Milestone B	Aug 2018	Aug 2018	Oct 2018	Aug 2018	
System Design Review (SDR)	Oct 2019	Oct 2019	Apr 2020	Mar 2020	(Ch-1)
First Flight	Sep 2021	Sep 2021	Mar 2022	Sep 2021	
First CVN Flight	Dec 2022	Dec 2022	Jun 2023	Dec 2022	
Low Rate Initial Production (LRIP)	Feb 2023	Feb 2023	Aug 2023	Feb 2023	
Initial Operational Test and Evaluation (IOT&E)	Jan 2024	Jan 2024	Jul 2024	Jan 2024	
Initial Operational Capability (IOC)	Aug 2024	Aug 2024	Feb 2025	Aug 2024	
Full Rate Production (FRP)	Apr 2026	Apr 2026	Oct 2026	Apr 2026	

Change Explanations

(Ch-1) The current estimate for SDR changed from October 2019 to March 2020 due to immature allocated baseline at contract award as expected and the resultant Boeing – Government requirements allocation and derivation work.

Performance

Performance Characteristics				
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
KPP 1: Carrier Suitability				
NIMITZ and FORD class CVNs	NIMITZ and FORD class CVNs	(T=O) NIMITZ and FORD class CVNs		NIMITZ and FORD class CVNs
KPP 2: Air Refueling				
≥ 16K lbs of give at 500 nm from CVN	≥ 16K lbs of give at 500 nm from CVN	≥ 14K lbs of give at 500 nm from CVN		≥ 16K lbs of give at 500 nm from CVN

Requirements Reference

Capability Development Document (CDD) dated 21 July 2017.

Change Explanations

None

Acronyms and Abbreviations

lbs - Pounds
K - Thousands
O - Objective
T - Threshold

Track to Budget

RDT&E

Appn	BA	PE
Navy	1319 05	0605414N

Project	Name	
3278	MQ-25 Development	(Shared)

Notes: Shared with UMCS

Procurement

Appn	BA	PE
Navy	1506 04	0305205N

Line Item	Name
0449	MQ-25

Appn	BA	PE
Navy	1506 06	0305205N

Line Item	Name	
0605	Spares and Repair Parts	(Shared)

Notes: J0449 Spares for MQ-25 Unmanned Air Vehicle (UAV)

MILCON

Appn	BA	PE
Navy	1205 01	0212176N

Project	Name
C1002222	MQ-25 Laydown

Appn	BA	PE
Navy	1205 01	0816376N

Project	Name	
47608265	MQ-25 MILCON	(Sunk)

Notes: FY 2017 Funding

Appn	BA	PE
Navy	1205 03	0901211N

Project	Name	
64482044	MCON Design Funds	(Shared)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2018 $M			BY 2018 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	3489.3	3489.3	3838.2	2160.7	3768.9	3768.9	2367.2
Procurement	8766.1	8766.1	9642.7	8350.7	11171.5	11171.5	10569.4
Flyaway	--	--	--	6659.3	--	--	8491.4
Recurring	--	--	--	6347.7	--	--	8083.6
Non Recurring	--	--	--	311.6	--	--	407.8
Support	--	--	--	1691.4	--	--	2078.0
Other Support	--	--	--	1296.6	--	--	1611.6
Initial Spares	--	--	--	394.8	--	--	466.4
MILCON	362.9	362.9	399.2	657.8[1]	429.0	429.0	778.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	12618.3	12618.3	N/A	11169.2	15369.4	15369.4	13714.6

[1] *APB Breach*

Current APB Cost Estimate Reference

The APB utilizes the Department of the Navy Component Cost Position dated August 6, 2018 and the OSD CAPE Independent Cost Estimate developed for KP2 (MS-B). dated August 21, 2018

Cost Notes

No cost estimate for the program has been completed in the previous year.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	4	4	7
Procurement	72	72	69
Total	76	76	76

Quantity Notes

The EMD contract has 4 Engineering Development Models (EMDs). Hardware procurements commenced at contract award, August 30, 2018, to meet 1st flight in FY 2021. Three additional System Demonstration Test Articles (SDTAs) will be procured to support testing. Total quantity, including EMD's and SDTA's, remains at 76.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2021 President's Budget / December 2019 SAR (TY$ M)									
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
RDT&E	623.6	590.9	215.6	187.0	185.6	120.9	123.3	320.3	2367.2
Procurement	0.0	0.0	0.0	137.8	799.6	750.0	755.4	8126.6	10569.4
MILCON	51.6	0.0	18.0	194.3	130.6	125.8	128.4	129.3	778.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2021 Total	675.2	590.9	233.6	519.1	1115.8	996.7	1007.1	8576.2	13714.6
PB 2020 Total	712.5	599.0	237.0	512.0	1125.4	1002.5	938.0	8021.4	13147.8
Delta	-37.3	-8.1	-3.4	7.1	-9.6	-5.8	69.1	554.8	566.8

Quantity Summary										
FY 2021 President's Budget / December 2019 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Development	7	0	0	0	0	0	0	0	0	7
Production	0	0	0	0	0	4	4	4	57	69
PB 2021 Total	7	0	0	0	0	4	4	4	57	76
PB 2020 Total	7	0	0	0	0	4	4	4	57	76
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2017	--	--	--	--	--	--	28.2
2018	--	--	--	--	--	--	148.8
2019	--	--	--	--	--	--	446.6
2020	--	--	--	--	--	--	590.9
2021	--	--	--	--	--	--	215.6
2022	--	--	--	--	--	--	187.0
2023	--	--	--	--	--	--	185.6
2024	--	--	--	--	--	--	120.9
2025	--	--	--	--	--	--	123.3
2026	--	--	--	--	--	--	106.2
2027	--	--	--	--	--	--	105.9
2028	--	--	--	--	--	--	108.2
Subtotal	7	--	--	--	--	--	2367.2

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2018 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2017	--	--	--	--	--	--	28.2
2018	--	--	--	--	--	--	145.4
2019	--	--	--	--	--	--	428.1
2020	--	--	--	--	--	--	555.3
2021	--	--	--	--	--	--	198.6
2022	--	--	--	--	--	--	168.9
2023	--	--	--	--	--	--	164.3
2024	--	--	--	--	--	--	105.0
2025	--	--	--	--	--	--	104.9
2026	--	--	--	--	--	--	88.6
2027	--	--	--	--	--	--	86.6
2028	--	--	--	--	--	--	86.8
Subtotal	7	--	--	--	--	--	2160.7

RDT&E reflects PB21 Submission. Additional years and funding represents the addition of Follow On Test and Evaluation (FOT&E). FOT&E will capture defered testing prior to IOC as well as further development for advanced capabilities.

Annual Funding 1506 | Procurement | Aircraft Procurement, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2022	--	53.4	--	--	53.4	84.4	137.8
2023	4	500.9	--	63.4	564.3	235.3	799.6
2024	4	493.3	--	42.5	535.8	214.2	750.0
2025	4	510.7	--	23.5	534.2	221.2	755.4
2026	7	828.4	--	7.3	835.7	392.1	1227.8
2027	7	780.5	--	7.3	787.8	240.4	1028.2
2028	7	760.9	--	7.3	768.2	161.5	929.7
2029	7	768.6	--	7.4	776.0	135.3	911.3
2030	7	778.9	--	7.5	786.4	105.5	891.9
2031	7	791.2	--	7.6	798.8	84.1	882.9
2032	7	783.7	--	7.7	791.4	68.4	859.8
2033	5	611.6	--	6.1	617.7	66.9	684.6
2034	3	421.5	--	220.2	641.7	68.7	710.4
Subtotal	69	8083.6	--	407.8	8491.4	2078.0	10569.4

Annual Funding 1506 | Procurement | Aircraft Procurement, Navy							
Fiscal Year	Quantity	BY 2018 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2022	--	47.7	--	--	47.7	75.3	123.0
2023	4	438.4	--	55.5	493.9	205.9	699.8
2024	4	423.3	--	36.5	459.8	183.7	643.5
2025	4	429.6	--	19.8	449.4	186.0	635.4
2026	7	683.2	--	6.0	689.2	323.3	1012.5
2027	7	631.0	--	5.9	636.9	194.4	831.3
2028	7	603.1	--	5.8	608.9	128.0	736.9
2029	7	597.3	--	5.8	603.1	105.1	708.2
2030	7	593.4	--	5.7	599.1	80.4	679.5
2031	7	591.0	--	5.7	596.7	62.8	659.5
2032	7	573.9	--	5.6	579.5	50.1	629.6
2033	5	439.1	--	4.4	443.5	48.0	491.5
2034	3	296.7	--	154.9	451.6	48.4	500.0
Subtotal	69	6347.7	--	311.6	6659.3	1691.4	8350.7

Procurement based on PB20 submission. 12 LRIP and 57 FRP Aircraft.

Cost Quantity Information 1506 | Procurement | Aircraft Procurement, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2018 $M**
2022	--	--
2023	4	442.3
2024	4	425.0
2025	4	429.6
2026	7	658.5
2027	7	632.8
2028	7	604.5
2029	7	598.4
2030	7	594.4
2031	7	591.8
2032	7	590.6
2033	5	455.8
2034	3	324.0
Subtotal	69	6347.7

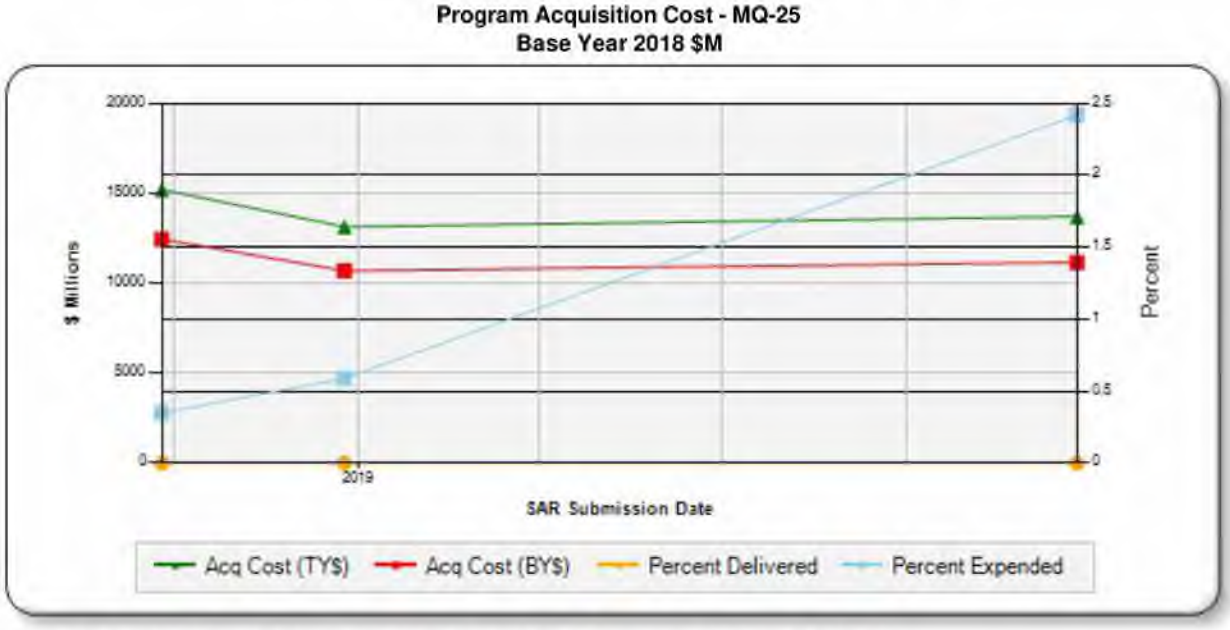
Annual Funding 1205 | MILCON | Military Construction, Navy and Marine Corps	
Fiscal Year	TY $M Total Program
2017	51.6
2018	--
2019	--
2020	--
2021	18.0
2022	194.3
2023	130.6
2024	125.8
2025	128.4
2026	129.3
Subtotal	778.0

Annual Funding 1205 | MILCON | Military Construction, Navy and Marine Corps	
Fiscal Year	**BY 2018 $M**
	Total Program
2017	49.6
2018	--
2019	--
2020	--
2021	15.9
2022	168.3
2023	110.9
2024	104.8
2025	104.8
2026	103.5
Subtotal	657.8

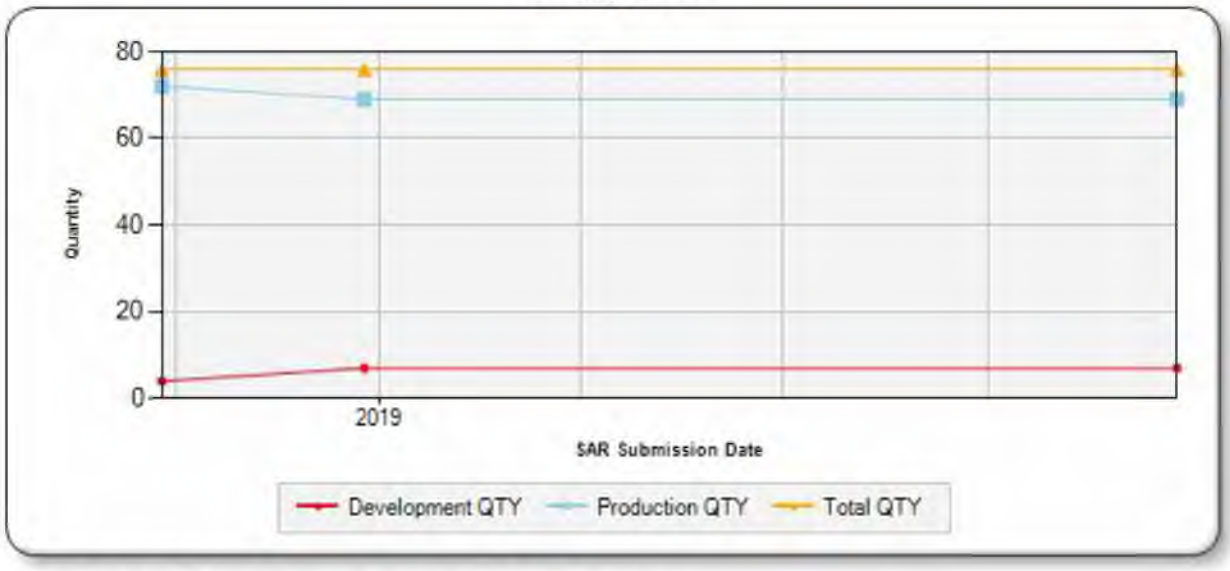
MILCON cost taken from program office estimate and represents planning estimates for East Coast Hangar, West Coast Hangar, Training Facility, Depot Facility; Forward Deployed Naval Forces (FDNF) Hangar.

Charts

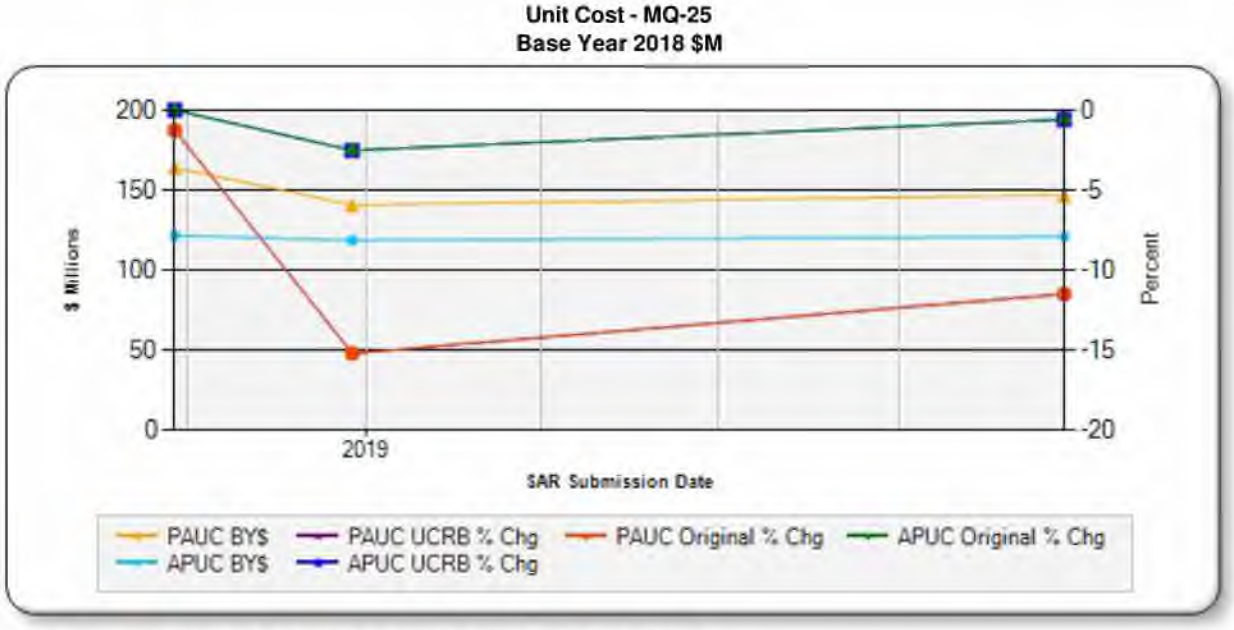
MQ-25 first began SAR reporting in September 2018



There are no significant risks currently associated with Program Acquisition Cost.



There are no significant risks currently associated with quantity.



There are no significant risks currently associated with unit cost.

Risks

Significant Schedule and Technical Risks

Significant Schedule and Technical Risks	
Current Estimate (December 2019)	
1.	Carrier Availability: Limited CVNs configured for test in planned testing windows and limited timing, number, and length of Planned Incremental Availabilities per CVN for required modifications may lead to USN caused schedule delays.

Risks

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Baseline Estimate (August 2018)	
1.	An Independent Cost Estimate has been completed for the program in the previous year to support Knowledge Point 2. Program risks identified in the estimate include engineering changes, economic price adjustment (EPA) provisions, the program office acting as the lead system integrator, development and integration of a control system with connectivity to carriers, availability of CVN's used for testing, and the Joint Precision Approach and Landing System. The potential impacts of the risks on program cost would increase the costs above the agreed upon Fixed Price contract. Any modification to the baseline contract could result in reopening the contracts cost. If the Navy delays any delivering of government provided materials, the contract could also be opened. To mitigate these risks, the program office is working closely with the Navy to ensure there is minimal requirement creep and that all government provided materials are provided in a timely manner. Ensuring full funding of the UCA Mission Control System program is extremely important to keep MQ-25 on track.
Original Baseline Estimate (August 2018)	
1.	The Original Baseline matches the Current Baseline Estimate.
Revised Original Estimate (N/A)	
None	
Current Procurement Cost (December 2019)	
1.	The current procurement estimate reflects lower costs due to award of the EMD contract.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	8/24/2018	8/24/2018
Approved Quantity	11	11
Reference	KP2 ADM	KP2 ADM
Start Year	2023	2023
End Year	2025	2025

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the establishment of an initial production base for the system and an orderly and efficient increase in the production rate.

Notes

LRIP contract award is contingent upon successfully achieving KP-6 entry criteria identified in the MQ-25 Acquisition Strategy.

Foreign Military Sales

None

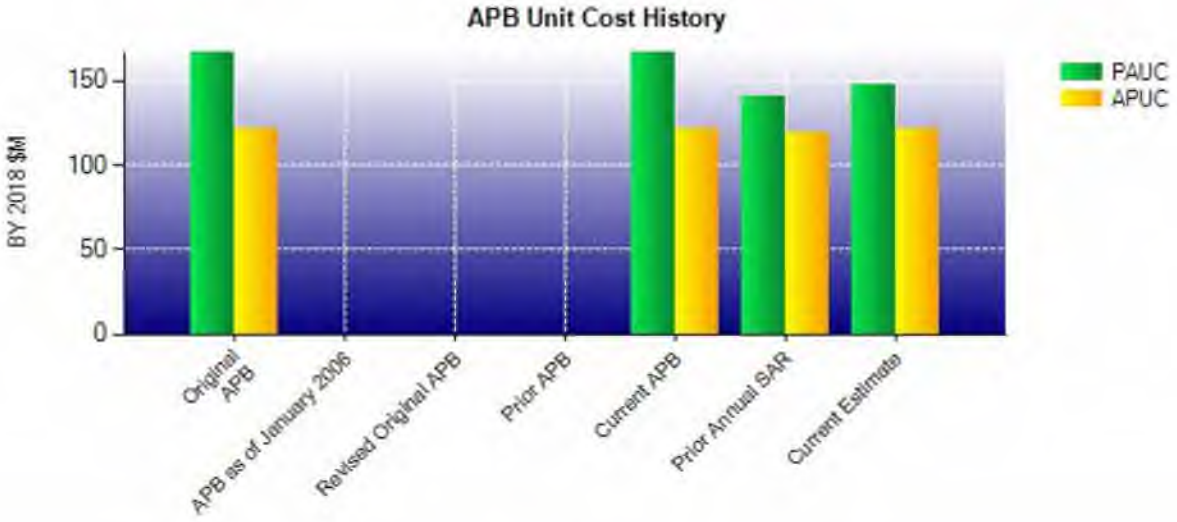
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2018 $M Current UCR Baseline (Aug 2018 APB)	BY 2018 $M Current Estimate (Dec 2019 SAR)	% Change
Program Acquisition Unit Cost			
Cost	12618.3	11169.2	
Quantity	76	76	
Unit Cost	166.030	146.963	-11.48
Average Procurement Unit Cost			
Cost	8766.1	8350.7	
Quantity	72	69	
Unit Cost	121.751	121.025	-0.60

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2018 $M Original UCR Baseline (Aug 2018 APB)	BY 2018 $M Current Estimate (Dec 2019 SAR)	% Change
Program Acquisition Unit Cost			
Cost	12618.3	11169.2	
Quantity	76	76	
Unit Cost	166.030	146.963	-11.48
Average Procurement Unit Cost			
Cost	8766.1	8350.7	
Quantity	72	69	
Unit Cost	121.751	121.025	-0.60



APB Unit Cost History					
Item	Date	BY 2018 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Aug 2018	166.030	121.751	202.229	155.160
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	Aug 2018	166.030	121.751	202.229	155.160
Prior Annual SAR	Dec 2018	140.812	118.701	172.997	150.578
Current Estimate	Dec 2019	146.963	121.025	180.455	153.180

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
202.229	-1.866	-3.909	16.967	0.000	-34.109	0.000	1.143	-21.774	180.455

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
155.160	-2.291	1.213	18.688	0.000	-20.849	0.000	1.259	-1.980	153.180

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	Aug 2018	N/A	Aug 2018
Milestone C	N/A	N/A	N/A	N/A
IOC	N/A	Aug 2024	N/A	Aug 2024
Total Cost (TY $M)	N/A	15369.4	N/A	13714.6
Total Quantity	N/A	76	N/A	76
PAUC	N/A	202.229	N/A	180.455

Cost Variance

Summary TY $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	3768.9	11171.5	429.0	15369.4
Previous Changes				
Economic	+6.6	-132.8	+1.6	-124.6
Quantity	+84.7	-381.8	--	-297.1
Schedule	--	+1289.5	--	+1289.5
Engineering	--	--	--	--
Estimating	-1880.3	-1627.0	+347.4	-3159.9
Other	--	--	--	--
Support	--	+70.5	--	+70.5
Subtotal	-1789.0	-781.6	+349.0	-2221.6
Current Changes				
Economic	+5.6	-25.3	+2.5	-17.2
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+381.7	+188.4	-2.5	+567.6
Other	--	--	--	--
Support	--	+16.4	--	+16.4
Subtotal	+387.3	+179.5	--	+566.8
Total Changes	-1401.7	-602.1	+349.0	-1654.8
Current Estimate	2367.2	10569.4	778.0	13714.6

Summary BY 2018 $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	3489.3	8766.1	362.9	12618.3
Previous Changes				
Economic	--	--	--	--
Quantity	+79.6	-278.9	--	-199.3
Schedule	--	+910.1	--	+910.1
Engineering	--	--	--	--
Estimating	-1716.7	-1260.9	+296.2	-2681.4
Other	--	--	--	--
Support	--	+54.0	--	+54.0
Subtotal	-1637.1	-575.7	+296.2	-1916.6
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+308.5	+143.2	-1.3	+450.4
Other	--	--	--	--
Support	--	+17.1	--	+17.1
Subtotal	+308.5	+160.3	-1.3	+467.5
Total Changes	-1328.6	-415.4	+294.9	-1449.1
Current Estimate	2160.7	8350.7	657.8	11169.2

Previous Estimate: December 2018

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+5.6
Reflects Delta to FY 2021 PB (Estimating)	+49.9	+65.0
Follow On Test and Evaluation (FOT&E) added to program to capture testing for deferred and additional capabilities. (Estimating)	+262.0	+320.3
Adjustment for current and prior escalation. (Estimating)	-3.4	-3.6
RDT&E Subtotal	+308.5	+387.3

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-25.3
Shifting of Advanced procurement to match FY 2021 PB (Estimating)	-27.3	-32.7
Increase in support costs reflected in air vehicle costs (Estimating)	-3.1	0.0
GFE captured under Recurring flyaway (Estimating)	+58.4	+74.6
Updates to elements within Flyaway unit costs including air frame, avionics, and labor. (Estimating)	+115.2	+146.5
Increase in Other Support due to updated methodology and strategy to incorporate training into the fleet. (Support)	+19.4	+18.6
Decrease in Initial Spares due to FY 2021 PB and updated unit costs and methodology. (Support)	-2.3	-2.2
Procurement Subtotal	+160.3	+179.5

MILCON	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+2.5
Matching FY 2021 PB with remaining funds allocated to FY 2026 (Estimating)	-1.4	-2.6
Adjustment for current and prior escalation. (Estimating)	+0.1	+0.1
MILCON Subtotal	-1.3	0.0

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: MQ-25 Engineering and Manufacturing Development (EMD)
Contractor: The Boeing Company
Contractor Location: 6200 JS McDonnell BLVD
St. Louis, MO 63166-0516
Contract Number: N00019-18-C-1012
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: August 30, 2018
Definitization Date: August 30, 2018

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
649.1	805.3	1	739.6	805.3	1	1200.6	805.3

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification #2 awarded December 19, 2018 to support EMD Studies and Analysis effort.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2020)	-3.4	-42.7
Previous Cumulative Variances	-6.8	-8.5
Net Change	+3.4	-34.2

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to continued focus on cost efficiency by the Prime.

The unfavorable net change in the schedule variance is due to two key factors. First, requirements definition was the primary driver of delays across the program. In recent months, design delays (including weight-reduction efforts), have become the primary driver of schedule variances.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	7	0.00%
Production	0	0	69	0.00%
Total Program Quantity Delivered	0	0	76	0.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	13714.6	Years Appropriated	4
Expended to Date	332.1	Percent Years Appropriated	22.22%
Percent Expended	2.42%	Appropriated to Date	1266.1
Total Funding Years	18	Percent Appropriated	9.23%

The above data is current as of February 10, 2020.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	August 24, 2018
Source of Estimate:	SCP
Quantity to Sustain:	74
Unit of Measure:	Aircraft
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 2025 - FY 2053

Utilization rate of 46.2 flight hours/day at 26 fly days per month during a 7 month deployment. This results in a total life cycle flight hour of 772,946. Primary Authorized Aircraft (PAA) is 46 which supports 8 CVN units and 1 FDNF. The CVN units have 5 air vehicles and FDNF has 6. The quantity of aircraft to sustain is 74. This is due to having two development aircraft as EMD assets that are not assigned to the fleet. The PAA of 46 is the basis behind the total of 1,012 aircraft years. The program includes an 8 year to ramp to the PAA, 14 years with full PAA, and an 8 year ramp down.

Sustainment Strategy

The contractor will provide product support through IOC and first deployment. The Life Cycle Sustainment Plan will address short and long term support activities and requirements. The Product Support Manager will investigate the possible usage of performance based agreements, contract logistics support, or performance based logistics as the program matures. The aircraft will be operated and maintained by sailors and be supported by three level maintenance based on the results of the level of repair analysis which will be performed once the final design is solidified.

Antecedent Information

There is no antecedent for the MQ-25. This will be the first carrier based unmanned aircraft in the fleet.

Annual O&S Costs BY2018 $M		
Cost Element	**MQ-25 Average Annual Cost Per Aircraft**	**No Antecedent (Antecedent)**
Unit-Level Manpower	1.994	--
Unit Operations	0.583	--
Maintenance	5.483	--
Sustaining Support	0.514	--
Continuing System Improvements	1.169	--
Indirect Support	1.254	--
Other	0.000	--
Total	10.997	--

MQ-25 is the first unmanned aircraft to operate in squadron service on an aircraft carrier and has no antecedent.

Item	Total O&S Cost $M			
	MQ-25			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	13777.6	15155.4	11130.1	N/A
Then Year	21335.5	N/A	17590.8	N/A

Equation to Translate Annual Cost to Total Cost

Total Aircraft O&S = Unitized Cost * number of operational aircraft years

($11,130M = $10.997M * 1,012 aircraft years)

O&S Cost Variance		
Category	**BY 2018 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2018 SAR	13777.6	
Programmatic/Planning Factors	-2586.5	Updated Manpower squadron from stand alone to composite with E-2.
Cost Estimating Methodology	-68.4	Updated Cost Estimating Relationship's (CERs) and methods to estimate RoR, Satellite, and software costs.
Cost Data Update	7.4	Updated PEMA unit costs
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	-2647.5	
Current Estimate	11130.1	

Disposal Estimate Details

Date of Estimate: August 24, 2018
Source of Estimate: SCP
Disposal/Demilitarization Total Cost (BY 2018 $M): 19.2

Disposal of attrition aircraft is included in the Disposal estimate.