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Evaluation of Sustainment of Operations



Performance Measurement and Evaluation Committee

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Acronyms and Abbreviations

AAR	after-action report
ADM(DIA)	Assistant Deputy Minister (Data, Innovation and Analytics)
ADM(Fin)	Assistant Deputy Minister (Finance)
ADM(Mat)	Assistant Deputy Minister (Materiel)
ADM(Pol)	Assistant Deputy Minister (Policy)
ADM(RS)	Assistant Deputy Minister (Review Services)
AROP	Arctic Regional Operations Plan
C2	Command and Control
C Prog	Chief of Programme
CA	Canadian Army
CAF	Canadian Armed Forces
CAF Ops	CAF Operations
CDIO	CJOC Directives for International Operations
CDS	Chief of the Defence Staff
CFAD	Canadian Forces Ammunition Depot
CFICC	Canadian Forces Integrated Command Centre
CFJOSG	Canadian Forces Joint Operational Support Group
CFJP	Canadian Forces Joint Publication
CFSD	Canadian Forces Supply Depot
CFTPO	Canadian Forces Task Plans and Operations
CJOC	Canadian Joint Operations Command
CMSG	Canadian Materiel Support Group
Comd	Commander
DMINO	Distribution and Materiel Inventory Network Optimization
DND	Department of National Defence
DRF	Departmental Results Framework
DRMIS	Defence Resource Management Information System
DSC	Defence Supply Chain
ERP	Enterprise Resource Planning System

FY	Fiscal Year
HQ	Headquarters
JETA	Joint Exercise Training Account
JOPG	Joint Operations Planning Group
JTF	Joint Task Force
JTFN	Joint Task Force (North)
JTFSC	Joint Task Force Support Component
L1	Level one
MISL	Modernization and Integration of Sustainment and Logistics
NORAD	North American Aerospace Defense Command
OCI	Office of Collateral Interest
OFA	Operations Funding Account
OGDA	Other Government Departments and Agencies
Op	Operation
OPCOM	Operational Command
OPCON	Operational Control
OPI	Office of Primary Interest
ops	Operations
OSH	Operational support hub
PAA	Program Alignment Architecture
PIP	Performance Information Profile
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
RJTF	Regional Joint Task Force
SEM Comd	Small Enduring and Mission Commander
SJS	Strategic Joint Staff
SME	Subject Matter Expert
SOODO	Standing Operations Order for Domestic Operations
SUPLAN	Support plan
TB	Treasury Board
TF	Task Force

Executive Summary

Purpose

This report presents the results of the Assistant Deputy Minister (Review Services) (ADM(RS)) evaluation related to the Command, Control (C2) and Sustainment of Operations program. The evaluation focused on the sustainment of operations component of the program and was conducted in fiscal year (FY) 2019/20 in compliance with the Treasury Board (TB) *Policy on Results*. In accordance with this Policy, the evaluation examined the relevance and performance of the sustainment aspect of this program over a five-year period, in this case, between FY 2014/15 and FY 2018/19. This evaluation is part of the ADM(RS) five-year departmental evaluation plan.

Program Description

The C2 and Sustainment of Operations program is identified in the Department of National Defence's (DND) Program Inventory as "program 1.6." The program is the responsibility of the Canadian Joint Operations Command (CJOC) and of the Royal Canadian Air Force (RCAF). The program involves a national command and communications structure and associated coordinating rules, resources, intelligence, space surveillance and cyber defence support to ensure unity of action to deliver military effects.

Relevance

The operational sustainment component of this program is an essential element of all operations (ops). It is, therefore, relevant to operations, which constitute the *raison d'être* of the Canadian Armed Forces (CAF).

Performance Effectiveness

The Sustainment of Operations, which is an enabler for domestic, continental and expeditionary operations, consistently achieved its expected outcomes. Sustainment tasks support and are involved in the preparation, planning, conduct, and engagement activities at the operational level. The program enables the CAF to anticipate, adapt and act in response to Government of Canada priorities, setting conditions of success for ops.

Overall Assessment

- Operational Sustainment is an enabler for all ops.
- The sustainment aspect of the C2 and Sustainment program activities was able to effectively prepare, plan, conduct, engage and sustain all ops.
- Efficiency in operations is not only a monetary issue but also a functional matter. The program has made progress. However, an area of sustainment inefficiency exists related to the national approach to sustainment activities.
- Economy in the execution of operations is secondary to the primary focus of achieving objectives.

Performance Efficiency and Economy

Efficiency is not the principle consideration in CAF operational sustainment activities given the necessity to react quickly and act decisively in ops. Nonetheless, the program has multiple initiatives, methods and processes to develop efficiency, albeit without measures to assess their impacts. The evaluation was unable to assess the economy of the program. Economy in the delivery of operational sustainment, while considered by stakeholders, is also not the primary focus in operational planning and conduct of ops. An ideal balance should be reached between economy of ops and achieving operational objectives.

Key Findings and Recommendations

Key Findings	Recommendations
1. The program covering the C2 and Sustainment of Operations is supported by a Performance Information Profile (PIP) which neither defines specific activities nor establishes key performance indicators for operational sustainment.	1. It is recommended that the PIP for program 1.6 be expanded to reflect the two dimensions of the program.
2. The relevance of operational sustainment is substantiated by the “raison d’être” of domestic, continental and expeditionary ops.	
3. Planning of support, sustainment and logistics is reflected in operational requirements.	
4. Reconnaissance (on-site assessment) of mission sites contributes to the effective identification of the capacity and feasibility for both operation and support-linked activities but can be improved by the incorporation of Subject Matter Experts (SME).	2. It is recommended that operational support SMEs be included as part of the on-the-ground early reconnaissance group of deployed ops.
5. Operational Support Hubs (OSH) are key factors in the effective planning and execution of logistics and support sustainment activities but are hampered by the absence of an independent mandate.	3. It is recommended that OSHs be established with a stand-alone mandate, including a funding mechanism distinct from the current named missions.
6. Absence of secure means of communications in some deployed ops presents a challenge for the effective transmission of essential operational information.	4. It is recommended to continue to evaluate communication options based on location and theatre requirements to ensure effective sustainment of operations.
7. Northern Ops and exercises present the same challenges as expeditionary ops but are not always provided with the same capabilities.	5. It is recommended that the development of a unified pan-government plan be assessed to enable planned and deliberate sustainment efforts in the North.
8. Utilization of Joint Exercise and Training Account funds for ops in the Northern region is seen by	6. It is recommended that the use of Operations Funding Account (OFA)

multiple stakeholders, including Joint Task Force (North) (JTFN), as an impediment to the acquisition of local support.	funds for the Op NANOOK series be examined.
9. Engagement arrangements with allies, coalition partners, civilian organizations and Other Government Departments and Agencies (OGDA) are force multipliers as well as sustainment enablers for ops and should be initiated early to maximize cohesion between partners.	7. It is recommended to initiate engagement activities with international partners as soon as operational activities are expected in a region in order to establish and/or build relationships and gain the required sustainment support for successful CAF Ops.
10. Identification of theatre support requirements of deployed ops is based on staff-intensive working methods. No mechanisms exist to measure and adjust the effectiveness of delivery of materiel to theatres of ops.	8. It is recommended that tools under development to support the national sustainment process (e.g., Modernization and Integration of Sustainment and Logistics (MISL) and Distribution and Materiel Inventory Network Optimization (DMINO)) be designed to facilitate the identification of operational support requirements and tracking of materiel shipped to deployed ops.
11. Ops staff consider that operational effectiveness is more vital than efficiency and economy in Sustainment of Operations.	
12. Inefficiencies in defence sustainment organizations and processes impact the efficient operational sustainment of ops.	9. It is recommended that the Defence Supply Chain (DSC) modernization efforts currently underway through the Defence Supply Chain Oversight Committee continue to progress in order to optimize sustainment of ops.

Table 1. Key Findings and Recommendations. This table outlines the evaluation’s key findings along with the associated recommendation.

Note: Please refer to [Annex A—Management Action Plan](#) for the management responses to the ADM(RS) recommendations.

1.0 Introduction

1.1 Context for the Evaluation

This report presents results of the evaluation of the relevance and performance of the sustainment component of the C2 and Sustainment of Operations program, conducted in compliance with the TB *Policy on Results*. It is a component of the DND/CAF five-year evaluation plan developed by ADM(RS).

This is the first time that an evaluation is specifically covering the Sustainment of Operations within the C2 and Sustainment of Operations program. Previous reviews conducted on sustainment looked mostly at institutional, functional or tactical sustainment; however, operational sustainment was never thoroughly reviewed, due to not having its own program.

This evaluation was supported by representatives from organizations including CJOC and its subordinate units, Assistant Deputy Minister (Finance) (ADM(Fin)), and Military Personnel Command. This report may be used to inform future decisions of senior management regarding the sustainment aspects of operations.

1.2 Program Profile

1.2.1 Program Description

The C2 and Sustainment of Operations program “involves a well-defined national command and communications structure and associated coordinating rules, resources, intelligence, space surveillance and cyber defence support to ensure unity of action to deliver military effects.”¹ As the program official, CJOC is the main CAF force employer for Canadian Defence Ops, having access to CAF operational elements, with some of them being under full command and others under operational command (OPCOM)² or operational control (OPCON).³ Ops are also supported by several federal departments and agencies, provincial agencies, and both bi-lateral and multi-lateral relationships with other nations’ militaries. Finally, while CJOC is primarily a Force Employer, in many aspects it is a “Force Generator, a Force Manager and a holder of institutional responsibilities as well.”⁴

CJOC integral and attached formations and units are numerous. In order to abridge the text, they have been listed at [Annex E](#).

1.2.2 Program Objectives

The program objectives of the C2 and Sustainment of Operations program are to provide a framework of ops that enables, supports and directs the ops captured in Programs 1.1

¹ Extract from the Program Information Profile for program 1.6, version 09/10/2019.

² Canadian Forces Joint Publications (CFJP), volume 3.0 (Operations) defines “OPCOM” as the authority granted to a Comd to assign missions or tasks to subordinate Comds, to deploy units, to reassign forces and to retain or delegate operational and/or tactical control as may be deemed necessary.

³ Ibid. “OPCON” is the authority delegated to a Comd to direct forces assigned to them in order to accomplish specific missions or tasks that are usually limited by function, time or location; to deploy units concerned; and to retain or assign tactical control of those units.

⁴ Extracted from CJOC Business Plan FY 19/20.

Operations in Canada (domestic), 1.2 Operations in North America (continental), and 1.3 Operations overseas (expeditionary).

The “operational activities” of the program that either are directly supported or require sustainment consideration, are encompassed in five domains as follows:

- **Preparation:** activities of surveillance, liaison, intelligence, information gathering and analysis necessary to plan and conduct ops;
- **Planning:** related to the execution of operational planning of mission-specific requirements;
- **Conduct:** ensuring the C2 and support of ops, which includes theatre opening and activation, deployment, support, theatre de-activation and closing, integration and control of joint enablers and other required capabilities;
- **Engagement:** activities related to engagement and liaison with OGDA, key partners and Allies; and
- **Sustainment:** providing deployed ops’ personnel and materiel support requirements, in-theatre operational support and in-theatre financial management.

These five operational domains are related to the doctrinal “Joint Operational Functions” known as Command, Sense, Act, Shield and Sustain.

1.2.3 Stakeholders

The main stakeholders for this program are:

- CJOC, including its subordinate units and operational elements listed at [Annex E](#);
- The Canadian Army (CA), RCAF, Royal Canadian Navy (RCN), and most DND/CAF Level 1 (L1) organizations;
- OGDA; and
- Allied forces and coalition partners in operations.

1.3 Evaluation Scope

1.3.1 Coverage and Responsibilities

The program covering C2 and Sustainment of Operations is identified in the Departmental Results Framework (DRF) as program 1.6. Although the program was created in 2017, this evaluation examines the five-year period covering FYs 2014/15 to 2018/19. The evaluation focuses on the operational sustainment elements executed by CJOC in the management of all ops. CJOC directs all ops with the exception⁵ of those solely run by:

- The Canadian Special Operations Forces Command; and
- The North American Aerospace Defense Command (NORAD).⁶

⁵ Extracted from <https://www.canada.ca/en/department-national-defence/corporate/organizational-structure/canadian-joint-operations-command.html>. Last consulted on November 13, 2019.

⁶ NORAD is this portion of the Program 1.6 led by the RCAF.

The evaluation also excludes the C2 component of the program and the roles of certain enablers like “Cyber” and “Space” capabilities, those being subject to a formal evaluation under their specific Programs.

1.3.2 Resources

Expenditures: Table 2 shows the expenditures captured under Program 1.6. Amounts shown are in millions of dollars.

Program	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
1.6 C2 and Sustainment of Operations	\$357.9	\$360.0	\$338.2	\$300.2	\$243.5

Table 2. C2 and Sustainment Program Expenditures. This table denotes program 1.6 expenditures for FYs 2014/15 to FY 2018/19.

Personnel: In 2019, CJOC headquarters (HQ) had 726 civilian and military staff. The number of personnel involved with the C2 and Sustainment of Operations among integral CJOC units was close to 2,200. The program also employs external resources such as contractors and service providers in various related capacities. In addition, during FY 2018/19, CJOC commanded 2,394 personnel provided by the various Force Generators (Army, Navy, and Air Force) who were deployed on 21 domestic, continental and expeditionary ops.

1.3.3 Issues and Questions

This report addresses the evaluation issues related to relevance and performance in accordance with the TB Directive on Results (2016).⁷ The methodology used to gather evidence in support of the evaluation questions can be found at [Annex B](#). An evaluation logic model has been included at [Annex C](#). The evaluation matrix detailing the outcomes, evaluation questions and indicators used to gather evidence appears at [Annex D](#).

⁷ Treasury Board Secretariat. Directive on Results, July 1, 2016. <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=31306> . Last consulted on November 12, 2019.

2.0 Findings and Recommendations

2.1 Performance Measurement Information

Key Finding 1: The program covering the C2 and Sustainment of Operations is supported by a PIP which neither defines specific activities nor establishes key performance indicators for operational sustainment.

This finding is the result of a review of the PIP for C2 and Sustainment of Operations. At the outset of the evaluation, the PIP was reviewed to assess the completeness and quality of the logic model and performance information in support of evaluation.

The evaluation found that the PIP developed for this program was mainly based on the definition and attributions pertaining to operational C2 and was very limited in terms of defined results and performance measurement parameters applicable to operational sustainment.

Recommendation 1: It is recommended that the PIP for program 1.6 be expanded to reflect the two dimensions of the program.

OPI: CJOC

OCI: C Prog, ADM(RS)

2.2 Relevance

Key Finding 2: The relevance of operational sustainment is substantiated by the “raison d’être” of domestic, continental and expeditionary ops.

The operational role and responsibilities of the CAF is clearly articulated in Canada’s defence policy: *Strong, Secure, Engaged*. The C2 and Sustainment of Operations program is the critical enabler of CAF Ops. It is the essence of the CAF’s ability to “act with decisive military capability across the spectrum of operations to defend Canada, protect Canadian interests and values, and contribute to global stability.”⁸

CAF objectives would represent a challenge to achieve without strong operational sustainment. Operational sustainment aims at having the required resources at the right time, at the right place, in the right quantity and in the right conditions. This is critical to obtaining results in the conduct of any operations. The fact that all departmental entities exist to assist some dimensions of ops reinforces the relevance of operational C2 and sustainment, and the continued need for this program.

⁸ Canada’s defence policy: *Strong, Secure, Engaged*.

2.3 Performance - Achievement of Expected Outcomes (Effectiveness)

This section presents the assessment of the effectiveness of the program applicable to the Sustainment of Operations. As such, the evaluation examined the ability of sustainment to support the following immediate outcomes:

- **Preparation for Operations:** Commander (Comd) CJOC has relevant information to make informed sustainment decisions;
- **Planning Operations:** Ops are resourced;
- **Conducting Operations:** Ops achieve expected operational objectives;
- **Engaging with Partners:** Ops leverage combined forces and civilian partners; and
- **Sustaining Operations:** Ops are sustained.

Before proceeding with the assessment of the afore-mentioned outcomes, it is imperative to define what CAF literature understands by “operational sustainment.” Operational sustainment is defined in the Canadian Forces Joint Publication (CFJP) 4.0 (Support) as “the ability of a nation or a force to maintain effective military power to achieve desired effects.” Applied in the operational context, those effects are concerned with sustaining a military force within a theatre of ops, and thus linking the Strategic and Tactical levels of sustainment.

2.3.1 Planning and Resourcing of Operations

The Chief of the Defence Staff (CDS) Directive on C2 clarifies the tasks involved in “operational planning” in stating that:

the plans will establish the context, framework and scope of tasks to be supported by the CF for routine, contingency or rapid-response operations that support the security and defence of Canada. The plans will be operationalized annually through the CF Force Posture and Readiness Directive, in which specific tasks and performance requirements will be issued, linking required force employment demands to force generation tasks and resource allocations.⁹

Incorporation of Support in Planning

Key Finding 3: Planning of support, sustainment and logistics is reflected in operational requirements.

A plan defining the details of an operation without associated details on how the operation will be supported presents a potential for failure. A review of the program documentation shows that all Operation Plans and sets of orders applicable to ops include, at a minimum, a section where the logistics support¹⁰ is covered.

⁹ CDS Directive on CAF C2 and Delegation of Authority for Force Employment, April 2013.

¹⁰ According to CFJP 4.0, the notion of support includes logistics services, contracting services, vehicle and equipment maintenance, military engineering services, communication and information services, military police, health services support, personnel support services and specialists services (legal, policy advisor, public affairs).

For expeditionary ops, Operational Support Plans (SUPLAN) reflect the regional operation plans in developing plans for each of the five established regions. Annex R of the Standing Operations Order for Domestic Operations (SOODO) provides details for the conduct of logistical support during the deployment, sustainment and redeployment phases of domestic ops. For specific domestic ops, CJOC HQ issues a SUPLAN to provide specific logistics direction as it relates to the proposed mission. This is developed in conjunction with the Regional Joint Task Forces (RJTF) and in consultation with involved OGDA.

According to program documentation, the planning and conduct of support ops within the support component of CJOC HQ mirrors the activities of the ops component. Logistics planning extensively covers the five typical phases¹¹ of an operation aiming at developing flexible and robust deployment, employment and redeployment sustainment plans. Planning activities involve engagement of the strategic-level support staff and participation of the planning staff of the support branches. This includes planning representatives from other branches of CJOC, logistics preparation of the battlefield, including initial assessment of potential Lines of Communications to the mission area, estimation of integral support capabilities, technical arrangements and status of forces agreements.

SUPLANS and orders reviewed by the evaluation team clearly establish the roles, responsibilities and the distribution of support tasks among all stakeholders. Because sustainment and support issues are part of the Joint Operations Planning Group (JOPG) process, the resulting plans are closely integrated and adapted to the operational situations.

However, certain interviewees indicated that planners do not always fully understand the difference in roles and responsibilities between planning sustainment at the Force Generator level and planning sustainment at the operational level. Stakeholders explained that this situation is partly due to the weaknesses of the Professional Military Education program insufficiently covering the sustainment aspect of the Joint Operations Planning Process, for example, in clarifying the difference between the Comd's responsibility to plan the sustain operational function and what a support plan is.

Key Finding 4: Reconnaissance (on-site assessment) of mission sites contributes to the effective identification of the capacity and feasibility for both operation and support-linked activities but can be improved by the incorporation of SMEs.

Key informants indicated that support staff were not always included in reconnaissance (on-site assessment) activities conducted during the initiation phase of missions. Many after-action reports (AAR) raised the importance of conducting reconnaissance for support purposes. For example, it was stated that the lack of support SMEs during reconnaissance made the requirements of new theatre of ops difficult to identify and to organize. They highlighted the importance of conducting ground reconnaissance for the support component as well as for the units assisting the opening and activation of theatres of ops. This approach can increase the

¹¹ The five phases of ops are: warning, preparation, deployment, employment and redeployment.

effectiveness of tactical planning on the operational SUPLAN, so that both operational and tactical planners can talk about capacity and feasibility directly on the ground.

Recommendation 2: It is recommended that operational support SMEs be included as part of the on-the-ground early reconnaissance group of deployed ops.

OPI: CJOC

Operational Support Hubs

Key Finding 5: Operational Support Hubs are key factors in the effective planning and execution of logistics and support sustainment activities but are hampered by the absence of an independent mandate.

The purpose of OSHs is to provide logistical sustainment for CAF operations. Evidence collected shows that OSHs meet the requirements and expectations of the Canadian missions deployed in theatre of ops. OSHs also increase effectiveness in the conduct of the subject logistics and support activities.

OSHS are physical installations. They are part of a concept developed to facilitate the support of ops having extended strategic lines of communications, which present challenges in terms of logistics support. It establishes the equivalent of a “support base” remotely located at an acceptable distance from the missions being supported and easily accessible by Canadian strategic airlift or sealift assets. Operational sustainment is then staged in a safe location, regrouped, processed and forwarded to the mission area. OSHs are located in areas where the local economy may allow contracting of goods and services, which is a clear enabler in terms of service support. They are also involved in the planning and conduct of the decompression activities required by personnel on completion of their participation to a mission and can be used to effectively stage personnel, materiel and equipment from and to the theatre of ops.

Intended, in theory, to cover the entire regional ops concept, OSHs can be activated or put at rest according to requirements and locations of Canadian engagements and ops around the world. According to the program documentation, up to seven OSHs are in plans but only two (Middle-East and Europe) were operational at the time of this evaluation.

OSH readiness contributes to the effectiveness of the plans developed to support ops. That being said, OSHs are not currently established with their own mandate, separate from missions. This affects the hubs’ C2 structure and the funding mechanism to which they are subject. This can further impact the extended strategic lines of communications, which present challenges in terms of logistics support. Stakeholders noted that this is problematic because different C2 structure models exist, impacting the coherence and consistency in their establishment and management.

Recommendation 3: It is recommended that OSHs be established with a stand-alone mandate, including a funding mechanism distinct from the current named missions.

OPI: CJOC

OCI: ADM(Fin)/CFO

Reconstitution of Forces

Reconstitution is basically the process of “restoring the elements of a Force to an acceptable level of combat power.” The process is different according to the type of ops. For domestic ops, RJTFs count on their parent organizations and on the Canadian supply system resources to acceptably restore their level of combat power once the mission is completed. Annex R of the SOODO describes reconstitution as the process where “consumables expended during the course of an operation will be replenished through routine sustainment.”

For expeditionary ops, the post-deployment reconstitution is coordinated on mission redeployment involving the CAF component of appurtenance, which involves being prepared for the next operation. However, Art. 3.18-20 of CJOC Directives for International Operations (CDIO) 3000 provides some guidance on reconstitution after redeployment, reinforcing the necessity of ensuring future CAF force posture is taken into consideration.

2.3.3 Operations Meet Expected Operational Objectives

Operational sustainment contributes to the achievement of the operational objectives of deployment, employment and redeployment of CAF elements to ops. It depends on activities accomplished by CJOC HQ to command, control and support ops in relation to the following: activation, support and de-activation¹² of theatre of ops; deployment of assets and required capabilities; integration and control of joint enablers; and redeployment of assets and capabilities.

CFJP 4.0 states that operational sustainment is “concerned with sustaining a military force within a theatre of operations, and thus links the Strategic and Tactical levels of sustainment.” To achieve this, ops benefit from various sustainment sources using a mix of national assets and contracting assistance in addition to adapting sustainment processes.

For domestic ops, the sustainment process is based on the integral capabilities made available to the RJTFs and is augmented when required. Integral bases and wings, Canadian Materiel Support Group (CMSG) ammunition and materiel depots, Canadian Forces Joint Operational Support Group (CFJOSG) units and many specialized L1s’ components assist in sustainment activities to achieve an effective support network. Whereas, for expeditionary ops, multiple strategic lines of communications may get involved, with its sustainment process split among sustainment activities in Canada and those performed abroad. In Canada, activities involve CAF depots, materiel preparation and movement to the theatre of ops.

¹² Theatre opening and closing are tasks executed by the Joint Task Force Support Component of a deployed TF (source: Joint Task Force Support Component - Standard Operating Procedures).

OSBs are introduced in the process to shorten lines of communication and to improve the support provided to deployed ops. OSBs are postured to support existing mission-specific requirements but can react easily to changes in situations when required (i.e., contingency plans). Major domestic and expeditionary ops may have an integral Joint Task Force Support Component, identified as JTFSC, to provide and arrange theatre-level support to the components of a Joint Task Force (JTF).¹³

AARs and key informants have identified concerns regarding the long delays involved in the delivery of their re-supply or in entering theatre while on expeditionary ops. Highlighted issues included: customs clearances for materiel; visas and diplomatic clearances for people; unavailability of proper materiel handling equipment to perform tasks; inadequate staff qualifications indicated in the Canadian Forces Task Plans and Operations (CFTPO) positions; people appointed but not adequately trained for the task; and people asking for waivers due to not being “green tagged” for deployment. On the goods and services contracting side, the contracting policy is a concern for overseas deployed ops as they have to follow a procurement policy/guide designed for procurement in Canada. This was clearly seen as an impediment given that operational sustainment outside Canada requires increased flexibility. Nevertheless, the impact of these challenges never jeopardized the execution of the mission, although delays were incurred and increased/additional staff efforts were required to resolve them.

Communications

Key Finding 6: Absence of secure means of communications in some deployed ops presents a challenge for the effective transmission of essential operational information that could impact the sustainment of operations.

Provision of communications capabilities is a vital sustainment activity in operations. All Task Forces (TF) deployed on ops must exchange information with the operational command. For domestic ops, TFs rely on their integral secure and non-secure means of communications to ensure that information essential to the conduct of ops is circulating. However, key informant interviews identified limitations with network capabilities, and compatibilities with OGDA and civilian partners.

Major expeditionary ops require access to secure and non-secure networks for both operations and sustainment activities. They allow the mission staff to initiate and maintain circulation of unclassified and classified information with the operational HQ in order to ensure operational requirements are met. Small enduring missions are restricted in the exchange of information, being limited to the use of non-secure means of communications like non-secure phone lines, internet or emails. As already indicated in the 2017 evaluation of CAF Ops report, this situation hampers their ability to circulate restricted or classified information. The multiplicity of networks existing among Allies, international and non-governmental organizations also makes the sustainment of communication interoperability a challenge in many theatres of ops.

¹³ Extract from Command SOP 101 – Role and functions of the JTFSC.

Without effective transmission of information, this could impact the sustainment of operations.

Recommendation 4: It is recommended to continue to evaluate communication options based on location and theatre requirements to ensure effective sustainment of operations.

OPI: CJOC

OCI: ADM(Mat)/DGLEPM

Redeployment

The redeployment activities for domestic ops are usually conducted within the same operational area as where the RJTF is established. Closing activities mainly consist of packing materiel and equipment, accounting for its use during the ops, moving to home base by road or by air and “reconstituting” stocks and personnel.

Redeployment activities for expeditionary ops are those linked to the deactivation and closing of the theatre of ops. The closing of a theatre of ops involves both ops and support-level decisions. Specific sets of orders are published to cover ops closing, de-activation and redeployment. A CJOC strategic movement order allows redeployment activities to pass from the planning to the execution phase of the redeployment. This involves a change of authority for the redeployment of forces, going from being “deployed TF-led” to being “under CJOC’s” authority. CFJP 4.0 explains the process in detail.

Redeployment from expeditionary ops involves many logistics activities to be completed with the concurrence of several enablers¹⁴ to ensure: proper materiel accounting and preparation; drawdown, equipment cleaning and fumigation; load configuration; theatre closing activities; and sealift/airlift to final destination. Returning mission personnel may transit through a decompression process involving transition to a third-location decompression area, if required.

According to some AARs and key informants, there are many sustainment challenges in the redeployment process. The main issues highlighted pertained to visa and customs clearances, inadequate staff qualifications indicated on CFTPO for “augmentees,” and redeployed equipment being quarantined in port of disembarkation by Canada Border Services Agency due to improper cleaning. Despite these challenges and according to TF Comds, the existing redeployment process does allow ops to effectively redeploy from mission areas.

Northern/Arctic Operations

Key Finding 7: Northern Ops and exercises present the same challenges as expeditionary ops but are not always provided with the same capabilities.

As identified in many AARs and by key informants, the deployment of domestic ops within the Northern/Arctic area poses unique operational and sustainment challenges, such as: facing

¹⁴ Main enablers being the integral or elected JTFSC, operational support capabilities from CFJOSG units (3 CSU, 4 CFMCU), and support from CMSG.

austere weather conditions; limited integral capabilities in terms of lines of communications; and limited logistics and support. In addition, JTFN's business model does not include integral troops to assist them in the conduct of regional ops, in contrast to other RJTFs. These characteristics of Northern/Arctic ops make the deployment to this region more similar to the deployment of forces to expeditionary ops than to domestic ops. To assist in the deployment, a theatre activation team using CFJOSG resources to enable this type of deployment has been tried in the past but was put on hold due to other operational and strategic priorities, and a shortage of resources.

Interviews with stakeholders indicated that operational sustainment is a consistent challenge during Northern Ops.¹⁵ Required services, commodities and utilities are in limited supply in most operational areas, and the use of local resources can negatively impact Indigenous population residing nearby due to increased scarcity of all commodities. This situation is even more amplified when combined ops include OGDA.

Although considered domestic ops, the redeployment from Northern/Arctic Ops involves the same restrictive factors as those encountered at deployment abroad and habitually involves the use of air and sea lift to redeploy personnel, materiel and equipment back to home base. Overall, the lack of a unified plan to support the North presents a potential factor for operational failure.

Recommendation 5: It is recommended that the development of a unified pan-government plan be assessed to enable planned and deliberate sustainment efforts in the North.

OPI: CJOC

OCI: SJS, ADM(Fin)/CFO, ADM(Pol)

Key Finding 8: Utilization of Joint Exercise and Training Account funds for ops in the Northern region is seen by multiple stakeholders, including JTFN, as an impediment for the acquisition of local support.

Many key informant interviewees, as well as statements made in AARs, mentioned issues regarding the Op NANOOK series of exercises in the Northern region. More specifically, the issues mentioned were with respect to relying on the use of Joint Exercise and Training Account (JETA) funds to conduct these exercises in the North. The use of JETA funds is governed by a framework that limits certain types of expenditures.¹⁶ For example, with JETA funds it is not possible to take on inventory, acquire permanent infrastructure or equipment or fund routine maintenance costs. Given these constraints, program stakeholders felt that JETA funds do not provide the necessary flexibility to ensure that adequate support can be locally acquired. Furthermore, stakeholders asserted that these types of exercises are more similar to expeditionary ops as they are conducted in the harsh conditions of the North, and numerous

¹⁵ Almost all activities conducted in the Northern/Arctic area are considered as Exercise but still have a tactic-operational objective.

¹⁶ See the 2013 document on Joint Exercise and Training Account (JETA) Governance Framework, Annex B paragraph 2.

challenges are encountered, such as very limited access to infrastructure, support capabilities, land lines for communications, and adequate air and sea terminals.

As a result, several stakeholders suggested that the use of the OFA could assist with some of the limitations described previously that are associated with using JETA funds for ops in the North. OFA funds are meant to financially support CAF current and contingency ops and would allow for increased flexibility and efficiency to support operational sustainment needs given that OFA funds can be used for the inventory, equipment and maintenance costs associated with an operation. Overall, the evaluation evidence suggests that the use of OFA funds instead of JETA funds in the North may result in increasing the CAF's capacity to support the sustainment of ops in this region.

Recently, a separate review was conducted on the expenditures covering the three sovereignty ops held annually by CAF in the North and showed that the JETA funds budgeted were not completely used. However, interviews with individuals involved in the conduct of those exercises stated that there had been limitations in place with respect to the amount of funds allocated for local procurement. Key program stakeholders indicated that JTFN would develop a plan to permit JETA funds to be maximized in the future keeping in line with the governance frameworks for these funds. Table 5 presents the planned and actual expenditures over the evaluated period.

Northern Exercises	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
Op NANOOK	\$6,636,134	\$5,040,634	\$3,932,397	\$1,513,795	\$2,332,437
Op NUNALIVUT	\$2,714,420	\$2,506,119	\$2,976,722	\$2,240,073	\$2,505,715
Op NUNAKPUT	\$90,310	\$138,220	\$206,077	\$343,124	\$194,487
Total Actual Expenditures	\$9,440,864	\$7,684,973	\$7,115,196	\$4,096,992	\$5,032,639
Total Planned Expenditures	\$10,000,000	\$8,572,700	\$8,680,000	\$8,000,000	\$10,000,000
Difference Planned vs Actual	\$559,136	\$887,727	\$1,564,804	\$3,903,008	\$4,967,361
% Underspent	6%	10%	18%	49%	50%

Table 3. Financial Data - Ops in the North/Arctic. This table outlines JETA Expenditures from FY 2014/15 to FY 2018/19.

Recommendation 6: It is recommended that the use of OFA funds for the Op NANOOK series be examined.

OPI: CJOC
OCI: SJS, ADM(Fin)/CFO

2.3.4 Engaging with Partners

Key Finding 9: Engagement arrangements with allies, coalition partners, civilian organizations and OGDA are force multipliers as well as sustainment enablers for ops and should be initiated early to maximize cohesion between partners.

Engagement is a sustainment enabler within a military context and fosters operational reach, collaboration, cooperation, mutual assistance and interoperability. Section 3.3-2 of CDIO 3000 (Ops) indicates that the term “Operational Engagement Plan” is not defined in CAF doctrine. Nevertheless, key informant interviews and formal presentations show that CJOC Operational Engagement with allied forces is present and positively impacts all sustainment activities such as leveraging allied logistical supply chains. Stakeholders involved in operational engagement explained that the Operational Engagement Plan flows from the DND Global Engagement Strategy, the DND/CAF Global Engagement Planning Guidance, and the Force Posture and Readiness Plans. In addition to the Five Eyes network, the defence forces of numerous other countries where CAF conducts ops were identified by the stakeholders as engagement partners.

Engagement with Military Partners

All engagements must relate to CJOC’s mission and must reflect the Comd’s intent. Long-term engagement activities are supported by an implementation plan allocating resources and describing desired outcomes and responsibilities. As such, 36 memoranda of understanding have been signed with key partners and Allies, and one Letter of Assist exists with the United Nations showing the effectiveness of the engagement plan with other forces.

Engagement with OGDA

Liaising and maintaining relationships with OGDA is also essential to the effective planning and execution of ops. When justified by the type of operation to be conducted, sets of orders clearly articulate the guidance to amplify this type of engagement as an enabler. Specific CDIOs, SOODO and CFJPs cover the engagement process established with OGDA. Lessons learned extracted from various AARs indicate how closer relations with OGDA resulted in operational benefits. For example, a memorandum of understanding has been signed with the Royal Canadian Mounted Police for mutual collaboration on domestic and expeditionary ops. Agreements also exist covering engagement commitments between the CAF and Global Affairs Canada, Canadian Border Services Agency, Department of Fisheries and Oceans, Parks Canada and the Canadian Coast Guard. At the continental level, engagement activities with the Joint Rescue Coordination Centres and the Marine Security Operations Centres are involved in emergency relief and are examples of commitments.

OGDA are involved in the planning and conduct of many joint ops and exercises domestically and abroad. Operational guidance, orders and practices ensure their integration within CAF military business. In addition, regular liaison activities are conducted and are reflected in the Command battle rhythm of CJOC HQ and in the battle rhythm of sub-units and CAF components. However, key informant interviews and focus groups indicated that for small

missions deployed abroad, relationships with OGDA may require some improvements. For example, the relationship with Global Affairs Canada exists more at the operational level but is not always reflected in the mission areas, on the ground. Key informants and AARs regularly indicated that operational engagements are not initiated early enough when a mission area has been identified. This late engagement process impedes the development of proper support capabilities.

Recommendation 7: It is recommended to initiate engagement activities with international partners as soon as operational activities are expected in a region in order to establish and/or build relationships and gain the required sustainment support for successful CAF Ops.

OPI: SJS
OCI: ADM(Pol), CJOC

2.3.5 Systems and Data for Sustainment

Force Generators providing the TF to be deployed on ops have the initial responsibility of providing sufficient personnel and materiel support. Once deployed, the TF Comd has the integral responsibility to monitor and oversee the composition, size, condition and support of personnel and materiel. However, according to CDIO 4000, CJOC HQ “provides the operational oversight of all deployed operations and is therefore responsible to ensure efficient and effective support at all times.”¹⁷

Key Finding 10: Identification of theatre support requirements of deployed ops is based on staff-intensive working methods. No mechanisms exist to measure and adjust the effectiveness of delivery of materiel to theatres of ops.

According to key informant interviews, there are no defined metrics or existing digital records systems to identify the required support to deployed ops. This is currently being done through staff-intensive methods. For instance, reports and returns represent the baseline for providing the necessary linkages with other CJOC branches, Force Generators and organizations within NDHQ as it pertains to sustainment. Table 6 presents the main reports assisting in identifying potential support required.

Reports	Due dates	To be submitted to	Transmission mode
SITUATION REPORT	As per Op Order guidance	CFICC	Emails via secure modes (CSNI) when existing
LOGISTICS REPORT	Monday 12h00 Zulu time	Respective Joint Support (J4) Desk O	
EQUIPMENT STATUS REPORT			
AMMUNITION STATUS REPORT			

¹⁷ CDIO 4000, Section 11, 4.11-1 para 1.

AMMUNITION EXPENDITURE REPORT	10th day of each month		
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Table 4. Schedule of deployed ops support-related reports and returns. This table itemizes the main reports which identify potential support required.

Key informants indicated that the CAF does not currently possess the necessary digital tools to appropriately measure and adjust the effective delivery of materiel. The Defence Resource Management Information System (DRMIS) is the tool utilized to track quantities, types and locations of all stored supplies. The evaluation team was informed that DRMIS is unable to forecast materiel requirements in a theatre of ops and that there are no other tools available to do so.

DND is progressing two initiatives that have the potential to mitigate these challenges. They are:

- Modernization and Integration of Sustainment and Logistics (MISL) – This departmental initiative seeks to enhance materiel visibility across the Supply Chain by achieving national-level integration of current standalone Enterprise Resource Planning Systems (ERP) for transportation and ammunition into the DRMIS environment; and
- Distribution and Materiel Inventory Network Optimization (DMINO) – This departmental initiative seeks to improve demand satisfaction rates for end-users to acceptable levels in order to enhance operational readiness capabilities of the CAF.

Recommendation 8: It is recommended that tools under development to support the national sustainment process (e.g., MISL and DMINO) be designed to facilitate the identification of operational support requirements and tracking of materiel shipped to deployed ops.

OPI: SJS

OCI: ADM(Mat), ADM(DIA), ADM(IM), CJOC

Incorporation of Lessons Learned

A review of the various repositories containing the lessons learned shows that all AARs have a section pertaining to sustainment. Key informant interviews and directives on lessons learned indicated that such information is thoroughly analysed so that best practices and corrective actions are taken into consideration to improve ongoing ops and to assist in shaping the planning for sustainment of future ops.

Responses to the evaluation questionnaire, as well as a review of AARs identified a few situations where a new capability linked to the sustainment portfolio was introduced in deployed ops. Key informants indicated that reporting on an emerging new capability in lessons learned reports resulted in new capabilities being integrated into an operation during the planning phase.

Financial Support

Finance is seen as a command function in the evaluation of the effectiveness of operational sustainment. A matrix applicable to CJOC HQ, subordinated units and deployed ops staff clearly delineates the financial responsibilities and delegation of authorities applicable to those involved in financial decisions in relation to ops. This financial document has been implemented and is subject to periodic reviews and adjustments. Furthermore, a review of the global financial statements covering the period from FY 2016/17 to FY 2018/19 shows that an effective process is in place to thoroughly manage all allocated funds. For each account and each operation, the process identifies fund surpluses and pressures. This is supported by both a risk assessment analysis and proper recommendations made to adjust resource requirements. Overall, the financial support executed by CJOC on ops proved to be effective.

2.4 Performance - Demonstration of Efficiency and Economy

Key Finding 11: Ops staff consider that operational effectiveness is more vital than efficiency and economy in sustainment of ops.

The question of how to obtain increased operational results with fewer or even the same resources is not the primary question considered by operational Comds and staff “in the heat of battle.” Comds are faced with a complex security environment, reacting to unpredictable situations, acting in austere conditions and highly complex areas of ops. All staff interviewed on this subject emphasized the fact that “effectiveness,” achieving the desired effects in ops, was the first priority and, while “efficiency” is still a priority, it is difficult to achieve. “Economy” is considered almost as a non-issue. In this context, financial concerns are not at the forefront when operational decisions have to be made. Because of this operational reality, assessing the efficiency and economy of results achieved by a program like the C2 and Sustainment of Operations presents challenges. In the context of ops, the achievement of objectives is paramount, with efficiency and economy becoming a secondary concern.

2.4.1 Efficiency

Barriers to Efficiency

Based on evidence from interviews and document review, the evaluation team found that there are several factors that adversely impact program efficiency. These include:

- The application of existing regulations and policies is an impediment to efficient support to expeditionary ops;
- Absence of classified means of communications with some deployed ops (mainly the small missions), impeding the circulation of operational information, which can have consequences on operational sustainment;
- Planning calendars for certain northern activities not reflecting seasonal conditions in the North;

- Inaccuracy of some of the information in the CFTPO document negatively impacting the preparation of personnel and the execution of the mission because of missing/erroneous personnel competency requirements;
- Effective sustainment only made possible through the deployment of additional quantities of equipment, materiel and ammunition, as a direct result of inadequate materiel forecasting tools;
- The considerations around the “ratio” of combat arms functions versus combat service support functions (i.e., the tooth-to-tail ratio), which appears to be a limiting factor when debating the number of support functions to include in tables of organization and equipment or to be sent on tasking or to on-site reconnaissance;
- The Professional Military Education program,¹⁸ where all support planning (Force Generators support or op level sustainment) is assigned to the Joint Support Staff (J4) or affiliated Support Branch Head, creating blurred roles during planning, confusion and inefficiencies; and
- Difficult tracking of materiel in transit to missions and proper inventory and location systems for materiel once in theatre.

Time and maturity of the program will determine the level of impact on the efficiency of the C2 and Sustainment of Operations Program.

Efficiency Multipliers

Key informants, program documentation and AARs relate to a number of changes that have been made with the intent to improve program efficiency. There have been efforts made to clarify roles linked to accountabilities, responsibilities and authorities of internal staff and subordinate units, and to delegate to the lowest levels where possible (empowerment). An extensive matrix was developed delegating financial authorities based on staff positions and the type and limits of financial expenditures (clarity). Changes were made to ensure SMEs directly involved in the conception of projects are the ones responsible for presenting those projects to senior management (involvement). The delegation of decision making to lower levels (where appropriate) has had the effect of reducing the number of formal decisions required by Comd CJOC on a yearly basis from more than 200 to only 34 (delegation).

Senior leadership has demonstrated an open-minded approach to new concepts, approaches and experimentation in sustainment (innovation). This is seen in the development of multiple initiatives, including the review study conducted preceding the implementation of the optimization process, the Plan-Execute-Measure-Adjust approach, and the “How We Fight” concept (implementation). There has also been the development of a global vision regarding

¹⁸ The Professional Military Education program is covered by PIP 3.2.

lessons learned, which is now being viewed as a system of intertwined activities, employed within HQ to optimize results (vision).

Continuous improvement processes have been introduced to govern the business conducted by the Command HQ in measuring and adapting the organizational structure. Many of the principle documents, publications and standing ops procedures have been reviewed and adapted following the 2013 amalgamation of three separate operational headquarters. In addition, during FY 2018/19, CJOC published the Materiel Accountability Action Plan to address inventory management deficiencies and to consider the disposal of obsolete ammunition as identified by the Office of the Auditor General in 2017.

It is too early to determine the impacts of these improvements; however, they may constitute the baseline for a future assessment.

Impacts of the Defence Supply Chain on Operational Sustainment

Key Finding 12: Inefficiencies in defence sustainment organizations and processes impact the efficient operational sustainment of ops.

Reports from the Office of the Auditor General, internal reviews, multiple Defence College papers, magazine articles and AARs have all commented on the impacts on ops created by recurrent inefficiencies of the DSC. The following issues were noted:

- Overstocking and understocking of defence materiel;
- Dormant stocks¹⁹ being warehoused while the same items were regularly bought on the market;
- Obsolete, decommissioned and expired items still occupying vital space in warehouses;
- Lack of visibility on many stocks;
- Loss of visibility while materiel is in transit;
- Difficulty tracking and estimating the exact value of inventories;
- Global inefficiencies at multiple levels of the supply chain activities;
- High management costs;
- Storage space not being optimized;
- Repairable items stored at 3rd line installations awaiting repair, which will never be fixed because the exact items are being acquired on the market or have become obsolete;
- Accountability levels lacking clarity;
- Multiplicity of actors involved with multiple and divergent interests;
- No central authority on departmental sustainment (federated approach); and
- Inefficient materiel disposal.

¹⁹ Dormant stock definition applies to supply items stored on the shelves for four years or more.

Fortunately, these issues have not resulted in any failure to achieve results in ops. Program stakeholders report that success in ops is not dependent on the existing mechanisms and functioning of the supply system but is more related to human factors (i.e., due to the fact that DND/CAF employs conscientious, knowledgeable and professional staff at all critical levels of the sustainment process, ensuring that results are achieved as they make things happen).

In response, DND/CAF has implemented multiple sustainment initiatives. These include, but are not limited to:

- MISL – Noted earlier in the report;
- DMINO – Noted earlier in the report;
- Materiel Identification – This departmental project has been established to clean and standardize DND’s materiel records to enable better Supply Chain execution;
- E-Procurement – This is a Public Services and Procurement Canada led initiative to adopt the SAP Ariba tool for the procurement of goods and services across government and will see changes in the way that DND procures goods and services;
- Defence Resource Business Modernization – This is a DND initiative to update the DRMIS system;
- Automatic Identification Technology – This is a departmental initiative aimed at adopting barcoding and radio frequency identification technology and associated software across the Supply Chain to improve data quality and allow for both increased effectiveness and efficiency; and
- ERP User Experience – This is a departmental initiative to adopt the SAP software to allow for better DRMIS user experience.

Some of our allies have also implemented changes in their sustainment structures. For example, some have found answers to their challenges by pairing unity of command, centralized control and decentralized execution as a C2 concept for their military sustainment activities.

In August 2019, a charter was co-signed by Assistant Deputy Minister (Materiel), Director General Materiel Support and Supply Chain, Strategic Joint Staff (SJS) Director of Staff, and SJS Strategic Joint Support (J4), establishing the requisite Accountabilities, Responsibilities and Authorities for inclusion in a future relevant “Organization and Accountability Directives and Regulations” designed to enable the management of the DSC as an end-to-end strategic asset. A future evaluation of this approach will determine if this strategy was the best approach to benefit the operational sustainment.

Recommendation 9: It is recommended that the multiple DSC modernization efforts currently underway through the Defence Supply Chain Oversight Committee continue to progress in order to optimize sustainment of ops.

OPI: DOS SJS, ADM(Mat)

OCI: CJOC

CJOC C2 Evaluation Index

A “C2 Evaluation Index” has been developed by CJOC to measure and improve efficiency of the program. The details of this index are provided at [Annex F](#). The C2 index contains three identical main indicators for three of the evaluated FYs (2016/17 to 2018/19) but with a different weight factor used for FY 2018/19. All indicators achieved their desired targets; however, although Indicator #2 (Engaging with operational-level partners and other stakeholders to ensure unity of action) was assessed as satisfactory, it showed the lowest score.

While the C2 evaluation index and indicators remain somewhat broad, the development of the index represents a positive step forward in the measurement and consideration of efficiency for the program. Overall, while the C2 and Sustainment program is grappling with some issues of inefficiency in the sustainment process, the program has demonstrated positive performance with the positive impacts on ops.

2.4.2 Economy

Table 7 shows the detail of expenditures for the first two years of existence of this Program.

Program 1.6							
SERIAL	COMMAND, CONTROL AND SUSTAINMENT OF OPERATIONS						
	L1s involved	TOTAL EXPENDITURES FOR FY 2017/18 and 2018/19		Variance between FY 2017/18 and FY 2018/19	Delta in percent	Average	Proportion
		FY 2017/18	FY 2018/19				
1	CMP	\$167,940,291	\$162,303,695	-\$5,636,596	-3%	\$165,121,993	61%
2	ADM(Fin) /CFO	\$93,293,510	\$41,069,309	-\$52,224,201	-56%	\$67,181,409	25%
3	CJOC	\$35,438,460	\$36,631,512	\$1,193,052	3%	\$36,034,986	13%
4	RCAF	\$3,546,283	\$3,464,165	-\$82,118	-2%	\$3,505,224	1%
5	TOTAL	\$300,218,544	\$243,468,681	-\$56,749,996	-19%	\$271,843,679	100%

Table 5. Total Program 1.6 expenditures. This table outlines the expenditures made on Program 1.6 by various L1s for FYs 2017/18 and 2018/19.

Even if Comd CJOC is accountable for this Program, only 13 percent of the total expenditures are under his direct control. Three other L1s are recording expenditures on this Program.

It was not possible to assess the economy of the entire program since the primary focus of the program remains timely execution of C2 and sustainment activities to support operational objectives. Furthermore, it is recognized that L1s are accountable for expenditures under their direct control but there is a lack of overview and accountability for Program activities delivered by multiple L1s. The department would benefit from clarifying allocations, monitoring and reporting of Program expenditures. This was identified as a finding and recommendation in the 2020 evaluation of CAF Operations – Search and Rescue.

2.4.3 Conclusion

The evaluation found that operational sustainment was a key enabler that was essential for the success of all ops. While opportunities for improvement have been identified to further bolster the DSC and support processes in the CAF, overall the sustainment aspect of the program proved to be effective in the preparation, planning, conduct and sustainment of operational activities, as well as in their engagement with partners.

Inefficiencies observed in operational sustainment were notably linked to the national approach to sustainment activities. Finally, while consideration was given to the issue of economy, due to the nature of program activities, economy in the execution of operations is secondary to the primary focus of achieving operational objectives. An ideal balance should be reached between economy of ops and achieving operational objectives.

Annex A—Management Action Plan

ADM(RS) Recommendation

1. It is recommended that the Performance Information Profile for Program 1.6 be expanded to reflect the two dimensions of the program.

Management Action

OPI: CJOC
OCI: C Prog, ADM(RS)

Action Plan:

Agree with recommendation.

In collaboration with all relevant CJOC SMEs and stakeholders, the PIP for this Program will be adjusted to clearly define “Operational Sustainment” as well as “Operational Command and Control” in the context of the “Operations” core responsibility area of the DRF. Alignments and redefinitions will include performance indicators, performance targets and a logic model, as deemed appropriate.

Action 1.1: Revised PIP will be provided to VCDS/C Prog/DDDRR.

OPI: CJOC/DG Rdns, DCM
OCI: VCDS/C Prog, CJOC DG Plans/OA, DG Sp, DG Ops ADM(RS)/DGE
Target Date: August 2021

ADM(RS) Recommendation

2. It is recommended that operational support Subject Matter Experts be included as part of the on-the-ground early reconnaissance group of deployed ops.

Management Action

OPI: CJOC
Action Plan:

Agree with recommendation.

CJOC endeavours to incorporate operational support SMEs during all reconnaissance activities. This includes J4 contracting, J4 Ops (depending on complexity of mission), Joint Health Service Support, and Joint Engineer personnel to advise and prepare teams for deployed ops.

When activities involve CA, RCAF or RCN component Comds, tactical support SMEs are provided by the respective components and are supplemented by CJOC HQ, CFJOSG or Canadian Forces

Ammunition Depot (CFAD) operational representatives, when required. The inclusion of SMEs is often aligned with component specific activities such as the Airfield Activation Surge Team or Forward Logistical Support teams employed by the RCAF and RCN respectively.

To comply with the recommendation:

Action 2.1: CJOC DG Ops will review all of its sets of orders and policies to ensure that the roles and importance of support SMEs in reconnaissance is clearly stated.

Action 2.2: CJOC will also provide guidance to appointed TF Comds on the use of operational support SMEs in on-the-ground tactical reconnaissance.

OPI: CJOC/DG Ops

OCI: RCAF, RCN, CJOC DG Sp, CFJOSG, CMSG

Target Date: March 2021

ADM(RS) Recommendation

3. It is recommended that OSHs be established with a stand-alone mandate, including a funding mechanism distinct from the current named missions.

Management Action

OPI: CJOC

OCI: ADM(Fin)/CFO

Action Plan:

Agree with recommendation. Comd CJOC published the OSH Directive on June 13, 2020. The directive acknowledges the gap of a global OSH network and future efforts will pursue the regions of South-East Asia and East Africa.

Action 3.1: CJOC DG Sp, assisted by CJOC POLAD, ADM(Pol) and SJS, and in consultation with CFJOSG, will support ADM(Pol) and SJS to work towards the establishment of a stand-alone mandate. The intent of this mandate will be to provide the operational authorities for the global OSH network as an entity versus the current process of activating independent OSHs to support named missions. These stand-alone operational authorities are the gateway to consistent funding of OSHs via the OFA as well as allowing all deployed OSH personnel to be entitled to allowances, medals and income tax relief. Once the authorities and funding are established, operational-level sustainment delivered by the OSHs to any and all expeditionary ops will become significantly more coherent. Additionally, these measures will enable CJOC to surge resources in and out of the OSHs on an as-required basis without the requirement to request external authority to do so. The end state is for these OSHs to have the operational flexibility to support the concurrency of ops in Canada's defence policy: *Strong, Secure, Engaged*.

Action 3.2: CJOC, with consultation from SJS and ADM(Pol), will close the gaps within the existing OSH network by selecting locations that not only support our Regional Operation Plans but also build on extant relationships with allied partners. These OSHs will be not be permanent in nature but will be regionally flexible and responsive to operational needs for new and established missions. Future efforts will focus on the development of agreements and allied partnerships, the latter through exercises and mutual support opportunities.

Action 3.3: For the development of any agreements linked to the OSHs, CJOC DG Sp will coordinate with SJS, ADM(Fin)/CFO, ADM(IE), ADM(Mat), and ADM(Pol)/DPFL to ensure that OSH activities are aligned with their requirements and responsibilities.

OPI: CJOC/DG Sp, J4

OCI: SJS, ADM(Pol), ADM(IE), ADM(Fin)/CFO, CJOC J4, CJOC J8, CJOC POLAD, CJOC LEGAD, CJOC J Engr, VCDS/Canadian Defence Attachés

Target date: July 2022

ADM(RS) Recommendation

4. It is recommended to continue to evaluate communication options based on location and theatre requirements to ensure effective sustainment of operations.

Management Action

OPI: CJOC

OCI: ADM(Mat)/DGLPEM

Action Plan:

Agree with recommendation.

Action 4.1: CJOC Small Enduring and Mission Commander (SEM Comd) will review, in consultation with the respective TF Comds, current C2 capabilities for all Small and Enduring Missions and compile a list of deficiencies.

Action 4.2: CJOC J6, working with CJOC Force Protection and the CJOC Provost Marshall, will confirm the procedural, organizational, physical and security changes required to correct the deficiency. CJOC J6 will produce an estimate of the initial and ongoing fiscal impact.

Action 4.3: SEM Comd will review and approve corrective measures on a per-theatre basis, based on a cost/benefit analysis of the added C2 capability versus the level of effort needed to achieve and maintain the recommended capability. SEM Comd will maintain a record of these decisions for future review.

Action 4.4: CJOC J6 will develop an implementation plan for approved changes, procure equipment and contract services as required, and arrange for a technical assistance visit with appropriate SMEs.

Action 4.5: SEM Comd will review each mission annually to determine if the cost/benefit analysis remains valid. A review will also be conducted if there are any significant changes to a mission's location, primary tasks or structure. Any TF Comd may also initiate a review.

OPI: CJOC/DG Ops/SEM Comd

OCI: CJOC/DG Sp/J6, ADM(Mat)/DGLEPM/LCMM for Command Systems (DCLSPM), CJOC Force Protection, CJOC Provost Marshall, CJOC J Engr, SEM TF Comd

Target Date: September 2021

ADM(RS) Recommendation

5. It is recommended that the development of a unified pan-government plan be assessed to enable planned and deliberate sustainment efforts in the North.

Management Action

OPI: CJOC

OCI: SJS, ADM(Pol), ADM(Fin)/CFO

Action Plan:

Agree with recommendation.

CJOC with JTFN as planning lead, in collaboration with key stakeholders, is developing the Arctic Regional Operations Plan (AROP) on behalf of the CDS.

Action 5.1: The AROP will provide general direction and guidance on the synchronization and coordination for CAF Arctic Ops to ensure they support and are aligned with Government of Canada priorities and objectives. CJOC will frame the AROP within a realistic and achievable plan to enable the effective deployment and sustainment of joint forces across the operational spectrum spanning safety, security and defence within the region.

Success in the Arctic depends on synchronizing DND/CAF activities, investments and strategic messaging across all OGDA, which have roles and responsibilities in the North. The CAF plan for support to the other complementary sectors of Northern security will include political, economic, environmental and societal sectors.

The development of the CAF Northern footprint must be focused on specific enhancements, which improve the CAF expected Arctic missions and not compete with other OGDA mandates and authorities, which also provide safety and security services for Canada.

Action 5.2: With no immediate military threat in the Arctic, the CAF approach to great power competition/deterrence in the North will look to advance domain awareness capabilities, supporting NORAD modernization and continental defence, and strengthening cooperation and collaboration with domestic and international partners on safety, security and defence issues.

The AROP operational design has been widely accepted, and redevelopment of the main body document and supporting annexes will be completed by JTFN by late 2020/early 2021. It is recommended that JTFN be empowered to oversee all CAF ops and exercises within its area of responsibility to ensure deliberate and efficient sustainment plans are executed in the North.

OPI: CJOC/JTFN

OCI: CJOC/DG Plans, SJS, ADM(Fin)/CFO, ADM(Pol)

Target Date: AROP document to be completed by March 31, 2021 with annual review to be completed every subsequent end of March.

ADM(RS) Recommendation

6. It is recommended that the use of OFA funds for the Op NANOOK series be examined.

Management Action

OPI: CJOC

OCI: SJS, ADM(Fin)/CFO

Action Plan:

Agree with recommendation.

Action 6.1: CJOC J8, in concert with DJR and CJOC Level 2s (including CFJOSG and JTFN), will examine the specific instances where the use of JETA was an “impediment for the acquisition of local support.”

Action 6.2: Specifically, CJOC J8 will take the lead in examining the following issues. Given that the availability of overall funding is not a concern (as evidenced by the fact that the overall budget has been underspent from 6 – 50 percent over the past five fiscal years), CJOC J8 will examine:

- (1) What are the limitations on the availability of funds for local procurement (as identified in the report)?;
- (2) Why these limitations exist; and
- (3) Whether the use of OFA would in fact resolve these issues.

Of note, although OFA has a different governance framework than JETA, it is likely that an ineligible expense under JETA (for reconstituting certain consumables or assets) may continue to be ineligible in OFA. It would be necessary to review with L1s the parameters and responsibilities of a Force Generator and Force Employer to alleviate limitations whilst making any confirmations on a case-by-case basis as they arise.

Action 6.3: CJOC J8 will examine whether the use of OFA will in fact provide additional flexibility in the “acquisition of local support.” The report would seem to infer that Op NANOOK is akin to an expeditionary ops (and would thus be eligible for OFA), and thus be eligible for additional delegated authorities (financial and transactional). Given the domestic nature of the Operation, the end users cannot be given delegated authorities that resemble a deployed Op (e.g., 400K/200K Contracting Direct with Trade competitive and non-competitive contracting authorities). As such, the use of OFA (and the required designations of TF Comds) would not rectify these delegated authorities limitations and may require a change to the Defence mandate.

OPI: CJOC J8

OCI: SJS, ADM(Fin)/CFO, RCN, CA, RCN, Military Personnel Command, CJOC DG Ops, DG Sp, DG Rdns, JTFN, CFJOSG

Target Date: March 31, 2021

ADM(RS) Recommendation

7. It is recommended to initiate engagement activities with international partners as soon as operational activities are expected in a region in order to establish and/or build relationships and gain the required support for successful CAF ops.

Management Action

OPI: SJS

OCI: ADM(Pol), CJOC

Action Plan:

Agree with recommendation.

Action 7.1: The recommendation being proposed by ADM(RS) in relation to initiation of engagement activities with international partners will be taken into consideration earlier in the planning process, as soon as mission areas have been identified, with particular attention being required for ops and activities with new partners and/or in regions where CAF will depend on support from new or existing partners to be successful. Depending on the partner and region, engagement activities may need to be conducted in sequence (political, strategic, operational, then tactical) or in parallel, before, during and after an operation or activity, so effective OGDA involvement and integration, at the outset, will be key to success.

OPI: SJS

OCI: ADM(Pol), OGD, applicable Canadian Defence Attachés

Target Date: July 2022

ADM(RS) Recommendation

8. It is recommended that tools under development to support the national sustainment process (e.g., MISL and DMINO) be designed to facilitate the identification of operational support requirements and tracking of materiel shipped to deployed ops.

Management Action

OPI: SJS

OCI: ADM(Mat), ADM(DIA), ADM(IM), CJOC

Action Plan:

Agree with recommendation.

Director of Staff Strategic Joint Staff (DOS SJS) and ADM(Mat) as the co-chairs of the DSC are overseeing several initiatives to increase the capability of the DSC to support CAF Ops. Two key initiatives being undertaken are MISL and the DMINO, both of which must be managed and synchronized under Assistant Deputy Minister (Data, Innovation and Analytics)'s (ADM(DIA)) DRBM Programme to ensure alignment with other L1 initiatives and the overall DND/CAF enterprise resource planning system.

Action 8.1: The overall design concept of MISL is to ensure improved support to CAF elements working day-to-day in garrison conducting Force Generation activities and to support CAF elements deployed on ops both domestically and internationally. With an integrated Transportation and Warehousing system on a SAP S/4 HANA landscape, with communications back to the corporate ERP SAP ECC landscape, asset visibility, in transit visibility and materiel accountability will be improved and will ensure an increased ability to support deployed ops. During all design work of MISL, support to deployed ops is a key requirement in ensuring the proposed Transportation and Warehousing Solution will meet DND/CAF high-level requirements.

Target Date: MISL – Q3 2023

Action 8.2: While DMINO is specifically designed to improve and optimize the National Freight Run across Canada to improve service levels, a secondary effect will be improved service delivery to deployed ops by reducing transit time from national Depots to Air and Seaports of Embarkation supporting international ops. The design concept behind DMINO is to provide an increased service level to all supported ops through a Time Definite Delivery Model.

Target Date: DMINO – Q4 2022

OPI: SJS

OCI: CJOC, ADM(IM), ADM(DIA)

ADM(RS) Recommendation

9. It is recommended that the DSC modernization efforts currently underway through the Defence Supply Chain Oversight Committee continue to progress in order to optimize sustainment of ops.

OPI: DOS SJS, ADM(Mat)

OCI: CJOC

Action Plan:

Agree with recommendation.

Action 9.1: ADM(Mat) and SJS, in collaboration with CJOC, will address this recommendation by including the following into the efforts underway:

- Establish a Joint Defence Supply Chain requirements team that consolidates and synchronizes modernization efforts. This Management Action Plan will include a review of the Terms of Reference and co-chairing construct for the DSC Oversight Committee. These efforts will integrate with applicable enterprise-wide initiatives such as the upgrade to the enterprise resource system and the Joint Combat Systems Integrator.
- Operationalize the approved DSC Performance Measurement Framework.

This Management Action Plan will be considered closed when:

- A memorandum of understanding establishing the Joint requirements team has been finalized; and
- The DSC PMF launches its initial capability, evidenced by a presentation at the Defence Supply Chain Oversight Committee.

OPI: ADM(Mat), DOS SJS

OCI: CJOC

Target Date: January 2022

Annex B—Evaluation Methodology and Limitations

1.0 Methodology

The evaluation used multiple lines of evidence and complementary qualitative and quantitative research methods to help ensure the reliability of information and data necessary to support relevance and performance narratives, including the evaluation findings. A triangulation approach was used in order to ensure the validity of data captured through different methods. The methodology established a consistent approach in the collection and analysis of data to support observations, findings, conclusions and recommendations. Based on the evidence from available sources, the evaluation reviewed the achievement of expected immediate outcomes and the efficiency of the sustainment activities stated in the PIP for Program 1.6 to develop a proper baseline for the relevance and performance of the program. Information and data were correlated to each evaluation question and corresponding indicators.

1.1 Overview of Data Collection Methods

Comparison of both qualitative and quantitative assessments was used to validate the overall analysis and to develop the evaluation’s findings and recommendations. The following data collection methods were used to gather qualitative and quantitative data for the evaluation:

- Literature and document review;
- Key informant interviews and focus groups;
- Financial data reviews;
- Questionnaire; and
- Site visits.

1.2 Details on Data Collection Methods

1.2.1 Literature and Document Review

A preliminary document review was conducted as part of the planning phase of the evaluation to gain a foundational understanding of the sustainment activities as a new program listed in the Program Inventory. A comprehensive document review was undertaken as part of the conduct phase of the evaluation, focusing on the relevance and performance of the program.

1.2.2 Key Informant Interviews and Focus Groups

Interviews were conducted in person or over the phone. Interviewees were provided in advance with an interview guide. Clarifying questions were asked during interviews. Notes were taken by the evaluators or agreement was given to be recorded during interviews. These notes were later transcribed and compared for clarity and accuracy using an evidence matrix tool, designed to capture recurring opinions on evaluation themes in a common record.

Over the course of the evaluation study, more than 80 interviews and three focus groups (three to six people) were conducted with key program stakeholders. Focus groups were conducted to minimize the footprint and the workload of stakeholders.

1.2.3 Financial Data Reviews

Financial data covering the program were reviewed to determine the expenditures of program activities. Data covering the period FY 2017/18 to FY 2018/19 were obtained from ADM(Fin)/CFO.

1.2.4 Site Visits

In order to develop an operational picture and to capture information pertaining to the context in which the program is executed, the evaluation team visited the following locations hosting CJOC Units and associated operational enabler units: Trenton, Kingston, Ottawa and Yellowknife.

1.2.5 Questionnaire

To better illustrate findings, a questionnaire containing 34 requests for information has been circulated among CJOC J staff members and Directors.

2.0 Limitations and Mitigation Strategy

The following limitations were identified during the conduct of this evaluation. Table B-1 explains the strategies put in place to mitigate them.

Limitations	Mitigation Strategies
<p>New Program</p> <p>The Program Inventory introduced this program in 2017 with no real cross walk links to follow financial data with the previous Program Alignment Architecture (PAA).</p>	<p>Comparative quantitative data only covered FYs starting in 2017/18.</p>
<p>First Time Evaluation</p> <p>There exists no real baseline to gather the data and evidence able to feed the observations and findings of the sustainment of ops.</p>	<p>This evaluation was conducted with the approach to establish this baseline to be used for future evaluation.</p>
<p>High Staff Turnover</p>	<p>Being informed by the CJOC point of contact for evaluation early in the</p>

<p>CJOC HQ had a 46 percent turnover rate of staff in FY 2019/20, making it difficult to accumulate data, facts and evidence from experienced CJOC staff.</p>	<p>evaluation process, the evaluation interviewed targeted staff identified to be posted out as a priority.</p>
<p>CJOC Recent Initiatives</p> <p>In 2019, CJOC implemented a series of initiatives (HQ Optimization, How We Fight, Plan-Execute-Measure-Adjust approach, Force Employment Lead Planner, pan-domain approach, etc.), impacting the way C2 is undertaken and the execution of ops.</p>	<p>Those initiatives were implemented after an assessment had been conducted among CJOC staff and stakeholders. They may constitute a baseline for future program evaluations; however, were outside the scope of this evaluation.</p>

Table B-1. Evaluation Limitations and Mitigation Strategies. This table lists the limitations of the evaluation and the corresponding mitigation strategies.

Annex C—Logic Model

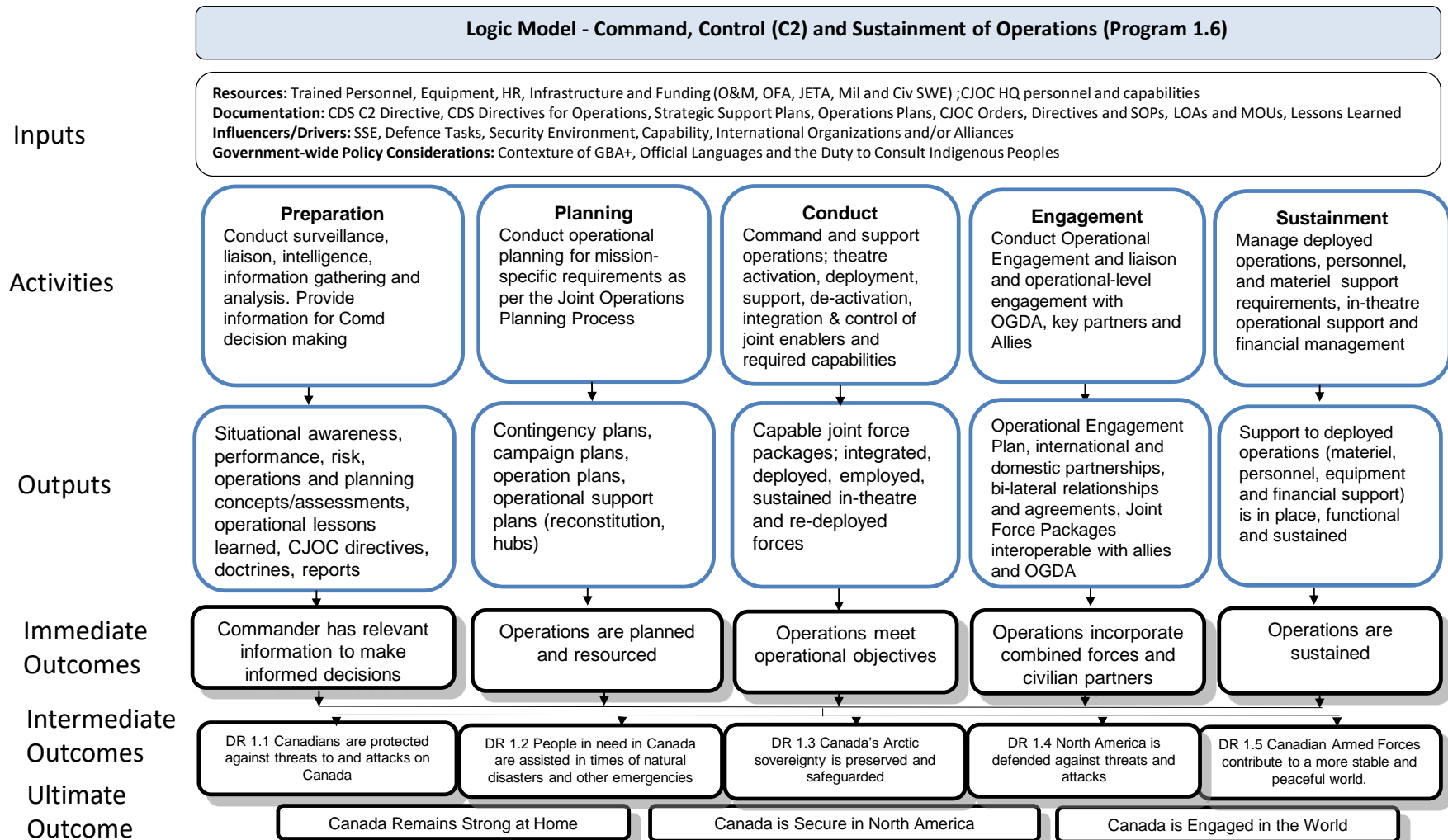


Figure C-1. Logic Model for C2 and Sustainment of Operations. This flowchart shows the relationship between the program’s main activities, outputs and expected outcomes.

Annex D—Evaluation Matrix

Evaluation Matrix of C2 and Sustainment of Operations (Program 1.6)

Relevance							
Evaluation Themes	Evaluation Issues/Questions	Key Indicators	Data Sources				
			Site Visits	Program Data	Surveys	Document/Literature Review	Key Informant Interviews
1-3. Themes related to relevance of C2 and Sustainment of Ops (1. continuous needs; 2. alignment with roles and responsibilities; and 3. alignment with policies and priorities) are covered in the evaluation matrix developed for the evaluation of CAF Ops	N/A	<ul style="list-style-type: none"> Evidence that C2 is a basic foundation to conduct ops 	C2 and Sustainment relevance observations and conclusions are substantiated by the relevance of CAF Ops				
	N/A	<ul style="list-style-type: none"> Evidence that sustainment is a basic foundation to conduct ops 					

Table D-1. Evaluation matrix for the relevance of the program.

Performance - Demonstration of Effectiveness								
Immediate Outcome	Key Activities	Evaluation Issues/Questions	Key Indicators	Data Sources				
				Site Visits	Program Data	Surveys /RFIs	Document/Literature Review	Key Informant Interviews
4. Comd has relevant information to make informed decisions	4.1 Conduct surveillance, liaison, intelligence, information gathering and analysis	4.1.1 To what extent do surveillance, liaison, intelligence, information gathering and analysis provide	<ul style="list-style-type: none"> Existence of surveillance updates (frequency/quality of info) Evidence of liaison between stakeholders Existence of a process to gather information 	X	X	X	X	X

		relevant information?	<ul style="list-style-type: none"> • Degree to which intelligence and analysis provide useful information 					
	4.2 Provide information for Comd's decision making	4.2.1 To what extent does the Comd have the relevant information for decision making?	<ul style="list-style-type: none"> • Existence of global situational awareness process • Incorporation of operational lessons learned • Incorporation of CJOC directives, doctrines and reports • Investigate components of Comds' briefs • Development and utilization of risk assessment tools • Evidence that intelligence provided influenced decision making 	X	X		X	X

5. Ops are planned and resourced	5.1 Conduct operational planning for mission-specific requirements as per the Joint Operations Planning Process	5.1.1 To what extent are ops planned and resourced?	<ul style="list-style-type: none"> • Effective and updated Regional Ops Plans • Effective and up-to-date contingency plans • Comprehensive Ops Plans/Ops Orders • Timely/effective Joint OPP (MND/Policy/SJS (SOPG)/JAG/FG/CJOC (JOPG)) • Level of Operational directives and guidance to TF Comds (to be comprehensive and to meet mission requirements) 		X		X	X
		5.1.2 To what extent is sustainment incorporated into plans?	<ul style="list-style-type: none"> • Effective and up-to-date support plans • Delta existing between plans and its activation • Readiness status of OSH • Effective reconstitution of Forces after ops completed 		X	X	X	X
6. Ops meet expected (planned) objectives	6.1 Command and support to ops activities: activation, support, and de-activation of	6.1.1 To what extent are ops meeting expected objectives?	• CAF successfully deploys to ops	X	X		X	X
			• Ops have C2 processes in place	X	X		X	X
			• Ops have sustainment processes in place	X	X	X	X	X

	theatre of ops; deployment of assets and capabilities; integration and control of joint enablers and required capabilities		<ul style="list-style-type: none"> • CAF successfully re-deploys from ops 	X	X		X	X
7. Ops incorporate engagement with combined forces and civilian partners	7.1 Develop Operational Engagement Plan, conduct liaison and operational-level engagement with OGDA, key partners and Allies	7.1.1 To what extent is CJOC engaging with other forces?	<ul style="list-style-type: none"> • CJOC maintains engagement plans and agreements with other forces 	X	X		X	X
		7.1.2 To what extent is CJOC engaging with civilian partners?	<ul style="list-style-type: none"> • CJOC maintains engagement plans and agreements with civilian partners 	X	X			X
		7.1.3 To what extent is CJOC engaging with OGDA?	<ul style="list-style-type: none"> • CJOC maintains engagement plans and agreements with OGDA 	X	X			X

8. Ops are sustained	8.1 Manage deployed ops, personnel and materiel support requirements	8.1.1 To what extent are deployed ops, personnel and materiel support requirements effectively managed?	<ul style="list-style-type: none"> • The required support is identified and delivered in a timely manner (personnel, materiel, equipment, transport/APOD/SPOD established, local and regional and national partnerships/medical, etc.) • Lessons Learned on mission execution are captured and introduced in ops • Metrics in place to measure materiel delivery effectiveness 	X	X	X		X
	8.2 Monitor in-theatre operational support	8.2.1 To what extent is in-theatre support effectively monitored?	<ul style="list-style-type: none"> • Processes and management tools are in place to anticipate requirements • Lessons Learned on sustainment are considered in support of ops 	X	X	X	X	X
	8.3 Ensure operational financial management	8.3.1 To what extent is operational financial management ensured?	<ul style="list-style-type: none"> • Processes are in place to manage and allocate funds 	X	X	X	X	X
	8.4 Governance of operational sustainment	8.4.1 To what extent is operational sustainment effectively governed?	<ul style="list-style-type: none"> • Operational sustainment Accountabilities, Responsibilities and Authorities are in place • Sustainment personnel 	X	X		X	X

			and resources are effectively managed					
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Table D-2. Evaluation matrix for the demonstration of the effectiveness of the program.

Performance - Demonstration of Efficiency						
Evaluation Issues/Questions	Key Indicators	Data Sources				
		Site Visits	Program Data	Surveys	Document/Literature Review	Key Informant Interviews
9.1 To what extent are measures of efficiency and economy incorporated in the conduct of ops?	9.1.1 Extent to which the notions of economy and efficiency are incorporated in the conduct of ops		X		X	X
9.2 In which ways are inputs determined as required, necessary or exceeding requirements in the conduct of ops?	9.2.1 Extent to which input analysis is conducted, including criticality component	X	X		X	X
9.3 To what extent are inputs made available as needed to ensure timely completion of activities?	9.3.1 Extent of flexibility and adaptability of inputs to meet external events, contextual issues, risks or other assumptions that compromise, assist or otherwise affect the processes (including the timing, quality, quantity or appropriateness of the required inputs)	X	X		X	X

Table D-3. Evaluation matrix for the demonstration of efficiency of the program.

Annex E—CJOC Formations and Units

The following units and components form the core assets to conduct ops subject to the Sustainment of Operations:

- The Canadian Joint Operation Command (CJOC) HQ, located in Ottawa, Ontario;
- The Canadian Forces Integrated Command Centre (CFICC), located in Ottawa, Ontario;
- The Canadian Joint Warfare Centre (CJWC) in Ottawa, Ontario;
- The 1st Canadian Division (1st Cdn Div) HQ, located in Kingston, including the Disaster Assistance Response Team (DART);
- The Canadian Forces Joint Operational Support Group (CFJOSG) located in Kingston, which is comprised of the following five units:
 - Canadian Forces Joint Signal Regiment (CFJSR) in Kingston;
 - 1 Engineer Support Unit (1 ESU) in Kingston;
 - 3 Canadian Support Unit (3 CSU) in Montreal;
 - 4 Canadian Forces Movements Control Unit (4 CFMCU) in Montreal; and
 - Canadian Forces Postal Unit (CFPU) in Kingston.
- The Canadian Materiel Support Group (CMSG), located in Ottawa, which is comprised of the following six units:
 - Four Canadian Forces Ammunition Depots (CFAD) identified as:
 - CFAD Angus, in Borden, Ontario;
 - CFAD Bedford, in Nova Scotia;
 - CFAD Dundurn, in Saskatchewan; and
 - CFAD Rocky Point, on Vancouver Island in British Columbia.
 - Two Canadian Forces Supply Depots (CFSD) identified as:
 - 7 CFSD, in Edmonton, Alberta; and
 - 25 CFSD, in Montreal, Quebec.
- Four Operational Support Hubs (OSH), activated when needed, located in Kuwait, West Africa, Europe (Germany), and Latin America & Caribbean (Jamaica)
- Six Regional Joint Task Forces (RJTF) providing tactical C2 and execution of domestic ops across Canada, and identified as follows:
 - Permanently under CJOC command:
 - Joint Task Force (JTF) North, located in Yellowknife, North West Territory.
 - Under CJOC command when dictated by the operational situation:²⁰
 - JTF Pacific, located in Esquimalt, British Columbia, led by the RCN;
 - JTF West, located in Edmonton, Alberta, Led by 3rd Cdn Div;
 - JTF Central, located in Toronto, Ontario, Led by 4th Cdn Div;
 - JTF East, located in Montreal, Quebec, led by 2nd Cdn Div; and
 - JTF Atlantic, located in Halifax, Nova Scotia, led by the RCN.

²⁰ Those elements are generated by the RCN for the two coasts (Pacific and Atlantic) and by the CA for the territorial elements (West, Central and East).

In addition, CJOC can facilitate the execution of operational mandates by using the following force enablers:

- An integrated Maritime Component Command Liaison Office (MCC LO), provided by the RCN, and an integrated Air Component Command Liaison Office (JFACC LO) provided by the RCAF. Those components are assigned OPCOM or OPCON to CJOC depending on the type of missions. They are responsible for planning, coordinating, allocating, tasking and synchronizing maritime and air assets in support of CJOC;
- Aeronautical Search and Rescue (SAR), coordinated by CJOC, and Maritime SAR, led by the Canadian Coast Guard, which are supported by the CAF through the coastal Joint Rescue Coordination Centres (JRCC);
- Partnership with Parks Canada leading ground SAR in federal parks and reserves.; however, the Canadian Rangers often help with ground SAR in sparsely settled regions of Canada, upon request; and
- Many Liaison Officers assigned to key OGDA,²¹ assigned to allied military forces or to other relevant operational HQs.

²¹ Main OGDA are: Department of Fisheries and Oceans; Canadian Coast Guard; Transport Canada; Public Safety; Global Affairs Canada; and the Royal Canadian Mounted Police.

Annex F—CJOC C2 Evaluation Index

CJOC HQ developed a C2 Evaluation Index²² containing the three indicators identified to measure the performance of the program. As indicated in Table F-1, those indicators are:

- Indicator #1: Overarching control functions;
- Indicator #2: Engaging with operational-level partners and other stakeholders to ensure unity of action; and
- Indicator #3: Rules and constraints established to control each operation.

C2 Evaluation Index	CJOC Performance Measurement Report			
	FYs	2016/17	2017/18	2018/19
Sources		PAA	PAA	DRF
Number of indicators		3	3	3
Number of sub-indicators		17	17	17
Indicator # 1:	Overarching control functions			
Relative Weight		60%		40%
Number of sub-indicators		9		7
Scores obtained indicator #1		93%	95%	95%
Indicator # 2:	Engaging with operational-level partners and other stakeholders to ensure unity of action			
Relative Weight		10%		20%
Number of sub-indicators		3		3
Scores obtained indicator #2		90%	92%	90%
Indicator # 3:	Rules and constraints established to control each operation			
Relative Weight		30%		40%
Number of sub-indicators		5		7
Scores obtained indicator #3		100%	95%	99%
Final score		95%	95%	96%
SCALES DESCRIPTION				
Scale green	Achieved : 90% and above			
Scale yellow	Mostly Achieved: 80 to 89%		Mostly Achieved: 60 to 89%	
Scale red	Not Achieved: Below 80%		Not Achieved: Below 60%	
DETAILS ON ACHIEVEMENTS				
NUMBER OF GREEN	16	15	14	
NUMBER OF YELLOW	1	2	3	
NUMBER OF RED	0	0	0	

Table F-1. CJOC Performance Evaluation Report FY 2016/17 to FY 2018/19.

²² CJOC Performance Measurement Reports for FY 2016/17 to FY 2018/19.