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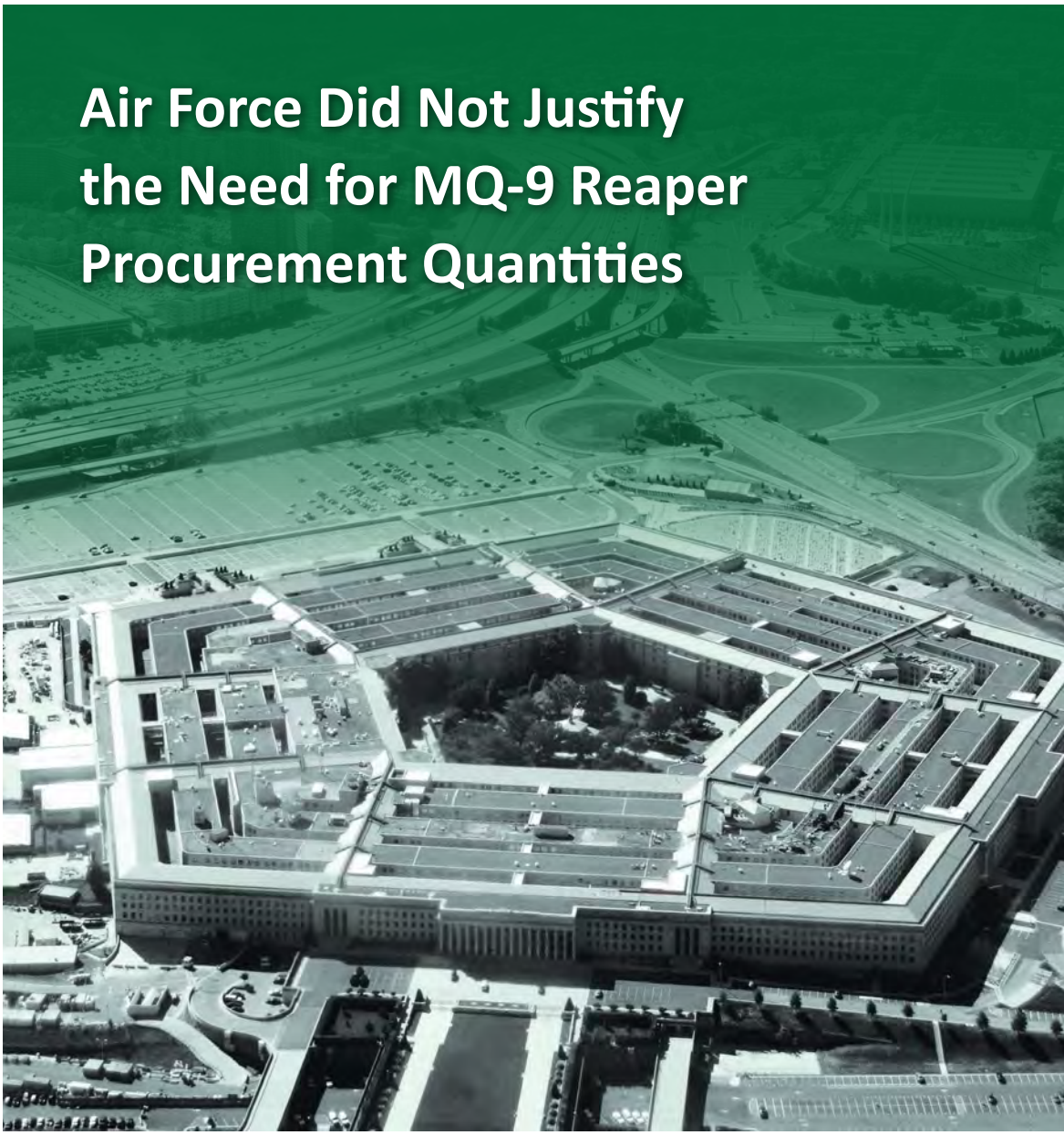
Inspector General

U.S. Department of Defense

SEPTEMBER 30, 2014

Air Force Did Not Justify the Need for MQ-9 Reaper Procurement Quantities



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Results in Brief

Air Force Did Not Justify the Need for MQ-9 Reaper Procurement Quantities

September 30, 2014

Objective

We determined whether the Air Force effectively managed the MQ-9 acquisition program. For this audit, we determined whether the Air Force justified the overall procurement quantity of 401 MQ-9 aircraft.

Finding

The Air Force did not justify the need for the planned procurement quantity of 401 MQ-9 aircraft, at an estimated cost of $76.8 billion. This occurred because Air Combat Command officials did not:

- follow the Joint Capabilities Integration Development System requirement to obtain Joint Requirements Oversight Council approval for an increase in procurement quantity; and
- conduct and maintain consistent, complete, and verifiable analyses for determining the necessary aircraft quantity.

As a result, the Air Force risks spending approximately $8.8 billion to purchase, operate, and maintain 46 MQ-9 aircraft it may not need. See Appendix B for details on how potential monetary benefits were calculated.

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Recommendations

We recommend the Director of Plans, Programs, and Requirements, Headquarters Air Combat Command, perform comprehensive analyses to determine the necessary quantity of MQ-9 aircraft for mission, training, test, Air National Guard, backup, and attrition reserve; update and submit the MQ-9 production document to the Air Force Requirements Oversight Council and Joint Requirements Oversight Council for validation of the cost and quantity before making any FY 2015 procurement decisions; and review the actions of the Air Force's Air Combat Command MQ-9 Requirements Branch officials, and initiate corrective measures and actions to ensure analysis is conducted and maintained.

In addition, we recommend the Chairman of the Air Force Requirements Oversight Council validate the necessary quantity and cost in the updated MQ-9 production document prior to providing the updated production document to the Joint Requirements Oversight Council for revalidation.

Management Comments and Our Response

We received comments from the Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, and the Director of Plans, Programs, and Requirements, Headquarters Air Combat Command. The Mobilization Assistant agreed with all recommendations, and stated that the Air Combat Command initiated an MQ-9 quantity analysis in August 2014 and that the Air Force Requirements Oversight Council would validate necessary MQ-9 quantities. The comments did not state what actions the Air Combat Command and Air Force Requirements Oversight Council would take to implement the specifics of Recommendations 1.b, 1.c, and 2. Therefore we request additional comments. Please see the Recommendations Table on the back of this page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
Director of Plans, Programs, and Requirements, Headquarters Air Combat Command	1.b and 1.c	1.a.(1), 1.a.(2), 1.a.(3), 1.a.(4), 1.a.(5), 1.a.(6)
Chairman of the Air Force Requirements Oversight Council	2	

Please provide comments by October 30, 2014.

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500

September 30, 2014

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS
COMMANDER, AIR COMBAT COMMAND
DIRECTOR, OPERATIONAL CAPABILITY REQUIREMENTS, DEPUTY CHIEF OF STAFF FOR OPERATIONS PLANS AND REQUIREMENTS
ASSISTANT SECRETARY OF THE AIR FORCE FOR (FINANCIAL MANAGEMENT AND COMPTROLLER)
ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION

SUBJECT: Air Force Did Not Justify the Need for MQ-9 Reaper Procurement Quantities (Report No. DODIG-2014-123)

We are providing this report for your review and comment. We determined the Air Force's Air Combat Command MQ-9 Requirements Branch did not demonstrate the need for the MQ-9 planned procurement quantities. As a result, the Air Force risks spending approximately $8.8 billion to purchase, operate, and maintain 46 MQ-9 aircraft it may not need. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all issues be resolved promptly. Comments from the Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, and the Director of Plans, Programs, and Requirements, Headquarters Air Combat Command, addressed Recommendations 1.a.(1), 1.a.(2), 1.a.(3), 1.a.(4), 1.a.(5), and 1.a.(6); partially addressed Recommendations 1.b and 2; and did not address Recommendation 1.c. We request the Director of Plans, Programs, and Requirements, Headquarters Air Combat Command provide additional comments on Recommendations 1.b, 1.c, and on the potential monetary benefit, and the Chairman of the Air Force Requirements Oversight Council provide additional comments on Recommendation 2 by October 30, 2014.

Please send a PDF file containing your comments to audapi@dodig.mil. Copies of your comments must have the actual signature of the authorizing official for your organization. We cannot accept the /Signed/ symbol in place of the actual signature. If you arrange to send classified comments electronically, you must send them over the SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the courtesies extended to the staff. Please direct questions to me at (703) 604-9077 (DSN 664-9077).

Jacqueline L. Wicecarver
Assistant Inspector General for
Acquisition, Parts, and Inventory

Contents

Introduction

Objective 1

Background 1

Review of Internal Controls 5

Finding. Need for MQ-9 Procurement Quantity Not Supported 6

Joint Capabilities Integration and Development System Process Should Validate Increased Procurement Quantity 6

Procurement Quantity Based on Inconsistent and Incomplete Analyses 7

Conclusion 16

Management Comments on the Finding and Our Response 17

Recommendations, Management Comments, and Our Response 20

Appendixes

Appendix A. Scope and Methodology 23

Use of Computer-Processed Data 25

Use of Technical Assistance 25

Prior Coverage 25

Appendix B. Summary of Potential Monetary Benefits 27

Management Comments

Headquarters Air Force 28

Headquarters Air Combat Command 30

Acronyms and Abbreviations 31

Introduction

Objective

The overall objective was to determine whether the Air Force effectively managed the MQ-9 Reaper acquisition program. For this audit, we determined whether the Air Force justified the MQ-9 Block 5 procurement quantity. The Air Force does not delineate between MQ-9 variations of Block 1 and Block 5 for quantity determination. Therefore, we determined whether the Air Force justified the overall MQ-9 procurement quantity. See Appendix A for a discussion of the scope and methodology and prior audit coverage.

Background

~~(FOUO)~~ The Air Force's MQ-9 program is an Acquisition Category IC[1] major defense acquisition program in the Production and Deployment phase of the acquisition process. An Acquisition Category IC program has research, development, test, and evaluation of more than $480 million (FY 2014 constant dollars) or procurement of more than $2.79 billion (FY 2014 constant dollars). The Milestone Decision Authority for an Acquisition Category IC program is the DoD Component head or, if delegated, the DoD Component Acquisition Executive. The Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L]) served as the MQ-9 Milestone Decision Authority until November 2012, when the USD(AT&L) delegated the Milestone Decision Authority to the Assistant Secretary of the Air Force for Acquisition. The Chief of Staff of the Air Force started the program in 2002 to provide rapid warfighter support for attack and information-gathering missions. In March 2006, the Chief of Staff of the Air Force moved the MQ-9 program under the authority of the MQ-1 Predator Unmanned Aircraft System (UAS) program management office. In August 2006, the Air Combat Command (ACC) identified the MQ-9 program as a Joint Requirements Oversight Council (JROC) interest program. JROC interest designations apply to all potential or designated Acquisition Category I programs and capabilities with a potentially significant impact on interoperability in allied and coalition operations. In January 2009, the USD(AT&L) designated the MQ-9 program a special interest program. Special interest designation is typically based on technological complexity, congressional interest, a large commitment of resources, or achieving a critical capability.

[1] The "C" refers to an organizational Service component.

According to the 2012 Acquisition Program Baseline, the estimated MQ-9 total procurement and operating and support cost was $76.8 billion, comprising $11.8 billion in procurement and $65.1 billion in operating and support costs.[2]

The MQ-9 aircraft system is an attack and information-gathering UAS that will replace the MQ-1. A UAS consists of the aircraft, equipment, network, and personnel needed to remotely control an unmanned aircraft. The following figure shows a picture of the MQ-9 aircraft.

Figure. MQ-9 Aircraft
Source: Selected Acquisition Report, MQ-9 Unmanned Aircraft System.

Stakeholders for the MQ-9

The Assistant Secretary of the Air Force for Acquisition, the Air Force Requirements Oversight Council (AFROC), the JROC, ACC, and the Air Force Life Cycle Management Center, Medium Altitude UAS Division, are the five primary organizations involved in acquiring the MQ-9.

The AFROC reviews and provides Air Force validation for the MQ-9 requirements documents, such as the capability production document (production document). This document provides authoritative, testable capability requirements for the Production and Deployment phase of the acquisition process. The document serves as a means for the Air Force to submit capability requirements and gaps for review

[2] Totals do not equal the actual sum because of rounding.

and approval. The AFROC decisions and recommendations are documented in a memorandum and approved and signed by the Vice Chief of Staff of the Air Force (or designated representative).

The JROC is the MQ-9 requirements validation authority. After the AFROC approves the MQ-9 production document, Air Force submits the document to the JROC. The JROC validates MQ-9 requirements and reviews and approves the MQ-9 production document.

(~~FOUO~~) ACC is the lead command for MQ-9 users. ACC accepts MQ-9 deliveries from the system program office and distributes the aircraft to the Air Force users. Additionally, ACC is the lead command for MQ-9 requirements, logistics, manning, and training. MQ-9 users include the active ACC wings, major commands and theater commands, Air Force Reserve, Air National Guard, Air Force Special Operations Command, and foreign military sales customers.

(~~FOUO~~) The Air Force Life-Cycle Management Center, Medium Altitude UAS Division, is the system program office for MQ-9. The MQ-9 system program office manages the acquisition and delivery of the MQ-9, manages testing, and supports ACC as the lead command.

Early Fielding

In March 2006, the Commander, ACC, directed early fielding of the MQ-9 to meet operational needs. To meet early fielding, ACC separated the program into two blocks, with Block 1 aircraft systems providing initial capability and Block 5 aircraft systems completing the performance requirements stated in the MQ-9 production document.

(~~FOUO~~) In February 2008, the Air Force Program Executive Officer for Aircraft Systems approved the MQ-9 program to begin production of the Block 1 aircraft. On June 29, 2011, the Secretary of Defense issued a memorandum that directed the Air Force to procure enough aircraft to perform 65 combat air patrols (air patrols) by the end of FY 2013. The Air Force defines an air patrol as near-24-hour observation of a target using a UAS. In November 2012, the MQ-9 program received approval to begin initial production of the Block 5 aircraft. As of May 2014, the Air Force procured enough MQ-1 and MQ-9 aircraft to perform 65 required air patrols. As of June 2014, Block 5 capabilities were still in development, and four Block 5 aircraft were delivered for developmental testing and operational test and evaluation.

Secretary of Defense Direction

DoD released the 2010 and 2014 Quadrennial Defense Reviews[3] in February 2010 and March 2014, respectively. The Secretary of Defense provided steps to adapt, reshape, and rebalance the military for current urgent demands and likely future threats. In the 2010 Quadrennial Defense Review, the Secretary of Defense identified an initiative to expand the UAS information-gathering role. He specifically stated the MQ-9 UAS provided information-gathering capabilities in combat areas and enhanced situational awareness.

In the June 2011 memorandum, the Secretary of Defense directed the growth of the MQ-9 program. The Secretary of Defense stated the MQ-9 provided a critical warfighting capability that would exist for UAS operations beyond conflicts in Afghanistan and Iraq. In addition, the Secretary directed the Air Force to work with the Chairman of the Joint Chiefs of Staff and the Director, Cost Assessment and Program Evaluation, to develop options and metrics for defining future UAS requirements. The 2014 Quadrennial Defense Review reflected the Secretary of Defense commitment to increasing the use of information-gathering UASs to provide timely and accurate information about battlefield conditions needed to effectively accomplish missions.

President's Budget Quantity Changes

In the FY 2007 President's Budget, the MQ-9 program had funding for 37 aircraft from 2005 through 2011. In 2012, ACC determined 401 MQ-9s were necessary to achieve the program growth directed by the Secretary of Defense. Between FY 2007 and 2013, the President's Budget increased the MQ-9 program's total planned procurement quantity by 364 aircraft, at a cost of about $69.7 billion in procurement and operating and support costs. Table 1 shows the changes to the MQ-9 procurement quantity.

[3] The Quadrennial Defense Review is signed by the Secretary of Defense and includes an assessment by the Chairman, Joint Chiefs of Staff. It is based on national security and national military strategies.

Table 1. MQ-9 President's Budget History

President's Budget FY	Date	Quantity
2007	February 2006	37
2008	February 2007	51
2009	February 2008	51
2010	May 2009	91
2011	February 2010	341
2012	February 2011	396
2013	February 2012	401
2014	April 2013	401*
2015	March 2014	343

* As of July 14, 2014, 401 is the approved aircraft quantity.

Review of Internal Controls

DoD Instruction 5010.40, "Managers' Internal Control Program Procedures," May 30, 2013, requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We identified internal control weaknesses in determining the Air Force's procurement quantities for the MQ-9 program. The Air Force assumed significant risk by not performing analysis to determine MQ-9 quantity needs and by not following the Joint Capabilities Integration and Development System (JCIDS) process to validate the MQ-9 procurement quantities and make informed decisions. See Appendix B for details on how potential monetary benefits were calculated. We will provide a copy of the report to the senior official responsible for internal controls in the Air Force.

Finding

Need for MQ-9 Procurement Quantity Not Supported

The Air Force did not justify the need for the planned procurement quantity of 401 MQ-9 aircraft, at an estimated cost of $76.8 billion. This occurred because ACC officials did not:

- follow the JCIDS process to obtain JROC approval for an increase in procurement quantity; and
- conduct and maintain consistent, complete, and verifiable analyses for determining the necessary MQ-9 aircraft quantity.

As a result, the Air Force risks spending approximately $8.8 billion to purchase, operate, and maintain 46 MQ-9 aircraft it may not need.

Joint Capabilities Integration and Development System Process Should Validate Increased Procurement Quantity

(~~FOUO~~) ACC did not follow the JCIDS requirements process to identify, validate, and prioritize capability requirements to support the need for 341 more MQ-9 aircraft, at an increase of more than $10 billion in procurement funding. Chairman of the Joint Chiefs of Staff Instruction 3170.01H, "Joint Capabilities Integration and Development System," January 10, 2012, provides a framework for the processes of identifying, validating, and prioritizing capability needs. Capability needs must be detailed in the production document, and validated before the program begins production. The production document describes the actual performance of the primary system as well as the quantity of end items necessary to provide the capability to the warfighter. The MQ-9 production document, approved on January 29, 2007 by the JROC, stated the Air Force needed 60 aircraft to achieve full operational capability. The production document reflected the program's operational requirements and detailed expected performance. Since 2007, the procurement quantity grew from 60 to 401 aircraft, an increase of 568 percent. Over the same period, MQ-9 procurement cost grew from about $1.1 billion to more than $11.4 billion, an increase of 936 percent.

MQ-9 procurement cost grew from about $1.1 billion to more than $11.4 billion, an increase of 936 percent.

Chairman of the Joint Chiefs of Staff, "Manual for the Operation of the Joint Capabilities Integration and Development System," (the JCIDS Manual), January 19, 2012, provides guidelines and procedures for operating the JCIDS. The JCIDS Manual states any changes made to validated production documents directly related to the key performance requirements, cost, schedule, and quantity make the document invalid for the purpose of any follow-on processes until revalidated by the validation authority. As the MQ-9 validation authority, the JROC validates MQ-9 requirements and reviews and approves the MQ-9 production document. Before submitting a production document to the JROC, the Air Force must obtain document validation from the AFROC. The AFROC provides Component-level validation of the Air Force production document. The AFROC was periodically involved in the MQ-9 program since the production document was first validated in January 2007, but has not revalidated the procurement quantity. According to an ACC official, ACC last briefed the AFROC on the status of the program in March 2014. However, the briefing did not result in an update to the MQ-9 production document. Until ACC obtains revalidation of its cost and quantity increases, the MQ-9 production document remains invalid.

According to the JCIDS Manual, a program must return to the JROC for revalidation if the program experiences a cost or quantity deviation greater than 10 percent. This mandate ensures the overall program is still in the best interest of the joint forces and the change considered the impact on funding for other programs. ACC should update the MQ-9 production document and request AFROC and JROC validation that the cost and quantity changes are necessary before making any FY 2015 procurement decisions. The Chairman of the AFROC should validate the necessary quantity and cost in the updated MQ-9 production document prior to providing the updated production document to the JROC for revalidation.

Procurement Quantity Based on Inconsistent and Incomplete Analyses

ACC did not conduct and maintain consistent, complete, and verifiable analyses for determining the necessary MQ-9 procurement quantity. ACC officials could not provide the underlying support for aircraft quantity determinations. Specifically, when we requested documentation supporting their analysis, ACC officials provided informal aircraft quantity determinations that had not been approved by the JROC, and verbally explained the basis of

ACC officials could not provide the underlying support for aircraft quantity determinations.

the planned quantity for mission, training, test, Air National Guard,[4] backup, and attrition reserve aircraft. According to DoD Directive 5015.2, "DoD Records Management Program," March 6, 2000, it is DoD policy to create, maintain, and preserve records that document the transaction of business and mission in wartime and peacetime to provide evidence of DoD Component organization, functions, policies, procedures, decisions, and activities.

(~~FOUO~~) ACC officials provided the "Combat Air Forces MQ-1 and MQ-9 Remotely Piloted Aircraft Steady State Operating Concept" [Steady State Operating Concept], February 20, 2013, as support for mission and Air National Guard aircraft quantities. This document was developed by ACC to present plans on how to stabilize and sustain the MQ-1 and MQ-9 weapon systems. However, according to ACC officials, MQ-9 program capabilities would never stabilize because the program was projected to always be reactionary to the changing capability needs of the warfighter. Therefore, the plans in the Steady State Operating Concept would never be fully achieved. The Steady State Operating Concept addressed the challenges associated with organizing, training, and equipping the MQ-9 and contained recommendations for the Combat Air Forces to improve efficiency. However, the Steady State Operating Concept did not reveal the source of the information, contain underlying analyses and support for the planned aircraft quantities, or specify how and when the plans would be implemented.

In December 2012, the Defense Acquisition Executive, Component Acquisition Executive, Program Executive Officer, and Program Manager signed the MQ-9 Acquisition Program Baseline,[5] which identified the total planned procurement quantity of 401 aircraft and increased life-cycle costs based on unsupported quantity input from ACC. In addition, Air Force budget officials and system program office officials relied on ACC's aircraft quantity determinations to make program decisions, prepare acquisition documents, and submit budget amounts included in the President's Budgets. According to Interim DoD Instruction 5000.02, "Operation of the

Air Force budget officials and system program office officials relied on ACC's aircraft quantity determinations to make program decisions, prepare acquisition documents, and submit budget amounts included in the President's Budgets.

[4] Air National Guard is not an aircraft inventory classification, but ACC provided the Air National Guard quantity for continuation training as a separate line item.

[5] The Acquisition Program Baseline is a program document with values for cost, schedule, and performance over a program's life cycle.

Defense Acquisition System," November 25, 2013, major defense acquisition programs, such as the MQ-9 program, carry the greatest consequences in terms of reporting requirements and documentation and analysis to support program decisions.[6] ACC officials did not analyze or support program decisions related to MQ-9 procurement quantities. The Director of Plans, Programs, and Requirements, Headquarters ACC should review the actions of the ACC officials who performed, or did not perform, adequate analysis to determine MQ-9 procurement quantities and, as appropriate, initiate corrective measures and actions to ensure analysis is conducted and maintained.

Table 2 shows the planned procurement quantity for mission, training, test, Air National Guard, backup, and attrition reserve aircraft.

(~~FOUO~~) Table 2. Planned MQ-9 Procurement Quantity Allocation

Aircraft Categories	2007 Production Document	2013 Program of Record
Mission	38	215
Training	8	51[1]
Test	8	16
Air National Guard	-	33
Backup	6	32
Attrition Reserve	-	54
Total	**60**	**401[2]**

[1] An ACC aircraft quantity determination contained math errors incorrectly identifying 51 training aircraft instead of 52.

[2] An ACC aircraft quantity determination contained math errors incorrectly identifying 401 total aircraft in 2013 due to adding 51 training aircraft instead of 52. However, 401 is the approved quantity.

Air Force Instruction 16-402, "Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination," May 30, 2013, provides guidance and procedures for programming, assignment, transfer, distribution, accounting, and termination of Air Force unmanned aircraft. The Instruction states the aircraft categories in Tables 2 and 3 make up the total active aircraft inventory, resulting in a total procurement quantity. ACC risks overstating the aircraft quantity because analyses to demonstrate the aircraft needed were not performed. Table 3 depicts potential excess aircraft and cost avoidance by aircraft category.

[6] Prior to the Interim DoD Instruction 5000.02, DoD Directive 5015.2 required DoD Components to create, maintain, and preserve records that document business decisions in wartime and peacetime to provide evidence of DoD Component organization, functions, policies, procedures, decisions, and activities.

(~~FOUO~~) Table 3. Potential Excess Aircraft and Cost Avoidance

Aircraft Categories	2013 Planned Aircraft Allocation	Potential Excess Aircraft	Cost[3] (millions)
Mission	215	13	$2,491
Training	51[1]	11	2,108
Test	16	5	958
Air National Guard	33	4	766
Backup	32	4	766
Attrition Reserve	54	9	1,724
Total	**401[2]**	**46**	**$8,813**

[1] An ACC aircraft quantity determination contained math errors incorrectly identifying 51 training aircraft instead of 52.

[2] An ACC aircraft quantity determination contained math errors incorrectly identifying 401 total aircraft in 2013 due to adding 51 training aircraft instead of 52. However, 401 is the approved quantity.

[3] The Acquisition Program Baseline identified an average procurement unit cost of $29.3 million and identified operating and support cost of $65.1 billion for 401 aircraft systems ($65.1 billion divided by 401 equals $162.3 million per aircraft system). Potential excess cost avoidance includes procurement and operating and support costs totaling $191.6 million per aircraft ($29.3 million plus $162.3 million equals $191.6 million). The methodology used to calculate operating and support cost per unit is based on the methodology used in the December 2012 and December 2013 Selected Acquisition Reports to derive the annual unit operating and support cost.

Mission

(~~FOUO~~) ACC did not support the need for the planned procurement quantity of 215 mission aircraft. According to Chairman of the Joint Chiefs of Staff Instruction 4410.01G, "Standardized Terminology for Aircraft Inventory Management," October 11, 2013, mission aircraft are unmanned aircraft assigned for performance of a mission. Air Force Instruction 16-402 requires ACC to identify, state, and validate mission aircraft needs. ACC provided the system program office, budget officials, and the audit team unapproved aircraft quantity determinations calculating the quantity of mission aircraft. In the determinations, ACC based necessary mission aircraft on four planning considerations: 1) each air patrol required near 24-hour coverage of a target, 2) aircraft endurance was 12 hours, 3) time and distance to and from target location was 1 hour each way, and 4) each of the planned 65 air patrols required 3.3 aircraft. Table 4 summarizes discrepancies we identified for each of ACC's planning factors.

(~~FOUO~~) Table 4. Discrepancies in Mission Aircraft Planning Factors

Planning Factor	Identified Discrepancies
Each air patrol required near 24-hour coverage	• Steady State Operating Concept states 24-hour coverage is not required of all air patrols
12-hour endurance	• Endurance ranged from 12.2 hours to 25.5 hours based on weapons load
Time and distance to and from target location was one hour each way	• No analysis provided • ACC assumption • ACC official said distance was based on looking at 10 years of data; ACC could not provide the data
Each air patrol required 3.3 aircraft	• No analysis provided • Based on undocumented and unapproved maintenance requirements • Inconsistent with approved maintenance model

(~~FOUO~~) Based on the information ACC provided, we could not validate ACC's mission aircraft needs. ACC's 12-hour endurance planning factor differed from an ACC presentation to the AFROC and differed from the Steady State Operating Concept. For example, in a 2011 presentation to the AFROC, ACC briefed that MQ-9 endurance ranged from 12.2 hours to 25.5 hours based on different weapons loads. ACC's most frequent weapons load resulted in 16-hour endurance. According to an ACC official, quantity planning for mission aircraft considered only fully loaded aircraft because ACC could not predict when and where some aircraft would require different weapons, or if weapons were necessary for the air patrol. However, if ACC considered operating efficiencies related to weapons loads by using a 16-hour endurance planning factor, ACC's most frequent weapons load, ACC would need 1 less aircraft per squadron, or a total of 13 fewer aircraft. Additional discrepancies of ACC's planning factors are identified in Table 4 above, but those did not result in quantifiable risk.

(~~FOUO~~) If ACC does not consider operating efficiencies related to aircraft endurance, it risks spending approximately $2.5 billion to purchase, operate, and maintain at least 13 mission aircraft the Air Force may not need. ACC is responsible for identifying and validating mission aircraft needs, in accordance with Air Force Instruction 16-402, and supporting program decisions with analyses, in accordance with Interim DoD Instruction 5000.02. ACC should identify and consider alternatives in coverage, operating efficiencies, time and distance to target location, and maintenance needs, and incorporate this data into a comprehensive analysis to determine necessary mission aircraft.

Training

(~~FOUO~~) ACC did not support the need for the planned procurement quantity of 52 training aircraft.[7] According to Chairman of the Joint Chiefs of Staff Instruction 4410.01G, training aircraft are unmanned aircraft assigned for technical and specialized training for crew personnel or leading to aircrew qualification. ACC provided the system program office, budget officials, and the audit team unapproved aircraft quantity determinations as support for the quantity of training aircraft needed. The determinations stated ACC needed 52 training aircraft for initial qualification training, maintenance training, and advanced training. Two ACC officials stated they performed no analyses to justify the specified number of necessary training aircraft. Also, an Air Force budgeting official stated he relied on ACC's quantity data without validating the training needs. Air Force Instruction 16-402 requires Headquarters Air Force officials to determine training aircraft based on the annual number of students to train, the number of training flights necessary to train each student, and the sustainable aircraft use rate. Headquarters Air Force officials were required to validate the major command's training needs.

(~~FOUO~~) ACC's unapproved training aircraft quantity determinations stated ACC needed the same number of training aircraft regardless of the quantity of mission aircraft. According to the ACC Steady State Operating Concept, formal training unit capacity and initial qualification training will fluctuate according to the need for the weapon system. Once ACC determines the final force size, crew training will normalize to meet a sustainable flying training need. Also, ACC aircraft quantity determinations did not address increased use of simulator technology and reduced training costs as required by Interim DoD Instruction 5000.02. The Steady State Operating Concept stated as simulator technology improves, more initial training should be conducted in the simulator. The ACC aircraft quantity determinations did not fluctuate training aircraft based on MQ-9 crew training need or increased simulator use.

[7] An ACC aircraft quantity determination contained math errors incorrectly identifying 51 training aircraft instead of 52.

(~~FOUO~~) As of June 2014, ACC reported 41 training aircraft in inventory and planned to purchase 11 more. If ACC does not analyze and validate the number of MQ-9 training aircraft needed, it risks spending approximately $2.1 billion to purchase, operate, and maintain 11 training aircraft the Air Force may not need. Headquarters Air Force officials are responsible for identifying and validating training aircraft needs, in accordance with Air Force Instruction 16-402, and supporting program decisions with analyses, in accordance with Interim DoD Instruction 5000.02. ACC should assess training needs in relation to necessary force size and develop alternative solutions for sharing aircraft with other inventories to support flexible training needs and increased use of simulation technology. ACC should provide that analysis to Headquarters Air Force officials to validate.

If ACC does not analyze and validate the number of MQ-9 training aircraft needed, it risks spending approximately $2.1 billion to purchase, operate, and maintain 11 training aircraft the Air Force may not need.

Test

(~~FOUO~~) ACC did not support the need for the planned procurement quantity of 16 test aircraft. According to Chairman of the Joint Chiefs of Staff Instruction 4410.01G, test aircraft are unmanned aircraft used for research, development, test and evaluation; operational test and evaluation; or test support. ACC provided the system program office, budget officials, and the audit team unapproved aircraft quantity determinations as support for the quantity of test aircraft needed. The determinations stated that 16 test aircraft were needed—8 for developmental and 8 for operational testing—to support software development and new capability integration. The MQ-9 Test and Evaluation Master Plan, updated July 23, 2012, and approved by the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation, and the Director, Operational Test and Evaluation, reported that 11 test aircraft were needed. ACC records reflect, as of June 2014, 11 test aircraft existed in inventory. According to Interim DoD Instruction 5000.02, the quantity of test aircraft needed should be identified and justified by analysis in the approved Test and Evaluation Master Plan. The increase in planned MQ-9 test aircraft from 11 to 16 was not validated by ACC or approved in the Test and Evaluation Master Plan by Office of the Secretary of Defense testing officials.

(~~FOUO~~) ACC officials were unsure how many MQ-9 test aircraft were needed for the life of the program because various aircraft configurations needed testing. ACC officials also did not know if the 16 planned test aircraft would be permanently maintained as test aircraft or if some aircraft would be reallocated to other inventories when a lesser test quantity was needed. If ACC does not validate the number of MQ-9 test aircraft needed, it risks spending approximately $958 million to purchase, operate, and maintain five test aircraft the Air Force may not need. ACC is responsible for identifying and validating test aircraft needs, in accordance with Air Force Instruction 16-402, and supporting program decisions with documentation and analyses, in accordance with Interim DoD Instruction 5000.02. ACC should maintain test aircraft quantity based on the approved Test and Evaluation Master Plan, and develop alternative solutions for sharing aircraft with other inventories to meet additional testing requirements.

Air National Guard

(~~FOUO~~) ACC did not support the need for the planned procurement quantity of 70 Air National Guard aircraft. The Air National Guard anticipated a total of 70 aircraft—37 mission and 33 continuation training aircraft—would be acquired by ACC and operated across 11 Air National Guard units.[8] The 37 Air National Guard mission aircraft are included in the "Mission" discussion above, and in the 215 mission aircraft in Table 3. According to ACC's Steady State Operating Concept, a typical Air National Guard unit should consist of four to six aircraft. However, ACC could not provide any support data for the Air National Guard quantities. Considering the information in the ACC Steady State Operating Concept, at 6 aircraft, the maximum preferred number of aircraft per Air National Guard unit, the planned procurement quantity for the Air National Guard would be 66 MQ-9s. Therefore, ACC risks spending $766 million to purchase, operate, and maintain four aircraft the Air National Guard may not need. ACC should conduct an analysis using factual and verifiable data to determine the quantity of Air National Guard aircraft needed throughout the life of the MQ-9 program.

ACC risks spending $766 million to purchase, operate, and maintain four aircraft the Air National Guard may not need.

[8] The FY 2013 National Defense Authorization Act added a twelfth Air National Guard unit; however, this unit did not have MQ-9 aircraft.

Backup

ACC did not support the need for the planned procurement quantity of 32 backup aircraft. According to Chairman of the Joint Chiefs of Staff Instruction 4410.01G, backup aircraft is the unmanned aircraft, in addition to primary aircraft inventory,[9] necessary to perform scheduled and unscheduled maintenance, modifications, inspections, and repairs without reducing aircraft available for the assigned mission. ACC used a planning factor of 10 percent to calculate backup aircraft; however, ACC could not provide support or rationale for using the 10 percent.

ACC's unsupported mission, training, test, and Air National Guard aircraft quantities resulted in 33 potential excess aircraft. Applying the ACC 10 percent backup aircraft planning factor (10 percent of 33 aircraft equals 3.3 aircraft, rounded to 4),[10] results in 4 excess backup aircraft, at an estimated cost of approximately $766 million in procurement and operating and support costs. ACC did not assess whether the 10 percent planning factor for backup aircraft was valid or applicable to the MQ-9 program; therefore, the four questionable backup aircraft was a conservative estimate and risk exists that additional excess backup aircraft may be planned for procurement. ACC should assess maintenance, modifications, inspections, and repair needs to accurately determine the necessary quantity of backup aircraft.

Attrition Reserve

(~~FOUO~~) ACC did not support the need for the planned procurement quantity of 54 attrition reserve aircraft. According to Chairman of the Joint Chiefs of Staff Instruction 4410.01G, attrition reserve aircraft include unmanned aircraft procured to replace the anticipated losses of aircraft because of peacetime and wartime loss or damage. The ACC unapproved aircraft quantity determination identified 54 total attrition reserve aircraft through FY 2045. ACC based attrition reserve aircraft needs on a Headquarters Air Force predictive model. According to a Headquarters Air Force official, the model used a learning curve theory, a common method for predicting future events based on historical data. The official said the ACC application of the learning curve only estimated losses from FY 2011 through FY 2016 because ACC only used projected flight hours for this 6-year period. The official said that for the model to estimate losses over the entire life of the MQ-9, the model needed to include projected flight hours for the entire period, through FY 2045.

[9] Primary aircraft inventory is the sum of mission, training, test, and special mission aircraft inventories.

[10] We rounded 3.3 aircraft up to the next whole number of aircraft. We did not round down to 3 aircraft, because 3 aircraft would be less than the 10 percent planning factor.

(~~FOUO~~) We applied the Headquarters Air Force predictive model to ACC's projected MQ-9 flying hours through FY 2045 as defined in the April 2012 Cost Analysis Requirements Description. The model predicted ACC needed 45 attrition reserve aircraft. As a result of its incomplete analyses, ACC risks spending an estimated $1.7 billion to purchase, operate, and maintain nine attrition reserve aircraft the Air Force may not need. ACC should conduct analyses considering anticipated MQ-9 flight hours for the life of the system to determine the quantity of attrition reserve aircraft needed throughout the life of the MQ-9 program.

Conclusion

The Air Force did not support the need for the planned MQ-9 procurement quantity of 401 aircraft. Air Force officials used unapproved aircraft quantity determinations as the basis for the planned quantity of MQ-9 aircraft and could not provide underlying support for the quantity determinations. Air Force officials did not analyze and justify the need for the MQ-9 mission, training, test, Air National Guard, backup, and attrition reserve aircraft inventories. DoD Instruction 7041.3, "Economic Analysis for Decisionmaking," November 7, 1995, requires DoD Components to document the results of analysis—including all calculations and sources of data—down to the most basic inputs, to provide an auditable and stand-alone document. Additionally, Air Force officials did not properly follow the JCIDS process to validate increased MQ-9 procurement cost and quantities. As a result, the Air Force risks spending approximately $8.8 billion—about $192 million per aircraft system—on 46 MQ-9 aircraft it may not need. Air Force officials should properly assess MQ-9 aircraft needs, perform analyses to determine necessary future procurement quantity, and obtain JROC revalidation of aircraft quantities. See Appendix B for details on how potential monetary benefits were calculated.

The Air Force risks spending approximately $8.8 billion—about $192 million per aircraft system—on 46 MQ-9 aircraft it may not need.

Management Comments on the Finding and Our Response

Management Comments on Secretary of Defense Direction

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, stated the report minimized the Office of the Secretary of Defense involvement in the MQ-9 quantity growth and instability. The Mobilization Assistant provided one new document, the Defense Budget Priorities and Choices, January 2012, in his response to that portion of draft report. The document confirms the Secretary of Defense direction to grow the MQ-9 program to 65 air patrols. The Director of Plans, Programs, and Requirements, Headquarters Air Combat Command, stated the MQ-9 is a rapid reaction program in response to the Office of the Secretary of Defense, the Joint Staff, and the Combatant Commander war-time direction. He stated the report does not highlight the dynamic characteristics of the MQ-9 program that evolved during a period of significant conflict to meet warfighter needs.

Our Response

The additional information provided by the Mobilization Assistant aligned with other documents we received and evaluated during the audit. The Air Combat Command, as the MQ-9 program lead command, is responsible for conducting analysis demonstrating the need for mission, training, test, Reserve Component, backup, and attrition reserve aircraft quantities necessary to support the Secretary of Defense directed 65 air patrols, in accordance with DoD and Air Force guidelines previously discussed in this report.

Management Comments on Joint Capabilities Integration and Development System Process Should Validate Increased Procurement Quantity

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, stated the report did not address the Joint Requirements Oversight Council validation of all joint urgent operational needs[11] statements assigned to the Air Force in accordance with the Joint Capabilities Integration and Development System manual. The Mobilization Assistant also provided three new documents to support his comments to that portion of the draft report. The

[11] Joint urgent operational needs are capability requirements identified by a Combatant Command as inherently joint and impacting an ongoing military operation. If left unfulfilled, joint urgent operational needs result in capability shortfalls, potentially resulting in loss of life or critical mission failure.

documents included Joint Requirements Oversight Council and Air Force Requirements Oversight Council memoranda endorsing and validating 65 air patrols directed by the Secretary of Defense.

Our Response

The memoranda provided by the Mobilization Assistant aligned with other documents we evaluated throughout the audit and did not address MQ-9 quantity. The documents neither validated total aircraft cost and quantity increases, nor excused the Air Force from complying with the Joint Capabilities Integration and Development System requirement to revalidate the MQ-9 production document when the program experienced cost and quantity increases over 10 percent. The Air Force was unable to justify the quantity of aircraft comprising each air patrol. Accordingly, Joint Requirements Oversight Council validation of the directed 65 air patrols did not preclude the Air Force from obtaining validation of the planned 401 MQ-9 aircraft necessary to comply with Secretary of Defense direction.

Management Comments on Potential Monetary Benefits

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, recommended we reexamine our methodology used to calculate cost savings in Table 3 of the report. The Mobilization Assistant stated the methodology should use costs of about $15 million per aircraft or $29.3 million for the average procurement unit cost. He also stated that the operating and support costs will remain unchanged regardless of the total number of aircraft procured and recommended the potential monetary benefits exclude operating and support costs. The Mobilization Assistant stated that avoidable costs should be $690 million, not $8.8 billion. Additionally, the Director of Plans, Programs, and Requirements, Headquarters Air Combat Command, provided comments stating that the methodology to determine potential monetary benefits is flawed and the calculations overstate both procurement and operating and support costs. He stated any cost avoidance should reflect only the reduced number of aircraft procured and that the cost per aircraft was $12.9 million and not $29.3 million. The Director stated that procuring fewer aircraft would not change the number of air patrols and flying hours to meet requirements. He also stated that avoidable costs should be $593.4 million, not $8.8 billion.

Our Response

Comments from the Mobilization Assistant and the Director are inconsistent and conflict with how the Air Force reported costs in the Selected Acquisition Reports they provided to Congress. The Mobilization Assistant stated aircraft costs should be about $15 million or $29.3 million while the Director stated aircraft costs should be $12.9 million, not $29.3 million. We used Air Force data from the December 2012 and December 2013 MQ-9 Selected Acquisition Reports to calculate potential monetary benefits. Both reports stated the average procurement unit cost was over $29 million and explained the average annual cost per aircraft was calculated by dividing the life-cycle cost by the number of aircraft and the number of years the program operates. Additionally, both reports included MQ-9 aircraft operating and support costs in the total life-cycle costs. The 2013 Selected Acquisition Report reflects the total operating and support costs would decrease by approximately $5.9 billion (Base Year) from decreased manpower and flying hours if MQ-9 quantities were reduced from 401 aircraft to 343 aircraft. Using Air Force methodology, a decrease in aircraft quantities reduces associated operating and support costs. According to the Cost Assessment and Program Evaluation Operating and Support Cost Estimating Guide, dated March 2014, operating and support costs include all costs of operating, maintaining, and supporting a fielded system, including personnel costs, equipment, supplies, software, and services for a system. Therefore, operating and support costs should be included in the potential monetary benefits identified in this report.

The Air Force did not provide analysis to support why operating and support costs should be excluded from calculating potential monetary benefits. Therefore, Table 3 still includes operating and support costs. Additionally, the Mobilization Assistant and Director were inconsistent on the total estimated potential monetary benefit based on the 46 excess aircraft. We request the Director, of Plans, Programs, and Requirements, Headquarters Air Combat Command, provide additional comments in response to the final report on the potential monetary benefit. Appendix B further explains potential monetary benefits are contingent on the extent of the Air Force's actions taken in response to our report.

Recommendations, Management Comments, and Our Response

Recommendation 1

We recommend the Director of Plans, Programs, and Requirements, Headquarters Air Combat Command:

a. Perform and document comprehensive analyses to determine the necessary quantity of MQ-9 aircraft. The analyses should:

1. identify and consider alternatives in mission aircraft coverage, operating efficiencies, time and distance to target location, and maintenance needs;

2. weigh training needs in relation to necessary force size, and develop alternative solutions for sharing aircraft with other inventories to support flexible training needs and increased simulation technology. Additionally, provide that analysis to Headquarters Air Force officials for validation;

3. identify alternative solutions for sharing aircraft with other inventories to achieve additional testing requirements above the approved Test and Evaluation Master Plan quantity;

4. use factual and verifiable data to determine the quantity of Air National Guard aircraft needed throughout the life of the MQ-9 program;

5. examine maintenance, modifications, inspections, and repair needs to determine the necessary backup aircraft quantity; and

6. include anticipated MQ-9 flight hours for the life of the system to determine the quantity of attrition reserve aircraft needed throughout the life of the MQ-9 program.

Air Force Comments

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, agreed, and stated that in August 2014, the Air Combat Command initiated an analysis to determine appropriate mission, training, test, Reserve Component, backup, and attrition reserve aircraft quantities with an estimated completion date of March 2015. The Director of Plans, Programs, and

Requirements, Headquarters Air Combat Command, also provided comments and disagreed with the recommendations, but stated Air Combat Command would include our recommendations in its analysis.

Our Response

Comments from the Mobilization Assistant and the Director addressed the intent of the recommendation, and no further comments are required.

b. Based on the results of Recommendation 1.a., update and submit the MQ-9 production document to the Air Force Requirements Oversight Council and subsequently, the Joint Requirements Oversight Council, and request validation that the cost and quantity changes are necessary prior to making any FY 2015 procurement decisions.

Air Force Comments

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, agreed, and stated that the Air Combat Command's aircraft quantity analysis will support the MQ-9 Increment II development or production document and be submitted to the Air Force Requirements Oversight Council. The target validation date for the MQ-9 Increment II development or production document is April 2016. In addition, in December 2014, the Air Combat Command will meet with the Air Force Requirements Oversight Council to update and validate the MQ-9 Increment I production document with the capabilities that address urgent warfighter needs. The Director of Plans, Programs, and Requirements, Headquarters Air Combat Command, also provided comments and disagreed with the recommendation, but stated Air Combat Command would request the Air Force Requirements Oversight Council validate cost and quantity changes based on the results of analysis in recommendation 1.a.

Our Response

Comments from the Mobilization Assistant and the Director partially addressed the recommendation. Despite planned updates to MQ-9 Increment II quantities, the Increment I production document, validated in January 2007, requires cost and quantity revalidation. The Director needs to clarify whether the MQ-9 Increment I production document will be updated to include the results of the planned aircraft cost and quantity analysis. We request the Director provide comments on whether the Air Combat Command will request the Joint Requirements Oversight Council to revalidate updated cost and quantity in the MQ-9 Increment I production document, and assure the revalidation will occur prior to making FY 2015 procurement decisions.

c. **Review the actions of the Air Force's Air Combat Command MQ-9 Requirements Branch officials who performed, or did not perform, adequate analysis to determine MQ-9 procurement quantities and, as appropriate, initiate corrective measures and actions to ensure analysis is conducted and maintained.**

Management Comments Required

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, agreed, but did not state what the Air Combat Command would do to review MQ-9 Requirements Branch officials' actions or what corrective measures it would take to ensure the MQ-9 procurement quantity analysis is conducted and kept updated. The Director of Plans, Programs, and Requirements, Headquarters Air Combat Command, also provided comments and disagreed, but did not address the specifics of the recommendation. We request the Director provide additional comments.

Recommendation 2

We recommend the Chairman of the Air Force Requirements Oversight Council validate the necessary quantity and cost in the updated MQ-9 production document prior to providing the updated production document to the Joint Requirements Oversight Council for revalidation.

Chairman of the Air Force Requirements Oversight Council Comments

The Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force, responding for the Chairman of the Air Force Requirements Oversight Council, agreed, and stated that the Air Force Requirements Oversight Council will ensure the production document includes aircraft quantities needed to meet Secretary of Defense-directed air patrol numbers, and is supported by a rigorous analytical baseline.

Our Response

Comments from the Mobilization Assistant partially addressed the recommendation. The Chairman of the Air Force Requirements Oversight Council needs to clarify whether the Air Force Requirements Oversight Council intends to validate program cost, in addition to quantity, in an updated MQ-9 Increment I production document, first validated in January 2007, and provide the production document to the Joint Requirements Oversight Council for revalidation of cost and quantity. We request the Chairman of the Air Force Requirements Oversight Council provide additional comments.

Appendix A

Scope and Methodology

We conducted this performance audit from October 2013 through July 2014 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 the audit objectives. We believe that the evidence obtained provides a reasonable basis for the findings and conclusions based on the audit objectives.

We interviewed officials from the following offices responsible for, or participating in, MQ-9 acquisition, budgeting, and requirements determination: Air Combat Command, Langley Air Force Base, Virginia; MQ-9 System Program Office, Wright Patterson Air Force Base, Ohio; Headquarters Air Force, Pentagon; Assistant Secretary of the Air Force for Acquisition, Pentagon; Office of the Joint Chiefs of Staff, Pentagon; and the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Pentagon.

We reviewed documents that the Air Force used to determine, justify, and budget for the quantity of MQ-9 aircraft planned to support Air Force mission needs. We collected and analyzed documents dated from August 2006 through March 2014. We reviewed:

- "Quadrennial Defense Review 2014," March 4, 2014;
- MQ-9 Reaper "Defense Acquisition Executive Summary," February 18, 2014;
- "Healthy 65 CAP Force Structure," December 5, 2013;
- "Healthy 55 CAP Force Structure," December 5, 2013;
- "Healthy 45 CAP Force Structure," December 5, 2013;
- MQ-9 Reaper "Operational Assessment-3 Report," October 2, 2013;
- "Combat Air Forces MQ-1 and MQ-9 Remotely Piloted Aircraft Steady State Operating Concept," February 20, 2013;
- MQ-9 Reaper "Selected Acquisition Report," December 31, 2012;

- MQ-9 Reaper "Acquisition Program Baseline," December 12, 2012;
- "Medium Altitude ISR Review," October 2012;
- "Test and Evaluation Master Plan for the MQ-9 Reaper," July 23, 2012;
- "MQ-9 Reaper Cost Analysis Requirements Description," April 24, 2012;
- MQ-9 Reaper "Acquisition Strategy," February 12, 2010;
- "Quadrennial Defense Review Report," February 1, 2010
- "Capability Production Document for MQ-9 Hunter-Killer," August 8, 2006; and
- MQ-9 Integrated Security Construct war-gaming scenarios, undated.

To determine whether the Air Force adequately justified the MQ-9 procurement quantity, we reviewed program planning and reporting documentation against the policies and guidance in the following DoD and Air Force issuances:

- Interim DoD Instruction 5000.02, "Operation of the Defense Acquisition System," November 25, 2013;
- Chairman of the Joint Chiefs of Staff Instruction 4410.01G, "Standardized Terminology for Aircraft Inventory Management," October 11, 2013;
- Air Force Policy Directive 65-5, "Cost and Economics," October 3, 2013;
- "Defense Acquisition Guidebook," September 16, 2013.
- Air Force Instruction 16-402, "Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination," May 30, 2013;
- Chairman of the Joint Chiefs of Staff "Manual for the Operation of the Joint Capabilities Integration and Development System," January 19, 2012;
- Chairman of the Joint Chiefs of Staff Instruction 3170.01H, "Joint Capabilities Integration and Development System," January 10, 2012;
- DoD Directive 8260.05, "Support for Strategic Analysis (SSA)," July 7, 2011;
- Air Force Instruction 10-601, "Operational Capability Requirements Development," June 14, 2011;
- "ACC Corporate Structure Business Rules," January 3, 2011;

- DoD Directive 5000.01, "The Defense Acquisition System," November 20, 2007;
- DoD Directive 5015.2, "DoD Records Management Program," March 6, 2000; and
- DoD Instruction 7041.3, "Economic Analysis for Decisionmaking," November 7, 1995.

Use of Computer-Processed Data

We did not rely on computer-processed data to perform this audit.

Use of Technical Assistance

The DoD Office of Inspector General Technical Assessment Division engineers assisted the audit team by evaluating ACC's calculation of MQ-9 primary mission aircraft quantities. The Quantitative Methods Division technical analysts assisted the team in reviewing and evaluating ACC's MQ-9 aircraft attrition model.

Prior Coverage

During the last 5 years, the Government Accountability Office (GAO) and the Air Force Audit Agency issued seven reports discussing the MQ-9 Reaper Unmanned Aircraft System. Unrestricted GAO reports can be accessed at http://www.gao.gov. Air Force Audit Agency reports are not available over the Internet.

GAO

GAO Report No. GAO-14-340SP, "Defense Acquisitions–Assessments of Selected Weapon Programs," March 2014

GAO Report No. GAO-13-294SP, "Defense Acquisitions–Assessments of Selected Weapon Programs," March 2013

GAO Report No. GAO-12-400SP, "Defense Acquisitions–Assessments of Selected Weapon Programs," March 2012

GAO Report No. GAO-11-233SP, "Defense Acquisitions–Assessments of Selected Weapon Programs," March 2011

GAO Report No. GAO-10-388SP, "Defense Acquisitions–Assessments of Selected Weapon Programs," March 2010

Air Force

Air Force Audit Agency Report No. F2014-0001-L30000, "MQ-1 Predator and MQ-9 Reaper Ground Control Stations," November 8, 2013

Air Force Audit Agency Report No. F2011-0001-FC3000, "Reaper (MQ-9) Acquisition Management," November 2, 2010

Appendix B

Summary of Potential Monetary Benefits

Potential monetary benefits are calculated using Acquisition Program Baseline and Selected Acquisition Report data, as shown in Table B-1. The actual benefits achieved could range anywhere from zero to more than $1.349 billion, depending on the extent of actions taken in response to the report recommendations to determine the necessary quantity of MQ-9 aircraft.

(~~FOUO~~) Table B-1. FY 2015-2019 Potential Monetary Benefits Associated With Actions Taken in Response to Recommendations for the MQ-9 Reaper Program

Potential Monetary Benefits FY 2015 – FY 2019				
Recommendation	**Type of Benefit**	**Aircraft Inventory Category**	**Amount of Benefit (millions)**	**Appropriation**
1.a.(1)	Funds Put to Better Use	Mission	$381.4	Procurement
1.a.(2)		Training	322.7	Procurement
1.a.(3)		Test	146.7	Procurement
1.a.(4)		Air National Guard	117.4	Procurement
1.a.(5)		Backup	117.4	Procurement
1.a.(6)		Attrition Reserve	264.1	Procurement
		Total	**$1,349.7**	

Furthermore, more than $7.463 billion in potential cost avoidance associated with the extent of the actions taken in response to report recommendations, which is not incorporated in Table B-1, is included in Table B-2. Any reduction in the procurement quantity will affect the Operations and Support amounts baselined in the Acquisition Program Baseline. This potential cost avoidance represents the anticipated MQ-9 life-cycle through FY 2044.

Table B-2. Total Potential Monetary Benefits Associated With Actions Taken in Response to Recommendations for the MQ-9 Reaper Program

Potential Cost Avoidance	
Appropriation	**Amount (millions)**
Procurement	$1,349.7
Operations and Support	7,463.0
Total	**$8,812.7**

Management Comments

Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON DC

26 August 2014

MEMORANDUM FOR DODIG

FROM: HQ USAF/A3/5
1480 Air Force Pentagon
Washington DC 20330-1480

SUBJECT: Draft Report of Audit, Air Force Did Not Justify the Need for MQ-9 Reaper Procurement Quantities (Project No. D2014-D000AU-0037.000)

AF/A3/5 concurs with your draft finding and recommendations 1 and 2. However, A3/5 non-concurs with the report's stated cause / effect of the issues found, and the projected cost savings impacting the MQ-9 Program of Record (PoR). There is a significant shortfall in the draft report with regards to Office of the Secretary of Defense (OSD)-directed actions impacting MQ-9 procurement.

Recommendation 1.a: A3/5 Concurs -- ACC should perform and document comprehensive analysis to determine the necessary quantity of MQ-9 aircraft.

Air Force Action:

a. ACC initiated an analysis in Aug 2014 to determine appropriate aircraft quantities for mission, training, test, Reserve Component, backup and attrition reserve inventories consistent with other Air Force Major Weapons Systems.
b. The estimated completion date of this analysis is Mar 2015.

Cause / effect shortfall in your draft: The report as currently written minimizes OSD involvement in MQ-9 PoR growth and instability.

a. The 29 Jun 2011 Secretary of Defense (SEDEF) memo (Atch 1) - directing MQ-9 growth to 65 orbits - represented a temporary plateau in progress towards an even greater enduring requirement. SECDEF's memo further directed Air Force to continue MQ-9 aircraft procurement at or above the rate of 48 per year over FY2013 to FY2017.
b. The Jan 2012 Defense Budget Priorities and Choices (Atch 2) directed the Air Force to fund enough trained personnel, infrastructure, and platforms to sustain 65 MQ-1/9 combat air patrols (CAPs) with a surge capacity of 85.

Recommendation 2: A3/5 Concurs – The Air Force Requirements Oversight Council (AFROC) should validate necessary MQ-9 quantities and costs in an updated requirements document and forward to the Joint Requirements Oversight Council (JROC) for revalidation.

Mobilization Assistant to the Deputy Chief of Staff, Operations, Plans, and Requirements, Headquarters Air Force (cont'd)

Air Force Action:

a. ACC's analysis will support the writing of an MQ-9 Increment II Capability Development Document (CDD) or Capability Production Document (CPD). The target validation date for this MQ-9 modernization and sustainment CDD or CPD is Apr 2016.
b. The AFROC will ensure the CPD includes necessary aircraft quantities to meet OSD-directed CAP numbers, supported by a rigorous analytical baseline.
c. ACC will return to a Dec 2014 AFROC for a Capability Transition Decision on Quick Reaction Capabilities IAW AFI 10-601. This AFROC will validate enduring MQ-9 capabilities that addressed JROC validated urgent warfighter needs and direct and update the MQ-9 Increment I CPD.

Cause / effect shortfall in your draft: The report does not address the JROC validation of all Joint Urgent Operational Needs Statements assigned to the Air Force IAW the Joint Capabilities Integration and Development System Manual.

a. The 7 May 2010 JROC (Atch 3) validated Air Force recommended prioritized urgent MQ-9 upgrades (Atch 4).
b. The 21 Jul 2011 AFROC validated updated MQ-9 requirements (Atch 5) levied to meet urgent warfighter needs, SECDEF and OSD direction.

Your draft report also indicates we must comment on potential monetary benefits. The report draws the conclusion that the Air Force risks spending ~$8.8B to purchase 46 x MQ-9 aircraft it may not need. The methodology detailed in Note 3 of your report includes operating and support costs. AF/A3/5 recommends you re-examine the calculus used to compute cost savings.

a. SECDEF directed Air Force maintain 65 CAPs. Operating and sustainment costs will remain unchanged, regardless of the total number of aircraft procured.
b. In this revised methodology, total savings would be 46 aircraft identified as excess times $29.3M Average Procurement Unit Cost totaling $1.3B or the ~$15M cost per current aircraft totaling ~$690M in avoidable costs versus the $8.8B identified in Table 3.

Thank you for the opportunity to respond to your draft report. If you have any questions or concerns with our comments, please contact [redacted]

JOHN T. WINTERS, Maj Gen, USAF
Mobilization Assistant to the DCS,
Operations, Plans & Requirements

Attachments:
1. OSD Direction for 65 x CAPS
2. Defense Choices and Priorities
3. May 2010 JROCM on MQ-9s
4. MQ-9 Prioritized Requirements
5. July 2011 AFROCM on MQ-9 Requirements

Director of Plans, Programs, and Requirements, Headquarters Air Combat Command

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
JOINT BASE LANGLEY-EUSTIS VA

26 Aug 2014

MEMORANDUM FOR DEPARTMENT OF DEFENSE INSPECTOR GENERAL

FROM: HQ ACC/A5/8/9

SUBJECT: Response to DoD IG Draft Report- Air Force Did Not Justify the Need for MQ-9 Reaper Procurement Quantities (Project No. D2014-D000AU-0037.000)

1. Thank you for the opportunity to comment on the Department of Defense Inspector General Report: "Air Force Did Not Justify the Need for MQ-9 Reaper Procurement Quantities." As you know, the MQ-9 is a rapid reaction program in response to OSD, Joint Staff, and Combatant Commander top-down, war-time direction with ever-evolving requirements. There have been in excess of 25 JUON/UON/QRCs and 14 surges or CAP increases to the program between FY06 and FY14. We are concerned that your report does not highlight these dynamic characteristics of an MQ-9 program that evolved during a period of significant conflict to meet warfighter needs at OSD direction.

2. In meeting the OSD direction to increase MQ-1/9 CAPs from 12 in FY06 to 65 CAPs in FY14 while fielding numerous quick reaction capabilities, the MQ-9 team used their best military judgment and experience. While I disagree with the findings and recommendations in 1.a.(1), 1.a.(2), 1.a.(3), 1.a.(4), 1.a.(5), 1.a.(6), and 1.c, in order to provide an additional level of analysis, I have directed my MQ-9 team to include your recommendations in our on-going MQ-9 cost and capability ISR gap study. Estimated completion date is March 2015.

3. I non-concur with recommendation 1.b to update and submit the MQ-9 production document; however, I have directed my MQ-9 team to work with the AFROC on validation of overall cost and quantity changes in the analysis referenced in paragraph 2. Even though the AFROC and JROC have not validated the current cost and aircraft quantities to meet the OSD-mandated 65 CAPs, the Air Force Program Objective Memorandum (POM) submissions were validated through the Air Force Corporate Structure.

4. Finally, the methodology used to derive per unit cost and subsequent cost avoidance of $192M per aircraft (page 10, Table 3) is flawed. The calculations overstate both procurement costs and operating/support cost. The cost per aircraft is $12.9M (derived from current AFLCMC contract unit costs) vice $29.3M. Additionally, procuring fewer aircraft doesn't change the number of sorties and hours required to meet the operational, test, and training requirements. Any savings or cost avoidance should reflect only the reduced number of aircraft procured. Total savings, using the calculation of 46 excess aircraft should be $593.4M vice $8,813M as Table 3 suggests.

5. My POC for this action is [redacted]

Scott J. Zobrist

SCOTT J. ZOBRIST
Major General, USAF
Director of Plans, Programs, and Requirements
(ACC/A5/8/9)

Agile Combat Power

Acronyms and Abbreviations

ACC	Air Combat Command
AFROC	Air Force Requirements Oversight Council
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
UAS	Unmanned Aircraft System
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics

Whistleblower Protection
U.S. Department of Defense

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Congressional Liaison
congressional@dodig.mil; 703.604.8324

Media Contact
public.affairs@dodig.mil; 703.604.8324

Monthly Update
dodigconnect-request@listserve.com

Reports Mailing List
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DEPARTMENT OF DEFENSE | INSPECTOR GENERAL

4800 Mark Center Drive
Alexandria, VA 22350-1500
www.dodig.mil
Defense Hotline 1.800.424.9098