



August 2018

MILITARY READINESS

Air Force Plans to Replace Aging Personnel Recovery Helicopter Fleet

Accessible Version

Why GAO Did This Study

Since the 1980s, the Air Force has used its HH-60G Pave Hawk helicopters to conduct life-saving missions, including for personnel recovery and medical evacuations. The aging HH-60G inventory has shrunk over the years as a result of mishaps. As the inventory was declining, the Air Force began efforts to replace its fleet with the new Combat Rescue Helicopter.

The National Defense Authorization Act for fiscal year 2018 includes a provision for GAO to review HH-60G replacement programs. This report examines: (1) the maintenance condition and service life of the Air Force's HH-60G Pave Hawk helicopters; (2) the Air Force's schedule for fielding the new Combat Rescue Helicopter in the active and reserve components; and (3) any training challenges the Air Force has identified related to this schedule.

GAO analyzed flight hour and availability data and contracts and fielding schedule for new and refurbished personnel recovery helicopters for the Air Force. GAO also analyzed documentation, and interviewed officials from the Air Force Headquarters, the Air Force major commands, including the Air National Guard and Air Force Reserve, and training and test and evaluation units to discuss challenges the Air Force expects to face as it fields its new helicopters.

What GAO Recommends

GAO is not making any recommendations in this report. GAO requested comments from the DOD, but none were provided.

View [GAO-18-605](#). For more information, contact John H. Pendleton at (202) 512-3489 or PendletonJ@gao.gov.

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Air Force Plans to Replace Aging Personnel Recovery Helicopter Fleet

What GAO Found

The material condition of the Air Forces' aging HH-60G fleet has declined and maintenance challenges have increased, in part due to extensions beyond the designed service life of the helicopters. About 68 percent of the 96-helicopter fleet were mission-capable as of fiscal year 2017, below the Air Force desired mission-capable rate of 75 percent. The fleet is experiencing maintenance challenges. For example, the helicopters undergoing depot-level maintenance spent an average of 332 days undergoing such maintenance in fiscal year 2017 compared with 233 days in fiscal year 2007, more than a 40-percent increase. Air Force officials attribute these challenges to the helicopters exceeding their initially planned service life. Currently, available helicopters across the fleet average about 7,100 flight hours about 18 percent more than their initial expected service life of 6,000 hours.

According to Air Force officials, the schedule for fielding the new Combat Rescue Helicopters generally prioritizes the replacement of helicopters with the highest number of flight hours; as a result, the active component is scheduled to begin receiving its new helicopters in fiscal year 2020, 6 years before the reserve component. In May 2018, the Air Force's active component HH-60Gs averaged about 2,000 more flight hours per helicopter than the reserve component. Under the fielding schedule, the Air National Guard squadrons are to receive new Combat Rescue Helicopters beginning in 2027, at the end of the fielding period. According to officials, in the meantime, to address aging helicopters in the Air National Guard, the Guard is scheduled to receive refurbished Army helicopters beginning in 2019. According to Air Force officials, these helicopters will have 3,000 or fewer flight hours and will be upgraded to the Air Force's HH-60G configuration. The Air Force officials explained that these helicopters are expected to increase reliability rates, reduce the need for unscheduled maintenance, and bridge the gap until the Air National Guard receives the new Combat Rescue Helicopters.

Due to the Air Force fielding schedule for the Combat Rescue Helicopters, the Air Force may face a challenge in supporting formal training for reserve component squadrons in fiscal year 2025 through 2028. The training squadrons at Kirtland and Nellis Air Force Bases conduct all formal HH-60G training for both the active and reserve components. By 2025, these training squadrons are scheduled to be completely transitioned to the new Combat Rescue Helicopters. Given the fielding schedule, the training squadrons will not have any legacy HH-60Gs for formal training for the reserve component. However, some squadrons in the reserve component are scheduled to continue flying HH-60Gs until 2028 and will still need formal training. Air Force reserve component officials did not concur with the new Combat Rescue Helicopter fielding schedule. However, Air Force officials said that they plan to maintain their fielding schedule because changing it would require renegotiation of the contract, likely increase costs, and possibly delay delivery of the new helicopters. Air Force officials acknowledged this potential training issue and told GAO that the Air Force was considering options to address it; including retaining some legacy HH-60Gs at a training squadron to provide training during any gap period.

Contents

Letter	1
Background	4
Air Force's HH-60G Helicopters Have Experienced Declines in Condition and Increases in Maintenance Challenges, Due in Part to Extensions beyond the HH-60G's Designed Service Life	6
Air Force Fielding Schedule Delivers Combat Rescue Helicopters First to High Flight-Hour Squadrons	9
The Air Force Has Identified Potential Training Challenges, but Would Likely Incur Costs If It Adjusted the Fielding Schedule for Its Combat Rescue Helicopters	12
Agency Comments and Our Evaluation	16
Appendix I: The National Commission on the Structure of the Air Force Report and Recommendation Implementation	18
Appendix II: GAO Contact and Staff Acknowledgments	20
Appendix III: Accessible Data	21
Data Tables	21
Table	
Table 1: Average Number of Flight Hours by HH-60G Helicopter Mission Type for Both Active and Reserve Components in May 2018	9
Figures	
Figure 1: HH-60G Pave Hawk Inventory by Mission Type, as of May 2018	4
Figure 2: Locations, Components, and Inventories of HH-60G Pave Hawk Rescue Squadrons	5
Figure 3: Typical HH-60G Helicopter Pilot Training Timeline	6
Figure 4: Elements of HH-60G Pave Hawk Helicopters That Failed Most Often (Fiscal Years 2013–2017)	7

Figure 5: Fielding Schedule for the Combat Rescue Helicopters, Fiscal Years 2019-2029	10
Figure 6: Average Flight Hours for Combat Rescue Helicopters by Component in May 2018	11
Figure 7: HH-60G Inventory by Component, Fiscal Years 2020-2029	13
Figure 8: Combat Rescue Helicopter Inventory by Component, Fiscal Years 2020-2029	14
Accessible Data for Figure 1: HH-60G Pave Hawk Inventory by Mission Type, as of May 2018	21
Accessible Data for Figure 6: Average Flight Hours for Combat Rescue Helicopters by Component in May 2018	21
Accessible Data for Figure 7: HH-60G Inventory by Component, Fiscal Year 2020-2029	21
Accessible Data for Figure 8: Combat Rescue Helicopter Inventory by Component, Fiscal Year 2020-2029	22

Abbreviations

DOD Department of Defense

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August 16, 2018

Congressional Committees

When U.S. pilots are shot down or U.S. servicemembers are stranded behind enemy lines, the Air Force's HH-60G Pave Hawk helicopter is a combatant commander's platform of choice to rescue them. The unique and advanced capabilities of this helicopter and its highly trained crews make it the Department of Defense's (DOD) premier personnel recovery helicopter. HH-60G units deploy frequently to support DOD personnel recovery missions and other operations around the world, and in recent years DOD has relied on these units to support medical evacuations in Iraq and Afghanistan. Although the other military services fly similar helicopters—such as the Army's UH-60L—the HH-60G's extensive communication suite and ability to operate at high altitudes and conduct in-flight refueling are some of the capabilities that make the HH-60G uniquely suited for recovering personnel who may be isolated in enemy territory. The HH-60G aircrew consists of two pilots and two special mission aviators—personnel trained to operate both as flight engineers and as gunners for the HH-60G's two 50-caliber machine guns.¹

First fielded in the 1980s, the HH-60G Pave Hawk helicopter is aging and in need of replacement. The HH-60G was initially designed to have a service life of approximately 6,000 flight hours, according to officials, and the Air Force procured 112 helicopters. As the helicopters aged and the inventory shrunk as a result of mishaps, the Air Force planned to procure a replacement helicopter—the Combat Search and Rescue Replacement Vehicle. However, this replacement program was canceled in 2009. Since then the inventory has continued to shrink and currently the Air Force has 96 HH-60G Pave Hawk helicopters, 16 fewer than required. The Air Force is now planning to rebuild its inventory in two ways. First, the Air Force procured 21 Army UH-60Ls, and those helicopters are being converted into the HH-60G Pave Hawk configuration under the Air Force's

¹ When conducting personnel recovery missions, the HH-60G Pave Hawk helicopters generally operate as part of a team that includes the Guardian Angels (Air Force pararescuemen; survival, evasion, resistance, and escape specialists; and combat rescue officers) and that may include HC-130 aircraft to provide refueling and other logistical support and fighter aircraft. This report refers only to the helicopter portion of the Air Force's personnel recovery capabilities.

Operational Loss Replacement program. Second, the Air Force is purchasing 112 new Combat Recovery Helicopters (HH-60Ws) to replace its fleet of HH-60G Pave Hawk helicopters by 2029.²

The National Defense Authorization Act for Fiscal year 2018 included a provision for us to review the Air Force's HH-60G replacement programs, which it defined as including both the Operational Loss Replacement and Combat Rescue Helicopter programs.³ The provision included direction to review the fielding schedule for the new Combat Rescue Helicopter. This report examines (1) the maintenance condition and the service life of the Air Force's HH-60G Pave Hawk helicopters (2) the Air Force's schedule for fielding the Combat Rescue Helicopter in the active and reserve components, and (3) any training challenges the Air Force has identified related to this schedule. Appendix I provides a brief summary of the National Commission on the Structure of the Air Force's 2014 report to the President and Congress, and the relationship of the Air Force's HH-60 replacement programs to that report.

For objective one, we examined fiscal year 2013–2017 average “mission capable rates,” which refer to the material condition of the aircraft possessed by a squadron and their abilities to conduct their designed missions. We compared the average squadron mission capable rates to the Air Force desired mission capable rate. We also analyzed fiscal year 2013–2017 Air Force maintenance “code 3 breaks” data, defined by the Air Force as an aircraft that lands and is unable to complete at least one of its primary missions. According to Air Force policy, this metric primarily indicates aircraft system reliability.⁴ To determine which “code 3 breaks” were most common, we analyzed fiscal year 2013–2017 annual code 3 break reports across the HH-60G fleet. We also analyzed flight hour data across the HH-60G fleet. Specifically, we analyzed flight-hour data by component and major command and compared them with the initial number of flight hours that Air Force officials stated the helicopters were originally designed to fly.

² In this report, we discuss three groups of helicopters—HH-60G Pave Hawk helicopters, HH-60G Operational Loss Replacement helicopters, and the HH-60W helicopters that the Air Force is procuring under the Combat Rescue Helicopter contract.

³ Pub. L. No. 115-91, §139 (Dec. 12, 2017)

⁴ Air Education and Training Command (AETC) Instruction 21-105, *Logistics Performance Measures Reporting Procedures* (Feb. 22, 2017).

To assess the reliability of the fiscal year 2013–2017 mission capable rates, maintenance “code 3 break” data, and flight-hour data we discussed with Air Force officials the processes used to collect the data and the internal controls used to maintain the databases where the data are maintained. We also conducted manual data testing on the flight-hour data and did not find any missing data, outliers, or obvious errors. We concluded that the data were sufficiently reliable for the purposes of determining average mission capable rates, reported flight hours by component, and the three most frequently-noted maintenance “code 3 breaks” between 2013 and 2017. To corroborate our understanding of Air Force efforts to rebuild the personnel recovery helicopter inventory and maintenance, and mission capable rate data, we conducted interviews with officials from Air Force Headquarters, the Air Combat Command, the Air National Guard, the Air Force Reserve, the formal training squadrons at Kirtland and Nellis Air Force Base, and the Test and Evaluation squadron at Nellis Air Force Base.

For objective two, we analyzed historical information from the Combat Search and Rescue Replacement Vehicle helicopter program and from the current Combat Rescue Helicopter fielding schedule. Specifically, we analyzed the Combat Rescue Helicopter fielding schedule for fiscal years 2020 through 2029 to identify which helicopter squadrons would receive the new Combat Rescue Helicopter and during which fiscal year.

For objective three, we analyzed the Air Combat Command fielding schedule for both Operational Loss Replacement helicopters and Combat Rescue Helicopters and we spoke with the Air Combat Command, the Air National Guard, the Air Force Reserve, and the Air Education and Training Command officials to discuss the positive aspects of the Air Combat Command’s schedule, any concerns the officials had with the schedule, and whether or not they had submitted any alternative schedules. Based on some concerns that were raised by reserve component officials, we reviewed and analyzed the Air Force training plan for the Combat Rescue Helicopter and discussed it with Air Force training officials. Specifically, we discussed expected differences between the HH-60G and the Combat Rescue Helicopter training, and any potential training gaps.

We conducted this performance audit from September 2017 to August 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe

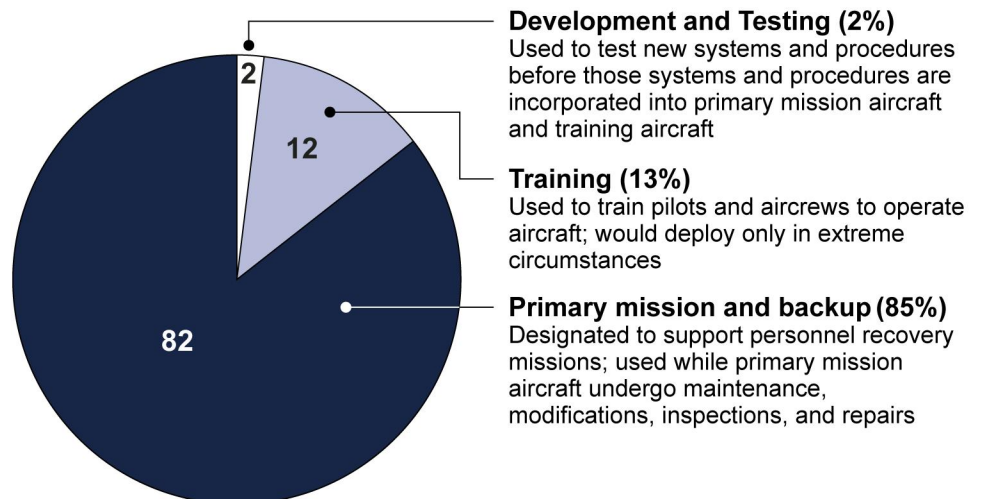
that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

HH-60G Pave Hawk Inventory

According to Air Force officials, the Air Force has 82 HH-60G helicopters designated to meet its personnel recovery mission requirements. The remaining 14 HH-60Gs are designated for training and, development and testing. Figure 1 shows the Air Force's inventory of HH-60G Pave Hawk helicopters as of May 2018.

Figure 1: HH-60G Pave Hawk Inventory by Mission Type, as of May 2018



Source: GAO analysis of Air Force data. | GAO-18-605

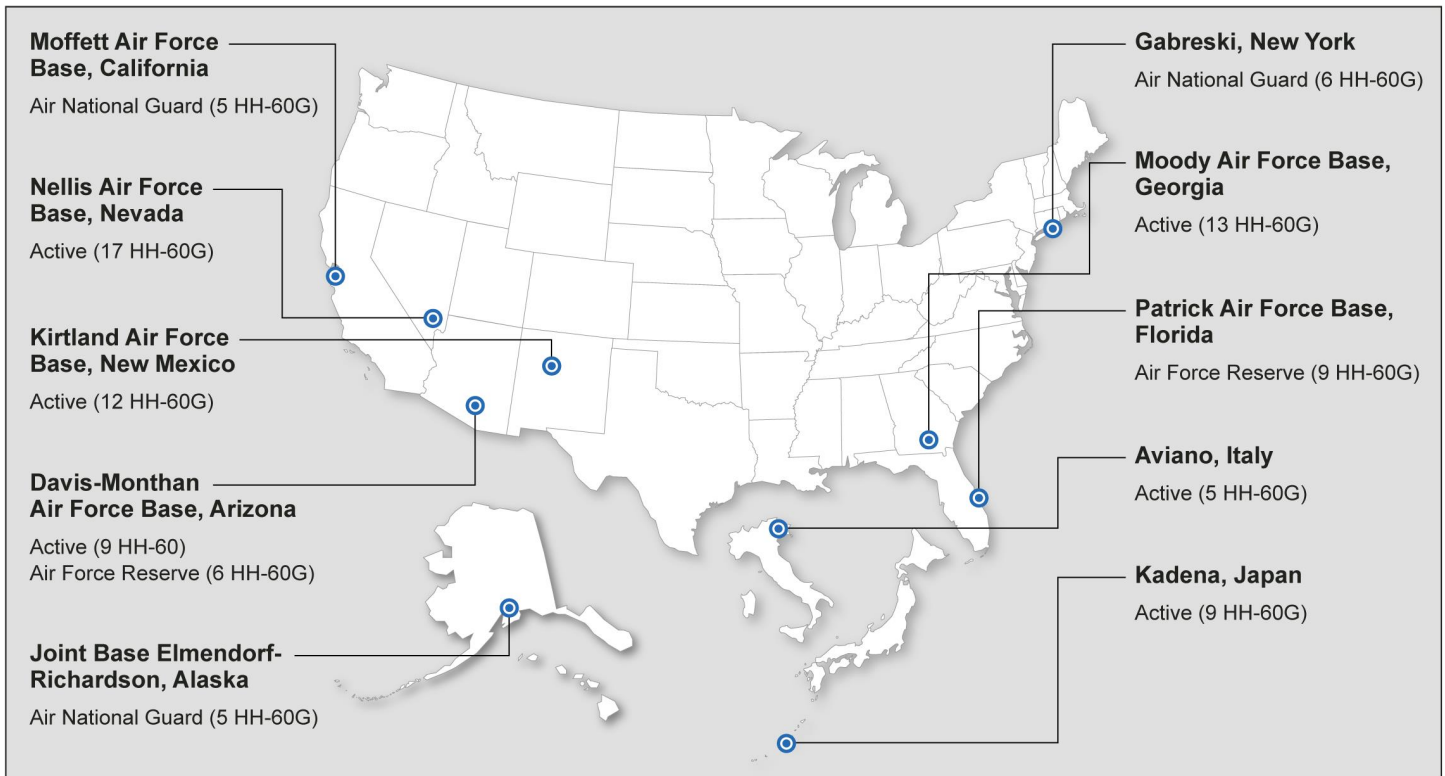
Note: The 12 training helicopters are owned by the Air Education and Training Command and used for formal training at Kirtland Air Force Base. Two of the Air Combat Command's helicopters at Nellis Air Force Base, which are included in the primary and backup numbers, are used for advanced pilot training.

Command Structure and Locations

The Air Combat Command is the lead command for personnel recovery helicopters and as such has responsibility for all requirements associated

with the helicopters, and for program funding.⁵ Formal training of helicopter aircrews takes place at Kirtland and Nellis Air Force Bases. The formal training unit at Kirtland Air Force Base is the only integrated unit with both active and reserve component forces, but the unit's helicopters are assigned to the active component. All other HH-60G Pave Hawk units consist solely of active or solely of reserve component forces. Figure 2 shows the locations and components of the HH-60G rescue squadrons. It also shows the numbers of helicopters at each location.

Figure 2: Locations, Components, and Inventories of HH-60G Pave Hawk Rescue Squadrons



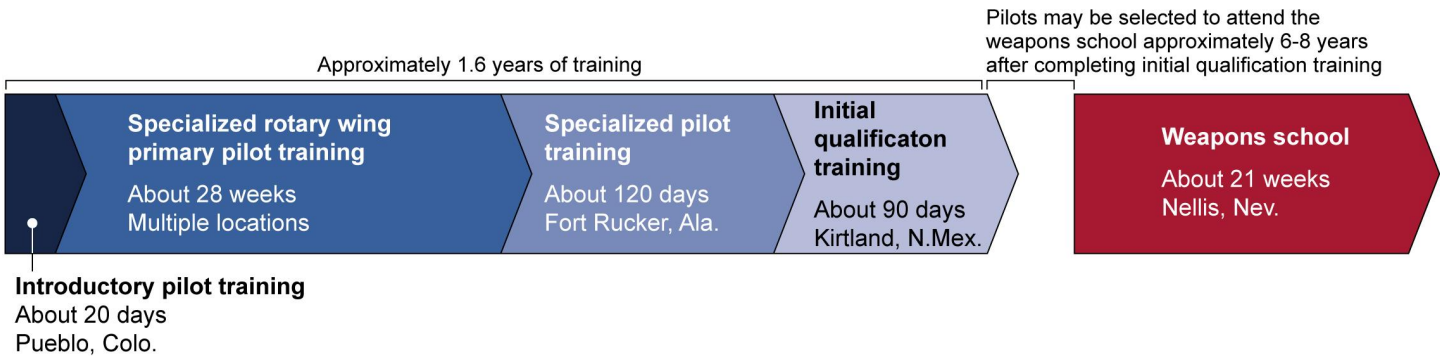
Source: GAO analysis of Air Force information. | GAO-18-605

⁵ Seven of the Air Force's major commands own HH-60Gs—the Air Education and Training Command, the Air Combat Command, the Pacific Air Forces, the United States Air Forces in Europe, the Air Force Materiel Command, the United States Air Force Reserve Command, and the Air National Guard.

HH-60G Helicopter Pilot Training

It takes several years to fully train a helicopter pilot. Pilots spend about a year and half in their general introductory and specialized helicopter training. For Air Force HH-60 pilots, this initial qualification training occurs at Kirtland Air Force Base. Following that, the pilots continue their training at their assigned operational squadrons. According to weapons school officials, a few experienced HH-60 pilots are selected to attend the HH-60 weapons school at Nellis Air Force Base where the pilots assist in the development of tactics, techniques, and procedures for the HH-60 community. Figure 3 shows a typical training timeline for HH-60G pilots.

Figure 3: Typical HH-60G Helicopter Pilot Training Timeline



Source: GAO analysis of Air Force information. | GAO-18-605

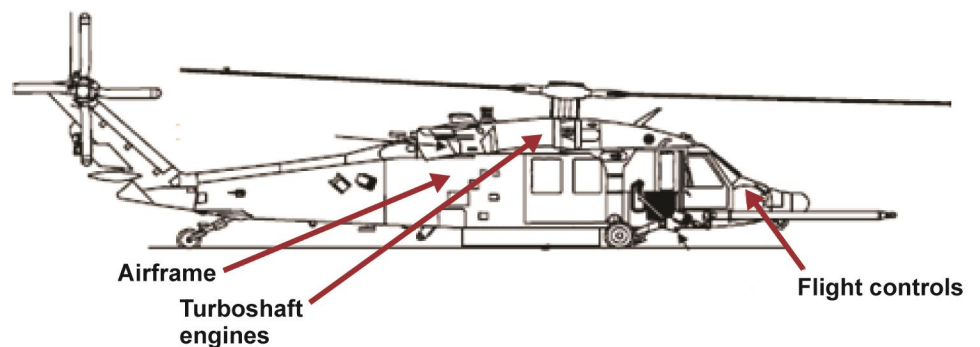
Air Force’s HH-60G Helicopters Have Experienced Declines in Condition and Increases in Maintenance Challenges, Due in Part to Extensions beyond the HH-60G’s Designed Service Life

The material condition of the Air Force’s HH-60G fleet has declined and maintenance challenges have increased, in part due to extensions beyond the initially designed service life of the helicopters. In November 2017, the Air Force’s HH-60Gs were about 5 percent below their desired “mission capable” rate of 75 percent, which refers to the material condition of a squadron’s possessed aircraft and their abilities to conduct their designed missions. Mission capable rates have shown some year-to-year fluctuations, without any clear trends. However, for each of the

past 5 years, the helicopters' mission capable rates have been below the Air Force's goal, and for fiscal year 2017, 68 percent of the 96 helicopter fleet were mission capable.

As the helicopters have aged, the amount of time spent conducting maintenance on them has increased. For example, according to Air Force officials, in fiscal year 2013 the fleet averaged about 21 maintenance manhours for every HH-60G flight hour. However, by fiscal year 2017, the maintenance time spent had increased to an average of more than 25 maintenance manhours for every flight hour. According to officials, the increased time conducting maintenance is a result of an aging helicopter that requires more intensive maintenance. Further, according to officials, in 2007 the average amount of time required to conduct more extensive depot-level maintenance was 233 days, but by fiscal year 2017 it was 332 days, more than a 40 percent increase. Air Force maintenance data for fiscal years 2013-2017 show that airframes, turboshaft engines, and flight controls (see fig. 4) were the HH-60G elements that failed most often. According to Air Force officials, these structural and major component failures can require time-consuming maintenance that negatively affects availability and mission capable rates.

Figure 4: Elements of HH-60G Pave Hawk Helicopters That Failed Most Often (Fiscal Years 2013–2017)



Source: GAO analysis of Air Force information. | GAO-18-605

According to Air Force flight-hour data, the average flight hours across the HH-60G fleet have increased by nearly 20 percent from fiscal year 2013 through May 2018. Air Force officials stated that the HH-60G was initially designed to have a service life of approximately 6,000 flight hours. However, in May 2018, the fleet-wide average was approximately 7,100 flight hours, or about 18 percent more than their initial expected service life. Table 1 shows that, as of May 2018, HH-60G training aircraft averaged about 10,500 flight hours, while the primary mission and back

up aircraft averaged about 6,600 flight hours. The Air Force's two developmental and testing aircraft had an average of 5,500 flight hours. According to Air Force officials, this is because developmental and testing aircraft are flown to test specific aircraft elements and not on regular missions. As flight hours increase more maintenance is required and maintenance challenges increase, according to Air Force officials.

Table 1: Average Number of Flight Hours by HH-60G Helicopter Mission Type for Both Active and Reserve Components in May 2018

Helicopter mission type	Number of helicopters	Average flight hours per helicopter ^a
Total Aircraft Inventory	96	7,100
Primary mission and Backup	82	6,600
Training	12	10,500
Developmental and testing	2	5,500

Source: GAO analysis of Air Force data. | GAO-18-605

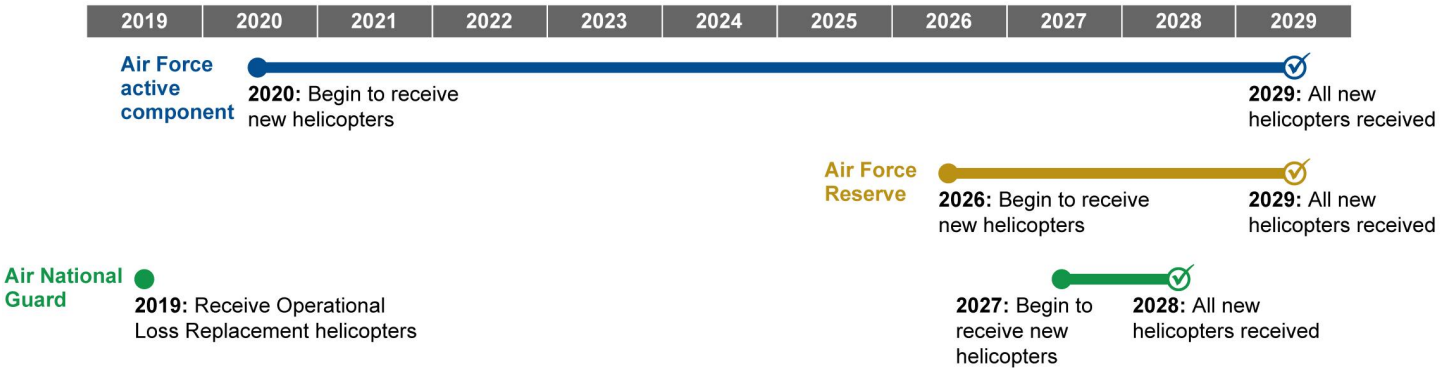
^aAverages rounded to the nearest hundred flight hours.

Air Force Fielding Schedule Delivers Combat Rescue Helicopters First to High Flight-Hour Squadrons

According to Air Force officials, the Combat Rescue Helicopter fielding schedule, which was included in the contract for the new helicopters, was designed to ensure that helicopters with the highest flying hours are generally replaced first. The officials told us that this is why the active component units, which have higher flying-hour averages, would begin receiving their new Combat Rescue Helicopters in fiscal year 2020. Based on the current Combat Rescue Helicopter fielding schedule, the Air Force Reserve is scheduled to receive its new helicopters beginning in fiscal year 2026. The Air National Guard is scheduled to receive refurbished Operational Loss Replacement helicopters in fiscal year 2019 and the new Combat Rescue Helicopters beginning in fiscal year 2027. The last Combat Rescue Helicopters are scheduled to be fielded to all three components in fiscal year 2029.⁶ Figure 5 shows the timeline for the transition to the new Combat Rescue Helicopters.

⁶ According to Air Force officials, as of May 2018 the Combat Rescue Helicopters were projected to be delivered ahead of schedule and to be fully fielded by fiscal year 2028.

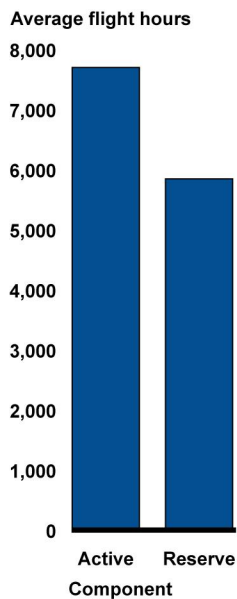
Figure 5: Fielding Schedule for the Combat Rescue Helicopters, Fiscal Years 2019-2029



Source: GAO analysis of Air Force information. | GAO-18-605

On average, the active component helicopters had about 2,000 more flight hours per helicopter than the reserve component helicopters, in May 2018, as shown in figure 6. Specifically, the active component helicopters had on average 7,700 flight-hours, while the reserve component helicopters averaged 5,800 flight hours.

Figure 6: Average Flight Hours for Combat Rescue Helicopters by Component in May 2018



Source: GAO analysis of Air Force data. | GAO-18-605

The active component helicopters in figure 6 include the Kirtland training helicopters, which averaged about 10,600 flight hours per helicopter.⁷ According to Air Force officials, due in part to the high number of flight hours per aircraft, Kirtland is one of the first squadrons scheduled to receive the new Combat Rescue Helicopters. Specifically, Kirtland is scheduled to begin receiving its new helicopters in fiscal year 2020.

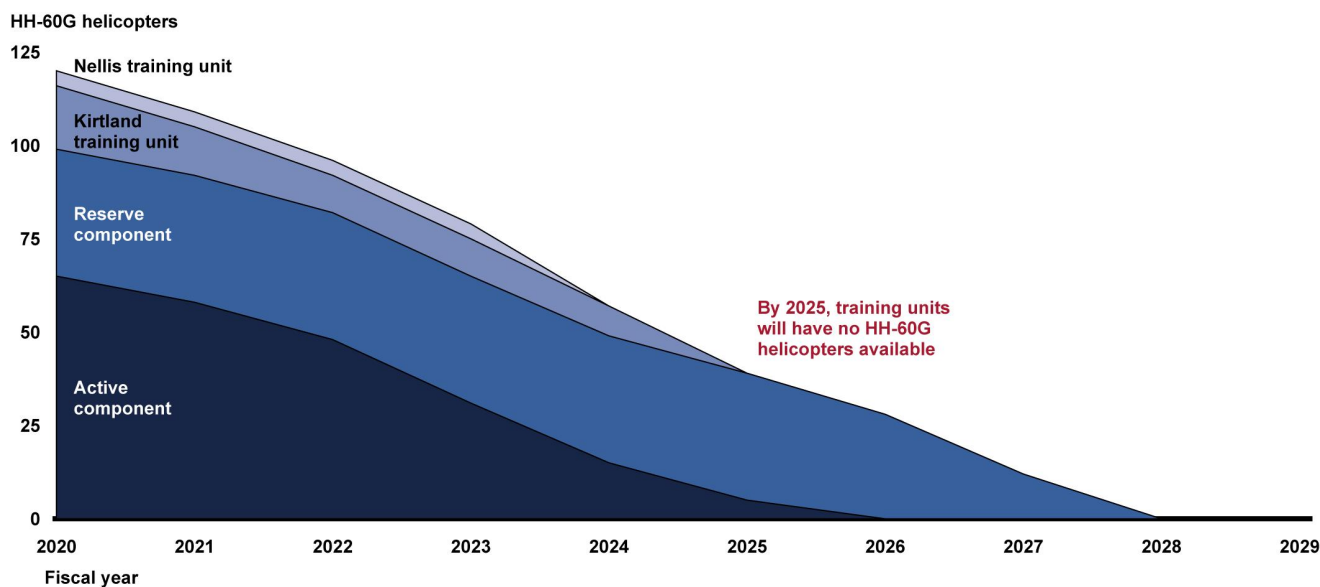
Among the reserve component, the Air National Guard helicopters have an average of about 6,200 flight hours while the Air Force Reserve helicopters have an average of about 5,500 flight-hours per aircraft. However, the Combat Rescue Helicopter fielding schedule shows that the Air National Guard squadrons are last to receive the new Combat Rescue Helicopters. According to Air Force officials, to address the later fielding of the new Combat Rescue Helicopters to the Air National Guard, beginning in fiscal year 2019 the Air Force is replacing all of the Air National Guard's helicopters with refurbished Army helicopters. These helicopters will be upgraded to the Air Force's HH-60G configuration and

⁷ As of December 2017, the average flight hours per active component helicopter, not including the 12 Air Education and Training Command training helicopters and 2 developmental and testing helicopters, was about 7,100.

will each have 3,000 or fewer flight hours. These refurbished helicopters are commonly referred to as the Operational Loss Replacement helicopters. According to Air Force officials the Operational Loss Replacement helicopters are expected to increase squadron helicopter reliability and are expected to reduce unscheduled maintenance until the Air National Guard squadrons receive their new Combat Rescue Helicopters.

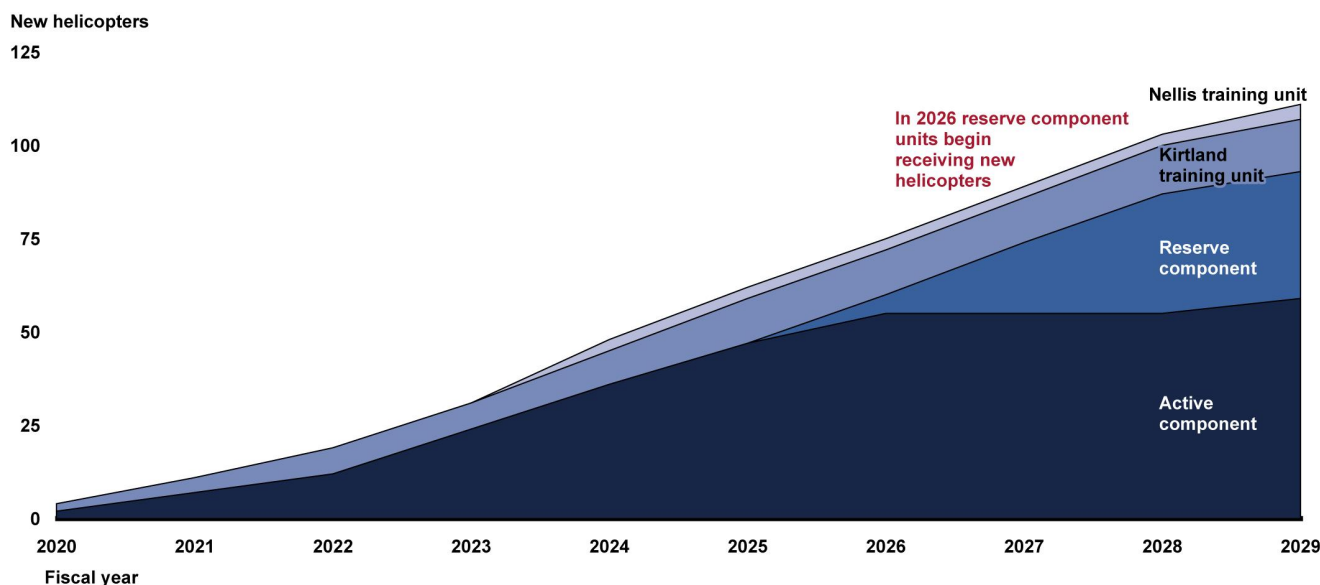
The Air Force Has Identified Potential Training Challenges, but Would Likely Incur Costs If It Adjusted the Fielding Schedule for Its Combat Rescue Helicopters

Due to the Air Force fielding schedule for the Combat Rescue Helicopters, the Air Force may face a challenge in supporting formal training for its reserve component squadrons during fiscal years 2025 through 2028. The rescue squadrons at Kirtland and Nellis Air Force Bases conduct all formal HH-60G training, and by fiscal year 2025, are scheduled to transition to providing formal training for the new Combat Rescue Helicopters. Specifically, these formal training units are scheduled to completely transition to the Combat Rescue Helicopter and will have divested all of their legacy HH-60G aircraft, as shown in figure 7. However, other squadrons will continue to fly the HH-60G aircraft after fiscal year 2025. Specifically, seven rescue squadrons will fly the legacy HH-60Gs in fiscal year 2025, and some will continue flying the HH-60Gs until fiscal year 2028 and so will continue to need formal training to fly that helicopter throughout that period.

Figure 7: HH-60G Inventory by Component, Fiscal Years 2020-2029

Source: GAO analysis of Air Force data. | GAO-18-605

According to the Combat Rescue Helicopter fielding schedule shown in figure 8, the reserve component squadrons will receive most of their Combat Rescue Helicopters between fiscal years 2026 through 2028. The Air National Guard squadrons will not receive their primary mission Combat Rescue Helicopters until fiscal year 2028. This is 3 years after the formal training units at Kirtland and Nellis will have stopped training students on the legacy HH-60Gs.

Figure 8: Combat Rescue Helicopter Inventory by Component, Fiscal Years 2020-2029

Source: GAO analysis of Air Force data. | GAO-18-605

The Air Force Reserve and Air National Guard did not concur with the Combat Rescue Helicopter fielding schedule. Reserve Component officials said they did not concur, in part, because the Air Force did not coordinate the fielding schedule prior to the contract's approval in 2014. However, according to Headquarters Air Force officials, the Combat Rescue Helicopter fielding schedule was coordinated with and approved by all components prior to the 2014 contract being approved. Further, Air Force officials stated they plan to maintain the fielding schedule because changing it would require the renegotiation of the contract and would likely result in increased costs and possibly a delay in delivery of the new helicopters. The Combat Rescue Helicopter contract was developed as a fixed-price contract.⁸ According to Air Force officials, as part of this fixed-price contract, specific terms such as base locations and order of delivery were predetermined.

According to Air Force officials, while the Combat Rescue Helicopter contract does allow for some variation in the quantity of helicopters procured each year, there is no location and order variation permitted

⁸ The Combat Rescue Helicopter contract required identifying location and order of bases to receive the new helicopters because of the associated costs of the specific locations where the contractor would be providing training and maintenance support through 2025.

without the renegotiation of price. According to the Air Force, any changes outside the included variation of the number of aircraft to be purchased in a given year (i.e. change in the order or location of the bases) would negate the firm-fixed prices in the year where the change occurred, and in all the remaining years of the contract. Specifically, if changes are made to the order or location of the bases, potential contract line items that could increase include base level spares, readiness spares packages, support equipment, interim supply support and field support representatives for both aircraft and training systems. According to Air Force officials, fielding schedule changes could also put at risk the ability to provide timely funding for the military construction projects necessary to house new simulators at the rescue squadrons' bases. These officials stated that the current Combat Rescue Helicopter fixed-price contract is ahead of schedule and within budget, as of June 2018. Air Force officials said they expect to have new helicopters by March 2020, 3 months ahead of schedule. They also said that if changes are made to the order of deliveries under the contract, the contract would have to be renegotiated which would, in turn, likely slow the delivery of the new helicopters and increase contract costs.

Air Force officials acknowledge that based on the current fielding schedule there is a potential training gap that will occur in fiscal years 2025 through 2028 when the formal training units will no longer have any HH-60Gs available to train the reserve component. As of June 2018, Air Force officials told us that the Air Force was considering a number of options to address future training issues, including the following:

- The Air Force would provide legacy HH-60G helicopters, for a limited time, to the Air National Guard squadron at Kirtland Air Force Base. This would allow the Air National Guard to continue providing initial and requalification training on the legacy HH-60G helicopters for several years after the active component portion of the formal training unit at Kirtland Air Force Base has divested its legacy HH-60G helicopters.
- The Air Force would require personnel that have completed training on the Combat Rescue Helicopter at Kirtland Air Force Base to then

receive additional training for the legacy platform at their home stations if their squadrons are still flying the HH-60Gs.⁹

Agency Comments and Our Evaluation

We provided a draft of this report to DOD for review and comment. DOD told us that they had no comments on the draft report.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense and the Secretary of the Air Force. 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) 512-3489 or at pendletonj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix II.



John H. Pendleton
Director
Defense Capabilities and Management

⁹ The extent of this additional training is not yet clear because the Air Force has not determined whether it will have a single qualification for both helicopters—the HH-60G and the Combat Rescue Helicopter—or whether it will have separate qualifications for the two helicopters. If the Air Force opts for a single qualification, pilots would only need to train on the differences between the HH-60G and Combat Rescue Helicopter at their home station. If the Air Force opts for separate qualifications for the two helicopters, the required home station training would be more extensive.

List of Committees

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

The Honorable Richard Shelby
Chairman
The Honorable Dick Durbin
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

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

The Honorable Kay Granger
Chairwoman
The Honorable Pete Visclosky
Ranking Member
Subcommittee on Defense
Committee on Appropriations
House of Representatives

Appendix I: The National Commission on the Structure of the Air Force Report and Recommendation Implementation

Following disagreements over the Air Force's proposals to reduce aircraft and Air National Guard end strength, the National Defense Authorization Act for Fiscal Year 2013 established the National Commission on the Structure of the Air Force. The act required the commission to conduct a study to determine whether, and how, the Air Force structure should be modified to best fulfill mission requirements in a manner consistent with available resources.¹ In January 2014, the commission issued its final report, which included 42 recommendations.² The Air Force agreed with 41 of the 42 commission's recommendations. The recommendations varied in size, scope, and duration, and they focused on a range of topics from personnel policies and systems to determining the appropriate balance between the active and reserve component.³ However, as we reported in 2016 many of the recommendations were interrelated and the Air Force grouped the recommendations into various lines of effort and assigned senior officials responsibility for tracking the implementation of each line of effort.⁴ The "Total Force Continuum" has half (21) of the commission's 42 recommendations. Recommendation 11 is part of this line of effort and it states:

¹ Pub. L. No. 112-239, §§ 362(a), 363(a) (2013).

² Report to the President and Congress of the United States, *National Commission on the Structure of the Air Force*, (Jan. 30, 2014).

³ The Air Force did not agree with the recommendation to disestablish the Air Force Reserve Command.

⁴ [GAO-16-405](#): FORCE STRUCTURE: Performance Measures Needed to Better Implement the Recommendations of the National Commission on the Structure of the Air Force, (Washington, D.C. May 6, 2016).

As the Air Force acquires new equipment, force integration plans should adhere to the principle of proportional and concurrent fielding across the components. This means that, in advance of full integration, new equipment will arrive at Air Reserve Component units simultaneously with its arrival at Active Component units in the proportional share of each component. As the Air Force Reserve and Active Component become fully integrated, the Air Force should ensure that the Air National Guard receives new technology concurrent with the integrated units. The Air Force should no longer recapitalize by cascading equipment from the Active Component to the Reserve Components.

In accordance with Section 1055 of the Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015, the Air Force provided the congressional defense committees with annual responses to the commission’s recommendations.⁵

In its initial response, the Air Force stated that it was embracing the commission’s intent and viewed the recommendations as a holistic approach to improving the service. With regard to recommendation 11, the Air Force stated that it agreed in principle with the recommendation and would make every attempt to concurrently and proportionally equip all components to be the most capable force within today’s constrained resources.

In its 2017 response, the Air Force cited the Combat Rescue Helicopters as one of the examples of how it is implementing recommendation 11. Specifically, the Air Force reported that its future fielding of the CRH shows the Air Force’s commitment to concurrent and proportional fielding of equipment amongst its components. Headquarters, Air Force officials elaborated on this response in response to our request for clarification, stating that the Air Force was replacing all its personnel recovery helicopters—for both its active and reserve component units—under a single contract and that it would not cascade any of its active component helicopters to its reserve component units. As of August 2017, the Air Force stated it had completed its review of recommendation 11 and it updated its Air Force Policy Directive 10-3, *Operational Utilization of the Air Reserve Component Forces* in November 2017, to better reflect the intent of the recommendation.

⁵ Report to Congressional Committees, *Report on Recommendations of the National Commission on the Structure of the Air Force* (February 2015).

Appendix II: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact named above, Michael Ferren, Assistant Director; Vincent Buquicchio; Mae Jones; Leigh Ann Sheffield; Mike Silver; and Nicole Volchko made key contributions to this report.

Appendix III: Accessible Data

Data Tables

Accessible Data for Figure 1: HH-60G Pave Hawk Inventory by Mission Type, as of May 2018

Percentage	Category
2	Development and Testing (2%) Used to test new systems and procedures before those systems and procedures are incorporated into primary mission aircraft and training aircraft
12	Training (13%) Used to train pilots and aircrews to operate aircraft; would deploy only in extreme circumstances
82	Primary mission and backup (85%) Designated to support personnel recovery missions; used while primary mission aircraft undergo maintenance, modifications, inspections, and repairs

Accessible Data for Figure 6: Average Flight Hours for Combat Rescue Helicopters by Component in May 2018

Component	Average flight hours
Active	7697.5
Reserve	5843.5

Accessible Data for Figure 7: HH-60G Inventory by Component, Fiscal Year 2020-2029

Fiscal year	Active Component-G Model helicopter	Reserve Component-G Model helicopter	Kirtland Training Unit-G model Helicopter	Nellis Training Unit-G model helicopter
2020	65	34	17	4
2021	58	34	13	4

Fiscal year	Active Component-G Model helicopter	Reserve Component-G Model helicopter	Kirtland Training Unit-G model Helicopter	Nellis Training Unit-G model helicopter
2022	48	34	10	4
2023	31	34	10	4
2024	15	34	8	0
2025	5	34	0	0
2026	0	28	0	0
2027	0	12	0	0
2028	0	0	0	0
2029	0	0	0	0

Accessible Data for Figure 8: Combat Rescue Helicopter Inventory by Component, Fiscal Year 2020-2029

Fiscal year	Active Component-New helicopter	Reserve Component-new helicopter	Kirtland Training Unit-new helicopter	Nellis Training Unit-new helicopter
2020	2	0	2	0
2021	7	0	4	0
2022	12	0	7	0
2023	24	0	7	0
2024	36	0	9	3
2025	47	0	12	3
2026	55	5	12	3
2027	55	19	12	3
2028	55	32	13	3
2029	59	34	14	4

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