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CANADIAN DEFENCE COMMITMENTS: OVERVIEW AND STATUS OF SELECTED ACQUISITIONS AND INITIATIVES

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SUMMARY

For years, successive Canadian governments have been overpromising and under-delivering on defence procurement. Timetables have slipped even as repair and maintenance costs for aging equipment have soared, while elaborate rules have obscured the acquisition process in a bureaucratic fog. This paper assembles information from a wide range of official sources and cuts through the confusion. It surveys 15 Canadian defence acquisitions and initiatives, each anticipated to cost more than \$100 million, to account for the delays. Final replacements for the ancient Sea King helicopters are no closer to arriving – after almost 30 years – because the DND failed to recognize that it asked for technology that is still in development. The Joint Support Ship project is years behind schedule because, as originally conceived, it sought to integrate so many capabilities that it was unbuildable. The Integrated Soldier System Project is almost as far behind because Ottawa's procurement rules are so complex and niggling that no bidder could fulfill every single one. Canada faces evolving threats, but efforts to equip the Canadian Forces to meet them have been marked by a long litany of failures – failures of communication, of organization and of vision. This paper sets out the military procurement process, and concisely explains the most egregious flaws, making it essential reading for anyone interested in the future of Canada's military.

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LES ENGAGEMENTS DE LA DÉFENSE NATIONALE : VUE D'ENSEMBLE ET SITUATION AYANT TRAIT À CERTAINS ÉLÉMENTS DU PROCESSUS D'ACQUISITION ET DES INITIATIVES

Elinor Sloan

RÉSUMÉ

Pendant des années, les gouvernements canadiens successifs ont fait beaucoup de promesses, mais bon nombre d'entre elles sont restées lettre morte en ce qui a trait à l'approvisionnement en matière de défense. Les retards se sont accumulés tandis que les coûts de réparation et d'entretien de l'équipement vétuste montaient en flèche et que des règles obscures et compliquées éclipsaient tout le processus dans la nébuleuse bureaucratique. Cet article collige des renseignements d'un large éventail de sources officielles et dissipe la confusion. L'auteur examine quinze projets d'acquisition et initiatives de la Défense nationale, lesquels devraient coûter dans chaque cas plus de 100 millions de dollars, selon les prévisions, en tenant compte des retards. Le remplacement final des vieux hélicoptères Sea King n'est pas près de se produire — au bout de près de 30 ans — parce que le ministère de la Défense n'a pas su reconnaître que la technologie exigée n'était pas encore au point. Le projet des navires de soutien interarmées a pris des années de retard par rapport à l'échéancier initial parce que selon leur conception originale, ils devaient être dotés de tellement de fonctions qu'ils étaient impossibles à construire. Le projet d'équipement intégré du soldat tire lui aussi de l'arrière parce que le cahier des charges d'Ottawa est à ce point complexe, et les règles si tatillonnées, qu'aucune entreprise n'était en mesure d'en satisfaire une seule. Le Canada est confronté à des menaces en évolution, mais les efforts visant à doter les Forces canadiennes en conséquence n'en finissent plus de faire long feu, que ce soit au plan des communications, de l'organisation ou de la vision. Cet article définit le processus d'approvisionnement de l'armée et explique brièvement les erreurs les plus flagrantes, ce qui en fait une lecture obligée pour toute personne que l'avenir des Forces canadiennes intéresse.

FOREWORD

Canadian defence procurement is a topic that is much in the news. Almost every week, there is a media report on some aspect of equipping the Canadian Forces, whether it's the Next Generation Fighter, Maritime Helicopter, Fixed-Wing Search and Rescue, or a range of other acquisitions and initiatives. Many detailed reports on defence procurement projects are produced on a regular basis, including reports of the Auditor General, reports by special advisors to government,¹ and annual reports to Treasury Board.² And within the lengthy pages of testimony from high-ranking military and government officials before the Senate Committee on National Security and Defence are first-hand accounts of the status of defence procurement projects.³

Despite the plethora of information sources pertaining to military acquisitions, it can be difficult — if not impossible — for interested Canadians to get a true sense of what the government has promised with their tax dollars, and the degree to which the promises have been delivered. This is partly because the information can be so difficult to find or interpret, and partly because it simply doesn't exist in a publicly available location. “How can the public follow and judge a government's performance in an area so complex and little known as defence [procurement] if the information picture that is presented to them is so multifaceted, incomplete or outdated?” asks *An Opaque Window*, a 2006 report by the Canadian Defence and Foreign Affairs Institute that tracked progress in 18 major military acquisitions, upgrades or organizational initiatives.⁴

The question matters on several levels: First, because only an informed voter can hold the government accountable to the commitments it has made; second, because it is imperative that Canadian Forces (CF) personnel have the tools to do the job they are asked to do by their country, including missions at home and abroad;⁵ and third, because, apart from the cost of the eventual asset, the very process of deciding what to buy is an expensive one, and should therefore be done in the most efficient manner possible.

This report provides a concise and readily understandable overall picture of some important Canadian defence acquisitions and initiatives. Covering 13 major acquisitions, one organizational initiative, and one infrastructure project, the report makes no attempt to be comprehensive in its inclusions. The intention is to add, in subsequent years, additional major acquisitions, upgrades, and organizational initiatives — and hopefully to be able to remove some due to their completion. Projects were selected because they are considered imperative for

¹ A good example is the Report of the Special Advisor to the Minister of Public Works and Government Services, *Canada First: Leveraging Defence Procurement Through Key Industrial Capabilities* (Ottawa: February 2013) (the Tom Jenkins report).

² The “Status of Major Crown Projects” component of the DND's Report on Plans and Priorities.

³ Many of these are cited below.

⁴ David J. Bercuson, Aaron P. Plamondon & Ray Szeto, *An Opaque Window: An Overview of Some Commitments Made by the Government of Canada Regarding the Department of National Defence and the Canadian Forces; 1 January 2000 – 31 December 2004* (Calgary: Canadian Defence & Foreign Affairs Institute, May 2006).

⁵ The June 2008 Canada First Defence Strategy lists six missions: Conduct daily domestic and continental operations; support a major international event in Canada; respond to a major terrorist attack; support civilian authorities in Canada for things like natural disasters; lead and/or conduct a major international operation for an extended time; and deploy forces in response to other international crises for a shorter period.

CF operations in the short to medium term, and because they are anticipated to cost more than \$100 million. This is an arbitrary threshold selected on the basis that, although lower cost acquisitions and initiatives may also be critical for operations, the public is most likely to be interested in areas of major expenditure. The projects include:

- 1) Maritime Helicopter Project (MHP)
- 2) Fixed-Wing Search and Rescue (FWSAR)
- 3) Canadian Multi-Mission Aircraft (CMA)
- 4) Joint Unmanned Surveillance Target Acquisition System (JUSTAS)
- 5) Joint Support Ship (JSS)
- 6) Arctic Offshore Patrol Ships (AOPS)
- 7) Canadian Surface Combatant (CSC)
- 8) Close Combat Vehicle (CCV)
- 9) Medium Support Vehicle System (MSVS)
- 10) Medium-to-Heavy Lift Helicopter (Chinook)
- 11) Integrated Soldier System Project (ISSP)
- 12) Canadian Space Surveillance System (Sapphire)
- 13) Protected Military Satellite Communications (PMSC)
- 14) Canadian Special Operations Regiment (CSOR)
- 15) Nanisivik Naval Facility

This report carries forward several of the projects that were covered in *An Opaque Window*, which focused on the 2000 to 2004 period. They include the PMSC, Maritime Helicopter, JSS and FWSAR projects. In addition, *An Opaque Window* discussed CP-140 Aurora Incremental Modernization, a major upgrade related to the later CMA project. The MSVS and Sapphire projects have their roots in the late 1990s, while the remaining ones date to the mid- or late 2000s. The AOPS and the Nanisivik Naval Facility have specific origins in the Conservative Party's election platform of 2005, and in the promises it made once elected in January 2006. A decision was taken to not include two of the more egregious ongoing major defence acquisitions, the Joint Strike Fighter and the Victoria-class submarines, because each could fill its own, lengthy report.

The underlying premise of this report is that there is distinct value to a reference that clearly states what commitments have been made and why, what progress has been made, what their current status is, and why it may be that stated and actual delivery dates differ. The report benefits the informed public, which should have the information to judge the government's performance and hold it accountable; parliamentarians, who should do the same; and high-level government policymakers. In terms of format, it reflects the approach adopted in *An Opaque Window*. With a few exceptions, the discussion of each acquisition or initiative includes a section on project history and requirement overview, project details, official commitments and testimony since the Harper government came to power, current status, and an estimation as to why stated commitments and current status are at a (in many cases substantial) variance.

The report uses only publicly available sources. Information in the official commitments sections is drawn from the DND's Report on Plans and Priorities (RPP), produced annually for Treasury Board; the Status Report on Major Crown Projects in the DND's Departmental Performance Review (DPR), also normally produced annually (however the last one available publicly is that of 2011-12); and testimony by high-ranking military and civilian officials before the Standing Senate Committee on National Security and Defence. All 15 projects are covered in a single Annex. Observations and conclusions are provided immediately below, before the Annex, so that the reader can see overarching findings, before looking into the details of the evidence upon which the conclusions are based.

OBSERVATIONS AND CONCLUSIONS

The first thing that jumps out when looking at the evidence below is the sheer magnitude of the problem. Almost every project detailed here is years behind the originally planned initial operational capability — not to mention the project completion (full operational capability) date. As of 1 September 2013 there has been no:

- Delivery of any compliant Maritime Helicopters, once promised to start in 2008;
- Contract award (or even Request for Proposals (RFP) released) for Fixed-Wing Search and Rescue Aircraft, originally anticipated for 2005;
- RFP issued for the Joint Unmanned (or Uninhabited) Surveillance Target Acquisition System, originally expected in 2009;
- Steel cut for the Joint Support Ship, originally targeted for first delivery in 2012;
- Design chosen for the Arctic Offshore Patrol Ship, originally promised for first delivery in 2013;
- Design chosen for the Canadian Surface Combatant to replace the navy's soon-to-be decommissioned command and control destroyers, now estimated for first delivery in 2022, rather than the original 2016/17;
- Winning bidder announced for the army's Close Combat Vehicle, originally planned for 2010;
- Delivery of any of the 1300 military-patterned vehicles that are part of the Medium Support Vehicle System, originally promised to start arriving in 2008; or
- Contract award for the Integrated Soldier System Project, at one time planned to be fielded starting in 2013.

In addition:

- Plans to replace the Aurora long-range patrol aircraft with a Canadian Multi-Mission Aircraft remain in options analysis phase, six years after the upgrade program for the original aircraft was halted;
- The first of 15 Chinook helicopters that are part of the Medium-to-Heavy Lift Helicopter project was delivered in summer 2013, rather than 2010 as originally planned;
- The Sapphire satellite that is the core of the Canadian Space Surveillance System was launched in 2013, much later than the originally anticipated 2005 to 2007 timeframe;

- Initial operating capability for the CF's Protected Military Satellite Communications capability was established in 2013, many years after the once-stated date of 2004;
- The effective strength of the Canadian Special Operations Regiment stands at about 450 troops, far smaller than the 700-strong force originally to be in place by 2009/10; and,
- The Nanisivik Naval Facility, originally expected to be fully operational by 2015, has been scaled back significantly and given a completion date of at least 2017, probably later.

Although each project is unique, there are some commonalities across projects in terms of reasons for procurement delays. Some, but not all, of the reasons can be better understood in the context of the various components of the defence procurement process. This process is mandated by the Treasury Board Secretariat (TBS) for all major defence capital acquisition projects that are administered by Public Works and Government Services Canada (PWGSC).⁶ Every project is different, and the process itself is detailed and complex. In simplified form it is essentially as follows:⁷

- (1) **Defence policy.** The prevailing defence policy sets out the broad parameters of the sorts of missions with which the Canadian Forces have been tasked. The current Canada First Defence Policy dates to 2008, but its content was largely established in the 2005-06 federal election campaign.
- (2) **Capabilities and platforms.** From the overall policy, and from an ongoing process of looking at the future security environment and potential threats, force planners in National Defence to draw up planning scenarios and identify capabilities necessary to address them.
- (3) **Statement of Requirements (SOR).** The requirements staff writes a detailed Statement of Requirements for a particular platform or capability necessary for one or more of the planning scenarios.
- (4) **Letter of Interest (LOI) or Letter of Interest (Price & Availability) [LOI (P&A)].** After the SOR is established the DND sends out Letters of Interest to industry to get a preliminary sense of whether this is a project to which industry could respond. If this is an LOI (P&A), industry is also asked if, in terms of technological maturity and production capacity, it can produce what is being asked for at an affordable price.
- (5) **Synopsis Sheet Identification (SS-ID).** The requirements staff also draws up a Synopsis Sheet Identification of the proposed project for the Treasury Board Secretariat. Based on the SS-ID, Treasury Board may or may not approve this as a new procurement project worth examining further.
- (6) **Options analysis.** If given the green light from Treasury Board, the original idea is now officially a project and it enters the options analysis phase. Additional letters of interest are sent out to industry. Industry is asked to provide a rough order of magnitude (ROM) cost of the particular platform or capability in question.

⁶ Most major infrastructure solicitations (as opposed to platform acquisitions) are managed by Defence Construction Canada, not PWGSC. This includes the Nanisivik Naval Facility.

⁷ The process is currently under review by the Treasury Board Secretariat. Results of the review have not yet been released.

- (7) **Synopsis Sheet Preliminary Project Approval (SS-PPA).** Based on feedback from the options analysis phase, Treasury Board may give Preliminary Project Approval. If so, money is now committed to set up a project office within the DND, including staff and consultants (Project Definition Phase). In addition, Treasury Board will establish a dollar amount or budget for the project, based on the ROM cost inputs, and also on the requirement for Industrial and Regional Benefits (IRBs).
- (8) **Statement of Interest and Qualification (SOIQ).** At this stage the project office might ask potential industry bidders to complete a Statement of Interest and Qualification. The SOIQ is normally only used on high-risk projects, and is essentially a questionnaire asking a company to prove in advance that it is capable of answering the eventual request for proposals (RFP). The DND, Industry Canada and PWGSC — now the lead department — will use the SOIQ to pre-qualify bidders that should receive the tender.
- (9) **Synopsis Sheet Effective Project Approval (SS-EPA).** Upon completion of the SOIQ and the identification of potential bidders, the project receives Effective Project Approval, which is essentially the go-and-buy decision. In some recent projects (for example the Integrated Soldier System Project), the SS-EPA step has been delayed until after step 11, the RFP. That is to say, the government has waited to see what proposals it gets before giving the go-and- buy decision.
- (10) **Draft RFP and Industry Day.** Before issuing a formal RFP to industry bidders, PWGSC may issue a draft RFP and then host an industry day to generate feedback.
- (11) **Request for Proposals (RFP).** Taking into account the feedback received, PWGSC issues the formal RFP. At this stage the project enters the Implementation Phase and there may be another Industry Day. Typically a formal RFP will close two to six months after issue, at which time phase one of the bid is complete and all companies wanting to bid on the project must have submitted their response to the RFP.
- (12) **Prototype.** In a relatively recent development, in some cases the bid now enters a second phase in which qualifiers must build a prototype of the platform or capability. This is a formal part of the bid evaluation.
- (13) **Decision.** Based on an assessment of the company bids and the prototypes produced, PWGSC announces the winner of the contract. If the government decides there are no compliant bids, the RFP is cancelled. The project returns to step 10, to the stage of drafting the RFP and consulting industry.

Details of the various projects examined here reveal some common reasons for delays in military procurement, and these in turn can be better understood in the context of the overall procurement process. One area where problems appear to have emerged or originated is with step 3, the Statement of Requirements. The Maritime Helicopter the DND asked for in 2004 existed only on paper, and turned out to be much more complex than was fully appreciated at the time by either the DND or the contractor. It is at the SOR stage, some industry specialists argue, that “unreality sets in”⁸ — or, at a minimum, that “requirement definitions turn into more of a ‘wish list’ [of capabilities] than an operational requirement.”⁹ There were also

⁸ Interview with defence contractor, Ottawa, 16 August 2013.

⁹ Admiral (retired) Ron Buck, “Blue Ribbon Panel for Defence Procurement,” *Frontline Defence* 2 (2013), 8.

situations where the original SOR did not fully reflect what was required in the end product and this in turn created delays. For example, Treasury Board approved the Medium-to-Heavy Lift Helicopter (Chinook) project in 2006, but a 2010 report of the auditor general found that the DND added on several mandatory requirements at a later date, causing a delay in the helicopter delivery.¹⁰ Similarly, additional armor was added to the military-pattern vehicle component of the MSVS project that was not reflected in the original SOR, leading to increased costs and project delay. “There is a clear need for a challenge function for establishing operational and technical requirements,” beyond what currently exists in the Vice-Chief of the Defence Staff office within the DND.¹¹

The options analysis phase, step 6 here, can also be challenging. This is the case even if the SOR is well written. With the growing number of technological choices, addressing a capability goal is no longer a matter of assessing a one-for-one platform replacement. For example, despite its title the Fixed-Wing Search and Rescue project might fulfill the assigned capability requirement by focusing on a certain number and type of fixed-wing aircraft, or on a mix of aircraft and other assets that can also contribute to search and rescue, such as unmanned aerial vehicles. Similarly, in the context of the CMA project, it might be possible to fulfill the maritime patrol function currently carried out by Aurora long-range patrol aircraft, by using a mix of manned aircraft and unmanned aerial vehicles. Logically, these considerations also come into the equation for the options analysis phase of the JUSTAS program, with the added aspect here that satellites might also fulfill some of the surveillance requirements. Advanced military (or dual-use civilian) technology has created new opportunities and choices that, while welcome, have also made the options analysis stage increasingly complex.

A third problem area is in step 7, the Preliminary Project Approval by Treasury Board, specifically with respect to the ROM costs. Estimated costs are an outcome of the options analysis phase and essentially become set in stone with the PPA. “When government decides on a major defence procurement,” writes a former Vice-Chief of the Defence Staff, “a dollar amount is established very early and it is almost impossible to subsequently increase, even though when set, the budget has not been in any rigorous way validated.”¹² This was a factor, for example, in the delay in the Joint Support Ship program. The original SOR included three capability areas (supply and fuel replenishment, sealift, and offshore command and control), two more than the auxiliary oil replenishment ships the Joint Support Ships are to replace. As a quite different platform from its predecessor, the JSS was difficult to fully and accurately cost in advance, with the result that bid responses to the original JSS RFP were significantly higher than the established budget. Clearly, there should be a stage at which a reassessment of costs can be submitted to Treasury Board and renewed project approval given (or denied).

¹⁰ Office of the Auditor General, *Report of the Auditor General of Canada to the House of Commons: Chapter 6 - Acquisition of Military Helicopters* (Ottawa: OAG, Fall 2010), para 6.56

¹¹ Buck, 8.

¹² *ibid.*, 9.

The evidence below also points to the interdepartmental nature of the military procurement process as a factor in project delays. While the project office is set up within the DND, almost from the beginning two other departments, Industry Canada and PWGSC, are involved and have full veto powers. At a certain stage the procurement moves beyond the DND entirely. But even when it comes to the SOR, ostensibly a DND responsibility, Industry Canada is involved to ensure IRBs, while PWGSC is involved from the contracting perspective. All three aspects are certainly necessary. As one analyst notes, “The government is not going to allow [defence] to spend billions of taxpayers’ dollars without some economic benefit to Canada.”¹³ That said, having one Minister in charge of all three aspects of a military procurement could somewhat streamline the process.¹⁴

Some of the projects discussed here have been delayed because the government cancelled the original RFP after finding no compliant bidders. This was the case with both the Close Combat Vehicle and the Integrated Soldier System Project (and also JSS and MSVS, but those were due specifically to budgetary issues). PWGSC has a strict set of rules it follows when awarding a contract. A major project may have thousands of specific requirements, every single one of which must be met; failing just one will cause a bid to be rejected. In the case of CCV and ISSP all bidders were rejected, not due to cost but because of other reasons, some of which were relatively inconsequential. The intent is to protect taxpayer money that is spent on the actual asset, minimize risk, and ensure the system is not manipulated. But the result may be to throw out what are otherwise very strong bids and end up with nothing after years of taxpayer-funded bureaucratic expenses. A recently instituted pilot process of allowing defence firms to repair minor bid infractions may go some way towards addressing this concern.

Two related and overarching concerns about Canadian defence procurement are that there is no single point of accountability and little sharing of risk. There are three federal departments involved in military procurement, none with overriding authority. A major procurement can go through all 15 steps and still be cancelled by the government with no one responsible for the project going off-track, and no reimbursement to contenders who have met the SOIQ and then spent millions of dollars responding to the RFP (phase one of the bid) and on building a prototype (phase 2 of the bid). The move to a prototype end phase is an understandable response to the Maritime Helicopter debacle, as is the government’s current aversion to risk. Nonetheless, if it is considered important for Canada to have a defense industrial base, both to promote technological expertise and to ensure our country is not entirely dependent on others to equip the Canadian Forces, then a greater sharing of risk between industry and government at the latter stages of the procurement process is imperative.

¹³ J.C. Stone, *A Separate Defence Procurement Agency: Will it Make a Difference?* (Toronto: Canadian International Council Strategic Studies Working Group, February 2012), 9.

¹⁴ *ibid.*, 12.

ANNEX: PROJECTS AND COMMITMENTS

1. MARITIME HELICOPTER PROJECT (MHP)

Project history and requirement overview

Maritime helicopters operate off of Canada's frigates and destroyers. They are critical operational and logistical assets. Operationally they significantly increase a ship's maritime surveillance and interdiction capability by extending its range of view outward, well beyond the horizon; logistically they are used almost daily to transport forces and cargo back and forth between ship and shore. Canada's *Sea King* helicopters have performed these roles since they were acquired in the 1960s.

In 1986 the Mulroney government launched a replacement process for a new maritime helicopter. This resulted in a 1992 contract to purchase the EH-101 helicopter, but when the Chretien government was elected the following year it cancelled the contract. Only a year after that, in its 1994 Defence White Paper, the government stated that the Sea Kings were "rapidly approaching the end of their operational life," and that planning would start immediately to get a new aircraft in place by the end of the decade.¹⁵ The acquisition process re-restated in 1995 as the Maritime Helicopter Project, and over the next five years National Defence conducted options analysis. At a 2000 news conference former Minister of National Defence Art Eggleton announced the government had given the DND approval to proceed with the replacement process.¹⁶ Originally the project was divided into two competitions, one for airframe and one for mission systems, but this changed in 2002 when the government decided to hold a single competitive process for the entire aircraft. The number of aircraft was set at 28, two manufacturers were deemed compliant, and Sikorsky International Operations Incorporated won the contract.

In late 2004, Ottawa signed a contract with Sikorsky specifying that the company would deliver one aircraft per month beginning in November 2008. But in early 2008 Sikorsky formally advised the government of a delay in the planned delivery date. The contract was amended, this time breaking the delivery into a tiered schedule of up to 19 interim aircraft beginning November 2010, and 28 fully compliant aircraft starting in June 2012. In June 2010 there was a second contract amendment, this time allowing for delivery of six interim aircraft with a "preliminary version of the mission software."¹⁷ The first interim helicopter arrived in Shearwater in 2011, and three more in 2012. Canadian Forces personnel have been training with the aircraft, but they remain under Sikorsky title and control. The government will not take delivery of the aircraft until all requirements are met, something which has proved elusive. In summer 2012 then-Defence Minister Peter MacKay declared the Cyclone to be the worst procurement in Canadian history, while the following spring PWGSC commissioned an independent evaluation of whether it would ever be possible for Sikorsky to deliver a compliant aircraft. By summer 2013 the government had begun to look at alternative helicopters by rival aircraft makers.

¹⁵ 1994 Defence White Paper (Ottawa: Government of Canada, December 1994), 46-47.

¹⁶ Bercuson et al., p. 27.

¹⁷ "Maritime Helicopter Project: Status," *DND Fact Sheet*, 25 February 2013.

Project details

The purpose of the Maritime Helicopter Project is to replace Canada's existing Sea King helicopters with a fleet of 28 new maritime helicopters. These are to be the CH-148 Cyclone helicopter built by Sikorsky (Connecticut), with the onboard mission system being developed by General Dynamics Canada (Ottawa). Additional details on this project as of the end of 2004 can be found in *An Opaque Window*.¹⁸

Official commitments and testimony

2006-2007 DPR: States first delivery will be January 2009.

2007 Senate testimony: The first Cyclone will arrive in early 2009 and the Sea King will be phased out two or three years after that.¹⁹

2008-09 DPR: States first delivery will be November 2010.

2009 Senate testimony: Confirms first delivery for November 2010.²⁰

2009-10 DPR: States first delivery of Interim Maritime Helicopter will be in 2010; first delivery of Compliant Maritime Helicopter will be in 2012.

2010-11 DPR: States project focus is shifting from design and engineering to operational testing and evaluation.

2011-12 DPR: States first delivery of an aircraft is contractually required by 2012, but that "the delivery of fully capable helicopters is now expected to occur in 2013."

2012 Senate testimony: "I expect to see [the Cyclone] helicopters arriving in an interim capability this year [2012] and in 2013 and 2014."²¹

Mar 2013 Senate testimony: "We have four helicopters in Shearwater. I am being told it is still a matter of days or weeks until we will be able to use them for training. I am confident that this is coming."²²

2013-14 RPP (p. 38): States will continue to progress the Maritime Helicopter Project.

¹⁸ Bercuson et al., 27-30.

¹⁹ Lieutenant General (retired) Steve Lucas, then-Chief of the Air Staff, testimony before the Standing Senate Committee on National Security and Defence, 26 February 2007.

²⁰ Dan Ross, then-Assistant Deputy Minister Materiel, testimony before the Standing Senate Committee on National Security and Defence, 25 May 2009.

²¹ Vice Admiral (retired) Paul Maddison, then-Commander of the Royal Canadian Navy, testimony before the Standing Senate Committee on National Security and Defence, 27 February 2012.

²² Lieutenant General Yvan Blondin, Commander of the Royal Canadian Air Force, testimony before the Standing Senate Committee on National Security and Defence, 25 March 2013.

Explanation of variances

The significant delays in (and perhaps cancellation of) this project are due to a combination of the contractor committing to more than was technologically possible to deliver, and the DND not being fully aware of both the technological complexity of the helicopters it was asking for and the degree to which the technology was in developmental status. The aircraft is the first military and naval variant of Sikorsky's S-92 Cyclone civilian helicopter. At the time of contract award, it existed only on drawing boards and was expected to go from there to operational use within four years, an ambitious endeavour for "an aircraft that never existed before."²³ A fall 2010 report by Canada's Auditor General found that National Defence did not adequately assess the developmental nature of the aircraft and the complexity of the required technical modifications.²⁴ An independent PWGSC evaluation in spring 2013 similarly determined that, while in 2004 the government thought it was buying an off-the-shelf product, in fact what was being asked for was a state-of-the-art aircraft involving advanced technology. It therefore should have been treated as a developmental program.²⁵

Status as of 1 September 2013

As of 1 September 2013 the air force has not taken delivery of the interim maritime helicopters. It is possible the entire project will be cancelled and restarted. Under a two-track process the air force has begun to look at other options for a Sea King replacement, while remaining in talks with Sikorsky to deliver compliant interim aircraft.²⁶

2. FIXED-WING SEARCH AND RESCUE (FWSAR)

Project history and requirement overview

Fixed-wing search and rescue aircraft are necessary to provide immediate assistance in distress cases anywhere in an 18 million square kilometre Canadian search and rescue (SAR) area of responsibility. Since 1947, the Canadian military has been the lead agency responsible for SAR in Canada, working in conjunction with the Canadian Coast Guard, the RCMP, and provincial and territorial governments. Military search and rescue operates from four bases across Canada — Greenwood, Trenton, Winnipeg and Comox — using a mix of six Buffalo and 13 C-130 Hercules aircraft. Well-suited to mountainous terrain, all six Buffalo are stationed in Comox.

²³ Office of the Auditor General, 2.

²⁴ *ibid.*, para 6.33.

²⁵ Kathleen Harris, "Cyclone Helicopter Contract Revisions Urged by Report," *CBC News*, 4 September 2013.

²⁶ Alison Auld, "Future of Choppers up in the Air: DND," *Ottawa Citizen*, 6 September 2013.

A persistent issue for military search and rescue over the past decade has been the age of the assets dedicated to this mission. The Buffalos were purchased in 1967, while the H-model Hercules used for SAR are more than 20 years old. (The E-model Hercules, which first entered service in 1960, have, as of 2012, been replaced with 17 new C-130J Hercules for overseas missions.) Time spent on maintenance, and the difficulty of finding spare parts for the Buffalo, have inevitably reduced the availability of aircraft. In 2013 Canada's Auditor General declared Canada's search and rescue aircraft to be at the breaking point.²⁷

New search and rescue aircraft have been on the books for some time. In 2003 then-Chief of Defence Staff General Ray Henault announced it as an equipment priority, while in 2004 the Liberal government said it was fast-tracking the project and would go to industry later that year to begin the competition process for 15 FWSAR aircraft.²⁸ The idea was to award a contract by summer 2005, but by the time the government changed there was not yet an RFP. The election of the new Conservative government in January 2006 coincided with an increased Canadian commitment to Afghanistan, which had the effect of pushing aside procurement projects not related to the Afghan operation.

In 2009 former Defence Minister MacKay announced plans to fast-track the purchase of up to 17 C-27J search and rescue aircraft under an Advance Contract Award Notice, where a preferred aircraft is identified and firms are given 30 days to make a counter proposal. But other government departments, objecting to the possibility of a sole-source purchase that may not ensure maximum Canadian industrial benefits, blocked the approach.²⁹ The government changed its approach in mid-2009, inviting industry to come up with solutions for a cost-effective search and rescue capability. These proposals were reviewed in early 2010. Since then the capability has continued to be in the project definition phase. In response to the 2013 OAG report National Defence stated that FWSAR remains a high priority³⁰ — but a list of new initiatives to improve Canada's search and rescue system, announced by MacKay in May 2013, did not include replacement aircraft.³¹

Project details

The aim of this project is to replace the military search and rescue capability currently being provided by Buffalo and Hercules aircraft. This involves aircraft that can fly from one of the four current SAR bases to undertake a search for a minimum of one hour, before having to return to an airfield. In the past there has been mention of up to 17 aircraft, all of the same type, as opposed to a mix of fleets. A recent draft RFP does not mention aircraft type or numbers. Additional details on this project as of the end of 2004 can be found in *An Opaque Window*.³²

²⁷ Office of the Auditor General, *Report of the Auditor General of Canada to the House of Commons: Chapter 7 – Federal Search and Rescue Activities* (Ottawa: OAG, Spring 2013).

²⁸ David Pugliese, "Afghan War Leaves Forces Unable to Buy New Rescue Planes," *Ottawa Citizen*, 26 April 2007.

²⁹ David Pugliese, "Canadian Defense Minister To Seek OK for SAR Planes," *Defense News*, 23 March 2009, 6.

³⁰ "DND Response to Chapter 7 of the Spring 2013 Report of the Auditor General of Canada," *DND Statement*, 30 April 2013.

³¹ "Ministers MacKay and Findlay announce New Initiatives to Improve Canada's Search and Rescue System," *National Defence News Release*, 2 May 2013.

³² Bercuson et al., 35-36.

Official commitments and testimony

Dec 2005 Conservative Party platform: States a Conservative government will station new fixed-wing search and rescue aircraft in Yellowknife.³³

2006-07 RPP (pp. 24 & 46): “High priority will be given to...Fixed-Wing Search and Rescue capabilities...The project is currently in pre-definition phase.”

2007 Senate testimony: “The Buffalo is scheduled to leave service in 2010...we will not get there by 2010. We have to extend the life of the Buffalo.”³⁴

2008 CFDS (p. 4): States the government will replace the Forces’ core equipment fleets, including 17 fixed-wing search and rescue aircraft.

2008 Senate testimony: The air force is at the point of determining solid specifications for the replacement aircraft to take to government for approval. The project is in the pre-definition stage.³⁵

2008-09 RPP (p. 58): “It is intended that this project proceed into its definition phase as soon as possible and may be ready for approval in 2008. Delivery...will begin by fiscal year 2014-2015.”

2009 Senate testimony: On fixed-wing search and rescue aircraft, “We are about ready to go as soon as there is a consensus on how to proceed.”³⁶

2009-10 RPP (p. 22): States fixed-wing search and rescue aircraft as a planned acquisition.

2009-10 DPR: States the FWSAR project will enter the project definition phase as soon as preliminary project approval is received from Treasury Board.

2010 Senate testimony: With respect to acquiring FWSAR aircraft “the latest development is that Defence and Research Development Canada and NRCan have looked at the requirements and validated them. People are poring over the report right now.”³⁷

2011-12 DPR: The FWSAR received Treasury Board expenditure authority and entered project definition stage in March 2012. The contract is expected to be awarded 2015; delivery of first aircraft 2017.

2012 Senate testimony: Fixed-wing search and rescue aircraft, “out of necessity, have to be replaced.”³⁸

³³ “Harper Stands Up for Arctic Sovereignty,” *Conservative Party News Release*, 22 December 2005.

³⁴ Lucas, 26 February 2007.

³⁵ Lieutenant General (retired) Angus Watt, then-Chief of the Air Staff, testimony before the Standing Senate Committee on National Security and Defence, 2 June 2008.

³⁶ Robert Fonberg, then-Deputy Minister of National Defence, testimony before the Standing Senate Committee on National Security and Defence, 25 May 2009.

³⁷ General (retired) Walt Natynczyk, then Chief of Defence Staff, testimony before the Standing Senate Committee on National Security and Defence, 7 June 2010.

³⁸ Peter MacKay, then-Minister of National Defence, testimony before the Standing Senate Committee on National Security and Defence, 30 April 2012.

2013 Senate testimony: “We have the fixed-wing search and rescue airplane program going on. It has taken longer than we would have wanted. It is into the definition phase... We expect to go into requests for proposals in 2014.”³⁹

2013-14 RPP (p. 38): States Defence will continue to progress the FWSAR project.

Explanation of variances

The spring 2013 OAG report on Federal Search and Rescue Activities recommends National Defence give priority to the acquisition of FWSAR. But it does not explain why the contract award has not taken place, despite the fact that it has been a stated high-priority acquisition on the part of Defence for a decade. At least part of the delay can be attributed to the fact that planners were working from a blank sheet of paper when drawing up the initial statement of requirement; no aircraft had ever been bought in Canada specifically with FWSAR in mind (the Hercules, for example, morphed into the role). Another factor may have been an early focus on a specific aircraft, rather than a capability. In 2010 the National Research Council was tasked to conduct an independent review of the original 2004 SOR; a key recommendation was that it should reflect a capability-based approach instead of a platform-centric one.⁴⁰ In 2013 testimony the Commander of the RCAF stated that in previous years the requirement was specified too precisely as to how many aircraft, etc., were necessary for search and rescue. “Instead of saying we need so many airplanes and this is what the airplanes need to do, we need to say in general what we need to be able to do.”⁴¹ The new draft RFP has accommodated these concerns by not specifying a number of aircraft or even that the capability has to be composed of one type of aircraft (i.e., it can be a mixed fleet).

Apart from the SOR, process has also been an issue. Former Defence Minister MacKay has pointed to the complex nature of the procurement process in Canada, which involves many government departments, including Industry and Public Works.⁴² A former FWSAR project officer points out that the VCDS signed off on the SOR many years ago, but once the procurement documentation went beyond the DND and PWGSC, other influences became involved that slowed the process. This “inter-departmental anchor was dragged by the project for several...years until the project lost steam and others rose higher on the priority list.”⁴³

Status as of 1 September 2013

FWSAR is in the definition phase. A draft RFP has been released, with comments due back from industry in October 2013. Contract award is expected in 2014-15 and delivery will not be before 2017.

³⁹ Blondin, 25 March 2013.

⁴⁰ Peter Pigott, “The Sorry Saga of FWSAR,” *Frontline Defence* (Issue 2, 2013), 25.

⁴¹ Blondin, 25 March 2013.

⁴² “MacKay Announces ‘Quadrennial’ Review of Search-and-Rescue System,” CTV News, 2 May 2013.

⁴³ Colonel (retired) Pat Dowsett, “Fixed Wing SAR: Defending the SOR,” *Frontline Defence*, Issue 3 (2013), 23.

3. CANADIAN MULTI-MISSION AIRCRAFT (CMA)

Project history and requirement overview

Purchased by the Trudeau government in 1980 as a platform for anti-submarine warfare, Canada's Long-Range Patrol Aircraft, the Aurora, is critical for Canadian sovereignty missions and has also been used in overseas operations. The Aurora is the primary maritime surveillance aircraft for our vast ocean approaches. It conducts missions up and down the east and west coasts on a regular basis, and also flies over the Arctic. In 1998 Canada launched the Aurora Incremental Modernization Project to extend the life of our 18 Auroras to about 2025 with structural and technology upgrades. An important consideration was to make the aircraft relevant to the broader range of post-Cold War security situations. The project therefore included imaging radar to give the aircraft a Ground Moving Target Indicator capability, enabling it to collect surveillance imagery over land and littoral (coastal) areas, in addition to traditional maritime surveillance. Canada deployed Auroras to the NATO mission in and around Libya in 2011. Whereas at first the aircraft conducted traditional maritime patrols, as the conflict continued the air force started using them to help direct naval gunfire against ground positions. Details on the CP-140 Aurora Incremental Modernization project as of the end of 2004 can be found in *An Opaque Window*.⁴⁴

In September 2007, on the recommendation of the Canadian military, the government temporarily halted the modernization project. Structural concerns were larger than expected and, it was argued, the technology upgrades would be out of date as soon as they were complete. Rather than spending additional money on modernizing Cold War-era aircraft it was thought better to fly them in their existing condition, while proceeding sooner rather than later with a replacement plane, the CMA. By the end of 2007, the decision had been taken to halt the upgrades on eight aircraft while continuing upgrades on the remaining 10, and beginning the process of acquiring a replacement aircraft. Money was set aside for this purpose.⁴⁵ Possible contenders were seen as the US Navy's Poseidon maritime aircraft built by America's Boeing, or, Britain's (smaller) ASTOR surveillance aircraft built by Canada's Bombardier. Because the eight non-upgraded aircraft were to be removed from the flight line by 2015, analysts at the time indicated the process of procuring a new maritime patrol plane should start in 2008 or at latest 2009. Not until 2012 did the project move into the options analysis phase.

Official commitments and testimony

2008 CFDS (p. 4): States the government will replace the Forces' core equipment fleets, including 10 to 12 maritime patrol aircraft.

2008 Senate testimony: Points out that although the Aurora aircraft have gone through a modernization program, they would run out of fatigue life on the structure. A new project has been started to define the mandatory capabilities of a replacement aircraft, which will be delivered in 2020.⁴⁶

⁴⁴ Bercuson et al., 47-51.

⁴⁵ Ken Pole, "Commander Interview: Canadian Skies Connects with RCAF Commander Lieutenant General Blondin," *RCAF Today* (2013), 18.

⁴⁶ Watt, 2 June 2008.

2009-10 RPP (p. 22): States Maritime Patrol Aircraft as a planned acquisition.

2010-11 RPP (p. 23): Does *not* include Maritime Patrol Aircraft as one of the major project acquisitions planned or underway.

2011-12 RPP (p. 33): Does *not* include Maritime Patrol Aircraft as one of the major project acquisitions planned or underway.

2012-13 RPP (p. 44): Lists Canadian Multi-Mission Aircraft as a project that will support CFDS objectives.

2013-14 RPP (p. 38): States Defence will continue to progress the Canadian Multi-Mission Aircraft.

Explanation of variances

Delays in the Aurora replacement appear to be the result of a combination of money and the challenges — and opportunities — of defining the requirement in the face of new technologies. On the funding aspect, the 2008 recession, the massive government stimulus that followed, and now the need for cutbacks to reduce those debts incurred, have inevitably had an impact. “Five years ago we went quickly into trying to figure out what we’d need for the future and identify all those requirements,” the commander of the RCAF relates, “When money gets tighter, you tend to look a lot more at whether there are other options — and that’s not bad.”⁴⁷

Advanced technologies are increasing the range of options. Rather than an entire fleet of new large manned aircraft, each requiring about 15 crew members, it may be possible to fulfill the capability with a mix of unmanned aerial vehicles for ground and maritime surveillance, and a smaller number of large manned aircraft acting as a sort of “mother ship” on surveillance missions. This is one option the RCAF is looking at, along with pushing the 10 upgraded Auroras “to the right” and keeping them flying until 2025.

Status as of 1 September 2013

The Canadian Multi-Mission Aircraft remains in the preliminary definition stage. The VCDS has not signed off on a statement of requirement.

⁴⁷ Blondin, as quoted in Pole, 18.

4. JOINT UNMANNED SURVEILLANCE TARGET ACQUISITION SYSTEM (JUSTAS)

Project history and requirement overview

With thousands of square kilometers of uninhabited northern areas, and lengthy coasts on three oceans, carrying out maritime and territorial surveillance and control is a huge undertaking for Canada. Not surprisingly, the air force is looking at medium-altitude long-endurance unmanned aerial vehicles (UAVs) as a means of making the task more manageable. In 2005 the air force began work on a JUSTAS program calling for the acquisition of a fleet of medium-altitude UAVs by 2010.⁴⁸ As part of its 2005 election campaign, the Conservative Party said if elected, it would station new long-range UAV squadrons at CFB Goose Bay and CFB Comox for eastern and western Arctic air surveillance.⁴⁹ In mid-2006 there was reference to the acquisition of a fleet of 18 drones,⁵⁰ but in 2007 a DND plan to sole-source purchase America's well-known Predator UAV was reportedly stopped by the government in favour of holding a competition.⁵¹ In September 2008 DND and PWGSC released a letter of interest to industry outlining a project to acquire UAVs,⁵² and a request for proposals was to be released by the end of 2009 for the acquisition of 18 UAVs.⁵³ This has yet to happen.

Project details

This project is to deliver a medium-altitude long-endurance unmanned aircraft system that meets the objectives of the Canada First Defence Strategy, including domestic and international operations. It is driven by three requirements:

- (1) To conduct long-range surveillance patrols over the Arctic;
- (2) To assist in maritime patrol along the east and west coasts out to 1,000 miles at sea, including in support of search and rescue. Here JUSTAS platforms would augment Aurora Long-Range Patrol aircraft and their eventual replacement (the Canadian Multi-Mission Aircraft); and
- (3) To support troops on overseas operations, including the range of missions from warfighting to humanitarian assistance.

Of the three areas, the RCAF considers the ability to carry out Arctic patrols as the "first and foremost" capability requirement. Although surveillance is of primary importance, the RCAF would like the drone to have some payload capacity, including the ability to carry and drop a

⁴⁸ David Pugliese, "Canada Shapes Plan for UAV Buy," *Defense News*, 5 December 2005.

⁴⁹ "Harper Stands Up for Arctic Sovereignty."

⁵⁰ Bruce Champion-Smith, "Drones on Military Wish List," *Toronto Star*, 4 July 2006.

⁵¹ David Pugliese, "Tories Kill Sole-Source DND Contract," *Ottawa Citizen*, 20 April 2007.

A sole-source purchase would have been the most expeditious way to deploy UAVs to Afghanistan, a critical requirement to support our troops. The 2008 Report of the Independent Panel on Canada's Future Role in Afghanistan (the Manley Panel) stated the acquisition of medium-altitude UAVs as a prerequisite for Canada's continued participation in the combat mission in Afghanistan. The resulting project NOCTUA, involving the lease of Heron UAVs on an interim basis, was separate from the long-term ISR solution that the JUSTAS program addresses.

⁵² David Pugliese, "Afghanistan Combat to Help Shape Canadian Budget," *Defense News*, 22 September 2008, p. 20.

⁵³ David Pugliese, "Canada Plans Long-Range UAV Fleet," *Defense News*, 16 February 2009, p. 20.

search and rescue package when patrolling the Arctic, and the ability to carry weapons in an overseas warfighting environment.⁵⁴ The overall idea is for a UAV that is flexible and can undertake many sorts of missions. Reports indicate the UAV must be able to transit 1,000 nautical miles, loiter for 12 hours at a time, and return to base. Other requirements include an overland capability to track targets as small as humans, and a maritime surveillance capability that can track ships along the coasts.

Official commitments and testimony

Jun 2008 CFDS: Does not mention joint unmanned aerial vehicles.

2008-09 RPP (p. 58): “The JUSTAS project will bring the CF a fleet of medium-altitude UAVs capable of overland operations in Canada and abroad. The project is aiming to deliver an initial operational capability in 2011.”

2011-12 DPR: The project is in options analysis stage. All major milestones, including project approval, contract award and aircraft delivery date are designated as “to be determined.”

Mar 2013 Senate testimony: JUSTAS is at the options analysis stage. The air force is looking at what platforms are available, and is trying to define exactly what is required for the future.⁵⁵

2013-14 RPP (p. 38): States Defence will continue to progress the Joint Unmanned Surveillance and Target Acquisition System.

Explanation of variances

Whereas at one time UAVs were anticipated by 2010, to date their acquisition is not on the horizon. In addition, the former MND has acknowledged funding from air force and navy activities had to be redirected to the Afghan war effort.⁵⁶ There is also a lack of clarity as to which service will own the capability, and therefore who will pay for it, contributing to delays. The longer-term issue is the statement of requirement and the fact that with advanced military technology — especially joint technology relevant to two or more services — it can be difficult to draw neat lines between platforms and the capability that they address. The proposed UAV fleet is closely linked to the Canadian Multi-Mission Aircraft project because some of the surveillance missions carried out by long-range patrol aircraft could, in the future, be conducted by long-endurance UAVs. In addition, satellites could fulfill some of the UAV surveillance requirements.

Thus a clear-cut solution is not as readily apparent as first may be thought. In 2007 the program was delayed while military and government officials worked out the country’s long-term intelligence, surveillance and reconnaissance (ISR) requirements, and in 2011 the RCAF launched a holistic review of its ISR requirements, trying to determine the right combination of UAVs, LRPAs and satellites.⁵⁷

⁵⁴ Blondin, 25 March 2013.

⁵⁵ *ibid.*

⁵⁶ Pugliese, 22 September 2008, 20.

⁵⁷ David Pugliese, “Canada’s Air Force Seeks Right Mix of ISR Assets,” *Defense News*, 19 December 2011, p. 16.

Status as of 1 September 2013

The program remains at the options analysis stage.

5. JOINT SUPPORT SHIP (JSS)

Project history and requirement overview

The Joint Support Ship project aims to replace Canada's two Auxiliary Oil Replenishment (AOR) ships, commonly referred to as supply ships, which are used to replenish naval task groups at sea both with fuel and other supplies. The AORs were commissioned in the late 1960s (at one time there were three) and the DND first began planning for a replacement Afloat Logistics Sealift Capability (ALSC) in the late 1980s. In the early 2000s the ALSC was renamed the Joint Support Ship project because of the decision to integrate capabilities beyond naval refueling and replenishment. Influenced by the 1990s experience of projecting naval power onto land (beginning in Bosnia and then in Kosovo), and also by Canada's lack of military sealift capability, the new JSS project was more ambitious than the old ALSC. It sought to integrate three capabilities: (1) refueling and resupply; (2) a command and control function for directing forces ashore; and (3) sealift for ground forces and their equipment. There was also to be room for three or four maritime helicopters on deck. The initial plan was to purchase three JSSs. Additional details on this project as of the end of 2004 can be found in *An Opaque Window*.⁵⁸

This vision survived the early 2006 change in government. The DND announced an RFP to select two industry teams for a project definition phase incorporating all three capabilities, stating that "based on these plans, one team will be selected to build the three ships, with delivery of the first ship targeted for 2012."⁵⁹ Two teams were awarded a contract in late 2006, and were given until spring 2008 to complete a proposal covering the design and building of the ships, and long-term in-service support. But both bids came in higher than the established budget, largely as a result of the ambitious scope of capabilities the ships were to include, but also because of a large increase in the price of steel. In summer 2008 the government rejected both bids. By summer 2009 the navy had completed a scaled-down redefinition of requirements, but the JSS procurement process was put on hold again pending an overall strategy for shipbuilding in Canada.

In summer 2010 the government announced the launch of a National Shipbuilding Procurement Strategy (NSPS). As part of the strategy, it issued an RFP to identify two shipyards to build several classes of ships. One shipyard would build combat ships (the Arctic/Offshore Patrol Ships and the Canadian Surface Combatant), while the other would build the non-combat vessels (the JSS and a Coast Guard icebreaker). An inter-departmental NSPS office was established to evaluate the bids. The winners were announced in October 2011: Irving Shipbuilding in Halifax for the combat ship and Seaspan Shipyards in Vancouver for the non-combat vessels.

⁵⁸ Bercuson et al., 30-32.

⁵⁹ "Canada First" Defence Procurement – Joint Support Ship," *National Defence Press Release*, 26 June 2006.

The final piece of the puzzle was to pick a supply ship design, one which maintained the refuel and resupply component in its entirety, while scaling back the sealift and support to forces' ashore components in order to ensure affordability. Design work on the desired JSS had continued within the navy, with a particular focus on whether it would go with a Spanish or German design — this time off-the-shelf. Rather than buying three ships, the contract would now be for two, with the option for a third.⁶⁰ Following an in-depth inter-departmental assessment based on operational capability, cost and risk, in June 2013 the government announced it had selected the Berlin-class ship design offered by ThyssenKrupp Marine Systems Canada.

Official commitments and testimony

2006-07 RPP (p. 23): “Starting in 2012 the first Joint Support Ship (JSS) will be delivered as a replacement to the Protecteur-class replenishment vessels.”

2007 Federal Budget (p. 253): “The procurement of major equipment has progressed with the approval and announcement of the acquisition of joint support ships, a medium-sized logistics truck fleet [and] medium-to-heavy lift helicopters.”

2007 Senate testimony: “In December 2006, two contracts were awarded for the next phase of development work...we will stand up a small team this summer [2007] that will focus exclusively on delivering that future class of ships. In late 2008, we will select one and provide an order to build... The lead ship will be ready by 2012, and the other two will be ready in 2013 and 2015.”⁶¹

2007-08 RPP (p. 37): Formal effective project approval will be sought in 2008.

2008 CFDS (p. 4): Restates the government has announced plans to acquire three replenishment ships.

Aug 2008: The government announces the termination of the procurement process to acquire three Joint Support Ships. After receiving and evaluating the bids against the criteria, it was determined the proposals were not compliant with the RFP.⁶²

2008-09 RPP (p. 57): States the intention is to deliver the first vessel in 2012, and that formal effective project approval will be sought in 2008.

2009 Senate testimony: “We will have a Joint Support Ship. We went out with a budget and certain specifications...the pricing came in at a significant premium over that. We do not have that space in the budget, so we are looking at the capabilities associated with that platform.”⁶³

2009-10 RPP (p. 21): “[T]he government...has announced *possible* plans to acquire...replenishment ships (emphasis added).”

⁶⁰ “Government of Canada to Acquire New Joint Support Ship,” *National Defence Press Release*, 14 July 2010.

⁶¹ Vice Admiral (retired) Drew Robertson, then-Chief of the Maritime Staff, testimony before the Standing Senate Committee on National Security and Defence, 26 February 2007.

⁶² As stated in the DND's 2010-11 Departmental Performance Report.

⁶³ Fonberg, 25 May 2009.

2009-10 DPR Estimates (p. 22): Procurement plans for the JSS have been re-evaluated and work continues on attaining preliminary project approval.

2010-11 DPR: The JSS project will acquire two new support ships, with the option for a third if additional funding is found. This is the first formal statement that purchasing three ships may not be possible. Anticipates project approval by September 2013; first ship delivery to be in spring 2017.

Oct 2011: NSPS secretariat announced Vancouver Shipyards would build the JSS.

DPR 2011-12: First JSS expected to be delivered in 2018.

Feb 2013 Senate testimony: The Joint Support Ship is in project definition phase and is being advanced within the framework of the National Shipbuilding Procurement Strategy. The hope is the first JSS will be delivered in 2017 and the second shortly after, so that both replenishment ships will be at sea by the end of the decade.⁶⁴

Mar 2013 Senate testimony: The Joint Supply Ship is in its definition stages.⁶⁵

2013-14 RPP (p. 38): States Defence will continue to progress the Joint Support Ship.

Explanation of variances

A major factor behind the delay in the JSS program was the large number of requirements the navy attempted to integrate into a single platform. In combining refueling and supply, the AORs were already a unique platform. Most navies have separate refueling and supply ships. The JSS as originally conceived would have gone a step further, combining the AOR functions with still two more, sealift and command and control ashore. Such a ship only existed in the minds of Canadian officers — there is no such ship currently in existence. It was an ambitious vision that could not be achieved within the established budget.

Status as of 1 September 2013

A JSS design and a shipyard to produce the ship have been chosen. Once ThyssenKrupp Marine Systems Canada has prepared the design package, the government will give it to Vancouver Shipyards to develop it into a production-ready state. A contract for construction is expected to be in place by 2015, with the first JSS delivered in 2018 — but no steel has been cut.

⁶⁴ Vice Admiral (retired) Paul Maddison, then-Commander of the Royal Canadian Navy, testimony before the Standing Senate Committee on National Security and Defence, 25 February 2013

⁶⁵ General Tom Lawson, Chief of Defence Staff, testimony before the Standing Senate Committee on National Security and Defence, 18 March 2013.

6. ARCTIC/OFFSHORE PATROL SHIPS (AOPS)

Project history and requirement overview

This project has its origins in an ambitious Conservative Party pledge during the 2005-06 election to significantly boost Canada's military presence in the Arctic. Recognizing that the Canadian military has no ice-capable ships, the party said that if elected it would station three new, armed heavy naval icebreakers in Iqaluit manned with regular force personnel.⁶⁶ Despite the pledge, for more than a year after its election the new Conservative government made no mention of armed icebreakers. Faced with a pending requirement to replace the navy's AORs, as well as its destroyers, it soon became clear the purchase of military icebreakers would be unaffordable. A more feasible option was a smaller class of ice-capable patrol ships, coupled with a new polar-class icebreaker for the Canadian Coast Guard.

In summer 2007 the government announced Canada would purchase between six and eight Arctic patrol vessels. Driving forces behind the project include the melting Arctic, more navigable waterways in the summer, and the requirement for Canada to have a vessel that is at least minimally ice-capable to promote sovereignty and carry out possible enforcement missions in its Arctic Exclusive Economic Zone (EEZ). Moreover, for years Canada has needed a vessel that can do these same things off the east and west coasts: while the navy's frigates are too big and expensive to use in a sustained maritime control role, its Maritime Coastal Defence Vessels are too small to operate to the limits of the EEZ. The original project was renamed the Arctic *Offshore* Patrol Vessel or Ship, in recognition of the ship's eventual three-ocean role.

After the official announcement in 2007, substantial planning work was done within the DND to determine the ships' requirements and design. Yet the project did not progress beyond the definition phase to a request for proposals. In 2008 Minister MacKay pledged to get the various shipbuilding programs "back on track,"⁶⁷ but in 2009 the government decided to delay sending letters of intent to shipbuilders. The AOPS ultimately became part of the NSPS that was announced in 2010 and awarded in 2011. But while a decision has been made on the shipyard that will build the AOPS, there has as yet been no decision on the ship design. In 2012 the government awarded Irving Shipyards a small contract to analyze pre-existing designs, and in 2013 a much larger contract to draw up the preliminary design for a final product. Around the same time questions — as yet unresolved — began to emerge about the cost of the AOPS. At least one independent consultant report, commissioned by PWGSC, has indicated it will cost Canada significantly more for the ships to be produced by Irving Shipyards than if the navy were to purchase the vessels offshore.⁶⁸

⁶⁶ "Harper Stands Up for Arctic Sovereignty."

⁶⁷ Mike Blanchfield, "Tories Vow to Get Ship Shape in the Arctic," *Ottawa Citizen*, 16 December 2008, A12.

⁶⁸ Terry Milewski, "Ottawa Warned About Arctic Patrol Ship's High Price," CTV News, 18 September 2013.

Project details

The AOPS project is to deliver between six and eight Arctic/Offshore Patrol Ships capable of conducting armed seaborne surveillance of Canadian waters out to the Exclusive Economic Zone limit, including in the Arctic; and assisting with search and rescue and supporting other government departments. The AOPS must be able to sustain operations for up to four months at a time, have a range of 6,800 nautical miles, and be able to operate year-round in ice up to one meter thick (but not to provide icebreaking services to other ships). It is also to have a gun armament.

Official commitments and testimony

May 2007: Treasury Board preliminary project approval.

2007-08 DPR: Delivery of first ship scheduled for fall 2013.

2008 CFDS (p. 4): Restates the government has announced plans to acquire six to eight Arctic/Offshore Patrol Ships.

2008-09 DPR: States first ship will be delivered in fall 2014.

2009 Senate testimony: “Arctic/Offshore Patrol Ships are at the development stage. We are finalizing the plans. We will be coming forward with proposals. It is a unique ship we are creating.”⁶⁹

2009 Senate testimony: The first AOPS will be delivered in 2014.⁷⁰

2009-10 RPP (p. 21): “[T]he government...has announced *possible* plans to acquire...Arctic/Offshore Patrol Ships (emphasis added).”

2009-10 DPR: States the Arctic/Offshore Patrol Ship’s procurement approach was revised to align with NSPS. Delivery of the first AOPS is expected in 2014 with initial operational capability in 2015.

2010-11 DPR: Delivery of the first ship will be in 2015; initial operating capability of first ship in 2016.

2012 Senate testimony: “I would expect to see the specific contract to build the AOPS negotiated this year, such that steel would be cut in 2013 with that first ship arriving in 2015-16.”⁷¹

2011-12 DPR: Delivery of the first ship will be in 2018; initial operating capability of first ship in 2019.

Feb 2013 Senate testimony: The Arctic/Offshore Patrol Ship is in project definition phase, and is being advanced within the framework of the National Shipbuilding Procurement Strategy. Steel on the first hull will be cut in 2015 with delivery around 2018.⁷²

⁶⁹ William Pentney, then-Associate Minister of National Defence, testimony before the Standing Senate Committee on National Security and Defence, 25 May 2009.

⁷⁰ Vice Admiral (retired) Denis Rouleau, then-Vice-Chief of the Defence Staff, testimony before the Standing Senate Committee on National Security and Defence, 25 May 2009.

⁷¹ Maddison, 27 February 2012.

⁷² Maddison, 25 February 2013.

Mar 2013 Senate testimony: The AOPS is in its definition stages.⁷³

Mar 2013 Federal Budget (p. 110): Construction of Arctic/Offshore Patrol Ships will begin in 2015.

2013-14 RPP (p. 38): States Defence will continue to progress the Arctic/Offshore Patrol Ship.

Explanation of variances

The government has not offered an explanation for how the AOPS project has gone from an originally promised (2007) first ship delivery date of 2013 to a currently promised first ship delivery date of 2018, but it is likely a number of factors have come into the mix. Timelines suggest that one consideration may have been the concurrent JSS project and the government's rejection of those bids in summer 2008. It may have wanted to avoid a similar fate for the AOPS. Moreover, the JSS outcome was followed in short order by a global economic crisis that prompted massive government expenditures — in non-defence areas — to stave off recession. The NPSP ultimately sought to devise a more efficient means of delivering Canada's many combatant and non-combatant ship requirements, while at the same time ensuring maximum industrial benefits for Canada. It is still too early to determine if this will have been a successful approach. As of fall 2103 there are many questions within the press as to the high cost of the AOPS

Status as of 1 September 2013

In March 2013 the government awarded Irving Shipyards a definition contract to complete the preliminary design for the AOPS. This is expected to take about two-and-a-half years.

7. CANADIAN SURFACE COMBATANT (CSC)

Project history and requirement overview

Canada conducts most of its naval missions abroad in the context of Naval Task Groups comprised of a destroyer, a frigate, a supply ship and occasionally a submarine. It also contributes destroyers and frigates to multinational operations led by NATO and the United States. While its 12 Halifax-class frigates are relatively new — purchased in the 1990s and recently modernized with new technology — its three destroyers date to the early 1970s and will reach the end of their operational life around 2015. These ships are necessary for area air defence and to command a task group of several ships. To bridge the gap between when the destroyers are decommissioned and when a new command and control ship is operational, part of the Halifax-class upgrade has involved giving the frigates a command and control capability (it is not possible to give them a commensurate area air defence capability). Ultimately, however, both the destroyers and frigates will need to be replaced, and the destroyers much sooner than later.

⁷³ Lawson, 18 March 2013.

In 2007 the Navy put forward the concept that a common hull could be used as the basis for each of the frigate and destroyer capabilities. The idea was to pursue system commonality in design and acquisition in an effort to generate cost savings in areas like crewing, training, maintenance and logistics. The Canadian Surface Combatant (CSC) will thus have two variants built on the same basic hull design, with the Area Air Defence and Task Group Command and Control variant being prioritized in the shipbuilding lineup. The CSC was part of the NSPS and will be built in Halifax by Irving Shipyards. No design has been chosen.

Project details

Official commitments and testimony

2007 Senate testimony: “The next priority...is preparing for a future surface combatant. We must replace the [destroyers and frigates] in the period beginning 2016-17. This summer my intent is to stand up a small team to begin the requirements definition work for the replacement.”⁷⁴

2008 CFDS (p. 4): States the government will replace the Forces’ core equipment fleets, including 15 ships to replace existing destroyers and frigates.

2009-10 RPP (p. 22): States the replacement of destroyers and frigates as a planned acquisition.

2009-10 DPR Estimates (p. 22): The planned acquisition to replace destroyers and frigates has progressed; options analysis has begun to be conducted.

2010-11 DPR: “Due to the pressing need to replace the IROQUIS Class destroyers, the CSC project will begin with the acquisition of a replacement for Area Air Defence and Task Group Command and Control capabilities, forming the basis for subsequent acquisition of general-purpose warships.” In this DPR, all major milestones with the exception of the identification phase approval are “to be determined,” pending the outcome of the NSPS.

2011-12 DPR: States the contract will be awarded in 2016, with initial operational capability in the mid-2020s; full operational capability (all vessels delivered) by 2036.

Feb 2012 Senate testimony: “We are expecting the first [Canadian Surface Combatant] to be delivered in the 2022 time frame.”⁷⁵

Feb 2013 Senate testimony: The Canadian Surface Combatant is in project definition, and is being advanced within the framework of the National Shipbuilding Procurement Strategy.⁷⁶

Mar 2013 Senate testimony: Indicates CSC has not entered definition stage or at least is not at the same definition stage as the AOPS and JSS.⁷⁷

2013-14 RPP (p. 38): States Defence will continue to progress the Canadian Surface Combatant.

⁷⁴ Robertson, 26 February 2007.

⁷⁵ Maddison, 27 February 2012.

⁷⁶ Maddison, 25 February 2013.

⁷⁷ Lawson, 18 March 2013.

Explanation of variances

Whereas in 2007 it was expected a new destroyer would be delivered the middle of this decade, today the estimate is 2022 or later. Like most other procurement programs, this project has slipped by several years. The JSS, the recession and the resultant NSPS process will have all played a role. The fact that of the two combatant ships being built in Halifax — the AOPS and the CSC — it is the AOPS that are to be built first indicates a relatively greater prioritization by this government of North American missions over those abroad.

Status as of 1 September 2013

The CSC project is currently in options analysis phase. The Navy has not issued design specifications.

8. CLOSE COMBAT VEHICLE (CCV)

Project history and requirement overview

The Close Combat Vehicle (CCV) is one component of a family of land combat systems, all with unique specifications but designed to work together on the battlefield. The program is meant to replace and modernize the current fleet of land combat vehicles. The concept of a family of vehicles is similar to that of the Future Combat System (FCS), a large US military program launched by the Pentagon around 2000 that would have been comprised of more than a dozen platforms, all designed to work together. Former US Secretary of Defense Robert Gates cancelled this program in 2009, deeming it of less relevance than other programs to the counterinsurgency missions in which America was then engaged. Canada's family of systems is smaller in scale than was the FCS. It comprises four systems including the CCV, a tactical armoured patrol vehicle, an armoured engineering vehicle and a modernized version of the existing Light Armoured Vehicle (LAV) III fleet.

The June 2008 CFDS referenced a family of combat vehicles, and in summer 2009 Minister MacKay announced government approval of the CCV program. But less than six months later, with no release of a solicitation of interest to industry, the program had ground to a standstill out of concern about whether the capability it provides should be a priority, and therefore the timing for its entry into service.⁷⁸ The program later restarted, only to see all bidders disqualified in summer 2010, because their vehicles on offer did not meet the stated standard of protective capability. Specifications were clarified and rewritten to be in line with those of NATO, and a new solicitation of interest was issued, but in spring 2012 all of these, too, were rejected. A new RFP released to pre-qualified bidders closed in fall 2012 and, despite a concern within the military that the CCV is not a priority in a time of cost-cutting, in spring 2013 the government announced that a winning bidder would be identified.

⁷⁸ Ken Pole, "CF 'Family' of Vehicles," *Frontline Defence* (Issue 3, 2012), p. 36.

Project details

The CCV is to be a well-protected armoured vehicle with high tactical mobility. At between 25 and 40 tons it will essentially be a light tank, meant to deliver a Canadian infantry section in close combat while operating in support of tanks during battle. The government plans to buy 108 CCVs with the option for up to 30 more vehicles.

Official commitments and testimony

2008 CFDS (p. 4): States the government will replace the Forces' core equipment fleets, including a fleet of land combat vehicles and systems.

2008-09 RPP (p. 59): The family of Land Combat Systems "will consist of several distinct projects...such as close combat vehicles...the definition phase of this programme (sic) will be sought in 2009."

2009-10 RPP (p. 22): States Land Combat Vehicles and Systems as a planned acquisition.

2010-11 DPR: Foresees Treasury Board project approval in spring 2012; contract award in summer 2012; first vehicle delivery in 2013.

2011-12 DPR: Notes the project successfully completed the Solicitation of Interest and Qualification Process in 2010-11 and there were five pre-qualified buyers. The RFP was issued in 2011 and closed later that year. It was determined no bidder met the mandatory technical requirements so the RFP was cancelled. Project is in definition phase [again]; first delivery of CCV is planned for 2015.

2012 Senate testimony: Stated the CCV RFP was cancelled because none of the close combat vehicles were found compliant. In this regard "the system worked exactly as it should."⁷⁹

2013-14 RPP (p. 38): States Defence will continue to progress the Close Combat Vehicle.

Explanation of variances

When the government formally announced that it had approved the CCV project in summer 2009, the contract was supposed to be awarded by fall 2010. Given that as of 2013 the government has identified but not announced a winning bidder, the project is now at least three years behind schedule. The key reason for delay is that on two occasions in three years the government found there to be no technically compliant bidders. A second explanation may be that, in an era of constrained defence budgets where the Canadian army budget has been sharply reduced, the army's preference is reportedly to prioritize other acquisitions and functions above the CCV. In this regard, it is troubling that this \$2 billion project appears to be going forward against the wishes of the army leadership.

Status as of 1 September 2013

The government has identified but not announced a winning bidder.

⁷⁹ MacKay, 30 April 2012.

9. MEDIUM SUPPORT VEHICLE SYSTEM (MSVS) (TRUCKS)

Project history and requirement overview

This project is meant to replace the Army's MLVW (Medium Logistics Vehicle Wheeled) fleet. Acquired in 1982, the service life of the MLVWs was supposed to be 15 years, yet they continued to be used, at growing cost of repair, until 2008. A project to replace the MLVWs began in the late 1990s but had not progressed by the time the Conservatives came to power. (In 2004 the Army proposed a foreign military sale of US trucks to Canada, but the proposal was turned down by the Liberal government for lack of domestic industrial benefits.) In June 2006 the new government announced it would buy new trucks, including 1,500 Standard Military-Pattern (SMP) vehicles, and 800 (later 1,300) Militarized Commercial Off-the-Shelf (MilCOTS) vehicles. The plan at the time was for all deliveries to take place between 2008 and 2010.

The MilCOTS portion of the program proceeded without significant delay. An RFP was released in late 2008, a contract was awarded in January 2009, and all vehicles were delivered by fall 2012. But an RFP for the SMP portion was not released until late 2011. Moreover, after six months the government abruptly cancelled the RFP. The cost had escalated as the capabilities the military wanted in the truck were added, but this increased cost — 40 per cent more than the allocated budget — had not been reflected in the RFP. In January 2013 the government conducted consultations with industry on a new RFP, which was subsequently issued in July 2013.

Project details

The SMP vehicles are to be a minimum of 4.5 tons, capable of being armed and armoured, and transportable on board the C-130 Hercules aircraft.

Official commitments and testimony

2006-07 RPP (pp. 24, 44 & 45): Notes the MSVS project's identification phase was approved in October 2000. The project has reached the end of its options analysis phase and is entering the definition phase. Treasury Board approved the MSVS project in June 2006; approval for initial operational capability is anticipated by June 2009, with full operational capability by December 2011. In the 2008-2012 timeframe, the MSVS project will deliver up to 1,500 military-pattern vehicles.

Budget Plan 2007 (p. 253): "The procurement of major equipment has progressed with the approval and announcement of the acquisition of joint support ships, a medium-sized logistics truck fleet [and] medium-to-heavy lift helicopters."

2007-08 RPP (p. 38): The MSVS project is in its definition phase. It is anticipated formal effective project approval will be sought in fiscal 2007-08.

2008 CFDS (p. 4): Restates the government has announced plans to acquire 2,300 trucks.

2008-09 RPP (p. 59): "The project is currently in its definition phase and will be seeking approval for phased implementation commencing in 2008."

2009-10 RPP (p. 21): “[T]he government...has announced *possible* plans to acquire...a fleet of medium logistics trucks (emphasis added).”

2009-10 DPR: A draft RFP was posted on the project website for industry comment in 2009, and the final RFP for this project is planned for release in early 2011.

2010-11 DPR: The SMP contract will be awarded in early 2013, with first delivery in spring 2014.

2011-12 DPR: The SMP project is in definition phase; the RFP was released December 2011; contract award date is to be determined.

2013-14 RPP (p. 38): States Defence will continue to progress the Medium Support Vehicle Systems Project.

Explanation of variances

The originally (2006) expected initial delivery date for the SMP vehicle has slipped from between 2008 and 2010 to what industry now expects to be 2016 or 2017. One explanation for the original delay in issuing an RFP was a difference of views in the early years (2008-09) between the army and civilian procurement staff on requirements — for example, on the level of armor protection against improvised explosive devices. As a result, the requirements had to be rewritten. The army was likely influenced in this regard by the ongoing mission in Afghanistan where, at this time, troops were being killed by IEDs on a regular basis. Increased armour, in turn, almost doubled the cost of the project, leading to further delays. The original RFP was cancelled, the shortfall had to be covered by transferring money from a future vehicle project to the MSVS project and a new RFP had to be issued.

Status as of 1 September 2013

In July 2013 the government issued an RFP to acquire a fleet of military trucks. Proposals are to be submitted by end-2013; a contract is expected to be awarded by 2015.

10. MEDIUM-TO-HEAVY LIFT HELICOPTER (CHINOOK)

Project history and overview

Troop transport helicopters are critical for battlefield operations. Without such helicopters, which can normally carry about 40 troops or a combination of soldiers and equipment, an army is forced to get supplies and people from one point on the battlefield to another by vehicle convoy. This can be exceedingly dangerous, as was demonstrated in Afghanistan where Canada lost many soldiers in convoys to IEDs. During the Cold War, Canada had a fleet of Chinook transport helicopters, but the government sold them to the Dutch in the early 1990s as part of an overall program of defence cutbacks.

The 2005 budget was the first to highlight the need for a new troop-carrying aircraft. At the time, the DND anticipated moving quickly through the project definition phase, with contract award in 2006 and first deliveries in 2008.⁸⁰ After the Harper government came to power in 2006, and as circumstances grew more dangerous for Canadian troops in Afghanistan that same year, there was a further commitment to replace the Chinook capability. In June 2006 the government announced Canada would purchase 16 new military transport helicopters, with plans for the contract to be awarded in 2007 and deliveries to start in 2010. Within two months the military had determined that only Boeing's Chinook could meet Canada's requirements, but over the following year the air force asked for changes that ultimately pushed back timelines. Requested design upgrades included better armour and weapons to enable casualty evacuation, and greater endurance to enable longer flying distances in the Arctic. In March 2008 the government issued an RFP to Boeing for 16 F-model Chinooks, yet a contract award — now for 15 aircraft — did not come until summer 2009. In July 2013 Canada took delivery of its first new Chinook.

Project details

The project is to deliver 15 Chinook CH-147F helicopters to support land-based domestic and international operations.

Official commitments and testimony

2006-07 RPP (p. 24): Notes Treasury Board approved the Medium-to-Heavy Lift Helicopter Project on 22 June 2006. “High priority will be given to...Medium-to-Heavy Lift Helicopters.”

Budget Plan 2007 (p. 253): “The procurement of major equipment has progressed with the approval and announcement of the acquisition of joint support ships, a medium-sized logistics truck fleet [and] medium-to-heavy lift helicopters.

2008-09 RPP (p. 58): “Delivery of up to 16 helicopters is scheduled to begin in 2011.”

2008 CFDS (p. 4): Restates the government has announced plans to acquire 16 CH-47F Chinook helicopters.

2009-10 RPP (p. 21): “[T]he government...has announced *possible* plans to acquire a Medium-to-Heavy Lift Helicopter capability (emphasis added).”

2009-10 DPR Estimates (p. 21): Notes the Medium-to-Heavy Lift Helicopter contract was awarded to Boeing on 30 June 2009.

2010-11 DPR & 2011-12 DPR: First fully mission-ready aircraft will be delivered in 2013.

2013-14 RPP (p. 38): States Defence will continue to progress the Medium-to-Heavy Lift Helicopter.

⁸⁰ Report of the Auditor General of Canada, 2010, 21.

Explanation of variances

Delivery of the first new Chinook took place five years after the originally anticipated date of 2008. The delay can be largely explained by the upgraded design requirements. Although originally characterized as being off-the-shelf, in fact the aircraft contained significant modifications. The impact was a delayed delivery schedule and an increase in cost such that the number of helicopters purchased had to be reduced by one. Delivery of the first Chinook from this program may also have been delayed by the need to negotiate an emergency purchase and deployment of six D-model Chinooks to Afghanistan by early 2009 — a requirement in response to the 2008 Report by the Independent Panel on Canada's Future Role in Afghanistan. These aircraft have now been sold.

Status as of 1 September 2013

Canada took delivery of its first new Chinook in July 2013. All 15 aircraft are expected to be delivered by the end of 2014.

11. INTEGRATED SOLDIER SYSTEM PROJECT (ISSP)

Project history and requirement overview

The Integrated Soldier System Project (ISSP) has its origins in the modern nature of warfare, which demands that all soldiers on a battlefield be technologically linked to one another, to a tactical command centre, and to various battlefield assets (such as unmanned aerial vehicles providing imagery). The objective is enhanced soldier performance and fewer friendly casualties through more comprehensive situational awareness, real-time tactical information sharing, and increased ability to synchronize activity. Most NATO allies have a future soldier system program underway. Canada's program began with extensive experimentation by Defence Research and Development in the early part of the last decade. In 2008, once the options analysis phase was complete, the ISSP received preliminary project approval from the MND and went to Treasury Board for funding approval for the definition phase.

News reports from 2008 state the intention was to field a fully integrated suite of equipment for the soldier between 2013 and 2018. But it was not until early 2012 that the government released a request for proposals. The anticipated contract award date moved to late 2013, with equipment to be delivered over four years starting in 2015. The RFP closed in June 2012, but in January 2013 the government announced that of the five bids submitted in response to the RFP, none were compliant. After some engagement with industry, the government released a new RFP in April 2013 with a close date of August 2013, and contract award expected in April 2014.

Project details

The project will provide up to 6,624 suites of equipment, to be carried by the soldier. As lightweight as possible, and linked to the Global Positioning System, the equipment will enable the soldier to seamlessly share data and voice communications through a network with their fellow soldiers and with a low-level command centre. It will include weapons accessories,

electronic devices, sensors, and specialized clothing. The project comprises two contracts going to one bidder: one contract for 1,600 units and the option for an additional 5,042 units, over four years; and a second contract for in-service support over 11 years.

Explanation of variances

Whereas in the mid-2000s it was expected initial ISSP deliveries would begin in 2010, the current projection is sometime after 2015. Key reasons for the delay include the complexity of the program and Canada's procurement rules. The RFP was released in three volumes consisting of over 1,700 pages and containing 2,500 specific requirements. Canada's procurement rules specify that failing just one requirement will cause a bid to be rejected. In each bid's case, one or more of the requirements were not met — in some cases a relatively innocuous specification like whether a person named in the contract had a security clearance. The overarching reason for such draconian rules is to protect taxpayer money, and to ensure the system is not manipulated. In the wake of the ISSP's bid rejections, the government introduced on a pilot basis a provision to allow defence firms to repair their bids on military equipment programs to avoid minor infractions. Critics are concerned this will open the system up to favouring a company that should be disqualified by giving them a second chance. Ultimately it will come down to what sorts of things are classified as minor infractions.

Status as of 1 September 2013

The RFP closed on 1 August 2013. Bids are now being evaluated.

12. CANADIAN SPACE SURVEILLANCE SYSTEM (SAPPHIRE)

Project history and requirement overview

The existence of hundreds of satellites orbiting the earth, along with thousands of pieces of space junk,⁸¹ makes it essential to be able to track satellites and objects in space as closely as possible to avoid collisions. The United States has been doing this with ground-based systems since the late 1950s, and for about three decades ending in 1992 (when the technology changed) Canada had ground-based space cameras/telescopes in two locations, feeding information into America's Space Surveillance Network (SSN). With the decommissioning of these cameras Canada's contribution came to an end. By virtue of its membership in the bi-national North American Aerospace Defense Command (NORAD) Canada maintained its access to SSN information on satellites and space debris. Nonetheless, there was concern about having assured access in the long term. In the late 1990s Canada — which in 1962 became the world's third country in space, after the Soviet Union and the United States — began to think about a unique space-based contribution to the SSN. A June 1999 report for the Chief of Defence Staff argued that a space sensor would provide a tangible contribution for Canada's military partnership with the United States. The advantage of a space-based sensor over a ground-based telescope is that it would not be affected by weather and the time of day.

⁸¹ Defined as objects that are 10 cm across or more and that therefore could seriously damage another object if there were a collision.

The DND established a Surveillance of Space project office in the early 2000s. At that time, the office indicated an RFP for a space-based sensor called Sapphire would be released in 2002, while the satellite would be launched sometime between 2005 and 2007. Later, in 2004, the office indicated a call for bids had been issued for firms interested in designing and building the satellite, that a company would be chosen that fall, and that a launch would take place in 2009 or 2010. The project received Treasury Board approval in mid-2007, and in October that year the DND awarded a contract to MacDonald, Dettwiler and Associates (MDA) of Richmond, BC to build and develop the satellite. By this time the launch was planned for mid-2011, with full operational capability by the end of 2011. Ultimately the satellite was launched in February 2013 by the India Space Research Organization. A target date of July 2013 was set for the system to finish the test and evaluation phase with NORAD, and to be fully operational and contributing to the SSN.

Project details

The Canadian Space Surveillance System comprises the satellite itself, called Sapphire; two ground stations (at Abbotsford, BC and Guildford in the UK) to which surveillance data is downlinked; a Space Control Center to control and monitor the Sapphire satellite in orbit; a Sapphire Processing and Scheduling Facility to receive and process surveillance data, and transmit it to a Sensor System Operations Center (SSOC); and an SSOC functioning as the interface between Sapphire and America's SSN. The satellite operates in a sun-synchronous circular orbit at about 750 km above the earth. It has an optical sensor that looks outward to track objects in orbits between 6,000 and 40,000 km above earth.

Explanation of variances

A satellite that was originally supposed to be launched between 2005 and 2007 was finally launched in 2013. Key reasons for the delay were likely the cost of the satellite, the prioritization of other National Defence projects during this time period, and the logistics of finding a launch location.

Status as of 1 September 2013

The Sapphire Mission satellite has been launched.

13. PROTECTED MILITARY SATELLITE COMMUNICATIONS (PMSC)

Project history and requirement overview

The Canadian Forces requires dedicated, secure military satellite communications for the conduct of its operations around the world. To date, the CF have never had such a capability — they are dependent on American and other allied military satellites systems, as well as on civilian systems. As far back as 1988, under the Mulroney government, the DND began to conduct research with the United States on satellite communications in the Extremely High Frequency (EHF) band. The Canadian Military Satellite Communications (CANMILSATCOM)

project, begun by the Chretien government, was a follow-on to the original EHF initiative. In 1999 Treasury Board granted preliminary approval for the project, now known as Protected Military Satellite Communications (PMSC), to proceed. The DND signed a memorandum of understanding with the United States guaranteeing, for the price of \$250 million, Canadian participation in America's Advanced EHF program (AEHF). The PMSC involves two phases: first, satellite procurement; and second, procuring, installing and testing ground- and sea-based terminals. In 2003 Treasury Board granted approval for the second phase, bringing the combined cost to just over \$550 million.

Once the AEHF satellite system is fully operational, Canada will have access for a 12-year period. When the MOU was originally signed, it was anticipated the first satellite launch, in a system of four, would take place in 2004 with full operational capability a few years later. But the projected launch date of the first satellite slipped from 2006 to 2008 and then to 2010. The first satellite in the system was finally launched in 2010 and the second in 2012. Neither has reached initial operating capability. In June 2013 Canada became the first international partner to communicate using the AEHF system, using a ground terminal near Ottawa. Testing has also taken place using terminals on our naval vessels. All satellites in the AEHF system are projected to be launched over this decade, and the system is expected to be fully operational by 2020.

Project details

The project will deliver to the Canadian Forces a near-worldwide, assured, secure, and survivable satellite-based military communications system. It will also deliver communications capability that is interoperable with our allies. The system is to operate in the EHF bandwidth, making such communications both reliable and robust, even in the event of nuclear war. Additional details on this project as of the end of 2004 can be found in *An Opaque Window*.⁸²

Official commitments and testimony

2007-08 DPR: Initial satellite delivery in 2010; full operational capability in 2014. Initial terminal delivery in 2009.

2008-09 DPR: Initial satellite delivery in 2012; full operational capability in 2017. Initial terminal delivery in 2011.

2009-10 DPR: Initial satellite delivery in 2012; full operational capability in 2017. Initial terminal delivery in 2010.

2010-11 DPR: Initial satellite delivery 2012-13; full operational capability in 2019-20. Initial terminal delivery 2012.

2011-12 DPR: Initial satellite availability 2012-13; full operational capability in 2020. Initial terminal delivery 2011.

⁸² Bercuson et al., 17-20.

Explanation of variances

Competing demands on defence in the United States over the course of a decade, combined with various technical difficulties experienced by the contractor, Lockheed Martin, progressively pushed back the launch of the AEHF satellites. Since America's AEHF satellite system is the heart of Canada's PMSC, Canada had no choice but to accept setbacks in the original PMSC schedule. Phase II of the project, over which Canada had control, progressed as fast as was necessary. On a few occasions the projected delivery date of the terminals actually moved up rather than back. That said, there were some delays in the PMSC's full operational capability as a result of delays in the naval fleet plan refit schedule, specifically upgrades to the Victoria-class submarines that included installation of the AEHF terminals.

Status as 1 September 2013

Two satellites within the now eventual six-satellite AEHF system have been launched. Canada is in the process of testing its ability to carry out connections through ground- and sea-based terminals.

14. CANADIAN SPECIAL OPERATIONS REGIMENT (CSOR)

Project history and requirement overview

The decision to create a Canadian Special Operations Regiment (CSOR) dates to the early years of the last decade, and especially the 2001-02 US-led operation in Afghanistan, which relied extensively on SOFs to defeat the Taliban government. Once used sparingly, after 9/11 SOF became important components of military operations. In late 2001 Canada embarked on a plan to double the size of its longstanding "Tier 1" special force, Joint Task Force Two (JTF2) over the next several years. But demand for such forces eventually created the need for a "Tier 2" CSOR to support JTF 2. The 2005 Defence Policy Statement referenced the creation of new "supporting land and maritime forces" to work in conjunction with JTF 2, and this thinking was reflected in subsequent organizational changes.

In early 2006 Canada reorganized its military command structure, creating a new Canadian Special Operations Command (CANSOFCOM), along with three other commands. Four units were assigned to CANSOFCOM: JTF2; an expanded nuclear, biological and chemical response squadron; an aviation squadron; and a new CSOR. News reports indicated that CSOR was to be a 700-strong regiment, while CANSOFCOM overall would increase in size to 2,500 personnel. Recruiting for CSOR began early that year, and the regiment was stood up in summer 2006 with 125 members. By 2010 the CSOR still had only about 450 troops, while CANSOFCOM as a whole was estimated at about 1,400 personnel, both figures far short of what was originally anticipated.

Project details

To create a regiment of about 700 troops trained to support JTF2, to reach full strength by 2010.

Official commitments and testimony

2006-07 RPP (p. 16): States that CSOR will be a high-readiness special operations force capable of supporting and conducting a broad range of special operations missions. The regiment would reach initial operational capability by August 2006 and full operational capability in fiscal year 2009/10.

Explanation of variances

From the beginning there were concerns within the army as to how quickly CSOR could achieve full operational capability, and indeed whether the force should even be created outside the army's conventional force. Most of the CSOR members would be taken from the army; they would not be new recruits. The army itself was struggling with force levels, and this would stretch it still further. In fact, between 2006 and 2010 close to 2,000 of the army's most capable officers and non-commissioned officers transferred from the conventional force to CANSOFCOM. The Canadian Forces grew in size from 53,000 to 68,000 between 2005 and 2010, with most going to the army. Nonetheless, a high operational tempo during Afghan operations, along with the force structure demands of staffing other new commands in Ottawa, impacted the growth of CANSOFCOM, and CSOR in particular.

Status as of 1 September 2013

CSOR is fully operational, but remains smaller in size than the originally established goal of about 700 troops.

15. NANISIVIK NAVAL FACILITY

Project history and requirement overview

Despite its vast Arctic territory, coasts and waters, Canada has no deepwater port in the region. By contrast, Russia has several major ports above the Arctic Circle. With the warming Arctic, melting ice, and increased traffic through the region — actual and predicted for the future — there is a growing need for a northern Canadian port. As part of his party's election platform in late 2005 Prime Minister Stephen Harper promised that a Conservative government would build a new military/civilian deepwater docking facility.⁸³ After the election, the DND began analyzing sites for the port, based on ice, tide, and strategic location. In August 2007 Harper announced a deepwater port would be built in Nanisivik, on the northern end of Baffin Island, in a sound just off the Northwest Passage. The decision itself was tied to a concurrent announcement that Canada would build between six and eight Arctic/Offshore Patrol Ships, which could dock and refuel at the Nanisivik facility. The deepwater port, combined with ships designed to operate in the Arctic, would enable Canada to maintain a federal presence in the region throughout the navigable season.

⁸³ "Harper Stands Up for Arctic Sovereignty."

In a backgrounder released at the time of the announcement, the Prime Minister's office stressed that the port would serve as a staging area for naval vessels on the high Arctic, enabling them to resupply, refuel, embark equipment and supplies, and transfer personnel. The project definition phase would begin in summer 2007; additional technical and environmental studies would take place summer 2008; construction at the Nanisivik site would begin summer 2010; initial operating capability was planned for summer 2012; full operational capability was expected for summer 2015.⁸⁴ In November 2009 the government awarded the first of four design contracts for what was now being called the Nanisivik Naval Facility to WorsleyParsons Westmar Ltd., of North Vancouver. This initial phase involved establishing requirements for construction and carrying out preliminary design work, while subsequent design contracts were to undertake detailed plans, develop drawings, and prepare construction estimates.⁸⁵

Yet even as the first design contract was awarded, the project had already fallen two years behind schedule. Construction work was now expected to begin in 2011, with initial operating capability anticipated by 2014. Later, in a winter 2012 letter to a northern environmental regulator, the DND officially scaled down the scope of what was originally envisaged. There would be less fuel stored, no permanent communications facilities installed, no heated accommodations, and delays in improvements to the wharf. The target date for initial operating capability was set at 2016. In a summer 2012 speech Harper stated the Nanisivik Naval Facility would be completed over the next five years⁸⁶ — but the content of “completed” was far less than that envisaged in 2007. The government made the same five-year commitment in its Economic Action Plan 2013, indicating the scaled-down deepwater facility will not be finished before 2018.

Explanation of variances

A key factor behind this project's delayed implementation, and its reduced scope, is the unanticipated cost of constructing and operating a facility in the north. Because Nanisivik is an abandoned zinc-mining village with a pre-existing berthing facility, startup costs were projected to be relatively low. But as the DND started to look at the details of the port expansion at so remote a location, projected costs ballooned to double the original allocation. Determined to stick to the budgetary envelope, the government reduced the scope of the project and the functionality of the site.

An equally important factor has been the environmental screening process. The DND cannot begin construction until the company which operated the now-closed mine conducts an environmental cleanup of the fuel tank farm. The company has not done so, frustrating military progress even as the Department of Fisheries and Oceans — which currently administers this crown land — has sent legal notification to the company to clean up the property.⁸⁷

⁸⁴ Office of the Prime Minister, “Backgrounder – Expanding Canadian Forces Operations in the Arctic,” 10 August 2007.

⁸⁵ “Canada's Government Awards Contract for Arctic Infrastructure Project,” *Marketwire*, 26 November 2009.

⁸⁶ “Statement by the Prime Minister of Canada in Churchill, Manitoba,” *States News Service*, 24 August 2012.

⁸⁷ Murray Brewster, “Harper's Vaunted Arctic Naval Refuelling Station Delayed Over Slow-Moving Environmental Clean Up,” *National Post*, 1 September 2013.

Status as of 1 September 2013

Construction is due to start in 2014, pending environmental remediation. Initial operating capability is anticipated in 2017/18.

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