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Department of Defense  
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

## **Selected Acquisition Report (SAR)**



## **MH-139A Grey Wolf (MH-139A)**

**FY 2024 President's Budget**

**Defense Acquisition Visibility Environment  
(DAVE)**

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## Common Acronyms and Abbreviations

\$B - Billions of Dollars  
\$K - Thousands of Dollars  
\$M - Millions of Dollars  
ACAT - Acquisition Category  
Acq O&M - Acquisition-Related Operations and Maintenance  
ADM - Acquisition Decision Memorandum  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
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  
FMS - Foreign Military Sales  
FOC - Full Operational Capability  
FRP - Full Rate Production  
FY - Fiscal Year  
FYDP - Future Years Defense Program  
ICE - Independent Cost Estimate  
Inc - Increment  
IOC - Initial Operational Capability  
JROC - Joint Requirements Oversight Council  
KPP - Key Performance Parameter  
LRIP - Low Rate Initial Production  
MDA - Milestone Decision Authority  
MDAP - Major Defense Acquisition Program  
MILCON - Military Construction  
N/A - Not Applicable  
O&M - Operations and Maintenance  
O&S - Operating and Support  
ORD - Operational Requirements Document  
OSD - Office of the Secretary of Defense  
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  
U.S. - United States  
UCR - Unit Cost Reporting  
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)  
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

## Program Information

### Program Name

MH-139A Grey Wolf (MH-139A)

### DoD Component

Air Force

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## Responsible Office

### Program Manager

**Name:** Mr. Matthew Beck

**Date Assigned:** March 16, 2020

**Address:** 2240 B Street

WPAFB, OH 45433

**Phone:** (937) 713-0389

## Mission and Description

The MH-139A Program Air Vehicle (AV) fleet supports vertical-lift needs of three Major Commands and the Air Force District of Washington. Air Force Global Strike Command assumes Lead Command responsibility for the MH-139A Program. The selected MH-139A will address vertical lift support mission requirements for Air Force Global Strike Command, Air Force District of Washington, Air Force Materiel Command, Air Education and Training Command, and Air Force Reserve Command. The three primary missions are Intercontinental Ballistic Missile (ICBM) convoy escort, ICBM Emergency Security Response, and Continuity of Operations/Transport. The MH-139A will aid in deterrence of adversaries and allow for a rapid response to mitigate threats and deny hostile aims. The MH-139A will afford the United States Air Force (USAF) one of the most agile capabilities available to them for defense and security of nuclear assets as well as transportation for senior Government officials and key personnel in the event of a national emergency or disaster. The MH-139A will provide effective 21st-century deterrence by providing an overwhelming and timely security response force to deny unauthorized access to nuclear facilities. This enables positive control and security of ICBM assets and facilities, strengthening the Air Force's strategic nuclear deterrence capabilities. The USAF MH-139A Program addresses the need to replace the USAF's aging UH-1N fleet. The MH-139A leverages an existing, airworthiness-certified baseline Air Vehicle (AV) and associated Training System(s) through Non-Developmental Item integration to meet operational requirements. Due to mission capability gaps with the UH-1N, expedited fielding of MH-139A AVs is highly desired. Filling the capability gaps of the UH-1N is especially critical to the nuclear security and passenger transport missions. The various USAF vertical lift missions will be met with tailored mission equipment that preserves a common helicopter system. As MH-139A (s) field, the current UH-1N(s) will be deactivated or realigned to support other DoD missions.

## Executive Summary

### MH-139A

#### Program Highlights Since Last Report

The MH-139A Program has recovered from the Acquisition Program Baseline (APB) schedule breach driven by Boeing challenges with FAA certifications. With FAA certification approvals in CY 2022, the USAF accepted the first four air vehicles and initiated military utility flight testing. An updated Acquisition Strategy and Acquisition Decision Memorandum (ADM) revising Milestone C (MS C) Entrance Criteria were approved in August 2022.

In September 2022, the Lead Developmental Test Organization completed High/Hot flight testing in Colorado for high priority Developmental Testing (DT) with operationally representative maneuvers. The Program Office, Air Force Test Center, Air Force Operational Test and Evaluation Center, and Air Force Global Strike Command collaborated to plan and prioritize this test series to demonstrate MH-139A performance in the expanded STC 4 envelope and inform the MS C decision. Additionally, Boeing completed all required flight testing for FAA certification of STC 4 in October 2022.

In March 2023, Boeing and the MH-139A program agreed on a way forward to deliver the required Technical Data Package (TDP) to support the USAF long-term organic sustainment strategy. The contractual TDP requirements are needed to support MH-139A depot maintenance and full product baseline documentation. Boeing previously disputed TDP delivery due to supplier commerciality and intellectual property rights. The TDP analysis and delivery effort will commence with DoD, Boeing, and Leonardo working groups to review Leonardo's database of Component, Repair, and Overhaul data to identify the desired systems for organic depot maintenance. DoD depot sustainment subject matter experts will initially focus on the highest priority dynamic systems that account for the largest share of depot workload, such as drives, rotors, and gearboxes. The Program Executive Officer and the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics will closely track progress and completion of deliverables with the Boeing Vice President and Chief Executive Officer.

On March 3, 2023, the Milestone Decision Authority for the MH-139A Grey Wolf Program approved entrance into the Production and Deployment Phase. Review and completion of MSC entrance criteria demonstrated adequate aircraft performance, manufacturing and quality processes, airworthiness, cyber security, production cost, and product support goals for the MH-139A. Coinciding with the approval, the program awarded its first Low-Rate Initial Production (LRIP) lot contract procuring 13 aircraft, training systems, and associated support equipment. This initial lot of aircraft will be delivered to Malmstrom AFB, Montana, and Maxwell AFB, Alabama.

Funding Status: Development funds expenditures are improving as a result of improved pace of USAF development testing in response to closure of FAA civil certifications in CY 2022. Get well date is May 2023 as a result of developmental test execution. FY 2022 and FY 2023 Production funds obligated March 3, 2023 with the approval of the ADM authorizing entrance into LRIP and contract award activating LRIP.

There are no issues with the function of the MH-139A software or software development.

History of Significant Developments Since Program Initiation	
History of Significant Developments Since Program Initiation	
Date	Significant Development Description
Mar - 2023	On March 3, 2023, The Service Acquisition Executive (SAE) signed the ADM authorizing entrance into LRIP following a successful Milestone C Air Force Review Board on February 15, 2023. The program office activated the previously negotiated LRIP contract minutes later that will provide 13 air vehicles, training devices, and other production investments to support the initial fielding of the MH-139A at Malmstrom AFB, Montana and Maxwell AFB, Alabama.
Dec - 2022	Throughout December 2022, the 413th FLTS successfully completed flight tests for the flares, guns, and ARC-210 that are prerequisites for MS C. Initial results are largely satisfactory, however, the test team identified deficiencies with the collection bag for expended ammunition from the M240 gun system. Potential solutions for ammunition catch bag or chute modifications are currently under investigation.
Nov - 2022	On November 24, 2022, All FAA flight testing to support STC 4 high/hot/heavy certifications completed. STC 4 is anticipated to be issued in 3rd Quarter FY 2023 following Boeing submission and FAA approval of all certification artifacts.
Oct - 2022	In October 2022, Boeing and the FAA completed all STC 4 high field certification testing in Colorado. This accomplishment closes a significant program risk regarding weather window certification testing. STC 4 issuance is estimated to occur in 3rd Quarter FY 2023.
Oct - 2022	On October 28, 2022, the ADM was signed by the MDA approving the procurement of Operational Flight Trainers (OFT) prior to Milestone C. Contractual award of the next OFT followed on November 2, 2022. Early procurement of the long-lead OFT devices accelerate the Ready for Training timeline to better support MH-139A fielding and aircrew training for AFGSC.
Sep - 2022	Between September 7-15, 2022, the 413th FLTS completed High/Hot flight testing in Colorado for high priority DT and operationally representative maneuvers, jointly conducted with Boeing and Leonardo aircrew. The program office, AFTC, AFOTEC, and AFGSC collaborated to plan and prioritize this test series to demonstrate MH-139A performance in the expanded STC 4 envelope and inform the upcoming MS C decision.
Sep - 2022	On September 30, 2022, the program office and Boeing contractually agreed to trade aircraft delivery penalties and relief of the self-sealing fuel tank requirement for integration and retrofit of the P25 radio and additional cabin tie-downs. The P25 radio is AFGSC's #1 priority for enhanced MH-139A capabilities and provides mission critical air-to-ground communications.
Aug - 2022	Between August 9 – 19, 2022, The USAF accepted the first four MH-139A Grey Wolf Air Vehicles following the July 2022 STC 2 approval.
Aug - 2022	On August 12, 2022, the USAF Technical Airworthiness Authority (TAA) signed the Development Testing (DT) MFR, initiating the Air Force Military Utility test phase of DT.
Aug - 2022	On August 17, 2022, the 413th FLTS and AFGSC Det 7 conducted the first MH-139A flight under USAF ownership, operated solely with USAF aircrew.
Aug - 2022	On August 18, 2022, the Milestone Decision Authority (MDA) signed the updated Acquisition Strategy and Entrance Criteria to support the MH-139A program's Milestone C (MS C).
Jul - 2022	On July 25, 2022, the FAA issued Supplemental Type Certification (STC) 2 for the MH-139A enabling conditional delivery of the first 4 Air Vehicles (AV) and Development Testing Military Flight Release (MFR) in August 2022.
Apr - 2022	Between April 4 to May 3, 2022: Boeing and Leonardo completed loads survey flight tests of operationally representative USAF maneuvers. The test was performed on Leonardo's fully instrumented test aircraft, and initial results were satisfactory and did not necessitate changes to USAF maintenance intervals.



## Schedule

### MH-139A

Events	Milestone Baseline Objective	Current Baseline Objective/Threshold		Current Estimate/Actual	Deviation
Pre-Milestone C	Sep 2018	Sep 2018	Sep 2018	Sep 2018	
AV CDR	Nov 2019	Jun 2019	Jun 2019	Jun 2019	
TRR	Feb 2020	Feb 2020	Aug 2020	Oct 2019	
TS CDR	Jan 2020	Jul 2021	Jul 2021	Apr 2020	
Milestone C	Sep 2021	Feb 2023	Sep 2023	Mar 2023	

#### Schedule Note

1. A successful Test Readiness Review allows Developmental Test to begin; signaling program maturity and ability to meet further schedule milestones.
2. The RAA is being used as the surrogate for Initial Operational Capability (IOC). A summary of requirements for RAA include: 7 mission aircraft, trained crews and maintainers, facilities, one Operational Flight Trainer at operational base, Interim Contract Support and support equipment, and validated technical orders.

## Performance

### MH-139A

Performance Characteristics					
Milestone Baseline	Current Baseline Objective/Threshold	Demonstrated Performance	Current Estimate/Actual	Deviation	
<b>(KPP) - Airspeed</b>					
Using no more than maximum continuous power, the UH-1N Replacement must be capable of maintaining 135 KTAS for the en-route portion of the ICBM ESR mission profile with 3194 lbs of the ICBM ESR SCL on a High Hot Day IAW ICBM ESR mission profile	Using no more than maximum continuous power, the UH-1N Replacement must be capable of maintaining 135 KTAS for the en-route portion of the ICBM ESR mission profile with 3194 lbs of the ICBM ESR SCL on a High Hot Day IAW ICBM ESR mission profile	(T=O) Using no more than maximum continuous power, the UH-1N Replacement must be capable of maintaining 135 KTAS for the en-route portion of the ICBM ESR mission profile with 3194 lbs of the ICBM ESR SCL on a High Hot Day IAW ICBM ESR mission profile	TBD	Current estimate 136.9 KTAS.	
<b>(KPP) - Carrying Capacity</b>					
Capable of carrying nine combat equipped troops (2475 lbs) and equipment (719 lbs) (3194 lbs of the total ICBM, ESR, SCL) IAW ICBM ESR mission profile.	Capable of carrying nine combat equipped troops (2475 lbs) and equipment (719 lbs) (3194 lbs of the total ICBM, ESR, SCL) IAW ICBM ESR mission profile.	(T=O) Capable of carrying nine combat equipped troops (2475 lbs) and equipment (719 lbs) (3194 lbs of the total ICBM, ESR, SCL) IAW ICBM ESR mission profile.	TBD	Capable of carrying 9 combat equipped troops (2475 lbs) and equipment (719 lbs)(3194 lbs of total ICBM, ESR, SCL) IAW ICBM ESR mission profile.	
<b>(KPP) - Energy</b>					
Average burn rate across both SCL profiles will not exceed 150 GPH.	Average burn rate across both SCL profiles will not exceed 150 GPH.	Average burn rate across both SCL profiles will not exceed 185 GPH.	TBD	Average burn rate across both SCL profiles will not exceed 150 GPH.	

**(KPP) - Force Protection - Floor**

Cockpit and cabin floor shall be able to provide ballistic protection at zero degrees obliquity against small arms fire up to 12.7x99 M33 ball at 500 meter range at V50 probability of penetration. If armor is used, it must be removable and accounted for in basic aircraft weight.	Cockpit and cabin floor shall be able to provide ballistic protection at zero degrees obliquity against small arms fire up to 12.7x99 M33 ball at 500 meter range at V50 probability of penetration. If armor is used, it must be removable and accounted for in basic aircraft weight.	Cockpit and cabin floor shall be able to provide ballistic protection at zero degrees obliquity against small arms fire up to 7.62x39mm M43 Type PS ball at 100-meter range at V50 probability of penetration. If armor is used, it must be removable and accounted for in basic aircraft weight.	TBD	Cockpit and cabin floor shall be able to provide ballistic protection at zero degrees obliquity against small arms fire up to 7.62x39mm M43 Type PS ball at 100-meter range at V50 probability of penetration. If armor is used, it must be removable and accounted for in basic aircraft weight.	
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**(KPP) - Mission Range**

Un-refueled range of 515 nm at cruise airspeed with sufficient useable fuel reserves to continue flight for 20 minutes under Hot Day conditions performing the COOP/Transport SCL IAW NCR 3A mission profile. Additional range provides increased distance capability desired for alternate locations for the NCR mission.	Un-refueled range of 515 nm at cruise airspeed with sufficient useable fuel reserves to continue flight for 20 minutes under Hot Day conditions performing the COOP/Transport SCL IAW NCR 3A mission profile. Additional range provides increased distance capability desired for alternate locations for the NCR mission.	Un-refueled range of 225 nm at cruise airspeed with sufficient useable fuel reserves to continue flight for 20 minutes under Hot Day conditions performing the COOP/Transport SCL IAW NCR 3A mission profile.	TBD	Current estimate 136.9 KTAS.	
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**(KPP) - Sustainment**

Operational Availability (Mission Capability) rate of 83% (Mission Capable hours / Possessed hours). Materiel Availability rate of 76% (MC hours / TAI hours)	Operational Availability (Mission Capability) rate of 83% (Mission Capable hours / Possessed hours). Materiel Availability rate of 76% (MC hours / TAI hours)	(T=O) Operational Availability (Mission Capability) rate of 83% (Mission Capable hours / Possessed hours). Materiel Availability rate of 76% (MC hours / TAI hours)	TBD	(T=O) Operational Availability (Mission Capability) rate of 83% (Mission Capable hours / Possessed hours). Materiel Availability rate of 76% (MC hours / TAI hours)	
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**(KPP) - System Survivability - Flight Damage**

95 percent probability to	95 percent probability to	95 percent probability to	TBD	95 percent probability to	
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withstand flight critical damage for 30 minutes imposed by a single hit at all azimuths and elevation angles within the bottom hemisphere while the aircraft is in a level flight attitude from a 7.62x39mm M1943 BZ API projectile at 50-meter slant range and 12.7x108mm B32 API projectile at 250-meters slant range.

withstand flight critical damage for 30 minutes imposed by a single hit at all azimuths and elevation angles within the bottom hemisphere while the aircraft is in a level flight attitude from a 7.62x39mm M1943 BZ API projectile at 50-meter slant range and 12.7x108mm B32 API projectile at 250-meters slant range.

withstand flight critical damage for 30 minutes imposed by a single hit at all azimuths and elevation angles within the bottom hemisphere while the aircraft is in a level flight attitude from a 7.62x39mm M1943 BZ Armor Piercing Incendiary (API) projectile at 100-meter slant range and 12.7x108mm B32 API projectile at 500-meters slant angle. IAW DoDI 8510.01, The airframe shall be capable of cybersecurity evaluation for MX equipment, flight planning equipment and ground based computer hardware and software with physical access control to systems and data ports. The system monitors and controls for system data exchanges at external boundaries with mechanics for preventing the deployment of malicious code being installed to prevent airframe system compromise. If a cyber system is compromised, the aircraft should be able to perform its primary mission

95 percent probability to withstand flight critical damage for 30 minutes imposed by a single hit at all azimuths and elevation angles within the bottom hemisphere while the aircraft is in a level flight attitude from a 7.62x39mm M1943 BZ API

projectile at 50-meter slant range and 12.7x108mm

B32 API projectile at 250-meters slant range.

		IAW profiles list in Appendix A of the CPD.		
<b>(KPP) - Training</b>				
<p>The goal of UH-1N replacement Training System is to efficiently train aircrews to enable the aircraft to function as designed to support assigned missions throughout its life cycle. The airframe itself will not require any specific operational performance characteristics; aircrew will operate and train on aircraft as it normally performs. The full training system compliment should include an ATS consisting of training devices, courseware, Type 1 Training, spare parts, support equipment and technical data. These devices must replicate the performance of the airframe and provide full spectrum training capability.</p>	<p>The goal of UH-1N replacement Training System is to efficiently train aircrews to enable the aircraft to function as designed to support assigned missions throughout its life cycle. The airframe itself will not require any specific operational performance characteristics; aircrew will operate and train on aircraft as it normally performs. The full training system compliment should include an ATS consisting of training devices, courseware, Type 1 Training, spare parts, support equipment and technical data. These devices must replicate the performance of the airframe and provide full spectrum training capability.</p>	<p>(T=O) The goal of UH-1N replacement Training System is to efficiently train aircrews to enable the aircraft to function as designed to support assigned missions throughout its life cycle. The airframe itself will not require any specific operational performance characteristics; aircrew will operate and train on aircraft as it normally performs. The full training system compliment should include an ATS consisting of training devices, courseware, Type 1 Training, spare parts, support equipment and technical data. These devices must replicate the performance of the airframe and provide full spectrum training capability.</p>	TBD	<p>(T=O) The goal of UH-1N replacement Training System is to efficiently train aircrews to enable the aircraft to function as designed to support assigned missions throughout its life cycle. The airframe itself will not require any specific operational performance characteristics; aircrew will operate and train on aircraft as it normally performs. The full training system compliment should include an ATS consisting of training devices, courseware, Type 1 Training, spare parts, support equipment and technical data. These devices must replicate the performance of the airframe and provide full spectrum training capability.</p>

**(KPP) - Unrefueled Endurance**

4.0 hours unrefueled flight performing in the ICBM convoy escort mission profile with SCL plus an additional 45 nm flight to the refueling location with sufficient usable fuel reserves to continue fight for 20 minutes. IAW convoy escort mission profile. Additional flight time provides enough gas for return flight home if necessary for additional security compliment.	4.0 hours unrefueled flight performing in the ICBM convoy escort mission profile with SCL plus an additional 45 nm flight to the refueling location with sufficient usable fuel reserves to continue fight for 20 minutes. IAW convoy escort mission profile. Additional flight time provides enough gas for return flight home if necessary for additional security compliment.	3.0 hours unrefueled flight performing in the ICBM convoy escort mission profile with SCL plus an additional 45 nm flight to the refueling location with sufficient usable fuel reserves to continue fight for 20 minutes IAW convoy escort mission profile.	TBD	Current estimate 3.2 hours.	
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**Requirement Reference**

UH-1N Replacement CPD Validated by: JROC, June 22, 2016

## Acquisition Budget Estimate

MH-139A

### Total Acquisition Cost

		Milestone APB	Current Baseline		Budget Estimate PB 2024		
Category	Base Year	Objective (BY\$M)	Objective (BY\$M)	Threshold (BY\$M)	BY\$M	TY\$M	Deviation
RDT&E	2023	569.4	676	743.6	698.3	615.1	
Procurement	2023	2,422.5	2,252	2,477.2	2,362.0	2,583.7	
MILCON	2023	316.9	330	363	245.9	247.8	
Acq. O&M	2023	0	0	0	0	0	
<b>Total</b>		<b>3,308.8</b>	<b>3,258.0</b>		<b>3,306.2</b>	<b>3,446.6</b>	
PAUC	2023	39.390	40.725	48.235	41.328	43.083	
APUC	2023	30.281	30.432	36.978	31.919	34.915	

The FY 2023 PB included a Congressional add of \$30M in FY 2023 Production funds for training systems and support equipment, which eliminated an existing FY 2023 Production fund disconnect. FY 2022 and FY 2023 production funds the first Low Rate Initial Production purchase of 13 air vehicles, training devices, and other required investments to support initial fielding at Malmstrom AFB, Montana and Maxwell AFB, Alabama.

The FY 2024 PB shifts Production funds totaling \$211M for the acquisition of 3 aircraft and associated spares from the Future Years Defense Program (FYDP) to the out-year FY 2029.

### Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	6	6
Procurement	74	74
O&M-Acquired	--	--

#### Quantity Note

The Program of Record is a total of 80 aircraft (6 Development plus 74 Production Aircraft).

**Unit Cost****MH-139A**

<b>Current UCR Baseline and Current Estimate (Base-Year Dollars)</b>			
<b>Category (\$M) Base Year: 2023</b>	<b>Current UCR Baseline</b>	<b>Current Estimate</b>	<b>% Change</b>
<b>Program Acquisition Unit Cost</b>			
Cost	3,258.0	3,306.2	
Quantity	80	80	
Unit Cost	40.725	41.328	1.48%
<b>Average Procurement Unit Cost</b>			
Cost	2,252.0	2,362.0	
Quantity	74	74	
Unit Cost	30.432	31.919	4.88%
<b>Original UCR Baseline and Current Estimate (Base-Year Dollars)</b>			
<b>Category (\$M) Base Year: 2018</b>	<b>Original UCR Baseline</b>	<b>Current Estimate</b>	<b>% Change</b>
<b>Program Acquisition Unit Cost</b>			
Cost	3,308.8	2,773.0	
Quantity	84	80	
Unit Cost	39.390	34.663	-12.00%
<b>Average Procurement Unit Cost</b>			
Cost	2,422.5	1,981.1	
Quantity	80	74	
Unit Cost	30.281	26.772	-11.59%

The Current Estimate's base-year costs have been converted from Base Year 2023 to Base Year 2018 using the National Defense Budget Estimates for FY 2018 (Green Book).

**Cost Growth Details****Unit Cost Note**

Program growth is due to offset funding within the later part of the FYDP. These funds are currently being realigned to support production cut in and modification of continuing development efforts to implement solutions to identified deficiencies in new modification programs supporting the MH-139A.



## Risks

### MH-139A

#### *Risk and Sensitivity Analysis*

##### Risk and Sensitivity Analysis

##### Current Procurement Cost (December - 2022)

1. There are no risks identified with this program at this time.

##### Original Baseline Estimate (September - 2018)

1. Total Acquisition Cost (BY18 \$M) - \$3,279.9M (Qty 84); PAUC - \$39.046M (Qty 84); APUC - \$30.546M (Qty 78).
2. RDT&E and Production APB (BY18\$): Total Acquisition Cost - \$3,308.8M (Qty 84); PAUC - \$39.390M (Qty 84); APUC - \$30.281M (Qty 80).
3. Due to the short timeline for stand up of the UH-1N Replacement Program Office (PO), the PO will pay for government civilians directly from 3600 UH-1N Replacement program funds. The PO plans to cover these 3600 civilian pay costs out of Program Management and Administration (PMA) from the SCP. The first opportunity to request civilian authorizations will be in the FY 2022 Program Objective Memorandum (POM). There is no guarantee that this civilian pay cost will move to the Central Civilian Pay fund in the FY 2022 POM or any subsequent POMs.

##### Current Baseline Estimate (March - 2023)

1. The CY 2023 Service Cost Position includes dollars based on uncertainty and risk analysis. Cost Growth is low risk as evidenced by the low % growth from the original baseline. With development over 90% complete and FFP NTE pricing for current and future production lots, additional cost growth is anticipated to be minimal. Additionally, most future modifications to the aircraft will be initiated as new programs, further insulating the program from cost growth.

#### *Significant Schedule Risks*

##### Significant Schedule Risks

##### Current Estimate (December- 2022)

1. There are no known risks with this program at this time.

#### *Technologies and Systems Engineering*

##### Significant Technical Risks

##### Current Estimate (December- 2022)

**[RISK]** Depot-Level Technical Data Package (TDP) for Long Term Sustainment: IF Boeing is unable to deliver required supplier-owned technical data to support full documentation of the product baseline and development of depot-level technical orders THEN the MH-139A long term organic sustainment strategy cannot be implemented. **MITIGATION:** The MH-139A Program Office collaborated with other DoD Program Offices and stakeholders for lessons learned on programs with similar tech data risks to organic sustainment. As a result, a TDP delivery strategy was developed that uses a metered gate process before each incremental future production decision. Boeing understands and concurs with the strategy and will provide government access to the MH-139A Component Repair and Overhaul Procedure (CR&OP) data. The government will evaluate the CR&OP data to determine gaps in existing data needed for long term sustainment and provide Boeing a list of the data needed via contractual letter. The government has established workshops and monthly steering groups to evaluate delivery progress. The Service Acquisition Executive (SAE) concurred with the TDP delivery strategy and approved Milestone C on March 3, 2023. This strategy will inform the SAE on the progress of data delivery before each future incremental production decision.

## Significant Technical Risks

### Current Estimate (December- 2022)

**[RISK]** Source Data for Technical Orders Verification: IF Boeing does not provide access to source data required to verify O-level Technical Orders by the start of Government Developmental Test, THEN Technical Order verification will not be complete to support the start of Initial Operational Test and Evaluation (IOT&E). **MITIGATION:** Boeing and USAF executed a closely coordinated plan for subcontractors to provide data in increments to evaluate data ahead of final delivery via technical interchanges and incremental in-progress reviews. As a result, additional gaps in flight manual (FM) and maintenance manual data were identified earlier than standard process which drove Boeing and USAF to proactively coordinate and prioritize future incremental deliveries synchronized with upcoming government verification and testing activities. The risk recently reduced in severity from HIGH to MODERATE after the 90% In-Progress Review (IPR) was conducted in November for the Interactive Electronic Technical Manuals (IETMs) (i.e., maintenance manuals). Follow-on mitigation steps include delivering FM performance charts and 100% IPR IETM are planned through CY 2023, further reducing likelihood of this risk.

**[RISK]** M240 Gun Collection System Redesign Schedule: IF the M240 Gun collection system is not successfully redesigned and tested within the planned IOT&E schedule THEN FRP and IOC could be delayed. **MITIGATION:** The current spent ammunition casing collection system design deforms in the airstream and causes gun jamming. The AF evaluated design and performance tradeoffs and selected parameters for an overall design change course of action to pursue. The design update will only affect a portion of the gun system and will not drive any major Air Vehicle changes. Based on expected certification timelines for any changes to the gun system configuration, the program office and AFGSC will be implementing a two-phased approach. First, the ammo collection bag will be reinforced to prevent jamming of the gun. This short-term solution will enable progression through the existing DT and OT schedules with a limited gun capability, but it will not resolve all deficiencies. Remaining shortfalls will be addressed through a more comprehensive redesign of the gun mount, over 2-3 years.

**[ISSUE]** Delays to Certify and Implement Identify Friend or Foe (IFF): Current IFF system configuration issues include: 1) Remote Control Unit (RCU) integration unable to obtain FAA certification, 2) AIMS non-compliances, 3) RCU obsolescence, 4) Warning/caution/advisory display needs updates IAW AF requirements, 5) DO-160 (Environmental Conditions & Test Procedures) qual gaps. These issues will cause significant delays to IFF implementation and may complicate future production decisions. **RESOLUTION:** Boeing provided IFF system modification and certification course of action options addressing all issues. The Program Office selected a configuration course of action with a new RCU. Boeing and US Government have reviewed the Root Cause Corrective Action analysis and determined no change is needed to the Air Vehicle's Operational Flight Program software, thus reducing project complexity and schedule risk for delivery. Boeing will now proceed with final design, integration and certification of the updated IFF system. Preliminary schedule estimate indicates FAA certification of IFF will be delayed until CY 2025. A workaround using the Civilian transponder will be required until Military IFF is available.

**[ISSUE]** Emergency Security Response (ESR) Mission Accomplishment: Multiple issues reduce the MH-139A's effectiveness performing ESR Mission requirements. ESR cabin seating configuration impedes door operation in flight and aircrew access to ammo cans and aft fire extinguisher. Lastly, mission equipment size and weight are not compatible with the current tie down and aft storage locations as originally placarded. **RESOLUTION:** In conjunction with AFGSC, the Program Office built a comprehensive resolution strategy to optimize cabin and cargo area configuration with AV performance. The comprehensive resolution plan includes attention to each sub-issue and their shared relationships collectively. The issue reduced in severity from HIGH to MODERATE due to several recent resolution accomplishments. A new cabin ammo can tie-down and seating configuration design was selected and is in work. Initial analysis for cargo storage areas is complete and placarded restrictions are planned to be removed allowing adequate storage for carry-on mission equipment. AFGSC and AF test units are developing new procedures and coordinating tech order changes for door operation and fire extinguisher access. Both will not require any significant AV modifications. Once each of the previously mentioned resolution courses of action are successfully tested and evaluated for suitability and effectiveness and approved by EN home office for incorporation into tech data, the issue will be resolved.

**Low Rate Initial Production****MH-139A**

Item	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	09/11/2018	03/03/2023
<b>Approved Quantity</b>	16	28
<b>Reference</b>	Pre-MS C ADM	MS C ADM
<b>Start Year</b>	2021	2023
<b>End Year</b>	2022	2025

**Rationale if quantity exceeds 10% of the total number of articles to be procured:**

The current LRIP Quantity is more than 10% of the total production quantity based on the program's low technical risk and to enable rapid fielding of a critical capability. The ADM signed on March 3, 2023, authorizes the first of three LRIP lots authorizing the purchase of 13 of the 28 planned LRIP aircraft.

**Contracts & Efforts**

Contract Data	
Contract Number	FA8739-18-C-5030
Effort Number	
Modification Number	P00077
Award Date	09/24/2018
Definitization Date	09/24/2018
Order Number	
CAGE Code/CAGE Legal Name	77272/The Boeing Company
Contract Title	UH-1N Replacement
Contract Address	Ridley Park, PA
Contracting Office	
Supported Phase	Development
Contract Strategy	
Contract Type	Firm-Fixed-Price
Modification Date	March 03, 2023
Work Start Date	
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TY\$M)		
Initial Target Price	Current Target Price	
\$375.5	\$785.4	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contractor EAC	PM EAC	
\$785.4	\$785.4	
Initial Quantity	Current Quantity	Delivered Quantity
4	19	4

**Contract Note:**

The difference between the Initial Target Price and the Current Target Price is due to additional air vehicles being procured. The original contract was to deliver four Air Vehicles, a modification was later issued to procure an additional two Air Vehicles for the developmental test and the Low Rate Initial Production modification was awarded to procure an additional 13 Air Vehicles for the MH-139A Program.

**Deliveries and Expenditures****MH-139A**

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	6	4	6	66.67%
Production	0	0	74	0.00%
Total Program Quantity Delivered	6	4	80	5.00%

Expended and Appropriated (TY \$M)
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Years Appropriated to date: 7

Total Years Appropriated Funding (Current Baseline): 14

Percent Years Appropriated: 50.00%

Then-Year Funding Appropriated as Percentage of Total Acquisition Estimate: 50.00%

Then-Year Funding Expended as Percentage of Total Acquisition Estimate: 20.70%

Total Acquisition Cost: \$3,446.6

## Operating and Support Costs

MH-139A

### *O&S Cost Breakdown:*

Category (BY2023\$ Million)	New Element
Unit-Level Manpower	\$6,247.0
Unit Operations	\$1,486.0
Maintenance	\$5,071.0
Sustaining Support	\$1,072.0
Continued System Improvements	\$492.0
Other	\$0.0
<b>Total</b>	<b>\$14,368.0</b>

**Cost Estimate Source:** Other dated February 27, 2023

**O&S Cost Note:** Approved by: C. Grant McVicker III – Deputy Assistant Secretary (Cost and Economics), February 27, 2023

Total Program O&S Cost Compared with Baseline					
	Current Baseline				
Base Year: 2023	Objective (BY\$M)	Threshold (BY\$M)	Current Estimate (BY\$M)	Current Estimate (TY\$M)	Deviation
<b>Total O&amp;S</b>	\$14,368	\$15,804.8	\$14,368.0	\$21,851.0	

***Operating and Support Costs - Disposal and Unitized Costs*****MH-139A**

**Annual Unitized O&S Cost Definition and Calculation Relative to Total O&S Cost:** Annualized Unit Cost is defined by dividing the Total BY\$ OS Cost by 80 aircraft which is further divided by 30 years of service life.

Sustainment Factors	System Name: MH-139A	Antecedent System Name: Not Applicable
Quantity to Sustain	80	
Unit of Measure	Aircraft	
Unit Expected Service Life	30	

**Base Year:**

Annual Unitized O&S Cost by Category Base Year \$ Unit:(\$M)	System Name: MH-139A	Antecedent System Name: Not Applicable
Unit-Level Manpower	\$2.603	
Unit Operations	\$0.619	
Maintenance	\$2.090	
Sustaining Support	\$0.446	
Continued System Improvements	\$0.205	
Other		
Total O&S	\$5.987	

**Disposal/Demilitarization Cost Estimate**

(BY2023\$M)	System Name: MH-139A	Antecedent System Name: Not Applicable
Total Disposal	\$11.5	

Cost Estimate Source - Disposal	
Type:	Other
Approval Authority and Date:	C. Grant McVicker III - Deputy Assistant Secretary (Cost and Economics. 02/27/2023)
Note:	
The source is the MH-139A Service Cost Position which was completed in support of the Production Acquisition Program Baseline.	
Disposal Cost Notes:	
None.	
Additional O&S Estimate Assumptions:	

Annual Flight Hours are 30,240 hours per year. Estimated Maintenance Cycles: Airframe every 8000 hours. Engine service life of 5,000 hours.

Sustainment Strategy:

The MH-139A strategy is to maintain two levels of maintenance: Organizational-Level and Depot-Level.

Antecedent Estimate Assumptions:

None