National Défense
Defence nationale

Chief Review Services Chef - Service d'examen
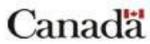
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Follow-up on Internal Audit: CP140 Aurora
Maintenance Contract

September 2009

7050-28-2 (CRS)

Canada

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Caveat

The result of this work does not constitute an audit of the CP140 Aurora Maintenance Contract. Rather, this report was prepared to follow up on the progress in implementing the Management Action Plan that resulted from the February 2007 CP140 Aurora audit.

The reported inventory values in this project may not represent the actual value of inventory.

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Acronyms and Abbreviations

ADM(Mat)	Assistant Deputy Minister (Materiel)
AERMS	Audit and Evaluation Recommendation Management System
CFSS	Canadian Forces Supply System
CRS	Chief Review Services
DAEPMM	Director Aerospace Equipment Program Management (Maritime)
DAP	Director Aerospace Procurement
DAOD	Defence Administrative Orders and Directives
DGAEPM	Director General Aerospace Equipment Program Management
DMPAP	Director Military Pay and Accounts Processing
DND	Department of National Defence
DQA	Director Quality Assurance
EVM	Earned Value Management
FAA	*Financial Administration Act*
FY	Fiscal Year
HST	Harmonized Sales Tax
ISSCF	In-Service Support Contracting Framework
MAP	Management Action Plan
NDQAR	National Defence Quality Assurance Representative
OWSM	Optimized Weapon System Management
PAV	Primary Air Vehicle
PRM	Progress Review Meeting
TA	Technical Authority
TLIR	Third-Line Inspection and Repair

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Introduction

In keeping with the Treasury Board Policy on Internal Audit,[1] Chief Review Services (CRS) is required to undertake audit follow-ups to assess the implementation status of management action plans (MAP) developed in response to previous CRS audit recommendations.

CRS conducted an audit of the CP140 Aurora Maintenance Contracts and issued the report in February 2007.[2] A three-year $108-million Harmonized Sales Tax (HST) excluded contract was awarded in April 2002 to provide life cycle support to the airframes of 21 CP140 Aurora maritime patrol aircrafts (see Figure 1). As this contract expired in June 2005, the audit also included the first year of the follow-on 10-year $492-million (HST excluded) CP140 Optimized Weapon System Management (OWSM) Primary Air Vehicle (PAV) contract.

Figure 1. CP140 Aurora Maritime Patrol Aircraft. As Canada's only strategic maritime surveillance aircraft, the CP140 Aurora is often used to patrol Canada's coastlines to safeguard our waters from foreign threats.

Methodology

This follow-up is not another audit of the same issues, but rather it is a review of documentation and evidence to assess the progress made in implementing the MAP. The following methods were used:

- Interviews with Department of National Defence (DND) contract management staff (technical authority (TA), requisitioning authority, quality assurance Representatives and other headquarters staff);
- Interview with contracting authority;
- Review of contract documentation that pertained to the MAP; and
- Analysis of data from Audit and Evaluation Recommendation Management System (AERMS),[3] Financial Managerial Accounting System, and the Canadian Forces Supply System (CFSS).

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[1] Policy on Internal Audit http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/ia-vi/ia-vi_e.asp.
[2] Internal Audit: CP140 Aurora Maintenance Contract.
[3] AERMS is a system that tracks the progress of the MAP items.

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Overall Assessment

There has been significant progress in the areas of vendor reporting. Measures were introduced to improve vendor report quality and monitor the cost and schedule of high-value tasks in the OWSM contract. As one of the first contracts to embody a new DND procurement policy—the In-Service Support Contracting Framework (ISSCF)—some of the inherent risks have been mitigated and the need for risk management[4] plans has been included in some DND policies.

At the time of follow-up, there were 10 MAP items designated as completed in AERMS. Upon further examination, five of the ten MAP items were found to be fully implemented. …………..………………………………………………………
………………………………………………………………………………………………
…………….. Management anticipates having the majority of remaining MAPs being fully implemented with the next year.

> **Best Practices**
>
> - Independent third party hired to conduct 100-percent stocktaking;
>
> - Comprehensive Earned Value Management (EVM) requirements; and
>
> - Third-Line Inspection and Repair (TLIR) performance linked to vendor profit.

MAP Implementation Progress

Payment Certification

To increase rigor in the payment certification process, the Director General Aerospace Equipment Program Management (DGAEPM) contract managers have obtained the vendor monthly activity cost breakdown and ensured TA involvement to verify the receipt of goods and services. They are also conducting quarterly expenditure reviews in order to reduce the occurrence of advance payment which could result in time value of money loss. As recommended, Director Aerospace Procurement (DAP) staff conducted the first quarterly review in 2008 and expects to recover ………………………………...
…………………………………………….. at the beginning of the year.

Risk-Based Pre-Payment Verification. There has been limited progress in conducting risk-based sampling of supporting documentations prior to payment.[5]

- The risk-based random sampling methodology was not communicated as planned to Director Military Pay and Accounts Processing (DMPAP)[6] for approval.

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[4] Although the CP140 PAV maintenance contract is an OWSM contract, the ISSCF guidance document states that "most of the principles and approaches presented here could be applied to legacy fleets' OWSM program."
[5] *Financial Administration Act* (FAA) Section 34 requires certification that good and services have been received prior to payment.
[6] The organization performs FAA Section 33 payment certifications.

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- Sampling of supporting documentation for engineer services was performed before payment until March 2008. Since then, only post-payment verification has been completed on payments by comparing past expenditures to quarterly vendor reports.
- Although the vendor's monthly and quarterly report formats comply with the contract, they do not facilitate the selection of payment supporting documentation samples. The reports lack the visibility into several higher-risk areas such as subcontractor work and materiel handling fees.

Accordingly, DAP will identify areas for random sampling for DMPAP concurrence and assess the relevance of the vendor report's activity cost breakdown by September 2009.

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OWSM Cost Control

Specific measures were needed to control costs in the OWSM contract. DGAEPM, in conjunction with the contracting authority, …………………………………………………
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Warranty Process Review. The plan to improve warranty practices in the OWSM contract has been delayed from April 2007 to January 2009. The February 2007 audit report identified that:

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- ……………………………………………………………………………………..
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[7] CRS does not have the mandate to audit vendors.
[8] ………………………… include materiel handling fee …………………………………….. labor charges of ………………………………………………………………..…… charges associated with ……. ………… firm price TLIR package …………………..

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DAP staff have started working with the vendor to identify the warranty procedures in place and the vendor was requested at the procurement and supply working group in January 2009 to provide a warranty process flowchart.

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DAEPMM agreed to develop a formal review process of ………………………………..
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Materiel Management

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Inventory Adjustments. Oversight of DND materiel has improved; …………………..
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- …………………………….. of the total line items held in the …………...
………... supply accounts were adjusted ……………... the adjustments to these
line items represent ……………………………………………………

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[9] A-LM-184-001/JS-001 DND Special Instructions for Repair and Overhaul Contractors.

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Warehouse	Total Quantity Adjusted	Total Quantity Held	% Quantities Adjusted	Total Line Items Adjusted	Total Line Items Held	% Line Items Adjusted	Median % Quantities Adjusted per Line Item
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....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....
Total or Average	....	....	....	....	....	....	

Table 1. ………………... Adjustments in 2007. A significant amount of adjustments were made ……… ……… to inventories in ……………………… DND warehouses ……………………………. The total quantity held reflects the amount at the end of the fourth quarter of 2007.

Because the monitoring of these ……... adjustments ……………………………….....
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- …………………………………………………[10] …………………………………..
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To address these inventory adjustment observations, Director Quality Assurance (DQA) committed to ensuring ………………………………………………. The NDQAR supply technician has started monitoring the ……………………………………..
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Stocktaking. A 100-percent stocktaking was completed as planned but the report formats did ……………………………………………………………... [11] ……..……..
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[10] There are 31 different holding adjustment reason codes. ……………………………………………… ………………

[11] A-LM-184-001/JS-001 DND Special Instructions for Repair and Overhaul Contractors, Chapter 6, page 6-2.

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- The total value of inventory before and after the stocktaking were not provided.
- The total number of line items and quantity counted were missing.

DQA agreed to change the vendor report format accordingly to address this observation at the next stocktaking in 2009.

Work Orders. …………………………………………………………………………………
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Supply Account Structures. DAP created a separate inventory account for the Aurora 10-year OWSM contract as planned, an improvement from sharing the same vendor-managed account with the CH124 Sea King helicopter maintenance contract. The separate supply accounts will improve visibility into the vendor usage of DND materiel, a major cost driver for materiel handling and transfer fees.

Risk Management

To improve the Department's ability to anticipate risks, it was recommended that ADM(Mat) report on contract risks at Progress Review Meetings (PRM), assess the risks associated with the ISSCF to develop high-level risk mitigation plans, and develop an extensive risk mitigation plan for the transition of materiel management to the vendor.

Contract Risk Management. Some steps to improve contract risk-management practices have been taken. There is no formal risk-management process at this time; however, contract-related risks are informally discussed at PRMs and weekly maintenance operations meetings. DAEPMM is planning to establish formal risk-management processes for areas within the program such as the Aurora Structural Life Extension Program by September 2009.

In-Service Support Contracting Framework Risks. As the CP140 maintenance contract was one of the first OWSM contracts under the new ISSCF, the inherent risks with this new policy were identified in the February 2007 audit. ADM(Mat) assessed the risks and strengthened departmental risk-management requirements in accordance with the MAP. Department project management directive[12] and DGAEPM policy[13] have both emphasized requirements for having risk-management plans and practices. The Director Materiel Policy and Procedures will insert guidance on contract risk management in Defence Administrative Orders and Directives (DAOD) 3000-0 which governs all Materiel Acquisition and Support activities, including in-service support phase. Due to

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[12] Draft DAOD 3024-0 Project Management and draft DAOD 3024-1 Project Management Instruction.
[13] AF9000 EMT06.003 Management of Repair & Overhaul Contracts.

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existing taskings, resource limitations and the need to move forward with a Materiel Acquisition and Support Information System compliant solution, this DAOD update is not expected to be done until 2010.

The audit follow-up found that the risk-mitigation strategy to proceed on a trial basis with the new ISSCF was erroneously included in the ISSCF guidance document.[14] As this strategy was never intended to be implemented as mitigation, the guidance document[15] has been revised in July 2009 to require the monitoring of the success of all established ISSCF contracts.

Materiel Management Transition. Materiel management has not yet fully transitioned to the vendor as the vendor proposal has not been accepted by DND. DAP will implement a trial phase to transition a subset of parts to the vendor and monitor the success of the trial phase before proceeding with 100-percent outsourcing of the materiel management function.

Vendor Reporting Framework

…………………………………………………………………………… it was recommended that ADM(Mat) include customer satisfaction metrics on reports and publications, and introduce earned-value reporting to improve cost and schedule management of high-value tasks.

Measures for Quality of Reports. DAEPMM introduced performance metrics to measure quality and timeliness of vendor report deliverables. Two metrics were inserted in quarterly cost-performance reports in the second quarter of FY 2008/09:

- the customer satisfaction rate of technical reports and publications which measures the satisfaction rate of readers by surveys; and
- the publication schedule variance which measures the turnaround time on publication writing or revisions.

Earned Value Management. DAEPMM introduced EVM for the TLIR, the high-value task in the contract. The TA has included a requirement in the contract for the vendor to report EVM in February 2009. Two best practices were observed:

- The EVM requirement for this contract follows commonly accepted industry standard[16] and exceeds departmental guidance[17] expectation; and
- The contract-management team introduced incentives to link vendor TLIR performance to their profit.

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[14] Draft ISSCF Guidance Document, October 2008, Risk Mitigation Recommendations, Risk serial 1 ISSCF is unproven, page 36/39.

[15] Draft ISSCF Guidance Document, July 2009, Risk Mitigation Recommendations, Risk serial 1 ISSCF is unproven, page 36/39.

[16] ANSI/EIA 748 standard as interpreted from the US Department of Energy—Earned Value Management Application Guide.

[17] Life Cycle Management Managers handbook, page 18/39.