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DODIG-2013-103 July 16, 2013

Inspector General
United States Department of Defense

Boeing Overstated Contract Requirements for the CH-47F Helicopter

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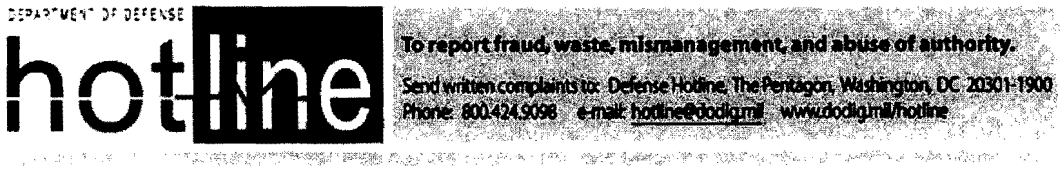

Acronyms

ACC	Army Contracting Command
AMCOM	Army Aviation and Missile Life Cycle Management Command
BOM	Bill of Material
FAR	Federal Acquisition Regulation
GAO	Government Accountability Office
GOLD	Government Online Data
IG	Inspector General
PNM	Price Negotiation Memorandum
TAMMS-A	The Army Maintenance Management System - Aviation

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

July 16, 2013

MEMORANDUM FOR AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Boeing Overstated Contract Requirements for the CH-47F Helicopter
(Report No. DODJG-2013-103)

We are providing this report for review and comment. The Army Aviation and Missile Life Cycle Management Command did not review proposed quantities of new and used parts on the CH-47F multi-year contract. As a result, Boeing overstated contract requirements by $15.1 million for 21 parts. Furthermore, Boeing overstated rework/overhaul and safety stock requirements, resulting in overcharges ranging from $7.4 million to $16.6 million. Also, the Army could not value CH-47F Government-furnished property at New Breed, increasing the risk of improper inventory management and valuation. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that recommendations be resolved promptly. The comments from the Executive Director, Army Contracting Command-Redstone, on Recommendations A.1 and A.2 were responsive. In addition, the comments from the Deputy to the Commanding General, Army Aviation and Missile Life Cycle Management Command, on Recommendation B.2 were responsive. However, the Deputy's comments on Recommendation B.1 were partially responsive. As a result of the comments, we are redirecting Recommendation B.1 to the Program Executive Officer, Aviation. Therefore, we request that the Program Executive Officer provide comments on Recommendation B.1 by August 15, 2013.

If possible, send a Microsoft Word (.doc) file and portable document format (.pdf) file containing your comments to audacm@dodig.mil. Pdf copies of your comments must have the actual signature of the authorizing official for your organization. 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

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

Report No. DODIG-2013-103 (Project No. D2012-D000CH-0060.000) July 16, 2013

Results in Brief: Boeing Overstated Contract Requirements for the CH-47F Helicopter

What We Did

The objective of this audit was to determine whether Army Aviation and Missile Life Cycle Management Command (AMCOM) and The Boeing Company (Boeing) were fully complying with DoD policy and guidance for the analysis of subcontractors' pricing proposals and whether the analyses was effective in the negotiation of prime contracts. We reviewed the analysis performed on subcontractor proposals and Boeing's proposed material requirements for the CH-47F multi-year I and multi-year II contracts.

What We Found

AMCOM and Boeing generally complied with Federal and DoD guidance for analyzing subcontractor pricing proposals. However, AMCOM did not review the $67.5 million of proposed safety stock (new parts that may or may not be used). In addition, Boeing installed significantly more reworked or salvaged parts instead of the proposed safety stock for remanufactured helicopters. This occurred because:

- Boeing did not clearly identify safety stock as a contingency in its proposal as required by the Federal Acquisition Regulation,
- AMCOM technical evaluators did not review Boeing's proposed quantities, and
- The contract did not include a separate line item for safety stock.

Therefore, Boeing overstated contract requirements by $15.1 million for 21 high dollar parts. Boeing also overstated requirements for 17 parts valued at $35.1 million that would result in overcharges ranging from $7.4 million to $16.6 million. As a result of our audit, AMCOM performed an analysis of Boeing's multi-year II contract proposal and calculated $36.8 million in funds that could be put to better use by reducing safety stock costs. The multi-year II contract also had potential requirement overcharges for eight parts valued at $51.7 million that would result in overcharges ranging from $10.6 million to $19.1 million. As a result of our audit, AMCOM officials reviewed these eight parts on the multi-year II contract, and Boeing adjusted the requirements.

The Army and Boeing could not accurately value the CH-47F Government-furnished property stored at New Breed. Army relied on Boeing's Government Online Data (GOLD) system to manage the CH-47F Army property. This occurred because Army did not have a process to value these parts. We identified four high dollar CH-47F parts in Army inventory at New Breed with significant useful life remaining that were not being used. The Army's reliance on and the unreliability of the GOLD system increases the risk of improper inventory management and valuation.

Recommendations, Management Comments, and Our Response

We recommend that the Executive Director, Army Contracting Command-Redstone Arsenal, instruct the contracting officer for the CH-47F multi-year II contract to require Boeing to clearly identify contingencies costs and establish a separate line item in the contract for safety stock. The Executive Director's comments were responsive. We also recommend the Commander, AMCOM, to properly value, manage, and use CH-47F Government-furnished property at New Breed through an Army inventory management system. The Commander's comments on using the existing property were responsive. However, the valuing and managing of the property is the responsibility of the Program Executive Officer, Aviation. Therefore, we request that the Program Executive Officer, Aviation provide comments in response to this report. Please see the Recommendations Table on the back of this page.

Recommendations Table

Management	Recommendations Requiring Comment	No Additional Comments Required
Executive Director, Army Contracting Command -Redstone Arsenal		A.1 and A.2
Commander, Army Aviation and Missile Life Cycle Management Command		B.2
Program Executive Officer, Aviation	B.1	

Please provide comments by August 15, 2013

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Introduction

Objectives

The overall objective of this audit was to determine whether Army Aviation and Missile Life Cycle Management Command (AMCOM) and The Boeing Company (Boeing) were fully complying with DoD policy and guidance for the analysis of subcontractors' pricing proposals and whether effective use was made of such analyses in the negotiation of prime contracts. For the purposes of this audit, we primarily focused on the review of proposed safety stock costs.

Our other objective was to determine whether quantity discounts were effectively passed to the Government to ensure a best value for direct materials and major subcontracts. However, during the audit we did not determine whether quantity discounts were effectively passed on to the Government based on the nature of contract negotiations. Specifically, the AMCOM contracting officer negotiated a price for the whole aircraft and did not focus the negotiation position to ensure best value for direct materials and major subcontracts. See Appendix A for a discussion of the scope and methodology and prior coverage related to the objective.

Background

Army Aviation and Missile Life Cycle Management Command

AMCOM is a major subordinate command of the Army Materiel Command, Headquartered at Redstone Arsenal, Alabama. AMCOM develops, acquires, fields, and sustains aviation, missile, and unmanned vehicle systems and is responsible for aviation and missile systems throughout their life cycle. As a Life Cycle Management Command, AMCOM is dedicated to providing integrated engineering, logistics, and contracting to more than 90 major systems, about half the major systems in the U.S. Army.

Army Contracting Command

Army Contracting Command (ACC) is a major subordinate command of Army Materiel Command. ACC acquires equipment, supplies, and services vital to the soldiers' mission and daily needs. For example, purchases include food, clothing, bullets and bombs, tanks, trucks, planes, and weapons and installations where soldiers work and live with their families. ACC-Redstone is responsible for the CH-47F Chinook Cargo helicopter (CH-47F) contracts.

Boeing

Boeing is an aerospace company and manufacturer of commercial jetliners and military aircraft combined. Additionally, Boeing designs and manufactures rotorcraft, electronic and defense systems, missiles, satellites, launch vehicles, and advanced information and communication systems.

CH-47F Chinook Helicopter

The CH-47 mission is to transport ground forces, supplies, ammunition, and other battle-critical cargo in support of worldwide combat and contingency operations. The CH-47F supports the Army's requirement to be strategically responsive across the full spectrum of operations. The CH-47F provides continued support, coverage and sustainment of maneuver, fire support, air defense, and survivability mission areas. Figure 1 shows the Chinook, manufactured by Boeing in Philadelphia, Pennsylvania.

Figure 1. CH-47 Chinook Helicopter

Source: www.army.mil

Multi-Year I Production Contract

On August 26, 2008, AMCOM awarded Boeing a 5-year production contract, W58RGZ-08-C-0098, valued at $4.4 billion for acquiring 181 CH-47F helicopters. Specifically, the firm-fixed-price contract consisted of the purchase of 109 new helicopters and 72 remanufactured helicopters.[1] The contract also included a priced option for acquiring 34 additional new helicopters. The price for a new helicopter is about $21.1 million, whereas a remanufactured CH-47F helicopter is about $18.1 million. As of January 31, 2012, AMCOM ordered all 215 helicopters with deliveries authorized through February 28, 2015.

Multi-Year II Production Contract

The multi-year II production effort is for the purchase of up to 215 CH-47F helicopters, 34 new and 121 remanufactured, with an option for 60 additional new during FY 2013

[1] The proposal was originally for 65 new helicopters and 116 remanufactured helicopters. During negotiations, the quantity mix of aircraft was changed; however, Boeing did not update the bill of material to reflect the quantity change. We based our analysis on the original aircraft quantities.

through FY 2017. On August 19, 2011, ACC-Redstone issued the request for proposal to Boeing for the CH-47F multi-year production contract. On November 1, 2011, Boeing submitted a firm-fixed-price proposal, not including options, valued at $4.0 billion. On January 31, 2012, Boeing submitted a revised proposal, with options, valued at $5.7 billion. The Army awarded the multi-year II CH-47F contract (W58RGZ-13-C-0002) to Boeing on June 10, 2013.

Safety Stock

The multi-year I contract allowed Boeing to determine whether to salvage parts or install new parts on remanufactured helicopters. Because Boeing could not know the condition of the parts on the remanufactured helicopters, Boeing estimated the number of parts that it could salvage and how many parts it would need to scrap and replace with new parts. Boeing personnel refer to these parts as "safety stock." We consider these new parts to be a contingency because Boeing would use these new parts only if it could not reuse the salvaged parts coming off remanufactured helicopters. In accordance with Boeing's terminology, we will refer to these parts as "safety stock" throughout the report.

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 that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We identified internal control weaknesses associated with Boeing's proposed costs for safety stock. Specifically, AMCOM did not perform an analysis of Boeing's proposed kinds and quantities, thus, were unaware of safety stock in the Boeing proposals. We will provide a copy of the report to the senior official responsible for internal controls in the Department of the Army.

Finding A. New Part Requirements Were Overstated for Remanufactured Helicopters

AMCOM and Boeing generally complied with Federal and DoD guidance for analyzing subcontractor pricing proposals. However, AMCOM awarded the CH-47F contract without reviewing the proposed requirements for quantities of new and used parts in accordance with Federal Acquisition Regulation (FAR) 15.404-1. Specifically, AMCOM awarded the CH-47F multi-year I contract, which included a requirement for about $67.5 million for safety stock (new parts that may or may not be used) with replacement rates of less than 100 percent on remanufactured helicopters.[2] In addition, Boeing installed significantly more reworked or salvaged parts (used Government property) instead of the proposed safety stock for remanufactured helicopters on the firm-fixed-price CH-47F multi-year I contract. This occurred because:

- Boeing did not clearly identify safety stock as a contingency in its proposal as required by FAR.
- AMCOM technical evaluators did not include a review of Boeing's proposed safety stock as part of AMCOM's technical analysis. Specifically, AMCOM technical evaluators did not perform an analysis of Boeing's proposed kinds and quantities and, thus, were unaware of the safety stock in the Boeing proposals.
- The contract did not include a separate line item for safety stock.

As a result, Boeing's practice of proposing new parts, when the installation of reworked or salvaged parts was planned and authorized, resulted in overstated contract requirements of $15.1 million for 21 high dollar parts under the CH-47F multi-year I contract. Boeing also overstated 17 part requirements valued at $35.1 million by proposing the use of both rework/overhaul and safety stock that would result in overcharges ranging from $7.4 million to $16.6 million. As a result of our audit, AMCOM requested and received data on parts' replacement rates from Boeing and calculated $36.8 million in funds that could be put to better use by reducing proposed costs on the CH-47F multi-year II contract proposal. In addition, the multi-year II contract proposal had eight parts valued at $51.7 million, in which both rework/overhaul and safety stock were proposed for the same requirement, resulting in proposal requirements being overstated by $10.6 million to $19.1 million. As an additional result of our audit, AMCOM officials reviewed the planned use of rework/overhaul and safety stock on the multi-year II contract proposal and Boeing adjusted the requirements.

[2] A replacement rate of less than 100 percent means that some portion of specific parts removed from the remanufactured helicopters can be salvaged and reused whereas the remaining parts need to be scrapped and replaced with a new part.

AMCOM and Boeing Compliance for Analysis of Subcontractor Pricing Proposal

AMCOM and Boeing generally complied with Federal and DoD guidance for analyzing subcontractor pricing proposals for the multi-year I CH-47F production contract. AMCOM obtained cost and pricing data as required and appropriately obtained Defense Contract Audit Agency audit assistance in reviewing Boeing's overall proposal and proposed subcontractor costs. The Defense Contract Management Agency also assisted in determining the reasonableness of subcontractor proposed costs. Furthermore, during negotiations with Boeing, the contracting officer had available updated information on negotiated subcontractor prices.

Boeing conducted cost analysis for sole source proposals, performed price analysis for the commercial proposals, and obtained adequate competition for competitive proposals. Boeing generally obtained current cost and pricing data in support of prospective subcontractor costs and provided the results of its proposal analysis to AMCOM for consideration.

AMCOM also prepared its price negotiation memorandum (PNM) in accordance with FAR policy and guidance. Although the PNM met the minimal requirements, AMCOM may not have effectively used the cost and price analysis in negotiating the prime contract. The PNM did not provide sufficient detail to explain how the contracting officer used the cost or price analysis and how the contracting officer reconciled and resolved the principal findings of those reports in the negotiation of a final contract price. See Appendix B for a summary of applicable criteria and an explanation of the requirements.

Contract Clause Allowed Boeing To Install Significantly More Reworked or Salvaged Parts Instead of Safety Stock

AMCOM awarded the CH-47F contract without reviewing proposed quantities of new and used parts requirements in accordance with FAR 15.404-1. Specifically, the AMCOM contracting officer awarded the CH-47F multi-year I contract which included about $67.5 million for safety stock with replacement rates of less than 100 percent on remanufactured helicopters. In addition, Boeing installed significantly more reworked or salvaged parts (Government property) instead of safety stock as proposed for remanufactured helicopters on the firm-fixed price CH-47F multi-year I contract. The CH-47F multi-year I contract included clause H-26 that allowed Boeing to determine whether to install a new (*safety stock*) or salvaged (*used*) part on a remanufactured helicopter. Contract clause H-26, "Salvage/RECAP

Boeing installed significantly more reworked or salvaged parts instead of safety stock as proposed for remanufactured helicopters.

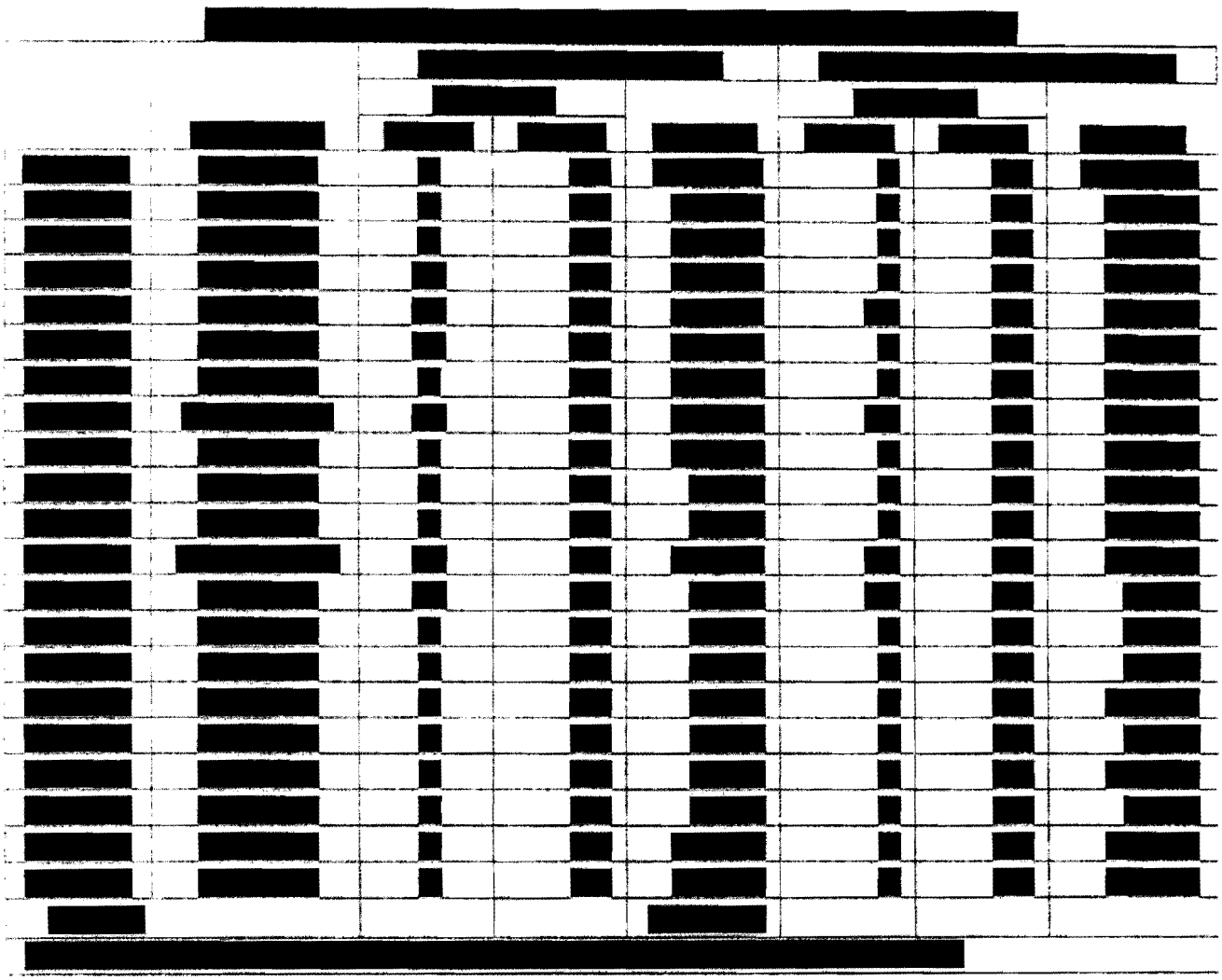
[Recapitalized] Parts," states that the, "contractor may elect to provide [a] New Part instead of [a] Salvage/Recap Part on [the] Renew[3] Aircraft and will update planning and engineering at no additional cost."

The CH-47F contract bill of material (BOM) included about $120.6 million to install safety stock on the CH-47F remanufactured helicopter. Of the $120.6 million, we calculated replacement rates for $116.0 million. Specifically, we calculated $48.5 million related to parts with replacement rates of 100 percent, meaning that Boeing would install a new part in each remanufactured helicopter. We calculated another $67.5 million related to parts with replacement rates of less than 100 percent, meaning that Boeing could salvage and reuse some portion of parts removed from the helicopters, whereas Boeing needed to scrap and replace the remaining parts with a new part.[4]

We nonstatistically reviewed 21 high dollar parts on the multi-year I contract that had replacement rates of less than 100 percent. To determine whether Boeing installed a new or used part, we used historical data recorded in The Army Maintenance Management System-Aviation (TAMMS-A). TAMMS-A is an Army electronic system that maintains actual data for each helicopter, such as the removal, installation, and overhaul of parts and assemblies. Specifically, we reviewed the 21 parts on the first 50 remanufactured helicopters delivered to the Army to determine whether Boeing installed a new or used part. We considered a part recorded in TAMMS-A with no flight hours a new part and a part with flight hours as a used part.

[3] The CH-47F multiyear I production contract refers to the remanufactured helicopter as "Renew."
[4] These are new parts proposed as safety stock.

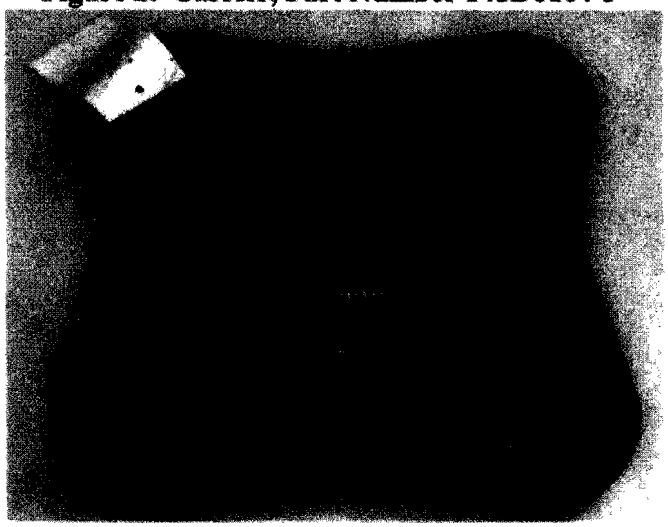
Table 1 shows Boeing's proposed safety stock costs for the 21 parts we reviewed.



[5] These are new parts proposed as safety stock.

Figure 2 shows a carrier, part number 145D0104-3.

Figure 2. Carrier, Part Number 145D0104-3



Boeing Did Not Clearly Identify Safety Stock as Contingencies

Boeing did not identify safety stock as contingencies in its proposal as required by the FAR. Specifically, FAR 15.408, Table 15-2, states that with a proposal, contractors must submit, "information reasonably required to explain their estimating process, including the nature and amount of any contingency parts included in the proposed price." Boeing submitted four separate BOMs from October 2007 through July 2008 to support its multi-year I contract proposal. None of the BOMs submitted by Boeing clearly identified the safety stock as a contingency. In the July 2008 BOM, Boeing proposed 555 parts with contingencies, valued at $120.6 million. However, Boeing did not label or clearly identify these parts as contingencies. Instead, Boeing labeled the contingency parts as "piece" in the BOM and referred to them as "safety stock." Figure 3 shows an example of the first part in Table 1 of how Boeing labeled these parts in its proposal.

[redacted]

[Table redacted]

Boeing also did not clearly identify safety stock as a contingency in its multi-year II proposal. In the January 2012 multi-year II BOM, Boeing proposed 567 parts with contingencies, valued at $180.5 million. However, Boeing labeled the contingency parts

in its BOM with the letter "P." Figure 4 shows an example of the fifth part in Table 1 of how Boeing labeled contingency parts in its multi-year II proposal.

[redacted]

[Table redacted]

The contracting officer for the CH-47F multi-year II production contract should require Boeing to clearly identify its contingency costs for safety stock in its proposal in accordance with the FAR.

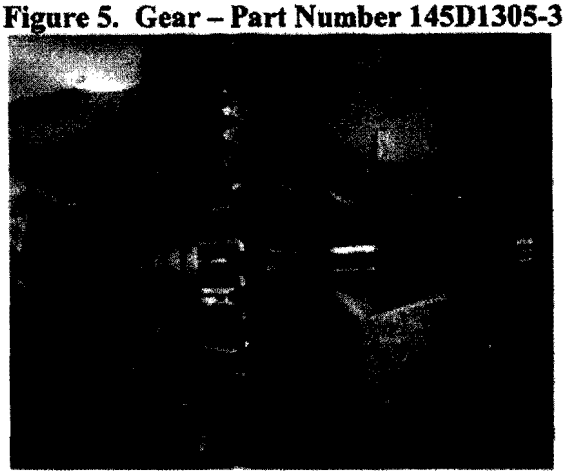
Boeing's Proposed Replacement Rates Were Generally Not In-Line With Historical or Actual Safety Stock Data

Boeing's proposed replacement rates for safety stock generally were not in-line with historical data or actual data. According to Boeing engineers, they based their estimates for safety stock rates on historical data, engineering estimates, and adjustments for problems experienced with parts. However, for 13 of the 21 safety stock we selected in Table 1, Boeing overstated the multi-year I replacement rates when compared with Boeing's 2003 historical data and TAMMS-A actual data. Boeing did not provide historical data for the remaining eight parts.

Table 2 shows Boeing's proposed rates were generally not in-line with historical rates or actual rates.

[redacted]

Figure 5. Gear – Part Number 145D1305-3



Management Action Initiated for Multi-Year II Safety Stock

For 8 of the 13 parts in Table 2, Boeing made significant adjustments to its proposed multi-year II part replacement rates. However, even with the adjustments, the multi-year II part replacement rates were still not in-line with historical or actual rates. As a result of our audit, AMCOM officials reviewed Boeing's multi-year II contract proposal and calculated $36.8 million in funds that could be put to better use by reducing the safety stock costs for 170 parts. AMCOM's pre-negotiation memorandum for the multi-year II contract included its safety stock analysis and replacement rates.

As a result of our audit, AMCOM officials reviewed Boeing's multi-year II contract proposal and calculated $36.8 million in funds that could be put to better use.

AMCOM Officials Were Unaware of Proposed Safety Stock

AMCOM technical evaluators were unaware of the safety stock in the Boeing proposals and did not review the reasonableness of the proposed kinds and quantities. AMCOM technical evaluators stated that as part of their technical evaluation, they did not conduct a detailed review to determine the reasonableness of the proposed kinds and quantities of materials needed to meet proposed contract requirements. Instead, they focused primarily on the review of proposed labor hours. As a result, AMCOM technical evaluators did not identify and review the $120.6 million of proposed safety stock included in the multi-year I production contract. Therefore, AMCOM officials did not have a technical analysis of proposed safety stock available for use in negotiating the final price. The use of the technical analysis and reviews of the quantities is necessary for ensuring that the prices the Army pays for the CH-47F are fair and reasonable.

Safety Stock Was Not a Deliverable End Item

The contract did not include a separate line item that identified the $67.5 million of proposed safety stock with replacement rates of less than 100 percent as a deliverable end item. Specifically, the multi-year I firm-fixed price contract included the production and delivery of 72 remanufactured helicopters. According to FAR 45.402, "Title to Contractor-Acquired Property," under a fixed-price contract, the contractor retains title to all property acquired by the contractor for use on the contract, except for property identified as a deliverable end item. Because the contract did not identify safety stock as a deliverable end item, Boeing retained title to all the safety stock acquired but not used on the contract, even though the Army paid for the safety stock under the firm-fixed price contract. Further, the Government should retain control over any unused parts.

The contracting officer's inclusion of a separate line item in the contract would have prevented the overpayment of $15.1 million related to 21 high dollar parts that the Army did not receive under the multi-year I CH-47F production contract. The contracting officer for the CH-47F multi-year II production contract should establish a separate line item in the contract for contingency costs so that safety stock is a deliverable item under the contract.

Safety Stock Requirements Overstated

Boeing significantly overstated estimates for safety stock replacement rates. Boeing primarily installed used parts, instead of the contract proposed safety stock for the 21 parts installed on the 50 remanufactured helicopters. As a result, Boeing overstated contract requirements for the 21 parts by $15.1 million. Figure 6 shows that Boeing significantly overstated replacement rates for safety stock in the multi-year I BOM compared to actual replacement rates. See Appendix C, Table C-1, for details of the overstatement.

Boeing overstated contract requirements for the 21 parts by $15.1 million.

[redacted]

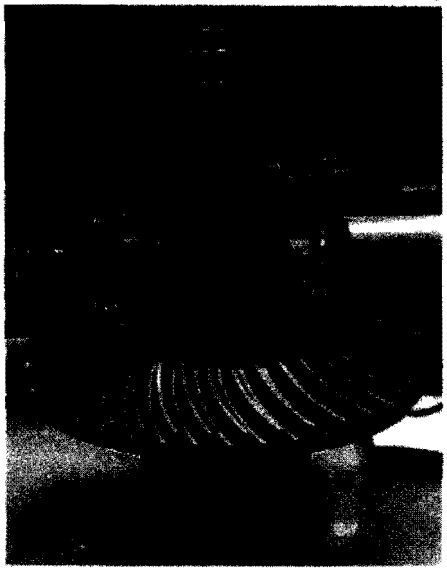
[Table redacted]

Example: Gear – Part Number 145D2305-3

[redacted]

Figure 7 shows a picture of the gear, part number 145D2305-3.

Figure 7. Gear – Part Number 145D2305-3



Similar Issues in the Multi-Year II Proposal

The same condition existed on the multi-year II CH-47F contract proposal. Boeing proposed $180.5 million in safety stock costs for multi-year II. Of the $180.5 million, we calculated replacement rates for $170.8 million.[6] Specifically, $61.9 million related to parts with replacement rates of 100 percent; $108.8 million related to parts with replacement rates of less than 100 percent. For the 21 parts we reviewed in Table 1, Boeing proposed $40.1 million for safety stock in multi-year II. Based on the replacement rates calculated from actual TAMMS-A data for multi-year I, the actual requirements should be valued at $21.1 million, an overstatement in multi-year II contract proposed requirements totaling $19.0 million.

[6] Because of the rounding, the $61.9 million and $108.8 million do not sum to $170.8 million.

Figure 8 shows that for the 21 parts reviewed, Boeing significantly overstated replacement rates for safety stock in the multi-year II BOM (January 2012) compared to actual replacement rates from the multi-year I contract. See Appendix C, Table C-2, for details.

[redacted]

[Table redacted]

Boeing Could Not Effectively Track the Installation of Parts

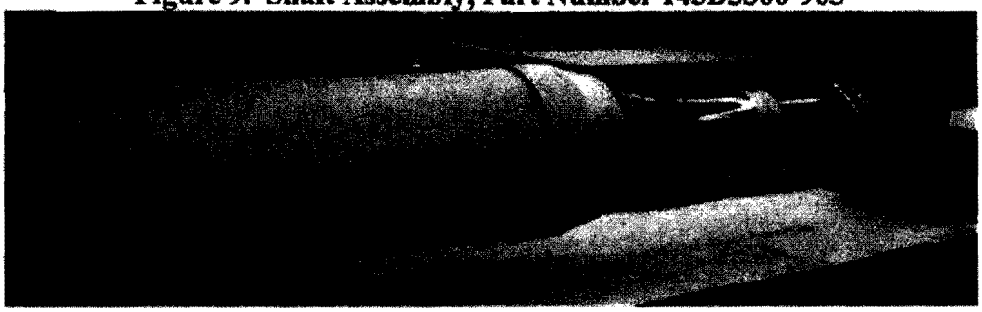
Boeing could not effectively track the installation of parts to a specific remanufactured helicopter. We requested that Boeing provide data showing how many new and used parts it installed on remanufactured helicopters for the parts reviewed. Boeing provided inventory data that showed how many new parts it issued out of inventory for installation on a helicopter. However, the data provided by Boeing did not match the data in TAMMS-A, which tracked the installation of these 21 parts to a specific remanufactured helicopter.

On three separate occasions the audit team discussed the discrepancies with Boeing personnel. Boeing used the audit team's TAMMS-A data for the 21 parts to reconcile Boeing's data with the data included in TAMMS-A. According to Boeing personnel, the updated data included minimal differences that may be related to timing. Boeing's updated data reconciled for 1 of the 21 parts, and even though there were minor differences for the remaining 20 parts, this reconciliation further illustrates that Boeing could not effectively track the installation of parts to a specific remanufactured helicopter.

Safety Stock and Rework/Overhaul Requirements Were Overstated

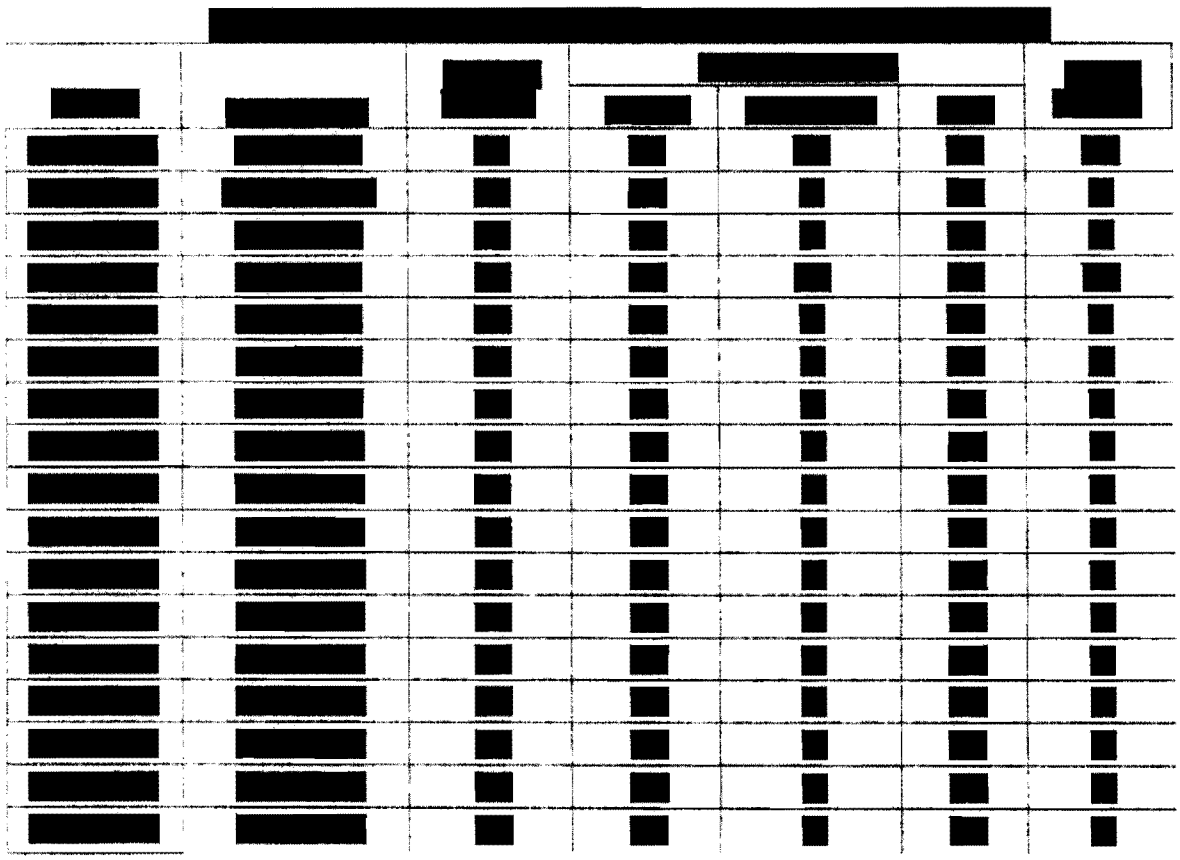
[redacted]

Figure 9. Shaft Assembly, Part Number 145D3300-903



[7] These are new parts proposed as safety stock.

Table 3 shows the rework/overhaul parts, including safety stock Boeing proposed on the multi-year I July 2008 BOM.



Boeing's proposed quantities for the 17 parts exceeded contract requirements. For all 17 parts, Boeing proposed that 100 percent of the contract requirement would be satisfied with reworked or overhauled parts, as well as proposing a requirement for using safety stock. Figure 10 shows that Boeing proposed quantities in excess of contract requirements in its multi-year I BOM.

Boeing's proposed quantities for these parts exceeded contract requirements.

[redacted]

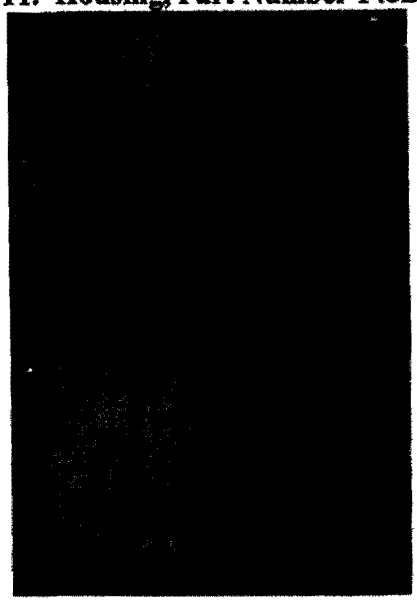
[Table redacted]

[redacted]

[8] We calculated the minimum excess cost by multiplying the weighted average unit price for rework/overhaul by the overstated quantity. We calculated the maximum excess cost by multiplying the weighted average price for the new safety stock part by the overstated quantity.

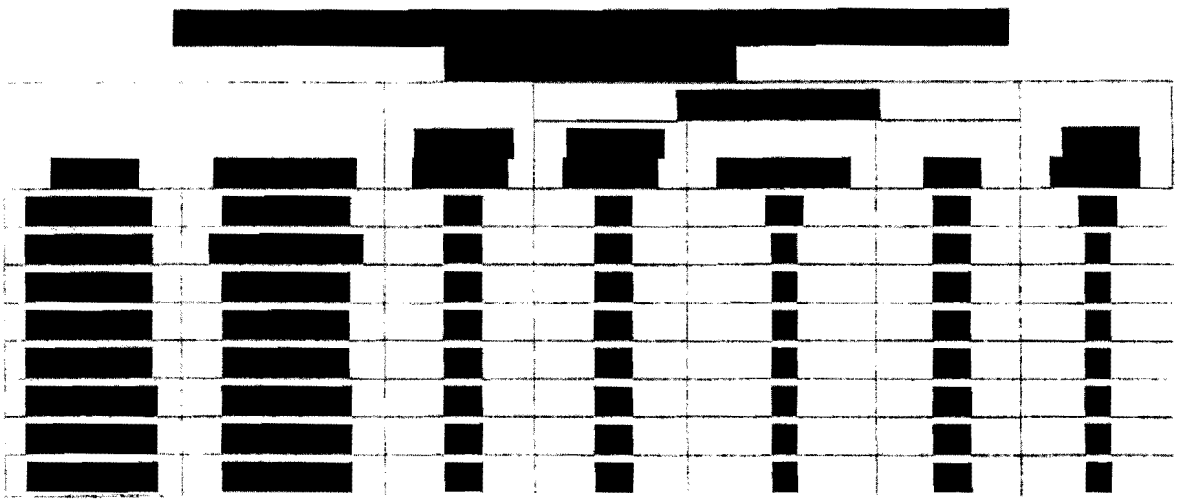
Figure 11 shows the housing, part number 145D6303-4.

Figure 11. Housing, Part Number 145D6303-4



Excess Contract Quantities on Multi-Year II

The same conditions existed on the multi-year II contract proposal for 8 parts, valued at $51.7 million. We calculated that potential excessive costs range from $10.6 million to $19.1 million.[9] (See Appendix D, Table D-2). Table 4 shows Boeing's proposed quantities for the eight rework/overhaul parts for the multi-year II contract.



[9] We calculated the minimum excess cost by multiplying the weighted average unit price for rework/overhaul by the overstated quantity. We calculated the maximum excess cost by multiplying the weighted average price for the new safety stock part by the overstated quantity.

Figure 12 shows that Boeing proposed quantities in excess of contract requirements in the multi-year II BOM.

[redacted]

[Table redacted]

Management Action Initiated for Multi-Year II Rework Parts

As a result of our audit, AMCOM took corrective action for multi-year II. Specifically, AMCOM requested that Boeing provide information on why it was proposing excess quantities for the rework/overhaul parts that the audit team identified in the multi-year I BOM. Boeing stated that it would adjust the quantities by reducing the amount proposed for rework by the quantity of new parts proposed as safety stock, resulting in a total proposed quantity equal to the contract requirement. Because the multi-year II contract is not awarded, the potential savings by reducing the quantities for these parts is unknown.

Conclusion

AMCOM's use of cost, price, and technical analysis is necessary for ensuring that the prices the Government pays for the CH-47F are fair and reasonable. Although Boeing and AMCOM generally complied with cost or price analysis requirements, documentation of the negotiations was lacking in detail to explain the use of such analysis in negotiating the final price. Furthermore, AMCOM did not fully comply with requirements for conducting technical analysis because it did not review the proposed kinds and quantities and therefore was unaware of overstated parts requirements. As such, AMCOM did not have evidence that it effectively used the required cost, price, and technical analysis in negotiating the final price.

Recommendations, Management Comments, and Our Response

A. We recommend that the Executive Director, Army Contracting Command – Redstone Arsenal instructs the contracting officer for the CH-47F multi-year II production contract to:

1. **Require Boeing to clearly identify its contingency costs for safety stock in its proposal in accordance with the Federal Acquisition Regulation.**

Department of Army Comments

[redacted]

Our Response

The Executive Director, ACC-Redstone, comments are responsive. No further comments are required.

2. **Establish a separate line item in the contract for contingency costs so that safety stock is a deliverable item under the contract.**

Department of Army Comments

[redacted]

[redacted]

[redacted]

Our Response

Even though the Executive Director, ACC-Redstone, disagreed with establishing a separate line item, his planned actions meet the intent of the recommendation. Therefore, no further comments are required.

Finding B. The Army Could Not Value CH-47F Government-Furnished Property at New Breed

The Army and Boeing could not accurately value the CH-47F Government-furnished property stored at New Breed Logistics (New Breed). According to data obtained from Boeing's Government Online Data (GOLD) system as of October 12, 2012, the CH-47F Government-furnished property at New Breed contained 155,665 total parts (5,885 unique parts numbers). Although GOLD valued these parts, the values in GOLD were inconsistent, and Boeing could not explain the variance for certain parts. Furthermore, the Army relied on Boeing's GOLD system to manage CH-47F Government-furnished property stored at New Breed. This occurred because the Army did not have a process in place to manage and value these parts. As a result, we identified four high-dollar CH-47F parts in Army inventory at New Breed with significant usage remaining that were not being used. Furthermore, the unreliability of the Boeing GOLD system and the Army's reliance on GOLD increases the risk of improper inventory management and valuation.

Contract Requirement

The CH-47F multi-year I contract required Boeing to manage and maintain records of all Government property accountable to contract W58RGZ-08-C-0098. Boeing stores Government-furnished property for the CH-47F at a subcontractor's facility, New Breed Logistics (New Breed), in Swedesboro, New Jersey. New Breed is a logistics provider that manages inventory and helps companies design and operate efficient supply chains. The CH-47F Government-furnished property at New Breed includes Government-furnished equipment and parts removed from remanufactured helicopters.

According to an Army logistics contractor, the accountable system of record for CH-47F Government property at New Breed is the GOLD system. According to a report from Boeing, as of October 12, 2012, the CH-47F Government property unit at New Breed contained 155,665 parts (5,885 unique parts).

Unknown CH-47F Government-Furnished Property Value

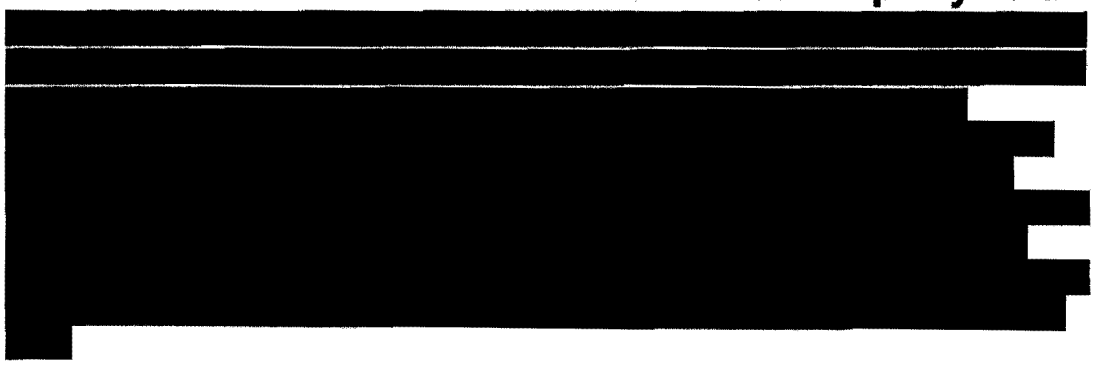
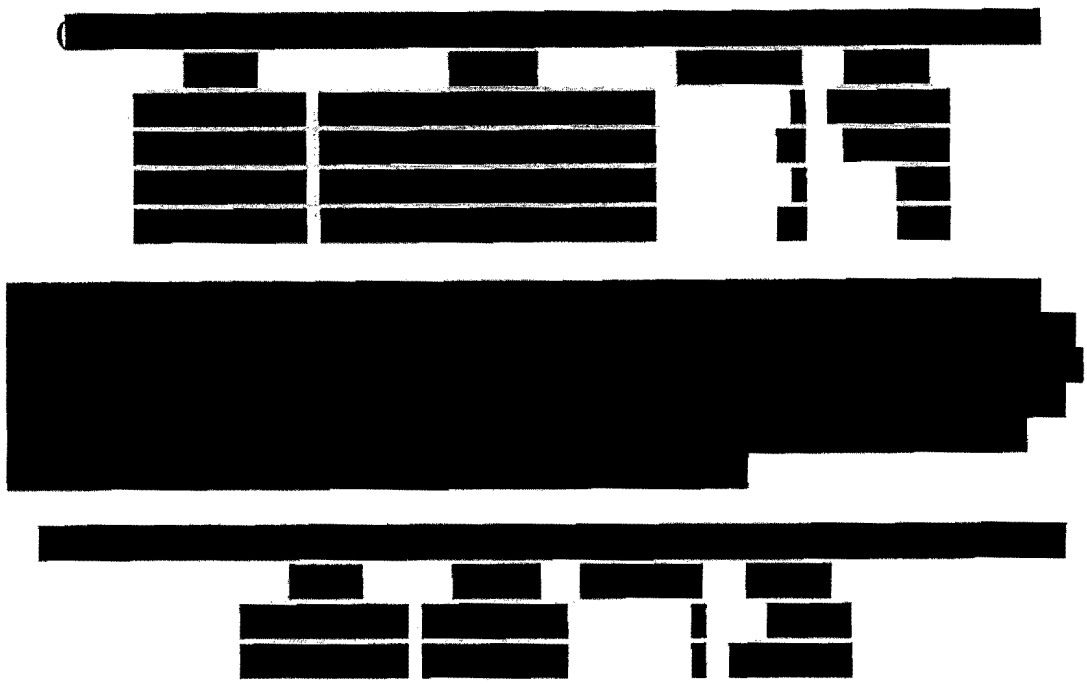


Figure 13 shows how Boeing's GOLD system reported the value of the meter, part number 2-310-192-02.



We brought the inconsistent valuation of the parts we reviewed to the attention of Boeing, who was unable to explain the basis of some of the prices. Boeing also noted confusion on whether the price field in the GOLD system represented unit price or total price, which resulted in inconsistent valuation. We also asked Army officials to provide us the value of the CH-47F property at New Breed, but they did not know the value.

The Army Relied on Boeing's System To Manage Government-Furnished Property at New Breed

Army officials relied on data from Boeing's GOLD system to account for the CH47-F inventory stored at New Breed. Specifically, Boeing provided quarterly reports from GOLD to the Army detailing CH-47F parts that were inactive.[10] The Army relied on these reports to identify inactive parts and to provide disposition instructions for the parts. However, we found that four parts removed from remanufactured helicopters were considered "active" parts and were not included in the reports even though these parts were not being used. Boeing personnel stated that they had receipts for these four parts and that therefore these four parts did not meet the definition of "inactivity." Boeing personnel agreed that their definition of inactive parts was not accurate and initiated

[10] Boeing defined "inactivity" as parts that had "no issues, no receipts, and no future requirements within a year." "Issues" refer to parts that are removed from the inventory at New Breed, whereas "receipts" refer to parts that are received in inventory at New Breed.

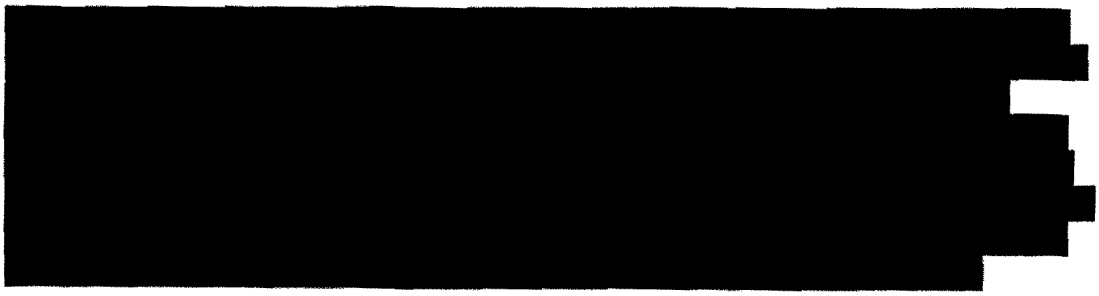
action to update their criteria for determining whether a part was inactive. Because The Army relied on these reports to manage inventory stored at New Breed, the Army did not have total visibility of Government-furnished property stored at New Breed.

The Army Had No Process To Manage and Value Total CH-47F Government-Furnished Property at New Breed

The Army did not have a process in place to manage and value all the CH-47F parts at New Breed. According to an Army logistics contractor, the values of the parts in the quarterly reports from GOLD were unreliable. The Army manually adjusted the quarterly reports part values using the Federal Logistics Data to more accurately reflect the price of some parts, which requires an extensive review. Although the Army manually adjusted the quarterly reports' values, the Army did not have a process to value all the CH-47F property stored at New Breed.

The inconsistent valuation of CH-47F parts in GOLD and the Army's lack of an effective process to manage and value inventory increases the risk of inventory mismanagement. The Army did not account for these parts in an inventory management system, resulting in an inaccurate record of the CH-47F parts, which compromises the Army's ability to accurately plan for future requirements. Furthermore, without an accurate value of the CH-47F parts at New Breed, one does not know how the Army accounts for the CH-47F parts on its financial statements. The Army needs to properly manage and value CH-47F Government-furnished property at New Breed using an Army inventory management system.

Four Parts With Significant Useful Life Remaining Were Not Being Used



Rotor Hub Example (Part Number 114R2050-35)

[11] TAMMS-A is an Army electronic system that maintains actual data for each helicopter, such as the removal, installation, and overhaul of parts and assemblies.

Pitch Housing Example (Part Number 145R2075-16)

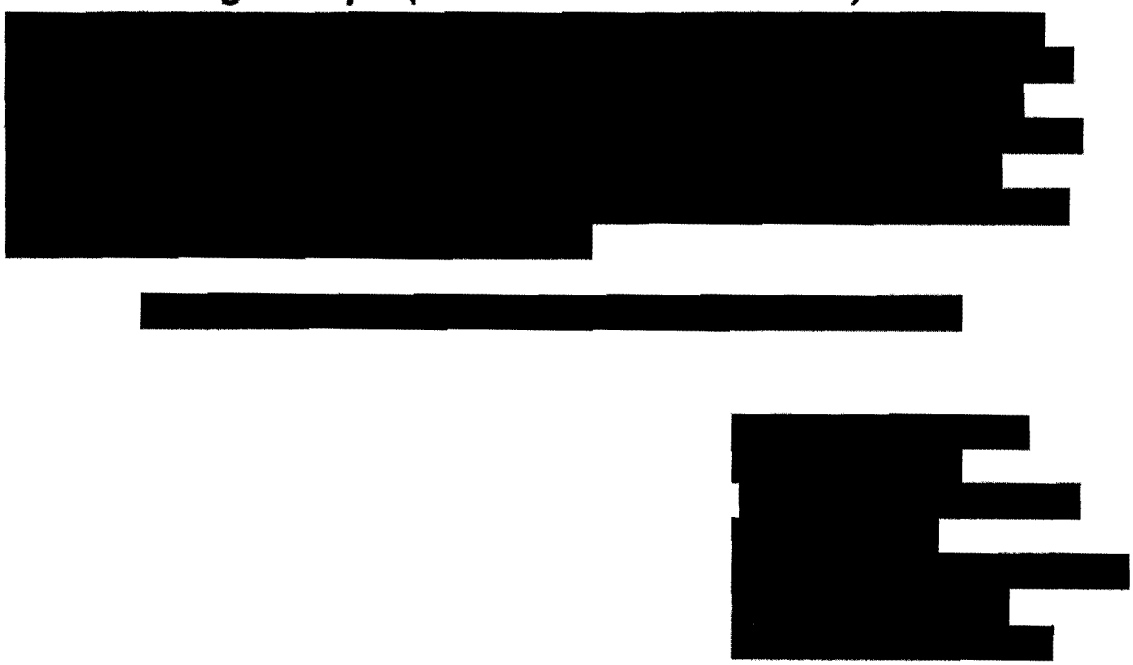


Table 5 shows the four parts' median useful life remaining.

Table 5. Rotor Hub and Pitch Housing Median Useful Life Remaining

Part Number	Nomenclature	Quantity	Median Useful Life Remaining (Percent)
145R2075-16	Pitch Housing	211	88.48
114R2050-35	Rotor Hub	52	80.60
145R2075-15	Pitch Housing	222	79.84
114R2050-36	Rotor Hub	59	74.34

The four parts clearly have a significant amount of useful life remaining, and DoD could use these parts elsewhere. However, Boeing removed the four parts from the helicopters. The conditions of these parts are unknown; these parts require further inspection before the Government could use these parts on other helicopters.

Management Action

During the audit, we brought these four parts to the attention of the Army. According to an Army official, the Army coordinated with the Corpus Christi Army Depot and planned to provide it the pitch housings. (See Figure 16.) The Army also stated that it worked to identify other users for the rotor hubs and that another DoD organization expressed an interest in reusing the parts. (See Figure 15.) Furthermore, the Army took action to address inactive CH-47F Government property at New Breed. Specifically, according to an Army logistics contractor, the Army made some parts available in the Plant Clearance Automated Reutilization Screening System, an excess Government inventory system that offered the parts to other potential users and subordinate commands. Army officials need to determine a use for the existing CH-47F Government-furnished property stored at New Breed.

Conclusion

The Army's reliance on Boeing to manage the CH-47F Government-furnished property at New Breed has increased the risk for mismanagement of inventory. Neither the Army nor Boeing was able to provide an accurate value of the CH-47F property at New Breed. Furthermore, parts at New Breed that had a significant amount of useful life remaining were not being used. Although the Army initiated some action with the CH-47F property at New Breed, the Army should provide proper disposition and accountability for the parts in an inventory management system.

Recommendations, Management Comments, and Our Response

Redirected Recommendation

As a result of management comments to the draft report, we redirected Recommendation B.1 from the Commander, Army Aviation and Missile Life Cycle Management Command, to the Program Executive Officer, Aviation, who has the authority to implement the recommendation.

B.1. We recommend that the Program Executive Officer, Aviation properly value and manage CH-47F Government-furnished property at New Breed using an Army inventory management system.

Department of the Army Comments

The Deputy to the Commanding General, AMCOM, partially agreed, stating that AMCOM has no cognizance or authority over the Government-furnished property at New Breed that was procured to support CH-47F production under contract W58RGZ-08-C-0098. The Deputy to the Commanding General, AMCOM, agreed that the suggested changes that fall within the cognizance of the Program Executive Office, Aviation, should occur. Accordingly, AMCOM has coordinated and provided this information to the organization for further action. As coordinated with AMC, we redirected this recommendation to the Program Executive Office, Aviation.

Our Response

Comments from the Deputy to the Commanding General, AMCOM, were responsive. The audit team redirected recommendation B.1 to the Program Executive Officer, Aviation. Comments from the Program Executive Officer, Aviation, are required.

B.2. We recommend that the Commander, Army Aviation and Missile Life Cycle Management Command determine a use for the existing CH-47F Government-furnished property stored at New Breed.

Department of the Army Comments

The Deputy to the Commanding General, AMCOM, agreed, stating that on completion of contract W58RGZ-08-C-0098, the personnel from the Cargo Sustainment Directorate, AMCOM Logistics Center, will meet with members of the Cargo Helicopter Program Office, Program Executive Office, Aviation, to review any property remaining that is not required for new or renew helicopter production. Any items that are determined to be needed for the continued sustainment of the Chinook Weapon System will then be transferred to the Army Wholesale Supply System.

Our Response

Comments from the Deputy to the Commanding General, AMCOM were responsive. No further comments are required.

Appendix A. Scope and Methodology

We conducted this performance audit from November 2011 through May 2013 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 finding and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

This report addresses our audit objective of whether AMCOM and Boeing fully complied with Federal and DoD guidance for the analysis of subcontractors' pricing proposals and whether effective use was made of such analyses in the negotiation of prime contracts. For the purposes of this audit, we primarily focused on the review of Boeing's proposed parts contingency costs. However, during the audit we did not determine whether quantity discounts were effectively passed on to the Government based on the nature of contract negotiations. Specifically, the AMCOM contracting officer negotiated a price for the whole aircraft and did not focus the negotiation position to ensure best value for direct materials and subcontracts.

Interviews and Documentation

We met with the Deputy to the Commanding General, AMCOM; the Principal Assistant Responsible for Contracting, ACC-Redstone; the Director, CH-47F Contracts, ACC-Redstone; and the Deputy Commander for Production, Corpus Christi Army Depot. We used the Electronic Document Access System to obtain and review the CH-47F multi-year I contract, W58RGZ-08-C-0098, and modifications issued from August 2008 through March 2013. We interviewed and obtained contract and subcontractor analysis documentation from personnel at Defense Contract Management Agency, Defense Contract Audit Agency, AMCOM, and Boeing. We obtained the BOMs for multi-year I and II from AMCOM personnel. We used TAMMS-A to obtain the installation data for the first 50 remanufactured aircrafts on the multi-year I production contract. In addition, we interviewed and obtained historical data on part replacement rates from AMCOM and Boeing personnel. We also obtained AMCOM's analysis on safety stock for multi-year II. We reviewed the FAR and other DoD guidance related to subcontractor analysis, contingencies, and Government property.

Nonstatistical Subcontractor Proposals Selection

During the course of negotiations for the multi-year I contract, Boeing submitted three separate BOMs. AMCOM used the February 2008 BOM as the basis of its negotiation position; thus, we used this BOM to select parts for review. The material on the February 2008 BOM was valued at $1.5 billion for 4,391 parts provided by 304 different subcontractors. We initially selected about 72 percent of the total material dollars from the February 2008 BOM to review, resulting in 260 high dollar parts. We narrowed our

selection to 41 subcontractors supplying 210 parts valued at $925.2 million, or 60.5 percent* of the $1.5 billion.

Nonstatistical Safety Stock Selection

We nonstatistically selected 21 parts proposed as safety stock that had replacement rates of less than 100 percent; a combined multi-year I and II value of greater than $1 million; and were traceable in TAMMS-A. The 21 parts represent $27.9 million of the total $120.6 million of contingencies on the multi-year I production contract and $40.1 million of the $180.5 million of contingencies on the multi-year II production contract.

Safety Stock Analysis

We used TAMMS-A to determine whether Boeing installed a new or used part on the first 50 remanufactured helicopters for the 21 parts we reviewed. We searched TAMMS-A by helicopter serial number, then by the next higher assembly for the selected part, and then by the selected part. We considered a part with no flight hours a new part and a part with flight hours a used part. Based on the data from TAMMS-A, we calculated actual replacement rates for the 21 parts reviewed and compared the replacement rates to Boeing's proposed rates for multi-year I and II.

Rework/Overhaul Analysis

We reviewed 17 parts on the multi-year I production contract and 8 parts on multi-year II that had both safety stock and rework/overhaul quantities proposed by Boeing, where the total quantity proposed exceeded the quantity required. We calculated the minimum excess cost by multiplying the weighted average unit price for rework/overhaul by the overstated quantity. We calculated the maximum excess cost by multiplying the weighted average price for the safety stock part by the overstated quantity.

Government-Furnished Property Analysis

We reviewed four high dollar parts that were stored at New Breed. We used the multi-year II BOM proposed unit costs for the remanufactured helicopter to determine CH-47F Army property at New Breed that had a value greater than $1.0 million and were accounted for in TAMMS-A. We then used TAMMS-A to determine the flight hours and overhaul/replacement life for the four high dollar parts reviewed. Furthermore, we selected four additional parts that had inconsistent valuation in GOLD.

Use of Computer-Processed Data

We relied on computer-processed data from the Army. We used the Electronic Document Access system to obtain the multi-year I production contract and contract modifications. We used data from TAMMS-A to determine whether new or salvaged parts were installed into remanufactured CH-47Fs. To determine the reliability, we compared the component removal and repair/overhaul data provided by Defense Contract

* A slight rounding inconsistency exists because auditor calculation included decimals.

Management Agency to the data in TAMMS-A. As a result of our analysis, we determined that the data within TAMMS-A system was sufficiently reliable for the purpose of our review.

Prior Coverage

During the last 5 years, the Government Accountability Office (GAO), the DoD Inspector General (DoD IG), and the Army Audit Agency have issued five reports related to AMCOM and Boeing's compliance with Federal and DoD guidance for analysis of subcontractor pricing proposals. Unrestricted GAO reports can be accessed over the Internet at http://www.gao.gov/. Unrestricted DoD IG reports can be accessed at http://www.dodig.mil/pubs/index.cfm. Unrestricted Army Audit Agency reports can be accessed from .mil and gao.gov domains over the internet at https://www.aaa.army.mil/.

GAO

Report No. GAO-10-717, "DoD Needs Better Information and Guidance to More Effectively Manage and Reduce Operating and Support Costs of Major Weapon Systems," July 2010

DoD IG

Report No. D-2011-104, "Pricing and Escalation Issues Weaken the Effectiveness of the Army Contract with Sikorsky to Support the Corpus Christi Army Depot" September 8, 2011

Report No. D-2011-061, "Excess Inventory and Contract Pricing Problems Jeopardize the Army Contract With Boeing to Support the Corpus Christi Army Depot," May 3, 2011

Report No. D-2008-048, "Procuring Noncompetitive Spare Parts Through an Exclusive Distributor," February 6, 2008

Army

Report No. A-2012-0013-ALM, "Follow-up Audit of Rotor Blades, U.S. Army Aviation and Missile Life Cycle Management Command," November 8, 2011

Appendix B. Criteria

Proposal Analysis

FAR 15.404-1, "Proposal Analysis Techniques," states that the objective of proposal analysis is to ensure that the final agreed-to price is fair and reasonable. The contracting officer is responsible for evaluating the reasonableness of the offered prices, and the FAR describes many techniques that the contracting officer can use to determine whether the final price is fair and reasonable. The preferred analyses are price analysis, when cost or pricing data are not required, and cost analysis to evaluate the reasonableness of individual cost elements, when cost or pricing data are required. However, the FAR recommends price analysis to verify that the overall price offered is fair and reasonable. In addition, FAR 15.404-1 requires a technical analysis to examine the types and quantities of material proposed and the need for the types and quantities of labor hours and the labor mix.

Subcontractor Pricing Proposal Analysis

FAR 15.404-3, "Subcontract Pricing Considerations," requires contracting officers to determine price reasonableness for the prime contract, including subcontracting costs; the prime contractor must evaluate subcontract prices to establish price reasonableness as part of the prime contract proposal. The contracting officer should consider whether a contractor has performed cost or price analysis of proposed subcontractor prices, or has negotiated the subcontract prices before negotiation of the prime contract, in determining the reasonableness of the prime contract price.

The contractor is to accomplish the following: determine the reasonableness of subcontractor prices by conducting cost or price analysis, include the analysis results with contractor's pricing proposal, and submit subcontractor cost or pricing data to the contracting officer as part of the contractor's data, when the subcontract is valued at $11.5 million or more.

Defense Federal Acquisition Regulation Supplement, Procedures, Guidance, and Information 215.404-2, "Information to Support Proposal Analysis," states that the contracting officer should consider requesting field pricing assistance for fixed-price proposals exceeding the cost or pricing data threshold of $650,000.

When Certified Cost or Pricing Data Is Prohibited

FAR 15.403-1, "Prohibition on obtaining certified cost or pricing," provides exceptions to obtaining certified cost or pricing data. Specifically, it states the contracting officer shall not require certified cost or pricing data to support any action when the contracting officer determines that prices agreed upon are based on adequate price competition, which is when two or more responsible offerors submit priced offers that satisfy the Government's expressed requirement.

Another FAR 15.403-1 exception to obtaining certified cost or pricing data is when acquiring commercial items, when these meet the FAR 2.101 definition. Defense Federal Acquisition Regulation Supplement, Procedures, Guidance, and Information 215.403-3 provides the specific information needed to determine the reasonableness of a commercial items price. This information is sales data that must be comparable to the quantities, capabilities, and specifications of the product or service proposed. The contracting officer must take sufficient steps to verify the integrity of the sales data, to include assistance from the Defense Contract Management Agency, the Defense Contract Audit Agency, and/or other agencies if required.

Documenting the Negotiation

FAR 15.406-3, "Documenting the Negotiation," requires that the contracting officer document in the contract file the principal elements of the negotiated agreement. The documentation is usually a PNM. The PNM is required to contain many things, including whether certified cost or pricing data was required, and if required, the extent to which the contracting officer:

- relied on the cost or pricing data submitted and used the data in negotiating the price;
- recognized as inaccurate, incomplete, or noncurrent any certified cost or pricing data submitted and the action taken by the contracting officer and the contractor as a result; the effect of the defective data on the price negotiated; or
- determined that an exception applied after the data were submitted and, therefore, considered not to be certified cost or pricing data.

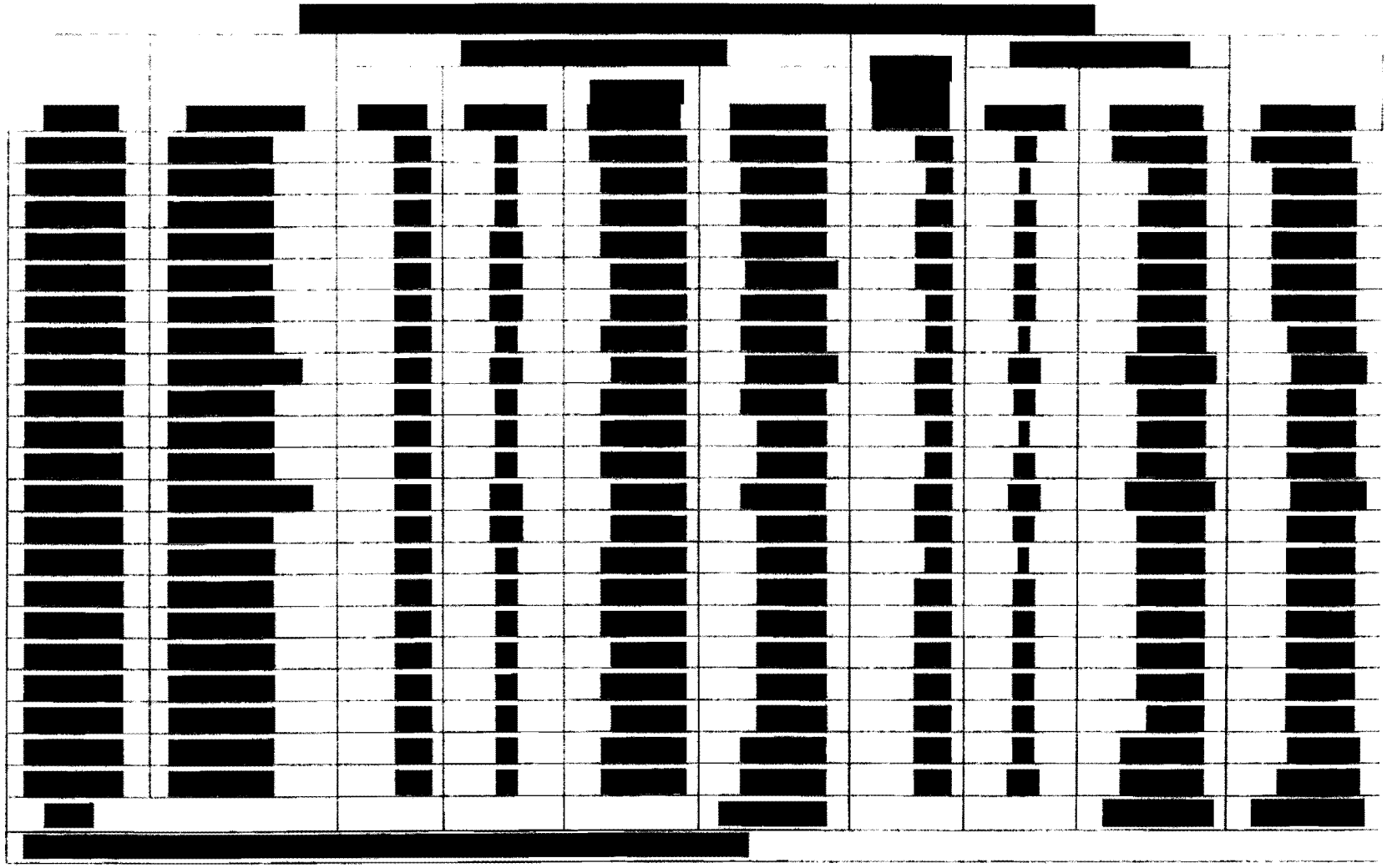
Contingencies and Government Property

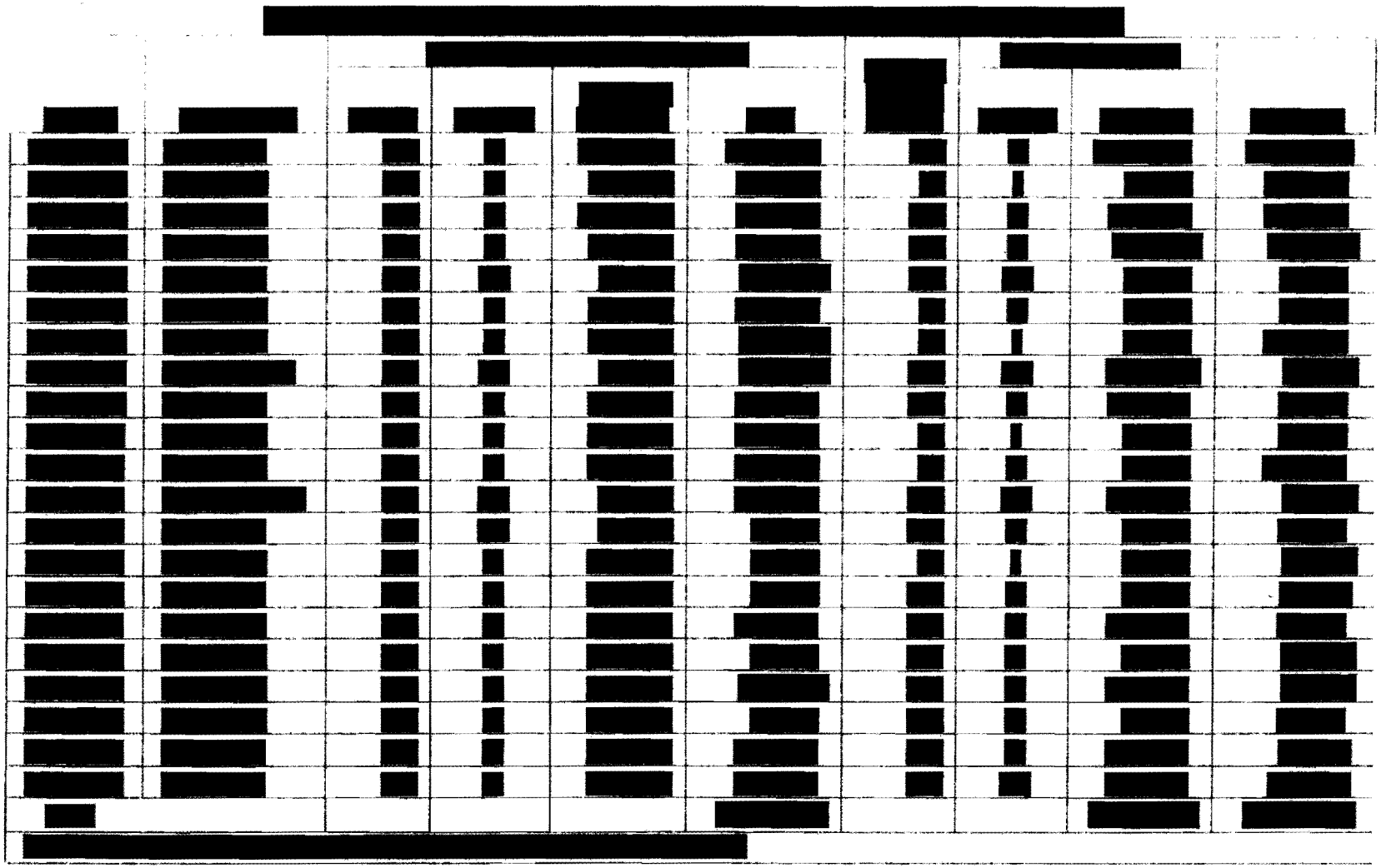
FAR 15.408, Table 15-2, "Instructions for Submitting Cost/Price Proposals When Certified Cost or Pricing Data Are Required," requires that contractors submit with their proposals the following: "information reasonably required to explain your estimating process, including –(i) The judgmental factors applied and the mathematical or other methods used in the estimate, including those used in projecting from known data; and (ii) The nature and amount of any contingencies included in the proposed price."

FAR 45.402, "Title to Contractor-Acquired Property," states the following:

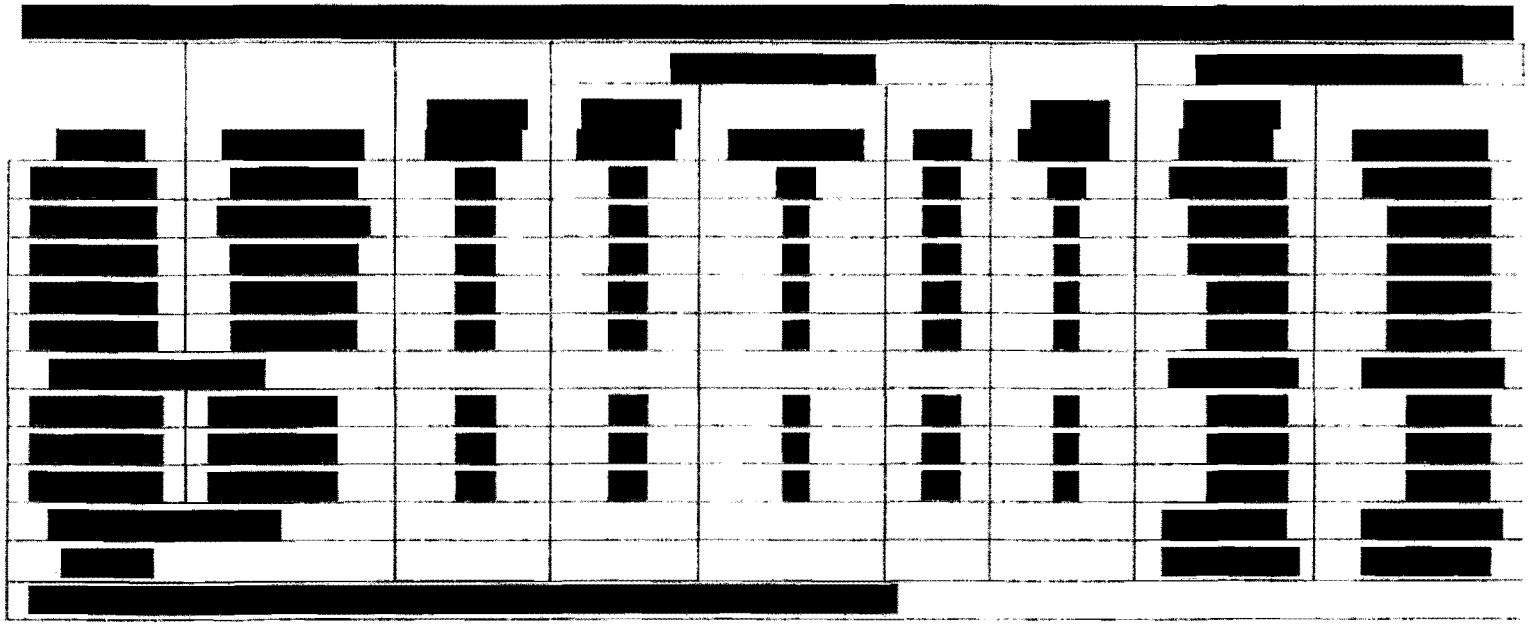
> Title vests in the Government for all property acquired or fabricated by the contractor in accordance with the financing provisions or other specific requirements for passage of title in the contract. Under fixed-price type contracts, in the absence of financing provisions or other specific requirements for passage of title in the contract, the contractor retains title to all property acquired by the contractor for use on the contract, except for property identified as a deliverable end item. If a deliverable end item is to be retained by the contractor for use after inspection and acceptance by the Government, it shall be made accountable to the contract through a contract modification listing the item as Government-furnished property.

Appendix C. Proposal for Safety Stock Was Overstated





Appendix D. Overstated Proposed Quantities for Safety Stock and Rework/Overhaul Parts



Department of the Army Comments

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND
4400 MARTIN ROAD
REDSTONE ARSENAL, AL 35898-5000

REPLY TO ATTENTION OF:

AMCIR

JUN 11 2013

MEMORANDUM FOR Department of Defense Inspector General (DoDIG), ATTN: Acquisition and Contract Management [redacted], 4800 Mark Center Drive, Alexandria, VA 22350-1500

SUBJECT: Command Comments on DoDIG Draft Report, Boeing Overstated Contract Requirements for the CH-47F Helicopter, Project D2012CH-0060

1. The US Army Materiel Command (AMC) has reviewed the subject draft report and the responses from the US Army Contracting Command (ACC) and US Army Aviation and Missile Command (AMCOM). AMC endorses the enclosed ACC and AMCOM responses.

2. The AMC point of contact is [redacted]

Encl

JOHN B. NERGER
Executive Deputy to the
Commanding General

DEPARTMENT OF THE ARMY
US ARMY CONTRACTING COMMAND
333-4A WELLS ROAD
REDSTONE ARSENAL AL 35898-5000

REPLY TO ATTENTION OF:

AMSCC-IR

03 JUN 2013

MEMORANDUM FO Director, Internal Review and Audit Compliance Office, Headquarters, U.S Army Materiel Command,4400 Martin Road, Redstone Arsenal, AL 35898-0500

SUBJECT: Boeing Overstated Contract Requirements for the CH-47 Helicopter (Project No. D-2012-DOOOCH-0060.000) (01344) (803)

1. Reference memorandum and draft audit report, Office of Inspector General ·Department of Defense, 8 May 2013, subject as above.

2. The Army Contracting Command (ACC) concurs with the enclosed ACC-Redstone Arsenal (RSA) comments.

3. The ACC Operations Security Officer recommends the referenced DODIG draft audit report not be released without For Official Use Only (FOUO) markings.

4. The ACC point of contact is [redacted]

Encl

HOLS
Major General, USA
Commanding

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DEPARTMENT OF THE ARMY
ARMY CONTRACTING COMMAND - REDSTONE
BUILDING 5303 MARTIN ROAD
REDSTONE ARSENAL, ALABAMA 35898-5000

CCAM-PSP 28 May 2013

MEMORANDUM FOR Internal Review and Audit Compliance Office, U.S. Army Contracting Command, 3334A Wells Road, Redstone Arsenal, Alabama 35898-5000

SUBJECT: Response to U.S. Department of Defense Office of Inspector General Draft Audit Report Entitled, "Boeing Overstated Contract Requirements for the CH-47F Helicopter Project No. 02012-D0000H-0060.000

1. The Army Contracting Command-Redstone provides the subject enclosed response

2. The subject report and response have been reviewed for any For Official Use Only (FOUO) material and been appropriately marked as required. The legal reviews from the servicing legal office stating that the response is legally sufficient and all documents in the package have been reviewed for FOUO are enclosed

3. As requested by the auditor document entitled, "Request for Security Marking Review," has been completed and is enclosed

4. The point of contact for this action is [redacted]

Enclosures

?LIN\ E
COL, Aviation
Executive Director, ACC-RSA

For Official Use Only

Army Contracting Command - Redstone Command Comments
DODIG Draft Report
"Boeing Overstated Contract Requirements for the CH-47F Helicopter"
DODIG Project No. D2012-DOOOCH-006000

[redacted]

[redacted]

Attachments:
Contract Attachment 25
Statement of Work
Contract Data Requirements List

Note: All FOUO paragraph markings are based on FOIA Exemption 4.

Attachment 025
MRL

10 September 2012

AC Qty per Lot			19	22	21	ff	ff	
Component Part Number	Nomenclature/Description	QTY /A/C	Lot 11 Qty	Lot12 Qty	Lot13 Qty	Lot14 Qty	Lot15 Qty	"T" Qty
[redacted]	[redacted]	[redacted]	12	14	1'	11	11	78
[redacted]	[redacted]	[redacted]	12	14	11	11	11	78
[redacted]	[redacted]	[redacted]		10	10	12	13	52
[redacted]	[redacted]	[redacted]						
[redacted]	[redacted]	[redacted]	[redacted]	7	[redacted]	[redacted]	[redacted]	39
[redacted]	[redacted]	[redacted]	5				7	52
[redacted]	[redacted]	[redacted]	4				[redacted]	ff
[redacted]	[redacted]	[redacted]		7				31
[redacted]	[redacted]	[redacted]	12	14	[redacted]	17	17	[redacted]
[redacted]	[redacted]	[redacted]	5		[redacted]			21
[redacted]	[redacted]	[redacted]	4		[redacted]	[redacted]	[redacted]	27
[redacted]	[redacted]	[redacted]	12	14	18	17	17	71
[redacted]	[redacted]	[redacted]	10	11	11	14	14	12
[redacted]	[redacted]	[redacted]						
[redacted]	[redacted]	[redacted]	5	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]		4	4		5	21
[redacted]	[redacted]	[redacted]		4	4		5	21
[redacted]	[redacted]	[redacted]					[redacted]	31
[redacted]	[redacted]	[redacted]	[redacted]		11	11	11	40
[redacted]	[redacted]	[redacted]						
[redacted]	[redacted]	[redacted]	15	17	20	21	21	[redacted]
[redacted]	[redacted]	[redacted]	4	6		[redacted]	[redacted]	27
[redacted]	[redacted]		20	22	21	21	21	124
[redacted]	[redacted]		ff	33	38	39	39	174
[redacted]	[redacted]		11	11	20	22	22	[redacted]
[redacted]	[redacted]		[redacted]	[redacted]	11	11	11	50
[redacted]	[redacted]				[redacted]			37
[redacted]	[redacted]		4		[redacted]			27
[redacted]	[redacted]		[redacted]		[redacted]			37
[redacted]	[redacted]		4	4	5	5	5	23
[redacted]	[redacted]		11	12	15	15	15	[redacted]
[redacted]	[redacted]		[redacted]	10	11	12	12	53
[redacted]	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]		31
[redacted]	[redacted]		3	4	4			21
[redacted]	[redacted]		7		10	10	10	44
[redacted]	[redacted]		14	1'	20	20	20	10
[redacted]	[redacted]		11	20	24	25	25	112
[redacted]	[redacted]		38	42	41	51	51	221
[redacted]	[redacted]		3'	42	41	51	51	221
11405120-1	BRACKET				[redacted]		9	39
114062424	SUPPORT ASSY			4	4	4	4	19
lt4DU47	SUPPORT MSY			2	2	2	2	10
114RT707-905	BUY FOR MFG		7			10	10	44
[redacted]	BUY FOR MFG		5	[redacted]	7	7	7	32
1CR.2050-35	HUB		11	22	21	27	27	121
114R205G-3e	HUB		19	22	21	ff	ff	121
[redacted]	BEARING INSRep		14	18	[redacted]	48	12	414
							[redacted]	318
1141121977	PIN,HORIZ		21	32	3'	38	38	172
114R2197-7-REW	REWORK		43	50	39	51	51	274

Attachment 025
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Component Part Mum*	eO.. nt Descl1pt1o	QTY Per AIC	LOI11 Qty	lot12 Qty	Lot 13 Qty	LOI1• Qty	LOI 15 Qty	local Qty
11.ut3053-10	SUDER	1	[illegible]	[illegible]	7	[illegible]	[illegible]	JS
1141131-	SPHERICAL BALL	1	10	12	1•	14	14	[illegible]
114B3417 1	RETAINER	1	[illegible]	[illegible]	10	10	10	[illegible]
[illegible]	RINGASSY	1	14	fT	20	20	20	to
1145Z171-1•	BELL CRANK	2	2	2	3	3	3	13
114821712I	SHAFT	2	15	17	20	21	21	!M
11-7 1-2	PIVOT	[illegible]	1	1	2	2	2	[illegible]
11.ut7124	SHAFT	2	12	14	17	17	17	[illegible]
[illegible]	SEAT	1T	15	1J	21	22	22	[illegible]
11482171	WEIGHT	[illegible]	107	124	141	152	152	611
1145217I-31	WEIGHT	11	11	!M	111	115	115	511
11482171-32	WEIGHT	[illegible]	13	73	[illegible]	11	[illegible]	
1148217142	SHAFT	[illegible]	2	2	2	3	3	12
114S2171.as	PLATE	2	2	2	3	3	3	13
11.s29714o	CASE	2	5	5	[illegible]	[illegible]	[illegible]	28
11'52175-24	COVER	2	[illegible]	4	5	$	$	23
11413975-31	COVER	2	3	3	[illegible]	[illegible]	[illegible]	11
11.tVI000.7	TRNSDCR	2	10	11	13	13	ts	50
11-VSI00-3	ACTUATOR	2	5	5	[illegible]	[illegible]	[illegible]	28
1'5001o-3	CARRIER,FIRST ST	1	2	2	[illegible]	[illegible]	[illegible]	11
1'500105-2	GEAIINTERNAL	1	2	2	[illegible]	[illegible]	[illegible]	11
1'5001-	CARTRIOGE,PINIOH	1	[illegible]	4	[illegible]	[illegible]	[illegible]	20
[illegible]	GEAIISPUR	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20
14500120-4	LUBRICATOR	1	2	2	2	2	2	10
14880123-1	LOCKNUT	1	2	2	3	3	3	ts
1'501301-3	SKAETRCTOR	1	3	3	[illegible]	[illegible]	[illegible]	[illegible]
1'501302-1	COVER ASSY,UPPER	1	2	2	2	2	2	10
1'501307-6	HOUSING IIA IN	1	3	3	[illegible]	[illegible]	[illegible]	11
1'501301-2		1	3	3			4	11
14501310-2	GEAR,SPUR GEAR SRUR	1	3	[illegible]	[illegible]	[illegible]	[illegible]	19
14501313-2	GEAIISPUR	1	3	3	3	3	3	fl
14502501-3	COVERASSEIIILY	1	1	1	1	1	1	5
1'5025022	CARRIER,XIIBN	1	1	1	1	1	1	5
14502304-1	RETAINER,XIIBN	1	10	11	13	13	13	80
1'50	GEARSHAFBEVEI	1	4	5	[illegible]	[illegible]	[illegible]	27
14502309-3	HOUSING)(IIBN	1	2	2	2	3	3	12
1'5023112	GEAR SHAFT,BEVEL	1	1	1	1	1	1	s
14502313-2	GEAR,SPUR	1	2	3	3	3	3	14
145023"-2	GEAR,SPUR	1	2	2	2	3	S	12
14502315-2	GEAR,SPUR	3	2	2	2	3	3	12
1'5023152	GEAII,SPUR	1	1	1	2	2	2	[illegible]
1'502317-2	GEAR,SPUR	1	1	1	1	1	1	S
14502315-2	GEAR,SPUR	2	2	2	3	3	3	ts
1'5023152	GEAR,SPUR	1	[illegible]	[illegible]	7	[illegible]	[illegible]	JS
14502321-3	COVER,ACCESS	3	1	1	1	1	1	s
150350I-6	SUPPORT	1	1	1	1	1	1	5
14503307-2	RETAINER	1	1	1	1	1	1	5
1'505302-3	HOUSING ASSY	1	5	[illegible]	7	7	7	32
14505306-3	HOUSING ASSY	1	1	1	1	1	1	5
1450530r-2	GEAMHAFT,BEVEL	1	19	22	21	27	27	121

Attachment 025

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Component Part Number	Component DMcription	QTY p.. A/C	LOIII Qty	LOIIZ Qty	LOII3 Qty	LOIH Qty	LOI I5 Qty	TOIII Qty
14505310-Z	GEARSHAFT.BEVEL	1	11	ZZ	26	27	27	121
145053I7-2	GEAR.SPUR	1	1	1	1	1	1	5
14505311-2	GEAR.SPUR	2	2	2	3	3	3	13
1450531I-IOS	BUY FOR MFG	1	1I	22	26	27	Z1	121
[illegible] RETAINER ASSY		2	2	2	2	2	2	10
1450I30W	SHAFT,SHOULDERED	2	31	44	5Z	54	54	ZXZ
[illegible]	GEAR ASSEMBLY	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1 a!>$01 2	SCREEN ASSEMBLY	1	1	1	1	1	1	5
1 a!>5011H	CTOR,CHIP	1	12	14	11	11	11	71
14505020-2/ S7-/	BEARING,BAU	1	11	20	2A	2A	2A	110
14508025-7	OASI<ET	1	15	17	20	20	20	TZ
145051 -7	BEARING,ROLIER	1	12	14	17	17	17	77
14505101 -7	BEARING	1	12	14	15	17	17	76
[illegible]	COOLERASSY	1	[illegible]	4	8	S	S	23
145051	HOUSINGASSY	1	2	2	2	3	3	12
1450 1	COOLERASSEMBLY	1	2	2	3	3	3	13
1450I2112	PUIIP,USIN	1	1	1	1	1	1	5
14508212-1	FILTER,ASSY	1	2	2	2	3	3	12
14505CM43/-4	BEARING	1	15	17	20	21	21	[illegible]
	BEARINGBALL	2	22	25	30	31	31	139
14505314-3	FILTER.FLUID	2	3	3	3	3	3	15
1450561U	FILTERHSG	1	1	1	1	1	1	5
1450551I-1	STRAINER	2	[illegible]	S	5	5	5	24
MOS511-2	STRAINER	2	a	9	11	11	11	50
14508517 1	COOLER.COMB	1	1	1	1	1	1	5
14508517-4	COOLERHSG	1	2	2	2	2	2	10
145056I7-1	COOLERHSG	1	2	2	3	3	3	13
145055IM	PANASSEMBLY	1	1t	ZZ	28	27	27	121
145HS143-1	V—	1	3	[illegible]	[illegible]	5	5	21
145HS143-2	SolenoidV-	1	3	4	4	4	4	19
145HS143-1	SolenoidValve	1	4	[illegible]	5	5	5	23
1o8II-I8204-3	L.w.v, 2 PositJonValv.	1	3	[illegible]	[illegible]	[illegible]	[illegible]	1t
1o8II-I8204-6	27 OIII.-I p.... I		3	[illegible]	[illegible]	[illegible]	[illegible]	11
1'8HS202	Chec:kV-	1	2	2	2	2	2	10
145HS21 1	Preasu..Tra8mitt8r	1	3	[illegible]	[illegible]	5	5	21
M5HS214-1	PrwsureSwitch	1	5	5	[illegible]	7	7	30
145HS217-4	P.....ure Switch	1	1	1	1	1	1	5
145HS752-2	SolefioldV11W	1	2	2	Z	3	3	12
145HS752-1	SolenoidV11Ye	1	2	2	2	2	2	10
1451U071-15	HOUSING ASSY	3	57	##	71	11	11	363
1451U015-11	HOUSING ASSY	3	57	[illegible]	71	11	11	353
1URJ0527	SHAFT ASSY,SIDE	[illegible]	5	5	6	6	6	21
8JR5352-2	RINGASSY	1	7	[illegible]	[illegible]	[illegible]	[illegible]	42
181065	CHIP DETECTOR	1	4	5	6	[illegible]	[illegible]	22
101065	C.PDET	[illegible]	7	[illegible]	10	10	10	45
234NOOOS-2	COUNIWI	2	Z	2	3	3	3	13
234N300Z 1	INSERT	a	28	30	35	37	37	165
234R20II-2	SHAFTASSY	3	15	17	20	21	21	[illegible]
41[illegible]51-5	RINGASSY	1	4	5	[illegible]	[illegible]	[illegible]	27
[illegible]	Check valve	3	2	2	2	2	2	10

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Attachment 025
MRL

10 September 2012

Componem Pert Numbor	Component Descriptio1	QTY Per NC	Lot 11 Qty	LOH2 Qty	Lot 13 Qty	Lot14 Qty	Lot 15 Qty	TOIII Qty
MKOOOMS	SC-	*	1	1	1	1	1	5
KSP4	BEARING	18	21	24	21	21	29	131
11S14104.S	BEARING	*	14	1*	19	11	19	87
NAS711-11-019	BUSHING	2	2	2	3	3	3	13
RFHOII-13	AdlDiltr-..v.	1	1	1	1	1	1	5

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17.0 Recapitalization/Overhaul of Chinook Helicopter Components

The Contractor shall provide for Recapitalization/Overhaul of Chinook Helicopter Components in accordance with the following:

a. The components listed in the RECAP Overhaul Component List, Appendix 07, to this SOW, shall be removed from the CH-47 Chinook aircraft during the induction and disassembly phase of the Full Rate Production contract. The Contractor shall monitor planned removals and document each component by part number, serial number, aircraft tail number and store in a database. The component shall be inventoried for completeness and historical component records checked. Upon completion of the receipt inspection process, the components shall be shipped to the designated recapitalization/overhaul facility. The Contractor shall perform all Recap/Overhaul requirements IAW Depot Maintenance Work Requirement (DMWR) or OEM Recap/Overhaul Process.

b. Components, which exhibit excessive external corrosion or physical damage, or which have been subjected to over-speed or sudden stop, or which have been operated outside normal operating limits in accordance with the applicable OEM Overhaul Process and Production Specifications, DMWR, or Technical Manual (TM) shall not be accepted for RECAP under this contract. The Contractor shall disposition each fault in accordance with U.S. Army Technical Manuals and records them on the appropriate Contractor media. The Government reserves the right to direct components not accepted into RECAP into O&A repair. Parts which do not meet the requirements of the DMWR or OEM Overhaul Process and Production specifications, with the exception of Critical Characteristics of Critical Safety Items, may be submitted for consideration of use to the Material Review Board.

c. Contractor source inspection and Government source inspection shall be performed prior to shipment from the recap/overhaul facility. All components shall be shipped to the Contractor's Government Property Unit (GPU) or pre-positioned for assembly line installation after component recapitalization/overhaul.

d. All repair parts required in the recapitalization program shall be provided as Contractor Furnished ew Parts (CFP), which includes mandatory replacement parts that are inspected for serviceability and require replacement or Rework and consumable parts. The Contractor shall, if necessary, request Government assistance on a "best-efTon.. basis to provide parts in the event that parts are not available through normal charuiels in a timely manner to support aircraft delivery.

1) The Contractor shall procure the CFP replacement parts listed in Auachment 025. In order to mitigate risk, the parts shall be procured to account for lead times so that the replacement parts are available for the lot for which they are procured. The Contractor shall manage, preserve, package, maintain, and store the CFP replacement parts IAW contractor procedures. The Contractor shall provide Status Reporting which details the number of parts consumed by lot IAW DI-MISC-80508 (F033). At the completion of Lot 15, the Contractor

shall deliver to the USG the CFP replacement pans not consumed during the MYII recapitalizationeffon

e. In the event that an End Item Recap component is scrapped during the Recap process the Government will provide a replacement. The replacement should be Zero hours Time since New or Zero hours Time since Overhaul from the OEM/Contractor. If the replacement components do not meet these criteria. they will be re-inducted into the Recap process.

f. Preservation. Packing and Marking of Recapitalization Components

1. In preparation for delivery, or subsequent to inspection and during storage in anticipation of installation. all items shall be packaged for long-term preservation *"A/C* Level" in accordance with MIL-STD-2073-1. DOD Bar Code marking required in accordance with MIL-STD-129). marking and bar coding in accordance with Association for Automatic Identification and Mobility (A1M) specification AIM-BC!

2. Level A Protection required meeting the most severe worldwide shipment. handling. and storage conditions A level "A" pack must. in tandem with the applied preservation. be capable of protecting material from effects of direct exposure to extremes of climate. terrain. and operational and transportation environments

3. General Military Packaging Requirements The developed military packaging requirements shall be documented in accordance with Appendix E of MIL-STD-2073-1

g. Transponation of Rccapitati7..ation Components

1 The Contractor shall manifest components shipped from the aircraft induction center to the component recapitalization/overhaul facility on a Commercial Bill of Lading (CBL) Recapitalized/overhauled components shall be shipped from the recapitalization/overhaul facility to the Government Property Unit (GPU) on a Commercial Bill of Lading (CBL).

2. The Government will be responsible for transponation from the Contractor's shipping dock in the event that a Recapitalized/overhaul ed component is required for reasons other than FIG-model re-assembly, the Contractor shall supply in-plant transponation

h. Blade Rework - In addition to the OEM Overhaul and Repair Process. as of 1 March 2008 Appendix 015. or as updated by the OEM and approved by the Government all salvaged rotorblades shall be subject to the following criteria

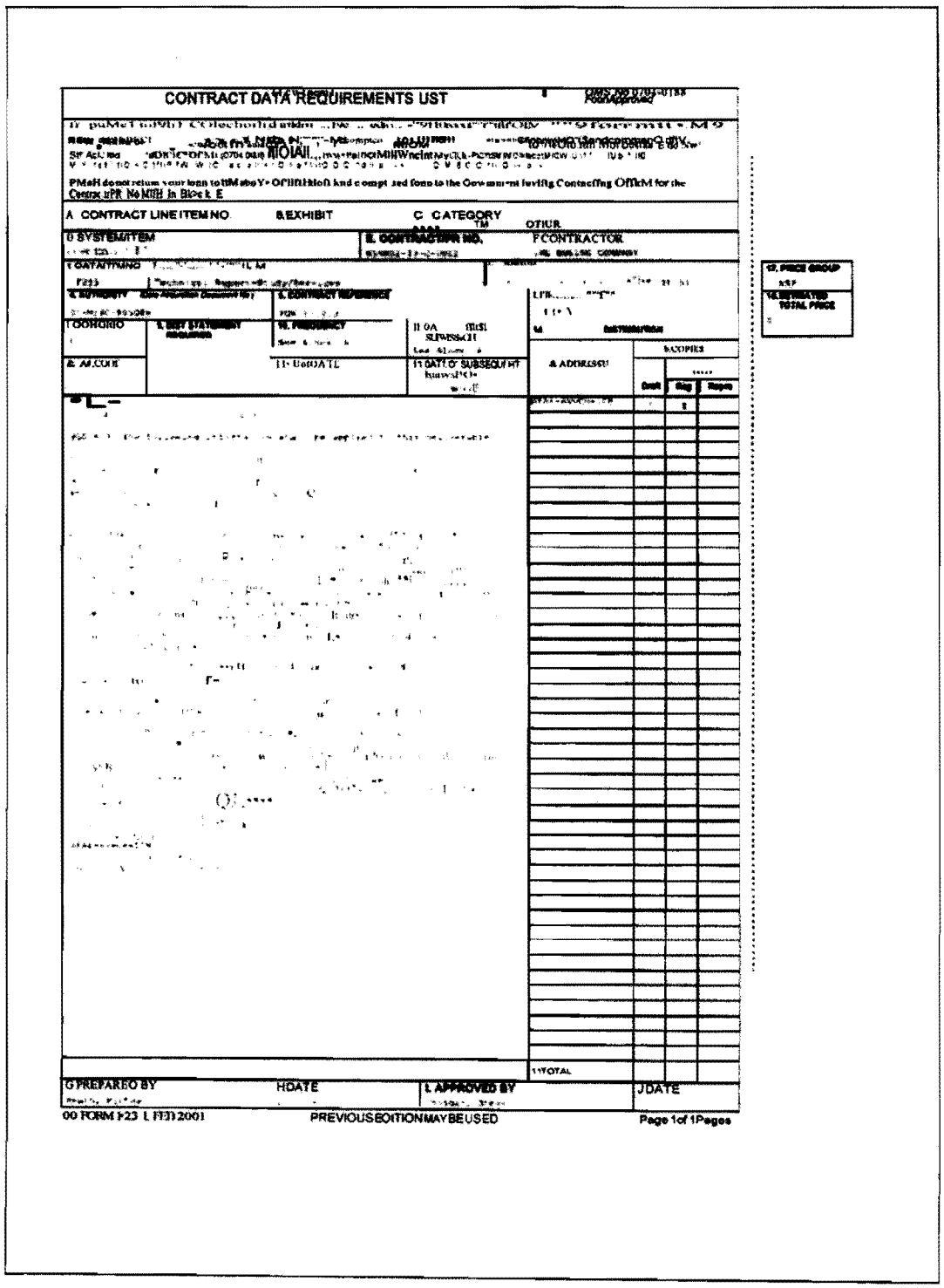
1 All rotorblades that have not been previously x-rayed with the Post 1999 technique in accordance with D210-11266-1 shall be x-rayed with this procedure

2. Once the x-ray has been performed. documentation of analysis by the Contractor on the Reworked rotor blade shall include serial number. distonion factor. and time since new IAW Recapital ization Rotor Blade X-Ray DI-MISC-80508 (F027)

3. All blades with a distortion factor of 4.0 or less shall be overhauled to a serviceable condition for use on Aircraft. If there is damage that makes blades non-repairable, it shall be demilitarized (root end cut off).

4. All blades with a distortion factor greater than 4.0 shall be returned to Government Property Unit (GPU) as unserviceable

5. 100% of the pin liners shall be replaced during overhaul with a visual inspection for cracks and damage of the root-end bore



CONTRACT DATA REQUIREMENTS LIST

A. CONTRACT LINE ITEM NO. B. EXHIBIT C. CATEGORY TM OTHER

D. SYSTEM/ITEM E. CONTRACT/PR NO. F. CONTRACTOR

G. PREPARED BY H. DATE I. APPROVED BY J. DATE

DD FORM 1423, FEB 2001 PREVIOUS EDITION MAY BE USED Page 1 of 1 Pages

DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION AND MISSILE COMMAND
5300 MARTIN ROAD
REDSTONE ARSENAL AL 35898-5000

AMSAM-IR

31 MAY 2013

MEMORANDUM FOR Director, Internal Review and Audit Compliance Office, Headquarters, US Army Materiel Command, 4400 Martin Road, Redstone Arsenal, AL 35898

SUBJECT: DODIG Draft Report: Boeing Overstated Contract Requirements for the CH-47F Helicopter (Project No. D2012-DOOOCH-0060.000) (AMC D1206) (AMCOM 2012D006)

1. Reference HQ AMC Tasker No. A1-0C7-3129-16538, 10 May 13, SAB.

2. Enclosed are comments from the US Army Aviation and Missile Command (AMCOM). The comments were provided by the AMCOM Logistics Center and reviewed by AMCOM Legal Office.

3. Point of contact is _____

Mary C. Dickens

Encl

MARY C. DICKENS
Deputy to the Commanding General

Printed on Recycled Paper

Final Report Reference

US Army Aviation and Missile Life Cycle Command
Comments to DODIG Draft Report – Boeing Overstated Contract Requirements for the CH-47F Helicopter (D2012-D000CH-0060.000)
(AMC No. D1202) (AMCOM Project 2012D006)

FINDING B: AMCOM Could Not Value CH-47F Government Furnished Property at New Breed.

"AMCOM and Boeing could not accurately value the CH-47F Government furnished property stored at New Breed Logistics (New Breed). According to data obtained from Boeing's Government Online Data (GOLD) system as of October 12, 2012, the CH-47F Government furnished property at New Breed contained 155,665 total parts (5,885 unique parts numbers). Although GOLD valued these parts, the values in GOLD were inconsistent, and Boeing could not explain the variance for certain parts. Furthermore, AMCOM relied on Boeing's GOLD system to manage CH-47F Government furnished property stored at New Breed. This occurred because AMCOM did not have a process in place to manage and value these parts. As a result, we identified four high-dollar CH-47F parts in Army inventory at New Breed with significant usage remaining that were not being used. Furthermore, the unreliability of the Boeing GOLD system and Army's reliance on GOLD increases the risk of improper inventory management and valuation."

RECOMMENDATIONS AND COMMAND COMMENTS:

Recommendation B.

"We recommend that the Commander, Army Aviation and Missile Life Cycle Management Command":

1. "Properly value and manage CH-47F Government furnished property at New Breed using an Army inventory management system."

Redirected Recommendation B.1

Command Comments: Partially Concur. The US Army Aviation and Missile Life Cycle Management Command has no cognizance or authority over the government furnished property at New Breed that was procured to support CH-47F production under contract W58RGZ-08-C-0098. We agree that the suggested changes that fall within the cognizance of Program Executive Office (PEO) Aviation should occur. Accordingly, we have coordinated and provided this information to the organization for further action. Per coordination through HQ AMC, the DODIG plans to redirect this recommendation to PEO Aviation in their final report.

2. "Determine a use for the existing CH-47F Government furnished property stored at New Breed."

Command Comments: Concur. Upon completion of the contract W58RGZ-08-C-0098, the personnel from the Cargo Sustainment Directorate, AMCOM Logistics Center (ALC, formerly IMMC) will meet with members of the Cargo Helicopter Program Office, PEO Aviation to review any property remaining that is not required for new/renew helicopter production. Any items that are determined to be needed for the continued sustainment of the Chinook Weapon System will then be transferred to the Army Wholesale Supply System.