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Report No. DODIG-2013-084 May 31, 2013

Inspector General
United States Department of Defense

Increased Procurement Quantity for CH-53K Helicopter Not Justified

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Acronyms and Abbreviations

AVPLAN	Aviation Plan
CDD	Capability Development Document
CPD	Capability Production Document
DC(A)	Deputy Commandant for Aviation
EMD	Engineering and Manufacturing Development
HMH	Marine Heavy Helicopter
HQMC	Headquarters Marine Corps
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
MARS	Marine Aviation Requirements Study
MOST	Mitigation Option Selection Tool
ORD	Operational Requirements Document

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

May 31, 2013

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS
ASSISTANT SECRETARY OF THE NAVY, RESEARCH, DEVELOPMENT, AND ACQUISITION
HEADQUARTERS MARINE CORPS, DEPARTMENT OF AVIATION (WEAPONS REQUIREMENTS BRANCH)

SUBJECT: Increased Procurement Quantity for CH-53K Helicopter Not Justified (Report No. DODIG-2013-084)

We are providing this report for your review and comment. We considered management comments on a draft of this report when preparing the final report. The CH-53K is a Marine Corps Heavy Lift helicopter replacing the CH-53E. This report is the first in a series of reports evaluating Naval Air Systems Command acquisition management of the CH-53K program. In this report, we determined that the Deputy Commandant for Aviation, Headquarters Marine Corps increased the CH-53K procurement quantity by 44 helicopters without adequate justification or support. As a result, the Marine Corps may spend $22.2 billion for those additional aircraft that may not be needed to support future Marine Corps requirements.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. The Deputy Commandant for Aviation was not responsive to the recommendations. We considered the Deputy Commandant for Aviation comments when preparing the final report; however, our recommendations remain unresolved. We request the Deputy Commandant for Aviation provide additional comments on the Recommendations that identify corrective actions and the dates for completing those corrective actions by July 2, 2013.

If possible, send a portable document file (.pdf) file containing your comments to audacm@dodig.mil. Copies of the management comments must have the actual signature of the authorizing official. We are unable to 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
Acquisition and Contract Management

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Report No. DODIG-2013-084 (Project No. D2012-D000CD-0037.000) May 31, 2013

Results in Brief: Increased Procurement Quantity for CH-53K Helicopter Not Justified

What We Did

This report is the first in a series of reports evaluating Naval Air Systems Command acquisition management of the CH-53K program. We evaluated the CH-53K program documentation used to support the increased procurement quantity from 156 to 200 aircraft for the CH-53K program.

What We Found

The Marine Corps procurement quantity for CH-53K Heavy Lift Helicopters in the DoD FY 2013 President's Budget was overstated by up to 44 aircraft. The Marine Corps could not support the need to procure a total of 200 aircraft because Headquarters Marine Corps Department of Aviation officials:

- did not follow the Joint Capabilities Integration and Development System Instruction and obtain Joint Requirements Oversight Council approval for the increase;
- did not have requirement studies prepared to determine a procurement quantity in consideration of program affordability;
- incorrectly relied on a 2008 memorandum from the Deputy Commandant for Aviation directing the increase of the procurement quantity to 200 aircraft, without support;
- incorrectly used the 2010-2011 Force Structure Review's war-gaming scenarios as justification for the quantity increase; and
- did not justify or appropriately consider the impact of the Marine Corps personnel reductions effect on Heavy Lift quantity requirements.

As a result, the Marine Corps risks spending $22.2 billion in procurement and operating and support funding for 44 additional aircraft that have not been justified and may not be needed to support future Marine Corps mission requirements.

What We Recommend

We recommend the Marine Corps Deputy Commandant for Aviation perform an analysis to determine the number of CH-53K aircraft needed, conduct an affordability assessment, and obtain Joint Requirements Oversight Council approval of the CH-53K quantity before the low-rate initial production decision planned in February 2016.

Management Comments and Our Response

The Deputy Commandant for Aviation disagreed with the report recommendations to perform a requirements analysis and affordability assessment. He stated that existing analyses justify the 200 CH-53K procurement quantity and that the Joint Requirements Oversight Council approved the procurement quantity. Headquarters Marine Corps Department of Aviation did not justify potential increases in cost and quantity.

After the Deputy provided comments to a draft of this report the Milestone Decision Authority approved the Marine Corps' request to re-baseline the program. The re-baseline included procurement cost increases of 54 percent and extended the Milestone C decision from December 2012 to February 2016. We request the Deputy provide additional comments on the Recommendations by July 2, 2013. Please see the recommendations table on the back of this page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
Marine Corps Deputy Commandant for Aviation	1.a, 1.b, 1.c, 2, and 3	

Please provide comments by July 2, 2013.

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Introduction

Objectives

The objective was to evaluate Naval Air Systems Command acquisition management of the CH-53K program. In this review, we evaluated the CH-53K program documentation used to support the increased procurement quantity for the CH-53K aircraft. A subsequent audit will assess the effectiveness of Naval Air Systems Command acquisition management and the adequacy of key acquisition documentation prepared for the CH-53K program. See Appendix A for a discussion of the scope and methodology and prior audit coverage.

Background

~~(FOUO)~~ The CH-53K is an Acquisition Category[1] ID major defense program in the Engineering and Manufacturing Development (EMD) phase of the acquisition process. This Marine Corps Heavy Lift helicopter will replace the CH-53E. The CH-53E replaced its predecessor, the CH-53D. The CH-53K's life-cycle procurement cost is about $22.2 billion with operating and support costs estimated to be about [redacted] The CH-53K is a multi-mission combat assault helicopter designed to transport and sustain forces by moving large amounts of fuel, water, food, equipment, and ammunition. The following figure shows the CH-53K helicopter.

Figure. Illustration of the CH-53K Helicopter

Source: Sikorsky.com

~~(FOUO)~~ Naval Air Systems Command, PMA-261, in Patuxent River, Maryland, manages the program. Headquarters Marine Corps (HQMC), Department of Aviation (Weapons Requirements Branch) provides support to the Deputy Commandant for Aviation (DC[A]) in the development, procurement, and employment of the CH-53K. The Under

[1] See the Glossary for definitions of terms appearing in the report.

~~(FOUO)~~ Secretary of Defense for Acquisition, Technology, and Logistics is the Milestone Decision Authority[2] for the CH-53K program.

~~(FOUO)~~ In December 2004, the DC(A), recommended an interim CH-53K Heavy Lift Replacement Acquisition Objective of 156 production aircraft based on the current CH-53E inventory. The Under Secretary of Defense for Acquisition, Technology, and Logistics approved Milestone B (Program Initiation Decision) for the Heavy Lift Replacement on December 22, 2005, and authorized the program to begin the EMD phase for the 156 aircraft. In March 2008, the DC(A) increased the CH-53K procurement quantity from 156 to 200 production aircraft.

~~(FOUO)~~ The DoD FY 2013 President's Budget Submission references the increased procurement quantity of 200 CH-53K production aircraft in addition to five test and development aircraft. The Milestone C (low-rate initial production) decision is planned for February 2016. With approval at Milestone C, the program will enter the Production and Deployment phase to fulfill the Marine Corps' procurement quantity of 200 helicopters. CH-53K production is scheduled to run from FY 2016 through FY 2027, with Initial Operational Capability scheduled for FY 2019. Table 1 shows the anticipated CH-53K production schedule for 196 aircraft.[3]

~~(FOUO)~~ Table 1. CH-53K Planned Production Schedule

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total
USMC - (b)(4)	[redacted]												196

CH-53K Procurement Quantity

~~(FOUO)~~ The CH-53K procurement quantity consists of primary,[4] backup, and attrition reserve aircraft. Headquarters Marine Corps, Department of Aviation (Weapons Requirements Branch) used Office of the Chief of Naval Operations Instruction 5442.8, "Management of the Naval Aircraft Inventory," April 18, 1995, as guidance for determining the CH-53K procurement quantity. The Instruction defines the various inventory that make up the procurement quantity for the Department of the Navy aircraft. Table 2 shows the original CH-53K procurement quantity of 156 and the increased CH-53K procurement quantity of 200.

[2] The Milestone Decision Authority is the designated individual with overall responsibility for the program and has the authority to approve entry of an acquisition program into the next phase of the acquisition process.
[3] The schedule does not include 4 CH-53K aircraft assembled in the EMD phase and later modified to become part of the 200 CH-53K aircraft.
[4] Primary aircraft inventory includes operating, training, development, and other aircraft.

Table 2. CH-53K Total Quantities by Aircraft Inventory Category

Aircraft Inventory Category	Original 156 Procurement Quantity	Increased 200 Procurement Quantity
USMC - (b)(4) [redacted]	96	144
USMC - (b)(4) [redacted]	15	21
USMC - (b)(4) [redacted]	2	3
USMC - (b)(4) [redacted]	6	0
USMC - (b)(4) [redacted]	18	26
USMC - (b)(4) [redacted]	19	6
Total Aircraft	**156**	**200**

Policy and Guidance for Defining Capability Requirements

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 requirements through the Joint Capabilities Integration and Development System (JCIDS).[5] The Instruction requires the program sponsor to complete the Capability Development Document (CDD) before the EMD phase and the Capability Production Document (CPD) during the EMD phase. The CDD describes the operational technical performance attributes of the system and whether the proposed system fills a capability gap. The CPD describes the actual performance of the primary system as well as the quantity of end items necessary to provide the required capability to the warfighter. The updated capability requirements documents, including the CPD, drive the development, procurement, and fielding of solutions satisfying the capability requirements.

Chairman of the Joint Chiefs of Staff, "Manual for the Operation of the Joint Capabilities Integration and Development System," January 19, 2012 (the JCIDS Manual), provides guidelines and procedures for operating the JCIDS.[6] The JCIDS Manual includes procedures for conducting an analysis and for developing, staffing, and validating the documents defining system capability requirements, including the CDD and CPD. The validation authority validates parameters on cost, schedule, and procurement quantities for the CDD and CPD.

[5] Chairman of the Joint Chiefs of Staff Instruction 3170.01F, "Joint Capabilities Integration and Development System," May 1, 2007, provides the same framework as the January 10, 2012, Instruction.
[6] This JCIDS Manual contains detailed guidelines and procedures for operating departmental processes facilitating timely and cost effective capability solutions for the warfighter. The manual emphasizes that it is not intended as a standalone document.

Review of Internal Controls

DoD Instruction 5010.40, "Managers' Internal Control Program (MICP) Procedures," July 29, 2010, requires DoD organizations to implement a comprehensive system of internal controls to provide reasonable assurance the programs are operating as intended and to evaluate the effectiveness of the controls. We identified control weaknesses in determining the Marine Corps' procurement quantities for the CH-53K Heavy Lift helicopters. The Marine Corps assumed significant risk by using the 2008 DC(A) memorandum as justification for the revised CH-53K procurement quantities and by not following the JCIDS process to validate the CH-53K procurement quantities and make informed decisions. We will provide a copy of the report to the senior official responsible for internal controls in the Navy.

Finding. CH-53K Procurement Quantity Increase Not Supported

The Marine Corps procurement quantity for CH-53K Heavy Lift Helicopters in the DoD FY 2013 President's Budget was overstated by up to 44 aircraft. The Marine Corps could not support the need to increase the procurement quantity from 156 to 200 aircraft because HQMC Department of Aviation officials:

- did not follow the Joint Capabilities Integration and Development System Instruction and obtain Joint Requirements Oversight Council approval for the increase in the procurement quantity;
- did not have requirement studies prepared to determine a procurement quantity in consideration of program affordability;
- incorrectly relied on a 2008 memorandum from the DC(A) directing the increase of the procurement quantity to 200 aircraft, without support for all aircraft inventory composing the CH-53K procurement quantity;
- incorrectly used the 2010-2011 Force Structure Review's war-gaming scenarios as justification for the quantity increase; and
- did not justify or appropriately consider the impact of Marine Corps personnel reductions on Heavy Lift quantity requirements.

As a result, the Marine Corps risks unnecessarily spending $22.2 billion in procurement[7] and operating and support[8] funding for 44 additional aircraft that may not be needed to support future Marine Corps requirements.

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

HQMC Department of Aviation (HQMC Aviation) did not follow the JCIDS process to identify, validate, and prioritize capability requirements to support the need for 44 additional CH-53K aircraft more than CH-53E aircraft requirements, an increase of [redacted] in procurement funding. HQMC Aviation officials should have followed the JCIDS process to validate the need for the additional CH-53K aircraft. The purpose of the JCIDS process is to ensure that the warfighter receives the capabilities required to successfully execute missions, to identify capability gaps, to determine the appropriate

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[7] Based on the Acquisition Program Baseline dated April 24, 2013, the total procurement cost is about $22.2 billion (Then Year). For the 196 aircraft, we calculated an average procurement unit aircraft cost of [redacted] (Then Year). Forty-four aircraft at [redacted] equals [redacted] (Then Year).

[8] Based on the Acquisition Program Baseline dated April 24, 2013, the total operating and support cost is about [redacted] (Then Year). For the 200 aircraft, we calculated an average operating and support unit aircraft cost of [redacted] (Then Year) over the life of the aircraft. Forty-four aircraft at [redacted] equals [redacted] (Then Year).

solution(s) to fill the gaps, and to assess the affordability and technical feasibility of the identified solution(s).

We asked HQMC Aviation if it planned to obtain Joint Requirements Oversight Council (JROC) approval for the increased quantity. The JROC validates joint war fighter group requirements and reviews and approves all joint capability documents. An HQMC Aviation official initially responded that the Marine Corps had already validated 200 CH-53Ks from a requirements perspective and indicated that the Marine Corps did not intend to obtain JROC validation of the increased quantity. In management comments to the draft report dated March 1, 2013, the DC(A) stated that the 200 CH-53K quantity was validated and approved at the November 2007 JROC. However, the "Minutes of the 8 November 2007 Joint Requirements Oversight Council (JROC) Meeting," dated December 3, 2007 (JROCM 270-07), made no mention that the content of the "USMC Grow the Force Aviation Requirements" brief dated October 9, 2007, was validated or approved. Rather, the minutes state the JROC requested Service comments on the proposed capability risk guidance to support the "Guidance for Development of the Force" process.

~~(FOUO)~~ The DC(A) also stated that the CH-53K Operational Requirements Document[9] (ORD), Change 4, dated July 15, 2010, was validated by the JROC and gives the Marine Corps the authority to make non-key performance parameter changes. Furthermore, the DC(A) stated that the final procurement quantity for CH-53K will be incorporated in the CH-53K Capability Production Document in time for the Milestone C decision. We agree that the JROC approved the CH-53K ORD dated December 15, 2004, and delegated the Marine Corps approval authority for non-key performance parameter changes. However, Change 4 did not revise the procurement quantity. Change 4 made only non-key performance parameter changes.

An HQMC Aviation official explained the quantity referenced in the July 2010 ORD aligned with the December 22, 2005, Acquisition Program Baseline. As of May 2013, the JROC had not validated and approved the decision to increase the procurement quantity to 200 aircraft. However, the Milestone Decision Authority approved Acquisition Program Baseline Change 1, April 24, 2013, after the Marine Corps provided comments to the draft report. The revised baseline increased the procurement quantity to 200 CH-53K aircraft and extended Milestone C from December 2012 to February 2016.

~~(FOUO)~~ The 2012 JCIDS Manual clarified that programs must return to the JROC for revalidation if they experience a cost or quantity deviation greater than 10 percent. This requirement ensures that the overall program is still in the best interest of the Joint force and the change considers funding for other programs. The revised procurement quantity of 200 aircraft was about 30 percent more than the quantities specified in the CH-53K

[9] In 2005, the Joint Staff approved the Marine Corps to use an ORD instead of a CDD.

~~(FOUO)~~ ORD, and as a result, the overall procurement cost increased about 54 percent.[10] HQMC Aviation should obtain JROC validation of the increased quantity requirement.

Requirement Studies Not Conducted To Support the Procurement Quantity Increase

~~(FOUO)~~ HQMC Aviation officials did not have requirement studies conducted to determine the procurement quantity. The DC(A) issued a memorandum on December 2, 2004, stating that the Marine Corps' current estimates needed further analysis to establish a total CH-53K procurement quantity. To avoid delays to CH-53K program initiation, the DC(A) suggested using the inventory of 156 CH-53E aircraft to complete the CH-53K program cost estimate and program baseline. The DC(A) memorandum stated future Seabasing analyses, such as the Joint Seabasing Capabilities Based Assessment and the Department of the Navy Seabasing Requirements Study, would determine the number of CH-53K aircraft needed. The CH-53K Acquisition Strategy, approved November 22, 2005, also indicated that a Department of Navy Seabasing Requirements Study and a Marine Aviation Requirements Study (MARS) would determine the CH-53K procurement quantity. The Navy and Marine Corps conducted a Seabasing analysis in 2006, and the DC(A) sponsored a MARS in 2007; however, neither study supported a specific procurement quantity or addressed affordability. HQMC Aviation should conduct an analysis to determine the number of CH-53K Heavy Lift Helicopters needed to support future mission requirements and force structure. Furthermore, HQMC Aviation should conduct an affordability assessment to determine the most realistic and achievable CH-53K procurement quantity.

Seabasing Study Excluded Aircraft Quantities

~~(FOUO)~~ HQMC Aviation officials provided the results of a jointly conducted Navy and Marine Corps 2006 Seabasing Capabilities study. This study examined the Naval force structure and identified Seabasing capability gaps, redundancies, and proposed solutions. The study concluded that a capability gap existed in the Navy's expeditionary helicopter assets. However, the study did not recommend force strength levels or CH-53K procurement quantities. Furthermore, the study did not assess costs associated with filling the capability gap.

The study did not recommend force strength levels or CH-53K procurement quantities.

Marine Aviation Requirements Study Excluded Total Aircraft Inventory and Affordability

~~(FOUO)~~ The DC(A) sponsored the 2007 MARS; however, this study did not substantiate a CH-53K procurement quantity of 200 aircraft. The study assessed operational aviation requirements for Marine

The study did not identify quantities of training, development, backup, or attrition reserve aircraft.

[10] We calculated the procurement cost percentage increase based on the difference between the 2006 baseline estimate ($14.4 billion, Then Year) and the current estimate ($22.2 billion, Then Year) in the Acquisition Program Baseline dated April 24, 2013. The equation is (22.2-14.4)/14.4*100 ≈ 54 percent.

~~(FOUO)~~ Air-Ground Task Force operations in peacetime and wartime, and how those requirements translate into numbers of aircraft and squadrons. The study focused on operational aircraft and concluded that the Marine Corps' operational CH-53K aircraft requirement ranged from 145 to 245 aircraft, based on seven different scenarios. In addition, the study did not identify quantities of training, development, backup, or attrition reserve aircraft. An HQMC Aviation official stated that the MARS did not direct a CH-53K procurement quantity of 200 aircraft.

~~(FOUO)~~ The MARS did not consider cost and manpower[11] because this study assessed operational aircraft requirements in a fiscally unconstrained environment. Cost and manpower are required to be considered as part of a program's affordability assessment. The Defense Acquisition Guidebook states that an affordability assessment demonstrates whether the program's projected funding is realistic and achievable. HQMC Aviation should have assessed program affordability to identify resources necessary to produce and maintain 44 additional aircraft over the program's life and obtained approval from the JROC for the cost increase.

~~(FOUO)~~ In management comments to the draft report provided March 1, 2013, the DC(A) stated that the 2012 MARS used Marine Corps capabilities and mission/peacetime requirements in the 2024 timeframe. The DC(A) also stated that the 2012 MARS included 151 CH-53K operating aircraft for peacetime and 243 CH-53K operating aircraft to support two operational plans. In our review of the 2012 MARS, we observed that a similar range of CH-53K operating aircraft were identified (145 to 245 versus 151 to 243) when comparing the 2007 and 2012 MARS, respectively. Like the 2007 MARS, the 2012 MARS identified only operational aircraft quantity requirements and did not identify quantities of training, development, backup, or attrition aircraft. Furthermore, the 2012 MARS did not consider cost and manpower because this study assessed operational aircraft requirements in a fiscally unconstrained environment. DoD consistently communicates the need for affordable and value added capabilities. Therefore, the 2012 MARS's not considering cost is unrealistic. We concluded that the 2012 MARS did not substantiate a CH-53K procurement quantity of 200 aircraft.

Deputy Commandant for Aviation Directed Increase in Procurement Quantity

~~(FOUO)~~ HQMC Aviation officials relied on a March 20, 2008, memorandum[12] from the DC(A). The memorandum directed the increase of the CH-53K procurement quantity from 156 to 200 aircraft without providing support for 44 additional aircraft. Specifically, officials did not have an analysis to support the need for increases in operating, training, development, back-up, or attrition reserve aircraft quantities. On

[11] "Manpower" refers to the total number of personnel required to operate, maintain, and support the program. Manpower is a resource driven by workload. Consequently, changes in manpower result from changes to the programs, missions, and functions requiring manpower resources.
[12] See Appendix B for the March 20, 2008, Memorandum from the Deputy Commandant for Aviation.

~~(FOUO)~~ May 30, 2008, the Department of the Navy Director, Air Warfare Division, issued a memorandum[13] concurring with the DC(A) decision increasing the number of CH-53Ks.

~~(FOUO)~~ Neither memorandum included analyses or documentation justifying the need for the increased quantities. Secretary of the Navy Instruction 5000.2E, "Department of the Navy Implementation and Operation of the Defense Acquisition System and the Joint Capabilities Integration and Development System," September 1, 2011, requires the Chief of Naval Operations and the Commandant of the Marine Corps, as user representatives, to identify, define, validate, make affordability determinations, and prioritize required mission capabilities through JCIDS.

HQMC Aviation did not provide an analysis supporting the need for CH-53K operating, training, development, back-up, or attrition reserve aircraft quantities describing the quantity of CH-53K aircraft necessary to provide the required capability to the warfighter, as required by Chairman of the Joint Chiefs of Staff Instruction 3170.01H. Furthermore, DoD 5000.4-M, "Cost Analysis Guidance and Procedures," December 1992, requires the sponsoring program office to compare the predecessor system to the proposed system and identify key system-level characteristics of both systems. HQMC Aviation used Office of the Chief of Naval Operations Instruction 5442.8, "Management of the Naval Aircraft Inventory," April 18, 1995, as the basis to calculate the total CH-53K procurement quantity. The Instruction states that the Marine Corps Aviation Plan (AVPLAN) is the governing document determining quantity of operating, training, development and other aircraft. However, HQMC Aviation's AVPLAN did not have an analysis to validate the Marine Heavy Helicopter (HMH) (specifically the CH-53K) planned quantity.

(FOUO) HQMC Aviation did not support the 200 CH-53K procurement quantity, derived from 144 [redacted] 21 [redacted] 3 [redacted] 26 [redacted], and 6 [redacted] aircraft. For example, HQMC Aviation:

- provided the 2007 AVPLAN to justify the 144 operating aircraft (9 CH-53K squadrons with 16 aircraft per squadron); however, supporting data did not corroborate the 2007 AVPLAN. An HQMC Aviation official stated that the HMH planned quantity was a one-for-one replacement of the nine CH-53D/CH-53E squadrons with nine CH-53K squadrons. Table 3 shows planned operating aircraft per CH-53D and CH-53E squadrons, number of CH-53D and CH-53E squadrons, and the quantity of operating aircraft based on the 2007 AVPLAN.

[13] See Appendix C for the May 30, 2008, Memorandum from the Department of the Navy Director, Air Warfare Division.

Table 3. Planned Operating Aircraft of CH-53D and CH-53E.

Aircraft	Aircraft per Squadron	Number of Squadrons	Quantity of Operating Aircraft
CH-53D	10	3	30
CH-53E	16	6	96
Total		**9**	**126**

~~(FOUO)~~ Despite the planned one-for-one squadron replacement, we determined that the number of operating aircraft within those nine squadrons increased from 126 CH-53D/CH-53E aircraft to 144 CH-53K aircraft, an increase of 18 aircraft. Furthermore, HQMC Aviation did not have analysis to support 16 CH-53K aircraft per squadron. HQMC Aviation officials stated the CH-53K program was authorized 16 aircraft per squadron based on historical practice;

- stated that a CH-53K training quantity requirements analysis and a CH-53K Training and Readiness Manual did not exist to support the need for the 21 [redacted] aircraft. Specifically, HQMC Aviation did not analyze student throughput and manpower training requirements. DoD Instruction 5000.02, "Operation of the Defense Acquisition System," December 8, 2008, requires training system plans to maximize simulation technology to reduce the demand on training requirements in operational aircraft;

- stated that [redacted] development aircraft would support developmental testing and the remaining [redacted] would support operational testing. However, an HQMC Aviation official was unable to provide documentation to support these testing requirements; and

- planned to procure 26 [redacted][14] and 6 [redacted] aircraft.[15] Marine Corps policy calculates [redacted] reserve aircraft as a percentage of the total operating, training, development, and other aircraft inventory; however, HQMC Aviation did not support its determination of those aircraft inventory requirements. As a result, any overstatement in the amount of operating, training, development, and other aircraft unnecessarily increases the [redacted] reserve aircraft.

[14] The Marine Corps calculated [redacted] aircraft using a factor of 15.5 percent, computed using a 5-year running average of actual aircraft inventory pipeline of CH-53E aircraft.
[15] The Marine Corps calculated [redacted] reserve aircraft using a factor of 0.5 percent, computed by using a 5-year running average of actual aircraft inventory attrition of CH-53E aircraft.

Force Structure Review War-Gaming Scenarios Used To Support Quantity Increase

~~(FOUO)~~ The 2010-2011 Force Structure Review neither supported the number of CH-53K aircraft included in the 200 CH-53K procurement quantity nor considered program cost. HQMC Aviation provided the results of the Force Structure Review, implying that the review endorsed the increase from 156 to 200 aircraft. However, the results provided only the required number of HMH squadrons derived from the Marine Corps Mitigation Option Selection Tool (MOST) war-gaming scenarios. The review did not validate the number of CH-53K aircraft planned for operational squadrons, training, or development, included in the requested quantity of 200 CH-53K aircraft. DoD Directive 8260.05, "Support for Strategic Analysis," July 7, 2011, states that the data obtained from strategic analysis products[16] (for example, the MOST) provide a starting point for studies that support development and implementation of defense strategy and policy. Office of the Secretary of Defense, Cost Assessment and Program Evaluation officials stated that the Marine Corps MOST is internal to only the Marine Corps and that other inputs are necessary when making aircraft procurement requirement determinations. The 2010-2011 Force Structure Review as well as the annual AVPLANs reported the results of the MOST without additional analysis or external review.

> *The review did not validate the number of CH-53K aircraft planned for operational squadrons, training, or development, included in the requested quantity of 200 CH-53K aircraft.*

~~(FOUO)~~ Without considering improved capabilities of the CH-53K aircraft, the MOST referred to HMH as a general series of aircraft in the Marine Corps Air Combat Element. The CH-53K ORD identified significant fatigue life, interoperability, maintenance, supportability, and performance degradation concerns with the CH-53E; the CH-53K ORD also stated that the CH-53K would provide significant improvements over the existing CH-53E. However, HQMC Aviation used the MOST war-gaming scenarios to define HMH squadron requirements but did not consider the CH-53K's improved capabilities when defining HMH squadron requirements.

Additionally, the Marine Corps did not use the Force Structure Review to develop cost savings and affordability assessments. DoD Directive 5000.01 states that all participants in the acquisition system should recognize the reality of fiscal constraints and that the primary objective of Defense acquisition is to acquire quality products that satisfy user needs at a fair and reasonable price.

Inconsistent Justification for Increased Quantity

HQMC Aviation officials provided inconsistent documentation and statements concerning the DC(A)'s justification for 44 additional CH-53K aircraft. In 2008, the

[16] Analysis conducted to inform senior leader deliberations and other studies on strategy, policy, and planning, programming, budgeting, and execution system matters.

DC(A) announced the additional aircraft were based on an increase in the Marine Corps end strength[17] to 202,000. Subsequently, HQMC Aviation officials did not conduct an analysis to demonstrate why planned reductions in Marine Corps end strength from 202,000 to 186,800, and then down to 182,100 by the end of FY 2016 would not have an effect on the CH-53K procurement quantity.

~~(FOUO)~~ The DC(A)'s March 20, 2008, memorandum referenced two 2007 Marine Requirements Oversight Council Decision Memoranda, calling for 44 additional aircraft based on the 202,000 Marine Corps end strength. However, neither memorandum supported the DC(A)'s decision to increase the procurement quantity. One of the memoranda, Marine Requirements Oversight Council Decision Memorandum 44-2007, May 29, 2007, discussed the 202,000 end strength but did not discuss the basis or support for an updated requirement of 44 additional CH-53K aircraft. The other memorandum, Marine Requirements Oversight Council Decision Memorandum 51-2007, July 9, 2007, stated that the planned end strength increase to 202,000 did not generate a rebalancing of aviation resources and that the Marine Corps would rebalance its resources even without the increase in end strength. An enclosure to the July 2007 memorandum; however, did link the increase in end strength to the CH-53K procurement quantity increase.

~~(FOUO)~~ An HQMC Aviation official, responding to our request for an explanation for the inconsistent statements in the memoranda, stated that the end strength increase to 202,000 was a reference point in time and should not be linked to the CH-53K quantity increase. However, the March 2008 memorandum clearly linked the increase in aircraft with the increase in end strength, and we also obtained several Marine Corps briefings dated from 2007 through 2010 that used the end strength increase to 202,000 as the basis to increase the number of CH-53K squadrons from six to nine squadrons. For example:

- "USMC Grow the Force Aviation Requirements," October 9, 2007, showed that the CH-53K procurement quantity increase from 156 to 200 resulted from the growth plan increase to a force of 202,000 and increased the number of CH-53K squadrons from six to nine; and

- "MAGTF [Marine Air Ground Task Force] Assault Support Force Structure," September 22, 2010, depicted a 202,000 force supporting 9 CH-53K squadrons.

In March 2011, the Commandant of the Marine Corps approved a reduction in the end strength from 202,000 to 186,800 following the completion of Marine Corps operations in Afghanistan. Despite this planned reduction, the Marine Corps did not change the CH-53K procurement quantity. HQMC Aviation officials stated that the plan to reduce the force structure to 186,800 did not change the CH-53K procurement quantity, that the relationship between Marine Corps Force Structure and CH-53K quantity was not linear, and that the need for 200 CH-53K aircraft remained valid. HQMC Aviation officials did not provide any analysis to support this statement.

[17] "End strength" is the number of Marine Corps military personnel.

~~(FOUO)~~ In February 2012, the Commandant of the Marine Corps issued a memorandum on the impact of the January 2012 DoD Strategic Guidance and the FY 2013 President's Budget on the Marine Corps. The memorandum detailed further reductions in Marine Corps end strength to 182,100 by the end of FY 2016. Again, a Marine Corps Combatant Command official stated this reduction in end strength did not change the CH-53K procurement quantity or squadron numbers. Considering planned reductions to Marine Corps end strength, the DC(A)'s 2008 decision is not consistent with the February 2012 memorandum. Specifically, the DC(A) stated:

> In support of the United States Marine Corps' end strength increase to 202,000, [Marine Requirements Oversight Council Decision Memoranda 44-2007 and 51-2007] called for an increase in the inventory requirement for the CH-53K aircraft. Accordingly, the procurement objective for the CH-53K will increase from 156 to 200 aircraft.

HQMC Aviation should conduct a CH-53K requirements analysis for all aircraft inventory that considers the reduced Marine Corps end strength.

Conclusion

The Marine Corps did not support the need to procure 200 CH-53K aircraft. HQMC Aviation officials increased the procurement quantities without conducting sufficient analyses to justify the increase in the CH-53K procurement quantity from 156 to 200 aircraft. As a result, the Marine Corps risks spending up to [redacted] in procurement funding and [redacted] in operating and support funding over the program's life for 44 additional aircraft that may not be needed. HQMC Aviation officials should follow the JCIDS process to validate the need for the 44 additional aircraft and determine program affordability for the proposed increase before committing to the additional aircraft.

Management Comments on the Finding and Our Response

Summaries of management comments on the finding and our response are in Appendix D.

Recommendations, Management Comments, and Our Response

We recommend the Marine Corps Deputy Commandant for Aviation:

1. Perform a requirements analysis to determine the necessary number of CH-53K Heavy Lift Helicopters. Specifically, the analysis should:

a. include the procurement quantity and associated rationale for Heavy Lift aircraft in combat operations needed to support the most current DoD Strategy and force structure.

b. determine the impact of reduced Marine Corps end strength on the quantity of CH-53K aircraft.

c. consider the operational impact of increased capabilities of the CH-53K aircraft.

Management Comments

The Deputy Commandant for Aviation disagreed. He indicated that the Marine Corps completed numerous analyses[18] justifying the 200 CH-53K procurement quantity.

Our Response

The Deputy Commandant for Aviation comments were not responsive. The Deputy Commandant for Aviation provided 12 documents in his response to the draft report. None of these documents justified an additional 44 aircraft and $22.2 billion for procurement and operating and support funding. Only 3 of the 12 documents[19] contained quantitative analyses. However, these three analyses did not justify CH-53K operating aircraft or determine quantities for training, development, backup, or attrition aircraft. Additionally, these analyses assumed a fiscally unconstrained environment.

~~(FOUO)~~ Of the remaining nine documents, five pre-dated the 2008 Deputy Commandant for Aviation memorandum for 200 CH-53K aircraft by 2 to 8 years. For example, the "Mission Area Analysis (MAA), Marine Corps Combat Development Command (MCCDC), Assault Support Capabilities Analysis," dated December 6, 2005, presented the preferred assault support aircraft mix. This document did not mention quantity or provide underlying support to derive a CH-53K procurement quantity.

~~(FOUO)~~ The other four documents, which date from 2008 through 2011, were briefings that either omitted any discussion on the CH-53K or that referenced 200 CH-53K but with no analysis to support that quantity. For example, HQMC, Combat Development and Integration, briefed the Force Structure Review Group, "Marine Air Ground Task Force Assault Support Force Structure," dated September 22, 2010. The purpose of this brief was to provide insight into Marine Expeditionary Brigade and Marine Expeditionary Unit operations and recommendations regarding assault force structure and required capabilities. The briefing concluded that as tactical vehicles increase in weight, the need for heavy lift also increased, thus a requirement for more heavy lift. Although the brief states that "analysis" shows that the optimal mix for Marine Expeditionary Brigades is at least 24 heavy lift aircraft and at least 6 heavy lift aircraft for Marine Expeditionary Units, the briefing does not provide details on who completed the analyses, the methodology used, and the assumptions considered. The brief does mention that the current program of record, 200 aircraft for nine active squadrons, did not account for attrition or a reserve squadron. DoD has established initiatives to make sure essential warfighting capabilities are delivered within the constraints of a declining defense

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[18] See Appendix E
[19] 2007 MARS, 2012 MARS, and 2010 Force Structure Review

~~(FOUO)~~ budget. We saw no evidence that the Marine Corps considered budget constraints in any of their analyses provided. We request the Deputy Commandant for Aviation provide comments in response to the final report.

2. Conduct an affordability assessment, using the results obtained in recommendation 1 to determine the most economical procurement objective and make sure that it fits within the overall Marine Corps plan for modernization, force structure, and manpower.

Management Comments

The Deputy Commandant for Aviation disagreed. He stated that the 200 CH-53K procurement quantity was 15 aircraft fewer than needed and was built on mission and capability requirements in consideration of an affordability assessment. The Deputy Commandant for Aviation indicated the Marine Corps will save money by procuring 15 fewer aircraft.

Our Response

The Deputy Commandant for Aviation comments were not responsive. The Marine Corps analyses did not substantiate a requirement for 200 CH-53K aircraft. Additionally, the Marine Corps did not validate the requirement through the Joint Capabilities Integration and Development System process as required. The Marine Corps did not provide an affordability or cost assessment for a procurement quantity of 200 CH-53K aircraft or conduct any analyses that supports 44 additional aircraft in a fiscally constrained environment. The Marine Corps should not acquire the 44 additional CH-53K aircraft without Joint Requirements Oversight Council approval. We calculated an average procurement and operating and support cost of [redacted] (Then Year)[20] over the life of each CH-53K aircraft. The Marine Corps efforts to acquire 44 more aircraft without appropriate requirement studies and affordability assessment(s), to determine whether those additional 44 aircraft fit within the overall Marine Corps plan for modernization, force structure, and manpower present significant strategic and monetary risk. The Marine Corps has not taken corrective action to reassess procurement quantity, force structure, affordability, or initiate action with the Joint Requirements Oversight Council, and no corrective actions are planned. According to an Acquisition Strategic and Tactical System, OUSD (AT&L), official the Navy asked OSD to consider a re-baseline in June 2009. As of May 2013, the JROC had not validated and approved the decision to increase the procurement quantity to 200 aircraft. The Acquisition Program Baseline, Change 1 was not approved until April 24, 2013. Change 1 increased the procurement quantity to 200 from 156 CH-53K aircraft and moved Milestone C from December 2012 to February 2016. We request the Deputy Commandant for Aviation provide comments in response to the final report.

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[20] Based on the Acquisition Program Baseline dated April 24, 2013, we calculated an average procurement unit aircraft cost of [redacted] (Then Year) and an average operating and support unit cost of [redacted] (Then Year), resulting in a total average unit cost of [redacted] (Then Year) over the life of each CH-53K aircraft.

3. Submit to the Joint Requirements Oversight Council for review and a decision on any increases in quantity beyond 156 CH-53K aircraft as determined from recommendations 1 and 2 before the low-rate initial production planned for February 2016.

Management Comments

The Deputy Commandant for Aviation disagreed. The Deputy Commandant for Aviation stated that HQMC Aviation obtained Joint Requirements Oversight Council approval for the 200 CH-53K procurement requirement on November 8, 2007. He indicated the Joint Requirements Oversight Council will revalidate the CH-53K procurement requirement in the Capability Production Document before the Milestone C decision.

Our Response

~~(FOUO)~~ The Deputy Commandant for Aviation comments were not responsive. The Deputy Commandant for Aviation did not provide documentation to support that the Joint Requirements Oversight Council approved the 200 CH-53K procurement quantity. We reviewed the JROCM 270-07 dated December 3, 2007[21], and there was no Joint Requirements Oversight Council approval of the 200 CH-53K procurement quantity. Furthermore, the CH-53K Operational Requirements Document Change 4, dated July 15, 2010, states that 154 aircraft are needed for full operational capability. We found no record of JROC's approval of a revised procurement quantity to 200 CH-53K aircraft in any document provided. The Joint Capabilities Integration and Development System Manual states that programs must return to the Joint Requirements Oversight Council for revalidation of the Capability Development Document[22] if they experience a cost or quantity deviation greater than 10 percent, to make sure that the program is still in the best interest of the Joint Force. Therefore, we request the Deputy Commandant for Aviation provide additional comments in response to the final report that supports the increase in quantity.

[21] JROCM 270-07 was the output of the November 8, 2007 Joint Requirements Oversight Council meeting.
[22] In 2005, the Joint Staff approved the Marine Corps to use an Operational Requirements Document instead of a Capability Development Document.

Appendix A. Scope and Methodology

We conducted this performance audit from October 2011 through May 2013 in accordance with generally accepted government auditing standards. Those standards require 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 the evidence obtained provides a reasonable basis for our findings and conclusions, based on our audit objectives.

We interviewed officials from the following offices either responsible for, or participating in, CH-53K quantity determinations: Marine Corps Headquarters-Department of Aviation, Pentagon; CH-53K Program Management Office, Patuxent River, Maryland; Marine Corps Combat Development Command, Quantico, Virginia; Office of the Secretary of Defense-Cost Assessment and Program Evaluation, Pentagon; Center for Naval Analysis, Alexandria, Virginia; Office of the Assistant Secretary of the Navy for Research, Development and Acquisition, Pentagon; and the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Pentagon.

We focused on documents that the Marine Corps used to determine, justify, and report the quantity of CH-53K aircraft needed to support Marine Corps mission requirements. We collected, reviewed, and analyzed documents dated from September 2003 through April 2013. We reviewed:

- "USMC CH-53K Program Acquisition Strategy," January 18, 2012;
- CH-53K "Selected Acquisition Reports," December 31, 2005, 2006, 2007, 2009, 2010, and 2011;
- "Marine Aviation Plan," April 2005, June 2007, October 2008, October 2009, September 2010, and December 2011;
- "Report of the 2010 Marine Corps Force Structure Review Group," March 14, 2011;
- "CH-53 Training and Readiness (T&R) Manual," March 8, 2011;
- "Operational Requirements Document for the USMC CH-53K Program, Change 4," July 15, 2010;
- "Marine Aviation Requirements Study (MARS) 2007: Summary Report," January 2008;
- "Seabasing Capabilities Study Report," September 2006;
- CH-53K "Acquisition Program Baseline," December 22, 2005 and Change 1 dated April 24, 2013;
- "USMC Heavy Lift Replacement Acquisition Strategy of 23 September 2005," approved November 22, 2005;
- "Operational Requirements Document (ORD) for the USMC Heavy Lift Replacement Program," December 15, 2004; and
- "Vertical Heavy Lift Mission Analysis of Alternatives (AoA) Final Report," September 11, 2003.

To determine whether the Marine Corps adequately justified the CH-53K procurement objective, we reviewed program planning and reporting documentation against the policies and guidance in the following DoD and Navy issuances:

- 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;
- Secretary of Navy Instruction 5000.02E, "Department of the Navy Implementation and Operation of the Defense Acquisition System and the Joint Capabilities Integration and Development System," September 1, 2011;
- DoD Directive 5100.01, "Functions of the Department of Defense and Its Major Components," December 21, 2010;
- Secretary of the Navy Instruction 5223.2, "Department of the Navy Cost Analysis," December 16, 2008;
- DoD Instruction 5000.02, "Operation of the Defense Acquisition System," December 8, 2008;
- DoD Directive 5000.01, "The Defense Acquisition System," November 20, 2007;
- Office of the Chief of Naval Operations Instruction 5442.8, "Management of the Naval Aircraft Inventory," April 18, 1995; and
- Defense Acquisition Guidebook.

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 Quantitative Methods Division assisted with the audit. The technical analysts assisted the team in reviewing and evaluating the Marine Corps Mitigation Option Selection Tool used in identifying CH-53K squadron quantity requirements.

Prior Coverage

During the last 5 years, the Government Accountability Office (GAO) issued seven reports discussing the CH-53K. Unrestricted GAO reports can be accessed over the Internet at http://www.gao.gov.

GAO

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

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

Report No. GAO-11-332, “Defense Acquisitions – CH-53K Helicopter Program Has Addressed Early Difficulties and Adopted Strategies to Address Future Risks,” April 2011

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

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

Report No. GAO-09-326SP, “Defense Acquisitions – Assessments of Selected Weapon Programs," March 2009

Report No. GAO-08-467SP, “Defense Acquisitions – Assessments of Selected Weapon Programs," March 2008

Appendix B. Deputy Commandant for Aviation Memorandum

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

IN REPLY REFER TO:
7000
A
20 Mar 08

From: Deputy Commandant for Aviation, Headquarters U.S. Marine Corps
To: Assistant Secretary of the Navy (Research, Development and Acquisition)
Via: Director Air Warfare (N88)

Subj: CH-53K PROGRAM OF RECORD CHANGE

Ref: (a) MROC Decision Memorandum 44-2007 dated 29 May 2007
(b) MROC Decision Memorandum 51-2007 dated 9 Jul 2007

1. The current CH-53K Acquisition Program Baseline (APB) reflects a POR of 156 CH-53Ks.

2. In support of the USMC's end strength increase to 202K, references (a) and (b) called for an increase in the inventory requirement for the CH-53K aircraft. Accordingly, the procurement objective for the CH-53K will increase from 156 to 200 aircraft.

3. I request the CH-53K program of record be modified to reflect the revised inventory objective as set forth above. Program documentation reflecting these increased quantities should be revised in time to support the full rate production decision review scheduled for the fourth quarter FY 15.

USMC - (b)(6)

Appendix C. Department of the Navy Director, Air Warfare Division Memorandum

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIOINS
2000 NAVY PENTAGON
WASHINGTON, DC 20350-2000

IN REPLY REFER TO:
7000
Ser N88/8U182024
30 May 08

From: Director, Air Warfare Division (N88)
To: Commander Naval Air Systems Command, Program Manager, Program Management Activity 261

Subj: CH-53K PROGRAM OF RECORD CHANGE

Encl: (1) Deputy Commandant for Aviation DC(A), Headquarters U.S. Marine Corps ltr 7000 Ser A of 20 Mar 08

1. Concur with DC(A) direction to change the Program of Record for the CH-53K from 156 to 200 aircraft.

2. Request you endorse enclosure (1) and forward to Assistant Secretary of the Navy (Research, Development and Acquisition).

3. Point of contact for this matter is USMC - (b)(6), N880B3, at USMC - (b)(6).

USMC - (b)(6)

A. G. MYERS
Rear Admiral, U.S. Navy

Appendix D. Management Comments on the Finding and Our Response

The Deputy Commandant for Aviation disagreed with the DoD Office of Inspector General finding that the CH-53K procurement quantity increase from 156 to 200 aircraft was not justified. He stated the procurement quantity of 200 was justified through quantitative and fiscal analyses, independent study, and mission requirements.

Management Comments on Procurement Quantity Determination

The Deputy Commandant for Aviation stated the CH-53K ORD Change 4, July 15, 2010, was validated by the JROC and that the JROC authorized the Marine Corps to change non-Key Performance Parameters. He stated total production quantities do not need to be finalized until Milestone C in accordance DoD Directive 5000.01 and DoD Instruction 5000.02. The Deputy Commandant added that the final procurement quantity will be included in the CPD before the Milestone C decision.

Our Response

~~(FOUO)~~ We agree that the Marine Corps was authorized to make non-key performance parameter changes; however the Marine Corps made only non-key performance parameter changes to this CH-53K ORD, and therefore, the Marine Corps would not require JROC validation for these changes. Furthermore, this CH-53K ORD stated that only 154 CH-53K aircraft are needed for full operational capability. The Marine Corp did not provide evidence or documentation that the JROC had approved a procurement quantity of 200 CH-53K aircraft. The Marine Corps is required to comply with the JCIDS Manual. Specifically, the manual requires programs to obtain JROC revalidation if the program experiences a deviation in cost or quantity greater than 10 percent. DoD Directive 5000.01 and DoD Instruction 5000.02 do not state when total production quantities need to be finalized. However, DoD Instruction 5000.02 states that a low-rate initial production quantity is established at Milestone B in consideration of total production quantity signifying total production quantity should be determined earlier in the acquisition process. Furthermore, DoD Directive 5100.01, "Functions of the Department of Defense and Its Major Components," December 21, 2010, states that the Secretaries of Military Departments are responsible for and have the authority to supply, equip, and train their respective Departments in an effective, efficient, and responsive manner.

Management Comments on Joint Requirements Oversight Council Revalidation

The Deputy Commandant for Aviation stated that the JCIDS Manual requires a JROC review for deviations from cost, schedule, and performance targets. He added that the CH-53K Program has not triggered a JROC Tripwire[23] for increased quantities.

[23] A JROC Tripwire is a JROC process established to review programs that deviate from cost, schedule, or quantity targets established at the time of validating the CDDs or CPDs.

Our Response

We agree that the Marine Corps did not trigger a JROC Tripwire for the increased quantities, which is required only for a reduction in end-item quantities. However, the JCIDS Manual requires that the Marine Corps go to the JROC for revalidation of JCIDS documents when there is an increase in cost or quantity greater than 10 percent. Therefore, the Deputy Commandant for Aviation should have notified the JROC when the program procurement quantities increased 30 percent and procurement costs increased 54 percent and asked the JROC to revalidate the program. The JCIDS Manual states this requirement separately and distinctly from the JROC Tripwire requirements, referenced by the Deputy Commandant for Aviation.

Management Comments on Cost and Quantity Reporting

The Deputy Commandant for Aviation stated that the CH-53K Program performance against cost, schedule, and quantity goals was accurately reported during the following:

- Annual Program Objective Memorandum or Budget Reviews;
- Defense Acquisition Executive Summary Reviews conducted on June 23, 2010, June 21, 2011, and June 27, 2012;
- Overarching Integrated Process Team meeting conducted on December 9, 2012;
- Annual Selected Acquisition Reports;
- Program Deviation Reports filed on January 12, 2009, June 2, 2009, March 9, 2011, and June 20, 2012; and
- Acquisition Program Baseline revision.

Our Response

The reviews and documents the Deputy Commandant for Aviation referenced report only the current status and desired end point of the program and did not constitute adequate support for a procurement quantity of 200 aircraft. As of May 2013, the JROC had not validated and approved the decision to increase the procurement quantity to 200 aircraft. Subsequent to the Deputy Commandant for Aviation comments, dated March 30, 2013, the Milestone Decision Authority signed the "CH-53K Heavy Lift Replacement Helicopter Acquisition Program Baseline," Change 1, Approval Date: April 24, 2013. Change 1 increased the procurement quantity to 200 CH-53K aircraft and extended the Milestone C from December 2012 to February 2016.

Management Comments

The Deputy Commandant for Aviation indicated that the Office of the Secretary of Defense, Cost Assessment and Program Evaluation will continue to conduct annual evaluations of CH-53K procurement in conjunction with the budget process. The Deputy Commandant for Aviation added that by doing so, Office of the Secretary of Defense, Cost Assessment and Program Evaluation will conduct recurring independent assessments to make sure that the Marine Corps procures only affordable and required capabilities.

Our Response

Office of the Secretary of Defense, Cost Assessment and Program Evaluation makes sure programs are appropriately resourced. However, Office of the Secretary of Defense, Cost Assessment and Program Evaluation, stated that it did not conduct independent analysis on CH-53K Heavy Lift quantity requirements. The Deputy Commandant for Aviation should not rely on the Office of the Secretary of Defense, Cost Assessment and Program Evaluation to determine whether the program is affordable and is fulfilling the requirements capabilities. The Deputy Commandant for Aviation has the responsibility to make decisions on cost and quantity and then seek revalidation from the JROC.

Management Comments on Aviation Requirements

The Deputy Commandant for Aviation stated that the "USMC Grow the Force Aviation Requirements" was briefed to the JROC per JROC memorandum 270-07. He further stated that this brief included the Marine Corps decision for nine active component squadrons (16 aircraft per squadron) and when including training, test, backup, and attrition assets a procurement quantity of 200 was established. He added that the content of the briefing slides was validated and approved by the JROC.

Our Response

The Deputy Commandant for Aviation did not provide evidence supporting the Joint Requirements Oversight Council approval of the 200 CH-53K procurement quantity. JROC memorandum 270-07, "Minutes of the 8 November 2007 Joint Requirements Oversight Council (JROC) Meeting," dated December 3, 2007, did not approve nine active Component squadrons or the training, test, backup, and attrition assets comprising the 200 CH-53K procurement quantity. Rather, this memorandum requested Service comments on "Guidance for Development of the Force" before November 21, 2007.

Management Comments on the 2007 Marine Aviation Requirements Study

The Deputy Commandant for Aviation reiterated the results of the 2007 MARS, which identified a range of required operational aircraft from 145 to 245 aircraft. He also noted that the MARS was conducted in a fiscally unconstrained environment and did not consider training, test, back-up, or attrition aircraft requirements. He then stated that the operational CH-53K aircraft requirement is 144 aircraft and that OPNAV Instruction 5442.8 was used to determine the appropriate back-up aircraft quantities to arrive at a total procurement quantity requirement of 215 CH-53Ks. However, he added that to contain costs, HQMC Aviation accepted the risk of using a lower attrition metric in determining a final program of record of 200 aircraft.

Our Response

The 2007 MARS focused only on operating aircraft in a fiscally unconstrained environment. In addition, the study did not identify quantities of training, development, backup, or attrition reserve aircraft. The MARS did not adequately justify the increase of the CH-53K procurement quantity to 200 aircraft. OPNAV Instruction 5442.8 defines the various units of aircraft inventory that compose a total procurement quantity.

Operational, training, test, and other aircraft are independent variables that should be validated before applying OPNAV Instruction 5442.8 when determining aircraft inventory such as back-up aircraft.

Management Comments on Force Structure Review

The Deputy Commandant for Aviation stated the 2010 Force Structure Review Group conducted detailed analysis concluding the need for eight active component and one reserve component HMH squadrons. The Commandant of the Marine Corps approved the 2010 Force Structure Group's analysis and briefed the results to the Secretary of Defense. He added the Force Structure Review Group also indicated they used a planning factor of 16 aircraft per HMH squadron, in accordance with Marine Corps Reference Publication 5-12D.

Our Response

The 2010 Force Structure Review neither supported the number of CH-53K aircraft included in the 200 CH-53K procurement quantity nor considered program cost. The purpose of the Marine Corps Publication 5-12D is to provide general information on the mission, concept of employment, organization, and equipment of the Marine Corps forces. Furthermore, the publication was prepared before the CH-53K program was established and identified only the quantities of CH-53D and CH-53E aircraft per squadron. The Force Structure Review documentation we received from HQMC Aviation did not include a planning factor of 16 aircraft per squadron. The documentation addressed only the number of HMH squadrons and did not specifically refer to CH-53K aircraft or CH-53K improved capabilities when defining HMH squadron requirements.

Management Comments on the 2012 Marine Aviation Requirements Study

The Deputy Commandant for Aviation stated that the 2012 MARS used Marine Corps capabilities and mission/peacetime requirements in the 2024 timeframe. According to the Deputy Commandant for Aviation, this study stated that 151 CH-53K operating aircraft were needed for peacetime and 243 CH-53K operating aircraft were needed to support two operational plans. He also indicated that with the 144 CH-53K operating aircraft (currently part of the 200 CH-53K procurement quantity), the Marine Corps must rely on CH-53K back-up aircraft to support warfighting requirements.

Our Response

The 2007 and 2012 MARS identified a similar range of CH-53K operating aircraft needed (145-245 versus 151-243, respectively). The studies assessed operational aircraft requirements in a fiscally unconstrained environment and did not identify quantities of training, development, backup, or attrition reserve aircraft. We determined that the studies did not contain sufficient analysis to substantiate a CH-53K procurement quantity of 200 aircraft. Like the 2007 MARS, the 2012 MARS did not consider cost and manpower. Marine Corps needs to perform a requirements analysis to determine the necessary number of CH-53K Heavy Lift Helicopters needed to meet current mission

needs. The analysis needs to include the rationale for heavy lift aircraft in combat operations needed to support the most current DoD Strategy and force structure. The analysis should determine the impact of reduced Marine Corps end strength on the quantity of CH-53K aircraft and consider the operational impact of the increased capabilities of the CH-53K aircraft. Additionally, the analysis needs to consider cost constraints and affordability. The DoD consistently communicates the need for affordable and value added capabilities. Therefore, not considering cost is unrealistic.

Management Comments on Inconsistent Justification for Increased Quantity

The Deputy Commandant for Aviation stated that as Marine Corps end strength decreases from 202,000 to 186,800, and then down to 182,100, there have been no Marine Expeditionary Brigade or Marine Expeditionary Unit reductions. He also stated that there is not a linear relationship between end strength and aircraft procurement. The Deputy Commandant for Aviation indicated the primary mission of a Marine Heavy Helicopter squadron (i.e. CH-53K) is not troop lift but transporting heavy weapons and equipment for a Marine Expeditionary Brigade or Marine Expeditionary Unit.

Our Response

(~~FOUO~~) The Deputy Commandant for Aviation provided inconsistent statements as compared to documentation provided during the audit. In a March 20, 2008, memorandum, the Deputy Commandant for Aviation stated that the 44 additional CH-53K aircraft were based on an increase in the Marine Corps end strength to 202,000 demonstrating a relationship exists between end strength and CH-53K procurement. Regarding Marine Expeditionary Brigades, we obtained a Marine Corps brief, "MAGTF [Marine Air Ground Task Force] Assault Support Force Structure," September 22, 2010, which stated an additional Marine Expeditionary Brigade (from 5 to 6) is supported with a 202,000 end strength. A Marine Expeditionary Brigade normally consists of about 14,500 Marines and sailors. With planned decreases in Marine Corps end strength totaling 19,900 overall (from 202,000 to 182,100, as of February 2012), it is improbable that the number of Marine Expeditionary Brigades would not be impacted, particularly when the initial justification to increase from five to six brigades was based on an end strength of 202,000. Our analyses concluded that a direct relationship, if not linear, does exist among end strength, CH-53K aircraft procurement, and Marine Expeditionary Brigades.

Appendix E. Marine Corps Analysis Documents

Center for Naval Analysis, Marine Aviation Requirements Study – 2012. The study identified only operational CH-53K aircraft quantity requirements in a fiscally unconstrained environment.

Marine Air Ground Task Force Assault Support Force Structure, Combat Development and Integration, September 22, 2010, updated February 17, 2011. The brief provided insight and recommendations regarding assault force structure and required capabilities. It did not provide underlying support or explanation for how the 200 CH-53K procurement quantity was derived.

Mission Area Analysis Branch, Marine Corps Combat Development Command, Assault Support Lift Analysis – 2010. The Marine Corps provided two briefs. The briefs examined the capability of Marine Corps assault support aircraft (CH-53E, CH-53K, and MV-22) to lift equipment found in the 2024 Marine Expeditionary Brigade vertical and surface battalion landing team. The briefs did not discuss the CH-53K procurement quantity, only its lift capability.

USMC Force Structure Review Group – 2010. The review evaluated the organization, posture, and capabilities of the Marine Corp expeditionary force. The review neither supported the number of CH-53K aircraft included in the 200 CH-53K procurement quantity nor considered program cost.

Marine Air Ground Task Force Sea Basing Integration Division, Marine Corps Combat Development Command, 2024 Marine Expeditionary Brigade Study – 2008. The brief discussed how many CH-53K's are needed for a Marine Expeditionary Unit and Marine Expeditionary Unit in 2024, but did not address the overall CH-53K procurement quantity.

Mission Area Analysis Branch, Marine Corps Combat Development Command, Effect of Tactical Vehicles on Vertical Assault Analysis – 2008. The brief examined the operational impact of heavier tactical vehicles on conducting vertical assaults, but did not discuss the CH-53K procurement quantity.

Center for Naval Analysis, Marine Aviation Requirements Study – 2007. The study identified only operational CH-53K aircraft quantity requirements in a fiscally unconstrained environment.

Mission Area Analysis Branch, Marine Corps Combat Development Command, Capabilities Based Assessment ISO Assault Support ICD – 2006. The study recommended an increase in the CH-53K procurement quantity but provided no quantifiable analysis. The study pre-dates the 2008 decision to increase the procurement quantity to 200 aircraft.

Mission Area Analysis Branch, Marine Corps Combat Development Command, Maritime Prepositioning Force (Future) Study – 2006. The brief looked at modeling and analysis results of surface assault, vertical assault, and ship-to-objective sustainment, but did not discuss the CH-53K procurement quantity. The briefing pre-dates the 2008 decision to increase the procurement quantity to 200 aircraft.

Marine Air Ground Task Force Sea Basing Integration Division, Marine Corps Combat Development Command, 2015 Marine Expeditionary Brigade Study – 2002/2006. The Marine Corps provided three documents, one study and two briefs with discussion on peacetime rotational deployment requirements and requirements in major theater war. Neither the study nor the briefs indicated a CH-53K procurement quantity requirement. The documents pre-date the 2008 decision to increase the procurement quantity to 200 aircraft.

Mission Area Analysis Branch, Marine Corps Combat Development Command, Assault Support Capabilities Analysis – 2005. The brief determined the preferred assault support structure mix but did not discuss the CH-53K procurement quantity. The brief pre-dates the 2008 decision to increase the procurement quantity to 200 aircraft.

Center for Naval Analysis, Marine Aviation Requirements Study – 2000. The study pre-dates the inception of the CH-53K program.

Glossary

Acquisition Category

There are three distinct Acquisition Categories. Acquisition Category I programs have the highest dollar value and have the Defense Acquisition Executive as the milestone decision authority. Acquisition Category II and III programs have relatively lower dollar values and the Component (Army, Navy, Air Force) acquisition executive or the executive's designee serves as the milestone decision authority.

Capability Development Document (CDD)

The primary objective of the CDD is to specify the operational technical performance attributes of the system and whether the proposed system fills the capability gaps previously documented. The DoD Component requiring the capability prepares the CDD at Milestone B.

Capability Production Document (CPD)

A CPD provides authoritative, testable capability requirements, in terms of Key Performance Parameters, Key System Attributes, and additional performance attributes, for the Production and Deployment phase of an acquisition program, and is an entrance criteria item necessary for the acquisition decision.

Engineering and Manufacturing Development (EMD) Phase

EMD is the third phase of the program life cycle, as defined and established by DoD Instruction 5000.02. This phase consists of two efforts, integrated system design and system capability/manufacturing process demonstration, and begins after acquisition Milestone B.

Joint Capabilities Integration and Development System (JCIDS)

JCIDS implements the DoD requirements process. Specifically, JCIDS supports the Chairman of the Joint Chiefs of Staff and the Joint Requirements Oversight Council in identifying, assessing, and prioritizing joint military capability needs, as required by law.

Joint Requirements Oversight Council (JROC)

The JROC reviews and validates all JCIDS documents for Acquisition Category I programs. The JROC also validates key system capabilities (known as key performance parameters). For Acquisition Category ID programs, the JROC makes recommendations to the Defense Acquisition Board. The JROC is chaired by the Vice Chairman of the Joint Chiefs of Staff, who also serves as the co-chair of the Defense Acquisition Board. The other JROC members are the Vice Chiefs of each military service.

Operational Requirements Document (ORD)

The ORD is a formatted statement containing performance and related operational parameters for the proposed concept or system. The user or the user's representative prepares the ORD at each milestone beginning with Milestone B.

Production and Deployment Phase

The Production and Deployment phase is the fourth phase of the life cycle (after EMD) as defined and established by DoD Instruction 5000.02. This phase consists of two efforts: low-rate initial production and full-rate production and deployment, separated by the full-rate production decision review. The Production and Deployment phase begins after a successful Milestone C review. The purpose of this phase is to achieve an operational capability that satisfies the mission need.

Selected Acquisition Report (SAR)

A SAR is an annual report to Congress documenting the status of total program cost, schedule, and performance, as well as program unit cost and unit cost breach information. Each SAR should include a full life-cycle cost analysis for the reporting program.

Headquarters Marine Corps, Department of Aviation Comments

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

IN REPLY REFER TO:
7500
DMCS-A
FEB 27 2013

From: Commandant of the Marine Corps
To: Department of Defense Office of the Deputy Inspector General for Auditing (Acquisition and Contract Management)

Subj: DEPARTMENT OF DEFENSE OFFICE OF INSPECTOR GENERAL DRAFT AUDIT REPORT D2012-D000CD-0037.000, INCREASED PROCUREMENT QUANTITY FOR CH-53K HELICOPTER NOT JUSTIFIED, DATED JANUARY 30, 2013

Ref: (a) DODIG memo January 30, 2013

Encl: (1) Marine Corps Responses

1. Official responses required by the reference are provided at the enclosure.

2. The Marine Corps appreciates the opportunity to respond to the draft report.

3. If you have any questions about the responses, please contact [redacted], Headquarters, U.S. Marine Corps Senior Audit Liaison, email [redacted] or phone [redacted]

USMC - (b)(6)

[redacted]
J. WILLIAMS
Director, Marine Corps Staff

Copy to:
NAVINSGEN (N11)
DC, AVN

Headquarters Marine Corps, Department of Aviation Comments

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, DC 20350-3000

IN REPLY REFER TO:
1000
DCA
25 Feb 13

From: Deputy Commandant for Aviation
To: Department of Defense Office of Inspector General

Subj: RESPONSE TO DEPARTMENT OF DEFENSE OFFICE OF INSPECTOR GENERAL DRAFT REPORT "INCREASED PROCUREMENT QUANTITY FOR CH-53K HELICOPTER NOT JUSTIFIED" (PROJECT NO. D2012-D000CD-0037.000)

Ref: (1) Memorandum: USMC Heavy Lift Replacement (HLR) Acquisition Objective, dated 02 Dec 2004
(2) CH-53K Operational Requirements Document, Change 4, dated 15 Jul 2010
(3) JROCM 221-04 dated 09 Dec 2004
(4) JROCM 259-05 dated 28 Nov 2005
(5) DoD Directive 5000.01 dated 20 Nov 2007
(6) DoD Instruction 5000.02 dated 08 Dec 2008
(7) USMC Grow the Force, Aviation Requirements Brief dated 09 Oct 2007
(8) JROCM 270-07 dated 03 Dec 2007 (Secret)
(9) OPNAV Instruction 5442.8 dated 18 Apr 1995
(10) MAGTF Assault Support Force Structure, CD&I, FSRG, dated 17 Feb 2011
(11) MCRP 5-12D dated 04 Dec 2008

1. The CH-53K heavy lift helicopter is the Department of Defense's (DoD) only Acquisition Category 1D (ACAT 1D) developmental rotorcraft program. The CH-53K Program achieved Milestone B in December 2005, is approximately 72% complete with the Engineering and Manufacturing Development (EMD) phase, and is working toward a Milestone C goal of August 2015. The Headquarters Marine Corps (HQMC) Aviation response will not address administrative inaccuracies contained in the report but will focus on the overall finding and supporting assertions.

2. On 06 Oct 2011, the DODIG initiated an audit of the CH-53K Program, to evaluate CH-53K procurement quantities and key acquisition documentation. A Discussion Draft (unsigned) was provided on 07 Nov 2012. HQMC Aviation did not concur with the Discussion Draft and provided a response on 15 Nov 2012. The DODIG resubmitted the Discussion Draft as a Draft Report (signed) on 30 Jan 2013. The Draft Report does not reflect any of the information submitted by HQMC Aviation to the Discussion Draft.

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Headquarters Marine Corps, Department of Aviation Comments

3. The Marine Corps does not concur with the Department of Defense Office of Inspector General (DODIG) Draft Report titled "Increased Procurement Quantity for CH-53K Helicopter Not Justified" Project No. D2012-D000CD-0037.000.

4. The Draft Report notes one finding: that the CH-53K procurement quantity increase from 156 to 200 aircraft is not supported. To support their finding, the DODIG provided the following assertions:

That HQMC Aviation officials -

- Did not follow the Joint Capabilities Integration and Development System (JCIDS) Instruction and obtain Joint Requirements Oversight Council (JROC) approval for the increase in the procurement quantity;
- Did not have requirements studies prepared to determine procurement quantity in consideration of program affordability;
- Incorrectly relied on a 2008 memorandum from DC(A) directing the increase of the procurement quantity to 200 aircraft, without support for all aircraft inventory comprising the CH-53K procurement quantity;
- Incorrectly used the 2010-2011 Force Structure Review's war-gaming scenarios as justification for the quantity increase; and
- Did not justify or appropriately consider the impact of Marine Corps personnel reductions on heavy lift quantity requirements.

5. The DODIG correctly states in their report that the Deputy Commandant for Aviation (DC(A)), in a December 2004 Memorandum to the Assistant Secretary of the Navy (Research, Development, & Acquisition) (Reference 1), recommended an "interim" CH-53K Heavy Lift Replacement Acquisition Objective of 156 production aircraft. This was a net loss of three CH-53D squadrons that would transition to MV-22 squadrons. The DC(A) also indicated in this memorandum that future heavy lift requirements would be higher than the current CH-53E inventory, and that a "final" procurement objective was yet to be determined. It is important to note throughout the DODIG report that any reference to 156 aircraft equates to an interim procurement objective. The final procurement objective was set forth by DC(A) in 2008, justified through quantitative analysis (to include fiscal analysis), independent study, and mission/capability requirements. The justification for the 200 A/C Program of Record (PoR) follows.

6. The CH-53K Operational Requirements Document (ORD) Change 4 dated 15 July 2010 (Reference 2) is validated by the JROC and includes JROC Memorandum 221-04 dated 09 Dec 2004 (Reference 3) (page iv) that gives the Marine Corps the authority to make non-Key Performance Parameter (KPP) changes. It also includes JROC Memorandum 259-05 dated 28 Nov 2005 (Reference 4) (page ii) which restates this authority. In accordance with DoD Directive 5000.01 and DoD Instruction 5000.02

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Headquarters Marine Corps, Department of Aviation Comments

(Reference 5&6) final procurement quantity determination is not required until Milestone C. Final procurement quantity for CH-53K will be incorporated in the CH-53K Capability Production Document (CPD), in time for milestone C.

7. The JCIDS Manual (Jan 2012) states that a JROC review is required when programs deviate with respect to cost, schedule, or quantity targets. To date, the CH-53K Program has not triggered a JROC Tripwire with respect to increased quantities. CH-53K Program performance against cost, schedule, and quantity goals has been reported accurately during:

- Program Objective Memorandum (POM) or Budget Reviews – conducted annually.
- OSD AT&L Defense Acquisition Executive Summary (DAES) Reviews – CH-53K DAES Reviews took place on 23 Jun 2010, 21 Jun 2011, and 27 Jun 2012.
- OSD AT&L Overarching Integrated Process Teams (OIPTs) – 09 Dec 2012
- Selected Acquisition Reports (SARs) – conducted annually.
- Program Deviation Reports – the CH-53K Program has filed Program Deviation Reports on 12 Jan 2009, 02 Jun 2009, 09 Mar 2011, and 20 Jun 2012.
- Changes to Acquisition Program Baseline – revised APB currently in routing

Additionally, the Office of the Secretary of Defense (OSD), Cost Assessment & Program Evaluation (CAPE) will continue to evaluate the program into production (post Milestone C), annually evaluating CH-53K procurement in conjunction with the budget process. By doing so, OSD(CAPE) will be conducting reoccurring independent assessments ensuring the Marine Corps is only procuring affordable and required capability.

8. On 08 Nov 2007, USMC Grow the Force Aviation Requirements (Reference 7) were briefed to the JROC by the Force Application Functional Capability Board (FCB) as per JROCM 270-07 (Reference 8). The content of this brief included the Marine Corps decision to maintain Marine Heavy Helicopter (HMH) squadrons at nine (9) Active Component squadrons (16 aircraft per squadron). When training, test, backup, and attrition assets are accounted for, an overall procurement quantity of 200 CH-53K's was established. This content was validated and approved by the November 2007 JROC.

9. A Marine Aviation Requirements Study (MARS), requested by the Deputy Commandant for Aviation, was conducted by the Center for Naval Analysis (CNA) in 2007. The purpose of the MARS was to determine aviation requirements to support combat operation scenarios. This study is fiscally unconstrained and focuses on required mission aircraft only (does not take into account training, test, backup, and attrition assets). The results of the MARS provided a range of aircraft requirements from 145 to 245 mission aircraft, based on specific scenarios (of note, 145 denotes peacetime operations). The

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Headquarters Marine Corps, Department of Aviation Comments

current CH-53K Primary Mission Aircraft Authorized (PMAA) is set at 144 aircraft (9 squadrons x 16 aircraft per squadron). The 200 aircraft Program of Record includes training, test, backup, and attrition assets. In determining Back Up aircraft authorized, OPNAV Instruction 5442.8 (Reference 9), directs a requirement for 215 CH-53K's. However, due to fiscal constraints, HQMC Aviation accepted risk by utilizing a lower attrition metric in determining a PoR of 200 aircraft.

10. In 2010, the Commandant of the Marine Corps directed that a Force Structure Review take place in order to review capabilities in preparation for the Marine Corps reduction from 202,100 to 186,800 Marines. The Force Structure Review Group (FSRG) conducted detailed analysis (Reference 10) and their results were then approved by the Commandant of the Marine Corps and briefed to the Secretary of Defense. The results of the FSRG directed that there would be eight (8) Active Component and one (1) Reserve Component Marine HMH squadrons. This equaled the total number of operational HMH squadrons (nine) prior to the FSRG, simply shifting an Active squadron to the Reserves. The FSRG also indicated that they used a planning factor of 16 aircraft per HMH squadron, in accordance with Marine Corps Reference Publication (MCRP) 5-12D (Organization of Marine Corps Forces) (Reference 11).

11. In 2012, the MARS 2012 was presented utilizing the most current Marine Corps mission sets, capabilities, and peacetime requirements for the 2024 timeframe. CNA determined peacetime operational aircraft requirements to be 151 CH-53K's. When adding requirement to support two Operational Plans (OPLANS), 243 operational CH-53K's are required. With an operational aircraft POR of 144, the Marine Corps must rely on backup aircraft authorized, aircraft normally allocated for scheduled and unscheduled maintenance and modifications, to satisfy warfighting requirements beyond peacetime operations.

12. Manpower, or end strength, refers to overall numbers of Marines in the Marine Corps. Additionally, as the Marine Corps draws down, it must be noted that operational commitments have remained the same or increased. As Marine Corps end strength decreases from 202,100 through 186,800 to 182,100, there has not been any reduction in the numbers of Marines that comprise a Marine Expeditionary Brigade (MEB) or Marine Expeditionary Unit (MEU), the key Marine Air-Ground Task Forces (MAGTF) that conduct the range of Marine Corps operations. In short, the size of Marine Corps core fighting units has remained the same and there is not a linear relationship between end strength and aircraft procurement. In fact, as the primary mission of an HMH squadron is not troop lift, it is more appropriate to correlate the CH-53K to heavy weapons, equipment, and vehicle lift requirements of the MEB or MEU.

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Headquarters Marine Corps, Department of Aviation Comments

13. The DODIG has made three recommendations for the Deputy Commandant for Aviation:

Recommendation 1: Perform a requirements analysis to determine the necessary number of CH-53K Heavy-Lift Helicopters. Specifically, the analysis should:

a. Include the procurement quantity and associated rationale for heavy lift aircraft in combat operations needed to support the most current DoD strategy and force structure.
b. Determine the impact of reduced Marine Corps end strength on the quantity of CH-53K aircraft.
c. Consider the operational impact of increased capabilities of the CH-53K.

Response: The Marine Corps has completed thorough analysis justifying a 200 CH-53K PoR:

1. Center for Naval Analysis (CNA), Marine Aviation Requirements Study (MARS) - 2000
2. CNA MARS - 2007
3. CNA MARS - 2012
4. USMC Force Structure Review Group (FSRG) - 2010
5. MAGTF Assault Support Force Structure, Combat Development and Integration, FSRG, dated 22 Sep 2010, updated 17 Feb 2011
6. Mission Area Analysis (MAA) Branch, Marine Corps Combat Development Command (MCCDC), Assault Support Capabilities Analysis - 2005
7. MAA Branch, MCCDC, Capabilities Based Assessment (CBA) ISO Assault Support ICD - 2006
8. MAA Branch, MCCDC, Effect of Tactical Vehicles on Vertical Assault Analysis (CDD) - 2008
9. MAGTF Sea Basing Integration Division, MCCDC, 2015 MEB Study - 2002/2006
10. MAGTF Sea Basing Integration Division, MCCDC, 2024 MEB Study - 2008
11. MAA Branch, MCCDC, Assault Support Lift Analysis - 2010
12. MAA Branch, MCCDC, Maritime Prepositioning Force (Future) (MPF(F)) Study - 2006

Recommendation 2: Conduct an affordability assessment, using the results obtained in recommendation 1 to determine the most economical procurement objective, and make sure it fits within the overall Marine Corps plan for modernization, force structure, and manpower.

Response: The Marine Corps finalized the 200 CH-53K procurement objective based on mission and capability requirements, balanced with an affordability assessment, resulting in a Program of Record less than the requirement. In establishing the requirement, the Marine Corps is assuming risk by choosing to

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Headquarters Marine Corps, Department of Aviation Comments

purchase 200 aircraft instead of the 215 aircraft derived from OPNAV metrics which, resulted in significant cost savings.

Recommendation 3: Submit to the Joint Requirements Oversight Council for review and a decision on any increases in quantity beyond 156 CH-53K aircraft as determined from recommendations 1 and 2 before low-rate initial production planned for August 2015.

Response: HQMC Aviation obtained JROC review and approval for the final procurement objective of 200 CH-53K's on 08 Nov 2007. The JROC will have the opportunity to revalidate the CH-53K procurement objective as part of the CPD approval process prior to Milestone C.

14. The Marine Corps does not concur with the DODIG Draft Report titled "Increased Procurement Quantity for CH-53K Helicopter Not Justified" Project No. D2012-D000CD-0037.000. The current PoR (200 aircraft) for the CH-53K helicopter is justified through proper analysis and approval in accordance with the JCIDS Process, the JROC, the Marine Aviation Requirements Study, and the Commandant of the Marine Corps directed FSRG. Strong consideration of the above information is recommended before moving forward with a final report.

USMC - (b)(6)

[redacted]

K. B. SCHMIDLE

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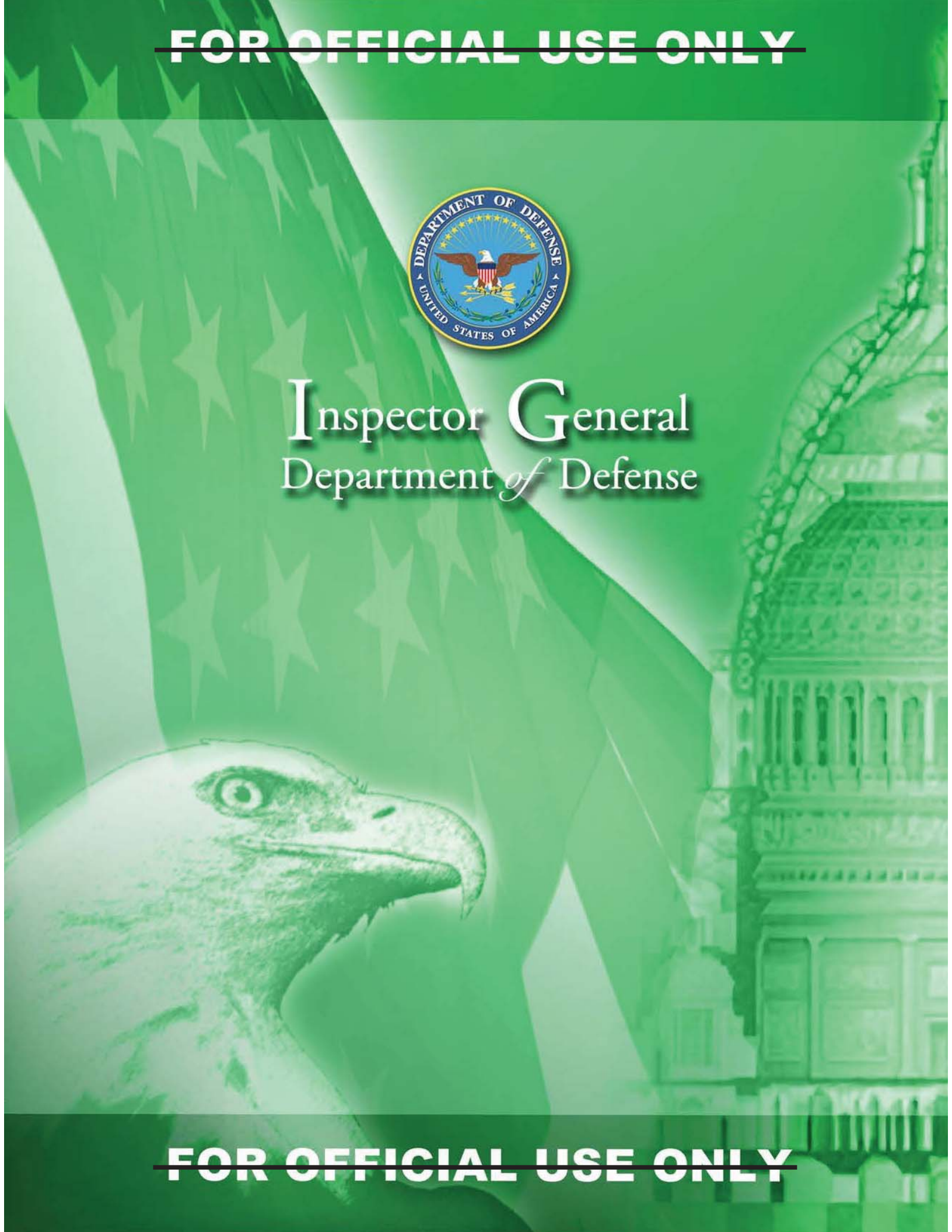
ENCLOSURE (|)



Inspector General
Department of Defense

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