



April 2019

# PRESIDENTIAL HELICOPTER

## Program Continues to Make Development Progress While Addressing Challenges

Accessible Version

# GAO Highlights

Highlights of [GAO-19-329](#), a report to congressional committees

## Why GAO Did This Study

The mission of the presidential helicopter fleet is to provide safe, reliable, and timely transportation in support of the President. The Navy plans to acquire a fleet of 23 VH-92A helicopters to replace the current Marine Corps fleet of VH-3D and VH-60N aircraft. Initial delivery of VH-92A presidential helicopters is scheduled to begin in fiscal year 2020 with production ending in fiscal year 2023. The total cost of this acquisition program was originally estimated at almost \$5.2 billion.

The National Defense Authorization Act of 2014 included a provision for GAO to report on the VH-92A program annually, until the Navy awards the full-rate production contract. This report discusses (1) the extent to which the program is meeting its cost and schedule goals and (2) challenges facing the program in system development.

To determine how the program is progressing, GAO analyzed program documents; and spoke with officials from the program office, the Defense Contract Management Agency, contractors, Director, Operational Test and Evaluation, and Department of Defense, Developmental Test and Evaluation. GAO also assessed the program's integrated master schedule against GAO best practices.

## What GAO Recommends

GAO is not making any recommendations in this report, but will continue to monitor the potential cost growth and schedule delays as the program responds to challenges meeting capability requirements.

View [GAO-19-329](#). For more information, contact Michael J. Sullivan at (202) 512-4841 or [sullivanm@gao.gov](mailto:sullivanm@gao.gov).

April 2019

# PRESIDENTIAL HELICOPTER

## Program Continues to Make Development Progress While Addressing Challenges

### What GAO Found

Acquisition cost estimates for the Presidential Helicopter Replacement Program (also known as the VH-92A) have declined from \$5.18 billion to \$4.95 billion, for 23 new helicopters, since the program started in April 2014 (see table), and the program remains within its planned schedule. The contractor attributes this cost decrease to several factors: stable requirements, a low number of design changes, and program efficiencies.

**VH-92A Program Continues to Reduce Its Acquisition Cost Estimate**

Category	April 2014 initial baseline	May 2018 latest estimate	Percentage change
<b>Cost estimate (then-year dollars in millions): Development</b>	\$2,805.7	\$2,687.6	-4.2%
<b>Cost estimate (then-year dollars in millions): Procurement</b>	2,379.0	2,263.3	-4.9
<b>Total program acquisition cost</b>	<b>5,184.7</b>	<b>4,950.9</b>	<b>-4.5</b>
<b>Total program acquisition unit cost</b>	<b>225.4</b>	<b>215.3</b>	<b>-4.5</b>
<b>Expected total quantities (number of aircraft)</b>	23	23	0

Source: GAO presentation of Navy data. | GAO-19-329

The program has delayed some program milestones—for example, its low-rate production decision—by 5 months from its original baseline goal. Although this remains within the approved schedule, the program will have less time than planned between the end of development testing and start of operational assessment. Program officials told GAO they expect to have enough information from both the government-led integrated testing and the operational assessment to inform the low-rate production decision.

Continuing development challenges concerning performance requirements may affect whether the program can deliver fully capable aircraft on time in the future. These include:

- **VH-92A start procedures:** As we reported last year, the VH-92A was pursuing technical improvements related to Sikorsky's S-92A propulsion system, which has yet to meet a VH-92A performance requirement. Program risk for this performance requirement has not changed since our April 2018 report on the program.
- **Landing zone suitability:** As GAO found in 2018, the program has not yet met a key system capability requirement for landing the helicopter without damaging the landing zone—for example, the White House South Lawn. According to program officials, Sikorsky plans to have a solution for this performance requirement by November 2020.
- **Mission communications system:** The VH-92A program has experienced problems connecting the aircraft's communication system to secure networks, due to changes in network security requirements, presenting a new risk area for the program. The Navy anticipates having a fix by January 2020. These changes are expected to be incorporated into the four production representative helicopters being built under the development contract in time for the program's initial operational test and evaluation.

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## Abbreviations

DOD	Department of Defense
EDM	Engineering Development Model

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EMD	Engineering and Manufacturing Development
IMS	Integrated Master Schedule
MCS	Mission Communications System
SDTA	System Demonstration Test Article

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April 11, 2019

Congressional Committees

The Navy's VH-92A program is to replace the aging presidential helicopter fleet, which has been in service for several decades. The VH-92A program intends to provide new helicopters for safe, reliable, and timely transportation for the President of the United States and other parties as directed by the White House Military Office. The Navy plans to acquire a fleet of 23 VH-92A helicopters to replace the Marine Corps' existing fleet of VH-3D and VH-60N aircraft. The Navy's acquisition strategy is to integrate mature technologies and an executive interior into an existing helicopter while minimizing modifications. Initial delivery of the VH-92A helicopters is scheduled to begin in fiscal year 2020 with production ending in fiscal year 2023.

The National Defense Authorization Act of 2014 included a provision for GAO to report on the Presidential Helicopter program annually until the Navy awards a contract for full-rate production, currently planned for 2021.<sup>1</sup> In this report we discuss (1) the extent to which the program is meeting cost, schedule, and performance goals and (2) challenges, if any, the program has experienced in developmental testing and in producing aircraft and plans for addressing the challenges.

To assess whether the program is achieving cost, schedule, and performance goals, we compared cost estimates and program milestones established at the start of development to current estimates and milestone dates. These data were contained in defense acquisition executive summary reports, selected acquisition reports, and program briefings provided by the program office and Sikorsky Aircraft Corporation, a Lockheed Martin Company (the prime contractor for the program).<sup>2</sup> We also examined and analyzed key acquisition documents including contractor monthly status reports, earned value management data, and Defense Contract Management Agency reports to determine the performance and cost status of the development effort. We reviewed the program's Integrated Master Schedule (IMS) and compared it against

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<sup>1</sup>Pub. L. No. 113-66, § 252 (2013).

<sup>2</sup>In November 2015, Lockheed Martin acquired Sikorsky Aircraft Corporation.

best practices criteria in the GAO Schedule Assessment Guide and discussed the results of our schedule assessment with VH-92A program officials.<sup>3</sup> To understand potential program challenges facing the program in system development and steps taken to address those challenges, we interviewed program officials from the Navy's Presidential Helicopter Program Office, as well as officials from the Defense Contract Management Agency and from the offices of the Director, Operational Testing and Evaluation, and Department of Defense (DOD), Developmental Test and Evaluation to better understand the test and evaluation aspects of the program. We analyzed data on program risks and challenges obtained during our visits to the Navy's Presidential Helicopter Program office in Patuxent River, Maryland and the Lockheed Martin facility in Owego, New York.

We conducted this performance audit from June 2018 to April 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit and obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

The Marine Corps uses a fleet of 23 helicopters to support the President in the national capital region and when traveling in the continental United States and overseas. These aircraft have been in service for decades. In April 2002, the Navy began development of a replacement helicopter later identified as the VH-71 program. By 2009, schedule delays, performance issues, and a doubling of cost estimates, from \$6.5 billion in 2005 to \$13 billion in 2009, prompted the Navy to terminate the program.

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<sup>3</sup>An Integrated Master Schedule connects all the planned work of the government and the contractor in a network, or collection of logically linked sequences of activities. The sequences clearly show how related portions of work depend on one another, including the relationships between the government and contractors. Although the Integrated Master Schedule includes all government, contractor, and external effort, the government program management office is ultimately responsible for its development and maintenance. GAO, *Schedule Assessment Guide: Best Practices for Project Schedules*, [GAO-16-89G](#) (Washington, D.C.: December 2015).

The need for a replacement helicopter remained, and by April 2012, the Office of the Secretary of Defense approved the Navy's current acquisition approach. The Navy's approach is based on the modification of an in-production aircraft to replace the legacy aircraft, by incorporating an executive cabin interior and unique mission equipment such as communications and mission systems, and limiting modifications to the aircraft to avoid a costly airworthiness recertification.

In May 2014, the Navy awarded a fixed-price incentive (firm target) contract to Sikorsky Aircraft Corporation, a Lockheed Martin Company, for an Engineering and Manufacturing Development (EMD) phase. The contract includes options for production quantities. The VH-92A presidential helicopter is based on Sikorsky's S-92A commercial helicopter. The fixed-price incentive contract includes a ceiling price of \$1.3 billion that limits the maximum amount that the Navy may have to pay the contractor under the contract subject to other contract terms.<sup>4</sup> The VH-92A is expected to provide improved performance, survivability, and communications capabilities, while offering increased passenger capacity when compared to the current helicopters.

Sikorsky is taking S-92A aircraft from an active production line (at the Sikorsky plant in Coatesville, Pennsylvania) to a dedicated VH-92A modification facility for subsystem integration at its plant in Stratford, Connecticut. When the aircraft arrives from Coatesville, some components, such as circuit breaker panels, engines, and main and tail rotor blades are removed. After airframe modifications are done, the aircraft is then transferred to the Sikorsky facility in Owego, New York, where integration of the mission communications system, painting, and contractor-led testing, installation of the executive cabin interior, and the delivery of the aircraft will take place. See figure 1 for a depiction of modification of the commercial S-92A aircraft to the VH-92A presidential helicopter.

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<sup>4</sup>The total estimated research, development, test, and evaluation cost is \$2.7 billion—consisting of the Engineering and Manufacturing Development phase contract's ceiling price of \$1.3 billion and \$1.4 billion for sunk costs; government labor, test and evaluation functions; and out-year research and development.

**Figure 1: Modification of the S-92A Commercial Helicopter to the VH-92A**



Source: © 2016 Sikorsky Aircraft Corporation, a Lockheed Martin Company (photos); GAO analysis of Navy program office information. | GAO-19-329

The VH-92A development program includes delivery of two Engineering Development Model (EDM) test aircraft and four System Demonstration Test Article (SDTA) aircraft.<sup>5</sup> The first flight of the first EDM aircraft took place in July 2017 and the second EDM aircraft's first flight occurred in November 2017. The two EDM aircraft are currently undergoing government-led integrated testing, at Naval Air Station Patuxent River, Maryland, and were used to conduct an operational assessment in March 2019 to support a decision on whether to enter low-rate initial production. The four SDTA aircraft, now in the modification stages, are production representative aircraft being built under the development contract. These aircraft are to be used in the VH-92A's initial operational test and evaluation, which is planned to begin in March 2020. The results of that testing will be used to inform a decision whether to enter full-rate

<sup>5</sup>During the development phase, the VH-92A program will conduct risk-reduction activities, systems integration/engineering design work, test and evaluation procedures, and operator training.



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production in 2021.<sup>6</sup> These SDTA aircraft will be used to determine whether the VH-92A is operationally effective and suitable for its intended use.

In July 2018, the Federal Aviation Administration certified the VH-92A EDM-1 aircraft and supporting documentation to allow delivery to the government under the contract. According to the program office, the first EDM VH-92A configured test aircraft arrived at Naval Air Station in Patuxent River, Maryland, to begin government-led performance testing. The program office explained that in December 2018, the contractor provided VH-92A EDM-2, the second development aircraft, to the Navy and it, too, is undergoing government testing.

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## VH-92A Cost Estimates Are Decreasing While Program Manages Its Schedule and Performance Goals

The VH-92A total program acquisition cost estimate has declined from \$5.18 billion to \$4.95 billion (then-year dollars)—since the program started in April 2014.<sup>7</sup> Contractor officials attribute that the estimated decline in cost is due to stable requirements, a low number of design changes, and streamlined processes and reviews. The program has incurred delays of about 5 months to the start of its operational assessment due to parts shortages and early integration problems during product development. Program officials told us they have adjusted schedule milestones accordingly and now project that the VH-92A is on track to meet its key performance parameters, including providing a fully

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<sup>6</sup>An operational assessment will be conducted on operationally representative aircraft to provide a risk assessment of the aircraft to determine whether it meets performance requirements. The operational assessment will inform the low-rate initial production decision. The later Initial Operational Test and Evaluation (IOT&E) will be conducted on production representative articles to determine whether systems are operationally effective and suitable to support a full-rate production decision.

<sup>7</sup>Annual projected cost estimates expressed in then-year dollars reflect inflation assumptions made by a program.

interoperable mission communications system (MCS) in time for initial operational test and evaluation in 2020.<sup>8</sup>

### Cost Estimates Have Declined Due to Stable Requirements and Efficiency Gains

The Navy continues to reduce its acquisition cost estimate for the VH-92A program. The total VH-92A program acquisition cost estimate has decreased \$234 million or about 4.5 percent—from \$5.18 billion to \$4.95 billion (then-year dollars)—since the program started in April 2014. The total program acquisition unit costs have decreased by the same percentage. According to the program office, this decrease is comprised, in part, by reductions of approximately:

- \$36 million for lower than expected inflation rates,
- \$88 million for efficiencies gained during development, and
- \$103 million for revised spare parts cost and equipment production list.

**Table 1: Initial and Current VH-92A Aircraft Program Quantities and Acquisition Cost Estimates**

Category	April 2014 initial baseline	May 2018 latest estimate	Change	Difference
<b>Expected quantities:</b> Development quantities	6	6	n/a	0
<b>Expected quantities:</b> Procurement quantities	17	17	n/a	0
Total quantities	23	23	n/a	0
<b>Cost estimates (then-year dollars in millions):</b> Development	\$2,805.7	\$2,687.6	-4.2%	\$118.1
<b>Cost estimates (then-year dollars in millions):</b> Procurement	2,379.0	2,263.3	-4.9	115.7
<b>Total program acquisition cost</b>	<b>5,184.7</b>	<b>4,950.9</b>	<b>-4.5</b>	<b>233.8</b>
<b>Unit cost estimates (then-year dollars in millions):</b> <b>Total program acquisition unit cost</b>	<b>\$225.4</b>	<b>\$215.3</b>	<b>-4.5%</b>	<b>\$10.2</b>

Source: GAO presentation of Navy data. | GAO-19-329

Note: Numbers may not add due to rounding.

A key factor in controlling total program acquisition cost has been performance requirements stability. The Navy has not added any key

<sup>8</sup>Key Performance Parameters are key system capabilities that must be met in order for a system to meet its operational goals. If an attribute is considered important but not critical to meeting system goals, it can be classified as a Key System Attribute.

performance requirements to the fixed-price contract, thereby limiting cost growth. In addition, the Navy and the contractor have been able to limit the number of necessary design changes that require modifications to aircraft. These modifications are now being incorporated into the four production representative aircraft. The Navy is using an existing basic ordering agreement with Sikorsky, separate from the VH-92A contract, for two additional design changes that are not part of the baseline program. These changes are to allow for improved visibility from the aircraft's forward door and the addition of a fifth multi-functional display in the cockpit (which is identical to the existing four displays) to improve situational awareness. The program office is working with the contractor to determine the best time to make these modifications to the aircraft in order to minimize the effect on the production schedule. The final costs are still being negotiated; however, the program office expects the cost of implementing these two engineering changes to be minimal relative to the program's total acquisition cost.

The Navy and contractor have also taken advantage of other cost saving measures including streamlining some work processes and revised testing approach for some components; they are also sharing secure facilities used in support of the current presidential helicopter. In addition, they eliminated activities deemed redundant to the Federal Aviation Administration VH-92A airworthiness certification and plan to use a streamlined reporting process for the March 2019 operational assessment. According to program officials, the VH-92A has also optimized its live fire test and evaluation program.

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### The Program Is Operating within Its Original Approved Schedule Baseline, Despite Experiencing Some Delays in Development

Overall, Sikorsky reported it had accomplished about 83.3 percent of development work, with the remainder to be completed by October 2020. As of February 2019, the contractor estimates it would have completed nearly all of its activities necessary to demonstrate performance specification compliance per the contract, by February 2019, and the Navy is now more than halfway through its ground and flight testing requirements needed to a support Milestone C, the decision point for entering into low-rate initial production. The program has addressed delays resulting from technical challenges and new discoveries during development by delaying the start dates for the operational assessment, the low-rate initial production decision, and initial operational test and

evaluation by 5 months each. The milestone start dates still meet the baseline schedule thresholds.

As we found in the past, part shortages and the integration and assembly effort taking longer than planned have all contributed to delays early in the development of the two engineering development model aircraft.<sup>9</sup> The overall effect has been between 3 and 5 months of schedule delays. In addition, some work initially allocated to the contractor's site will now be completed at the Naval Air Station, Patuxent River, Maryland. This is a result of the contractor's inability to get some parts when needed to maintain the planned build schedule. According to the program office, the Navy has implemented a number of mitigation strategies to reduce the effect of the schedule slip, including leasing a commercial S-92A for pilot training, reducing the duration of some future activities, adjusting the program's schedule, and reexamining and optimizing some work processes to maintain the approved program baseline schedule.<sup>10</sup>

We also found that the program's integrated master schedule met the best practices for a reliable schedule compared against best practices criteria in the GAO Schedule Assessment Guide.<sup>11</sup> The success of programs depend, in part, on having an integrated and reliable master schedule that defines when and how long work will occur and how each activity is related to the others. Such a schedule is necessary for government acquisition programs for many reasons. It provides not only a road map for systematic project execution but also the means by which to gauge progress, identify and resolve potential problems, and promote accountability at all levels of the program. An IMS provides a time sequence for the duration of a program's activities and helps everyone understand both the dates for major milestones and the activities that drive the schedule. A program's IMS is also a vehicle for developing a time-phased budget baseline. Moreover, it is an essential basis for

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<sup>9</sup>GAO, *Presidential Helicopter: VH-92A Program is Stable and Making Progress While Facing Challenges*, [GAO-18-359](#) (Washington, D.C.: Apr. 30, 2018); and GAO, *Presidential Helicopter: Program Progressing Largely as Planned*, [GAO-16-395](#) (Washington, D.C.: Apr. 14, 2016). For a list of prior reports, see related GAO products at the end of this report.

<sup>10</sup>If there is a break in the manufacturing process, according to the program office, the program may run the risk of losing skilled personnel on both the contractor and government side who are responsible for incorporating VH-92A-unique modifications into the commercial baseline aircraft.

<sup>11</sup>[GAO-16-89G](#).

managing tradeoffs between cost, schedule, and scope. Among other things, scheduling allows program management to decide between possible sequences of activities, determine the flexibility of the schedule according to available resources, predict the consequences of managerial action or inaction on events, and allocate contingency plans to mitigate risks. Our research has identified 10 best practices associated with effective schedule estimating that can be collapsed into 4 general characteristics (comprehensive, well-constructed, credible, and controlled) for sound schedule estimating. Overall, we found the program’s IMS fully met one and substantially met three of the four characteristics for sound schedule estimating.

Table 2 provides a comparison of the planned timeframe for key events at development start to the current estimated schedule.

**Table 2: Original and Current VH-92A Key Program Milestones**

Events/milestones	April 2014 initial baseline planning date	Oct. 2018 latest estimate current planning date	Change
Low-rate initial production (Milestone C) decision <sup>a</sup>	Jan. 2019	June 2019	5 month delay
Initial Operational Test and Evaluation start	Oct. 2019	Mar. 2020	5 month delay
Initial Operational Capability decision	July 2020	Oct. 2020	3 month delay

Source: GAO presentation of Navy data. | GAO-19-329.

<sup>a</sup>According to the program office, the plan is to accelerate the Milestone C decision by a month to May 2019.

The Navy’s operational assessment began in March 2019 and ended about 30 days later; this is nearly 2 months prior to the Milestone C review, which will authorize low-rate initial production.<sup>12</sup> The contractor’s delivery of the first engineering development model aircraft to the government was about a month late. A Developmental Test and Evaluation official stated that this reduced the already short window of time between the end of development testing and start of the operational assessment. A Director, Operational Test and Evaluation official responsible for monitoring the program expressed concern that there is little time to address any new discoveries found during the operational assessment. The program office acknowledged that, while solutions to any newly discovered problems may not be ready to implement at the

<sup>12</sup>This assessment will exercise Presidential airlift missions at actual mission sites with personnel participating from all agencies that support the White House and will consist of 30 flight hours using the two EDM aircraft.

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start of production, it expects to have enough information from government-led integrated testing and the operational assessment to move forward with the Milestone C decision.

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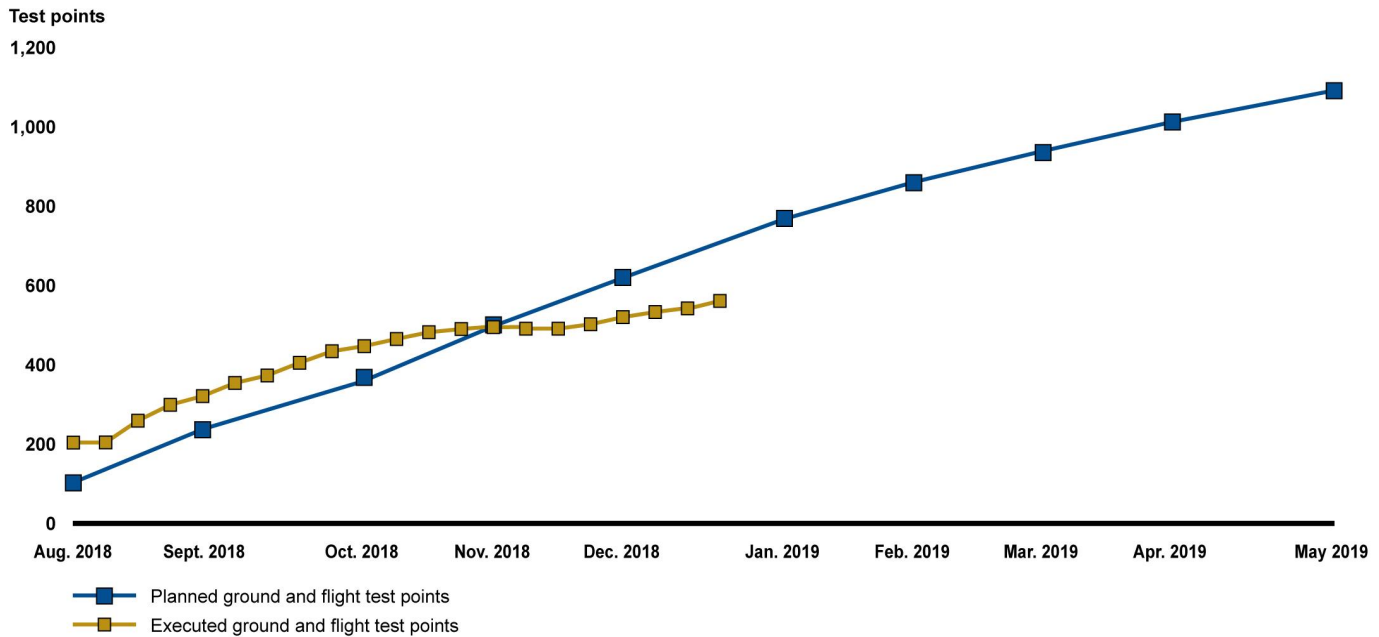
### The Program Made Progress in Demonstrating Performance Goals through Planned Developmental Testing

According to the contractor, by February 2019, its test program for the first two development aircraft will be nearly completed. In addition, as of December 2018, the government completed about 48 percent of its development ground and flight test points to support Milestone C but is slightly behind, as it had planned to complete about 57 percent at this time.<sup>13</sup> Between August and December 2018, the program conducted three major test events—the Navy conducted 14 landings on the White House south lawn to assess approaches, departures, and operations in the landing zone. The Navy also installed MCS version 2.0 on the second EDM aircraft in support of the operational assessment and tested the ability to transport the VH-92A in a cargo plane. Figure 2 shows the status of government testing as of January 2019.

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<sup>13</sup>Test point data based on events scheduled between August 2018 and May 2019.

**Figure 2: Status of Government Testing Leading to Milestone C as of January 2019**



Source: GAO analysis of VH-92A program data. | GAO-19-329

## Program Facing Development Challenges

While the program has made progress, the VH-92A program continues to face development challenges that could affect Sikorsky’s ability to deliver fully capable aircraft prior to the start of initial operational test and evaluation. Those challenges include issues associated with the aircraft’s start procedures for the propulsion system, landing zone suitability, and the aircraft’s mission communications system interoperability with secure networks. According to the program office, the performance requirements associated with these challenges may not be fully achieved until after the low-rate initial production decision currently planned for June 2019, which may result in a need to retrofit already built aircraft. Below is additional information on each of those performance requirements.

- **VH-92A aircraft start procedures:** As we reported last year, the VH-92A was pursuing technical improvements related to the S-92A propulsion system, which was not meeting a performance

requirement.<sup>14</sup> According to program officials, a previously identified solution is no longer being pursued. However, these officials stated that the program is continuing to assess current capabilities and both material and non-material solutions to any potential capability shortfalls. Testing to demonstrate aircraft performance against the requirement will be completed prior to the Milestone C review in June 2019. Design changes, if needed, will be coordinated with program stakeholders. Program risk for this performance requirement has not changed since our April 2018 report on the program.

- **Landing zone suitability:** The VH-92A operates in and out of a variety of restrictive and highly visible landing zones. The White House South Lawn is one of the most frequent locations utilized for helicopter operations in support of the President. As we reported last year, the program was not meeting a key system capability requirement to land the aircraft without adversely affecting landing zones (including the White House South Lawn).<sup>15</sup> The program has still not fully met this requirement and its assessment of this risk has increased since our last report. According to program officials, Sikorsky expects to have a solution for this requirement by November 2020.
- **Mission Communications System (MCS):** The mission communications system is a subsystem of the VH-92A aircraft that provides on-board and off-board communications services for the pilots, passengers, and crew. Currently, the VH-92A program has experienced problems connecting the MCS to secure networks, presenting a new risk area for the program. According to program officials, the MCS cannot connect to required secure networks due to recent changes in security protocols. Design changes will be needed to permanently correct this problem. For the March 2019 operational assessment, the program plans to connect to existing networks that do not use the new security protocols. This allowed the operational assessment to proceed but will limit the scope of testing. The Navy plans to have a final fix by January 2020 that will then be incorporated into the four production representative helicopters built under the development contract. These changes have caused the Navy to delay the start of the VH-92 initial operational test and evaluation by 3

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<sup>14</sup>[GAO-18-359](#).

<sup>15</sup>[GAO-18-359](#).



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months, a delay that is still within the approved program baseline threshold, as discussed earlier.

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## Agency Comments

We provided a draft of this report to DOD for review and comment. DOD provided technical comments, which were incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Acting Secretary of Defense and the Secretary of the Navy. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or [sullivanm@gao.gov](mailto:sullivanm@gao.gov). Contacts points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix I.

A handwritten signature in black ink, appearing to read 'Michael J. Sullivan', with a long horizontal flourish extending to the right.

Michael J. Sullivan  
Director, Contracting and National Security Acquisitions

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*List of Committees*

The Honorable James M. Inhofe  
Chairman

The Honorable Jack Reed  
Ranking Member  
Committee on Armed Services  
United States Senate

The Honorable Richard Shelby  
Chairman

The Honorable Dick Durbin  
Subcommittee on Defense  
Committee on Appropriations  
United States Senate

The Honorable Adam Smith  
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The Honorable Mac Thornberry  
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Committee on Armed Services  
House of Representatives

The Honorable Peter J. Visclosky  
Chairman

The Honorable Ken Calvert  
Ranking Member  
Subcommittee on Defense  
Committee on Appropriations  
House of Representatives

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# Appendix I: GAO Contact and Staff Acknowledgments

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## GAO Contact

Michael J. Sullivan, (202) 512-4841 or [sullivanm@gao.gov](mailto:sullivanm@gao.gov)

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## Staff Acknowledgments

In addition to the contract above, Bruce H. Thomas, Assistant Director; Marvin E. Bonner; Bonita J. P. Oden; Peter Anderson, Juana S. Collymore, Danny C. Royer, and Marie Ahearn made key contributions to this report.

# Appendix II: Accessible Data

## Data Tables

**Accessible Data for Figure 2: Status of Government Testing Leading to Milestone C as of January 2019**

Date	Planned ground and flight test points	Executed ground and flight test points
Aug. 2018	102	204
		204
		259
		299
Sept. 2018	236	321
		354
		373
		405
		434
Oct. 2018	368	447
		465
		482
		490
Nov. 2018	494	490
		491
		491
		502
Dec. 2018	620	520
		533
		537
		561
Jan. 2019	769	
Feb. 2019	859	
Mar. 2019	935	
Apr. 2019	1012	
May 2019	1091	

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## Related GAO Products

*Presidential Helicopter: VH-92A Program Is Stable and Making Progress While Facing Challenges.* [GAO-18-359](#). Washington, D.C.: April 30, 2018.

*Defense Acquisitions: Assessments of Selected Weapon Programs.* [GAO-17-333SP](#). Washington, D.C.: March 30, 2017.<sup>1</sup>

*Presidential Helicopter: Program Progressing Largely as Planned.* [GAO-16-395](#). Washington, D.C.: April 14, 2016.

*Presidential Helicopter Acquisition: Program Established Knowledge-Based Business Case and Entered System Development with Plans for Managing Challenges.* [GAO-15-392R](#). Washington, D.C.: April 14, 2015.

*Presidential Helicopter Acquisition: Update on Program's Progress toward Development Start.* [GAO-14-358R](#). Washington, D.C.: April 10, 2014.

Department of Defense's Waiver of Competitive Prototyping Requirement for the VXX Presidential Helicopter Replacement Program. [GAO-13-826R](#). Washington, D.C.: September 6, 2013.

*Presidential Helicopter Acquisition: Program Makes Progress in Balancing Requirements, Costs, and Schedule.* [GAO-13-257](#). Washington, D.C.: April 9, 2013.

*Presidential Helicopter Acquisition: Effort Delayed as DOD Adopts New Approach to Balance Requirements, Costs, and Schedule.* [GAO-12-381R](#). Washington, D.C.: February 27, 2012.

*Defense Acquisitions: Application of Lessons Learned and Best Practices in the Presidential Helicopter Program.* [GAO-11-380R](#). Washington, D.C.: March 25, 2011.

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<sup>1</sup>This report's assessment of the Navy's Presidential Helicopter Program constituted GAO's response to the annual reporting requirement for 2017, as required by the National Defense Authorization Act for Fiscal Year 2014.

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