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Evaluation of Land Readiness



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Acronyms and Abbreviations

ADM(IE)	Assistant Deputy Minister (Infrastructure and Environment)
ADM(IM)	Assistant Deputy Minister (Information Management)
ADM(Mat)	Assistant Deputy Minister (Material)
AEV	Armoured Engineering Vehicle
ARCG	Arctic Response Company Group
ARV	Armoured Recovery Vehicle
BG	Battle Group
Bde	Brigade
BCT	Brigade Combat Team [U.S. Army]
Bn	Battalion
CA	Canadian Army
CAX	Computer Assisted Exercise
CBG	Canadian Brigade Group (Res F)
CCA	Commander Canadian Army
CDS	Chief of the Defence Staff
CJOC	Canadian Joint Operations Command
CMBG	Canadian Mechanize Brigade Group (Reg F)
CMTC	Canadian Manoeuvre Training Centre
CPX	Command Post Exercise
CT	Collective Training
DGLEPM	Director General Land Equipment Program Management
FG	Force Generation
FTE	Full Time Employee
FoV	Family of Vehicles
FP&R	Force Posture and Readiness
FY	Fiscal Year
HR	High Readiness
HQ	Headquarters
IRU	Immediate Response Unit
IT	Individual Training
LR	Land Readiness

MR	Maple Resolve (HR confirmation exercise)
MRP	Managed Readiness Plan
O&M	Operations and Maintenance (budget)
Op	Operation
PAA	Program Activity Architecture
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
RP	Real Property
RTHR	Road to High Readiness
TBG	Territorial Battalion Group (Res F)
TF	Task Force
VOR	Vehicle Off-road Rate
WoG	Whole of Government

Executive Summary

This report presents the results of the evaluation of the Land Readiness Program conducted by the Assistant Deputy Minister (Review Services) (ADM(RS)). This evaluation is a component of the Department of National Defence (DND)/Canadian Armed Forces (CAF) Five-Year Evaluation Plan (FY 2013-14 to 2017-18). The Treasury Board (TB) Policy on Evaluation (2009) was rescinded 1 July 2016 and replaced by the new Policy on Results. Since the Policy on Results was only effective as of 1 July 2016, this evaluation was carried out in accordance with the Policy on Evaluation. As per the former TB policy, the evaluation examines the relevance and performance of the Land Readiness Program from FY 2010-11 to 2014-15.

Program Description

The Land Readiness Program is the responsibility of the Canadian Army (CA). The CA's mission is to provide the Government of Canada with combat-capable, multi-purpose land forces. This program will generate and sustain scalable, agile, responsive, combat capable land forces that are effective across the spectrum of conflict, from peacekeeping and nation building to war fighting. This is accomplished by bringing land Forces to a state of readiness for operations, assembling and organizing land personnel, supplies, and materiel as well as the provision of individual and collective training to prepare land forces to defend Canadian interests domestically, continentally and internationally.¹ Annual program expenditures are in excess of \$3 billion.²

Overall Assessment

- There is an ongoing need for the Land Readiness Program that is the foundation of the Canadian Army. The program is aligned with the roles, responsibilities and priorities of the federal government and the DND/CAF.
- The CA Regular Force (Reg F) has been able to meet its readiness requirements, and has demonstrated its effectiveness across the full spectrum of operations ranging from disaster relief to combat. |||
- The CA Reserves are |||
- The Land Readiness Program is assessed to be operating in an economical manner as it identifies efficiencies to preserve its ability to sustain operational readiness.

¹ The Department of National Defence and the Canadian Armed Forces 2013-14 Departmental Performance Report, p.61.

² Ibid, p. 24.

Relevance

The evaluation determined that there was a continued need to generate and employ land forces, which is the CA, as the CAF's lead element across the full spectrum of land operations ranging from domestic humanitarian and disaster relief to international combat missions. The Land Readiness Program is aligned with federal government and departmental roles and responsibilities within the *National Defence Act*. As well, the CA has made a significant contribution to the federal government and departmental priorities of defending Canada, protecting Canadians at home and abroad, and making a highly visible and significant contribution to a safer and more secure world.

Performance

The Land Readiness Program has consistently delivered well trained and prepared CA elements when assigned to operations ranging from domestic relief or security operations, to international combat missions as evidenced by their performance. That said, the ||| such as the combat mission in Afghanistan and deploying Forces to a crisis elsewhere in the world for shorter periods of time, including the current CAF operations in Eastern Europe. To date the CA has always been able to meet their operational demands.

Land Readiness Program expenditures, along with the Defence budget, have declined over the period of the evaluation, with the exception of FY 2011-12, when the land and other readiness programs received additional funding. In the case of the CA, the increase reflected a peak in activity as it transitioned from the Afghanistan combat mission in Kandahar to the training mission in Kabul. Overall, the land readiness budget declined over the period FY 2011-12 to 2013-14, forcing the CA to seek economies and efficiencies to meet the land readiness requirements prescribed in the Chief of Defence Staff's Force Posture and Readiness (FP&R) directives. A key element of this was revising the readiness cycle for the three principle CA divisions and their respective Reg F Canadian Mechanized Brigade Groups (CMBGs) from the 18 month cycle employed during Afghanistan operations to a post-Afghanistan cycle of 36 months. As well, commanders were directed to seize opportunities to maximize collective training opportunities between units, and elements of the Reg F and Reserves.

Looking ahead, the CA will be under increasing resource pressures, particularly in its Operations and Maintenance (O&M) budget, further stressing its ability to achieve its required readiness. As well, required equipment availability and serviceability is becoming increasingly difficult before the delivery of new combat and utility vehicles, having a further impact on the CA's ability to achieve its required readiness.

Key Findings and Recommendations

Findings

Key Finding 1: There is an ongoing and future need for land readiness for the Canadian Army to be prepared to conduct operations in support of Canada, Canadians, and Canadian national interests.

Key Finding 2: There is alignment between the generation and delivery of the Land Readiness (LR) Program with departmental and federal roles and responsibilities.

Key Finding 3: The generation and delivery of land readiness is consistent with federal government and the DND / CAF roles of defending Canada, defending North America and contributing to international peace and security.

Key Finding 4: The LR Program has met all actual operational requirements to-date; however certain ||| in the support trades and enablers, such as the intelligence and signals trades.

Key Finding 5: The LR Program is ||| to the required state of readiness for Reserve specific tasks based on personnel numbers and availability in the absence of an operational mission.

Key Finding 6: |||

Key Finding 7: The CA's readiness for Arctic Operations is ||| for those operations.

Key Finding 8: Current CA |||

Key Finding 9: |||

Key Finding 10: The Army has demonstrated its effectiveness across the full spectrum of operations from disaster relief and humanitarian operations to combat.

Key Finding 11: The CA operational capability in the Arctic remains in development and its mobility and sustainability in Arctic operations |||

Key Finding 12: The CA has clearly demonstrated its ability to lead and conduct a major international operation for an extended period during its deployment to Op ATHENA.

Key Finding 13: CA operations with other government departments (OGDs) would be further enhanced through greater engagement with civil authorities / agencies in planning and exercises to improve familiarity and interoperability.

Key Finding 14: The CA has demonstrated an effective response capability to a variety of crisis in the world as part of WoG disaster relief operations as well as allied operations.

Key Finding 15: Reduced financial and material resources have driven the CA to successfully use available resources more efficiently.

Key Finding 16: There has been some degradation of the CA infrastructure portfolio as a result of the CA prioritizing available funding to other requirements.

Key Finding 17: The CA effectively employs a broad range of data to inform financial and other resource decisions and continues to develop its Performance Measurement Framework.

Key Finding 18: The Land Readiness Program is assessed to be an affordable program.

Key Finding 19: The CA has effectively maintained a high readiness output while its budget has been reduced.

Key Finding 20: The CCA has introduced initiatives to mitigate funding pressures across the Army.

Key Finding 21: The CA provides a relatively efficient and economical Land Readiness Program (Army) in comparison to the armies of some of Canada's closest allies.

Recommendations

ADM(RS) Recommendation 1: The CA continue current efforts to increase the deployability level of available personnel through the Canadian Army Integrated Performance Strategy (CAIPS) and other similar initiatives to enhance the personal readiness and resilience of individual soldiers. OPI: CCA Office of Collateral Interest (OCI): CMP

ADM(RS) Recommendation 2: The CA work with CMP to address ||| and enhanced Reserve recruiting, while building on the success of well manned and supported Reserve units and maintaining less sustainable units until such time as those units can demonstrate growth potential. OPI: CCA OCIs: Chief of Military Personnel (CMP), Chief Reserves (C Res)

ADM(RS) Recommendation 3: The CA continue to implement and refine the CA Equipment Readiness Strategy to achieve CA VOR targets. OPI: CCA OCI: ADM(Mat) / DGLEPM

ADM(RS) Recommendation 4: The CA work with ADM(Mat) and ADM(IE) to document current ||| and develop a plan to address ||| that are being used to warehouse and repair new equipment and to enhance equipment availability for training and operations. OPI: CCA OCI: ADM(Mat) / DGLEPM and ADM(IE)

ADM(RS) Recommendation 5: The CA continue to rationalize and consolidate its infrastructure. Office of Primary Interest (OPI): Commander Canadian Army (CCA) OCI: ADM Infrastructure and Environment (IE)

ADM(RS) Recommendation 6: The CA continue development of a comprehensive Performance Measurement Framework and activity based accounting, leveraging divisions’ “best practices” as appropriate. OPI: CCA

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 represents the results of the evaluation of the Land Readiness (LR) Program conducted by ADM(RS) between December 2014 and April 2016 in compliance with the TB Policy on Evaluation (2009). As per the TB policy, the evaluation examines the relevance and performance of the program over a five year period, FY 2010-11 to 2014-15.

There have been previous evaluations of the LR Program as follows:

- *CRS Evaluation: Perspectives on Vanguard / Main Contingency Force Readiness and Sustainment*, October 2004. This evaluation noted deficiencies in the Army training and shortfalls in equipment, including vehicles; and
- *Evaluation of Land Force Readiness and Training*, March 2011. This evaluation noted that the Afghanistan mission stressed the Army’s capacity in terms of both personnel and equipment resources, and posed significant sustainment challenges, but the Canadian Army (CA) demonstrated effectiveness across the full spectrum of operations.

This evaluation was supported by an advisory group comprised of senior staff of the Commander Canadian Army (CCA). The advisory group was consulted regarding the program logic model, evaluation matrix, and sources of information, and provided feedback on the draft report.

1.2 Program Profile

1.2.1 Program Description

The CCA has functional command of the CA and is responsible for the LR Program that is embodied in the CA. LR is accomplished by assembling and organizing land personnel, supplies, and materiel as well as the provision of individual and collective training to prepare land Forces to defend Canadian interests domestically, continentally and internationally³.

The CA is the land component and largest element of the CAF, comprised of approximately ||| |

³ Operational readiness is based upon the ability to provide timely and appropriate military capabilities. Operational readiness is a function of three factors: a. personnel - numbers/strength, qualification levels and personal employability from a physical and mental health perspective; b. equipment - availability and serviceability; and c. training - individual and collective. Training for Land Operations B-GL-300-008-FP-001, 2014-06-14, p.2-2-3.

⁴ Army Staff Orientation, LGen J.M.M. Hainse, Commander Canadian Army, 11 September 2015.

Reg F and Reserve operational units are organized in four CA Divisions, formerly identified as Land Force Areas, across the western, central Quebec, and Atlantic regions of the country as follows:

- 3rd Canadian Division (Cdn Div), formerly Land Forces Western Area, with Headquarters (HQ) in Edmonton;
- 4th Cdn Div, formerly Land Forces Central Area, with HQ in Toronto;
- 2nd Cdn Div, formerly Land Forces Quebec Area, with HQ in Montreal; and
- 5th Cdn Div, formerly Land Forces Atlantic Area with HQ in Halifax.

Since the end of operations in Afghanistan, each of the CA divisions above (less the 5th Cdn Div) provide the basis of the CA's Task Forces (TFs) and go through a three year readiness cycle depicted in Figure E-1 at [Annex E](#). In addition to their regular readiness training, each TF element may be provided additional Theatre Mission Specific Training (TMST) prior to deployment dependent on their assigned mission.⁵

The Canadian Army Doctrine and Training Centre (CADTC), formerly the Land Forces Doctrine and Training Systems in Kingston, ON, is responsible for the CA's operational doctrine (how the CA will fight) and the individual and collective training (CT) that is at the heart of LR.

Additional information on the composition of each of the divisions and the CADTC organizations is available at Annex E.

The CA's personnel, training, and materiel, including ammunition, which are the foundation of the LR Program, are managed through the CA's annual Army Operating Plan, the "Op Plan". The Op Plan provides detailed direction to divisions regarding their Reg F and Reserves' training requirements for Normal Readiness (foundation training) and High Readiness (HR), and their allocated training resources including funds, equipment (Managed Readiness Training Fleet for Road to High Readiness (RTHR) training) and specific training objectives. The training standards and training confirmation requirements are clearly detailed in the *Training for Land Operations* and *Collective Training Battle Task Standards* documents.

As well, the Op Plan identifies the CA's HR and standby units to meet the requirements of the CDS' FP&R directives and CA's mission remits through its Managed Readiness Plan (MRP). The standby units include the Reg F Immediate Response Units and the Reserve Territorial Battle Groups (TBGs) and Arctic Response Company Groups (ARCGs), which are available for domestic operations. Specific unit task assignments are detailed in a Force Generation task organization matrix, and the Force Generation / Force Employment Transition Plan provides preliminary planning for generating follow-on TFs in the event of a prolonged major operation, such as in Afghanistan.

CA training, as with other CAF training, is comprised of Professional Military Education (PME), Individual Training (IT), and Collective Training (CT). Canadian Army (CA) PME is delivered by a variety of CA and CAF institutions, and IT for CA military occupations is primarily

⁵ Examples of such training include fire fighting for domestic forest fires, cultural training for foreign operations, and how to clear buildings of hostile forces in urban combat operations.

provided at the Combat Training Centre in Gagetown, NB. Much of the specialized army training, such as parachute training and mountain operations, is provided at the Canadian Army Advanced Warfare Centre located at the RCAF's 8 Wing in Trenton, ON or through allied courses. The divisions provide some IT in a mix of occupation training and individual readiness training, the latter detailed in the CA's *Individual Battle Task Standards*⁶.

Due to the nature of readiness training, this evaluation is focused primarily on CT that is detailed in the Army's *Training for Land Operations*⁷ and *Collective Training Battle Task Standards*⁸ publications. CT is described as the means by which an Army commander takes a full complement of qualified soldiers, with the time, resources and applied tactics, techniques and procedures to produce competent, cohesive and disciplined organizations that are operationally deployable within realistic readiness timelines. CT is conducted predominantly in the divisions' training and exercise areas as either field training serials or field training exercises for higher level CT (see Table 1 below). The CT conducted by units and headquarters (HQs) for HR is required for those elements to be deployed to international operations. The highest level CT is employed in the HR confirmation exercise, Ex MAPLE RESOLVE, conducted at the Canadian Manoeuvre Training Centre (CMTC) in Wainright, AB.

The CA's CT levels are described in the table below:

⁶ Individual Battle Task Standards for Land Operations B-GL-383-003-FP-001, 2008-04-07

⁷ Ibid

⁸ Collective Training Battle Task Standards, approved draft,

Level		Remarks
7	Formation (Bde)	May be multinational and includes full spectrum operations in a joint interagency multinational public setting ⁹ .
6	Unit and combined arms unit (battle group (BG) / battalion group)	Level 6 CAX and CPX should be used for command and staff training. Level 6 field training will generally be limited to training for HR, and confirmed by force-on-force training in a joint and combined context.
5	Combined arms sub-unit (combat team)	Level 5 is the CA's Reg F level of foundation training. During HR training, it will include live fire training. It is at this level that the synchronization of arms and services becomes critical.
4	Sub-unit (Squadron / Company / Battery)	Similar to Level 3, focused on Tactics, Techniques and Procedures (TTP) Training.
3	Sub-sub-unit (troop / platoon)	Increased command and control challenges and more complex tactical situations; battle drills should be less detailed. This is the training level to be achieved by Reserves, in a level 4/5 context.
2	Section / crew / detachment	Generally battle drills, aimed at executing battlefield tasks to a high standard; should culminate in a level 2 live fire event as an exercise serial, or field training exercise.

Table 1. CA Levels of Collective Training.¹⁰

1.2.2 Program Objectives

The LR Program objective is to provide the Government of Canada (GC) with a combat-capable, multi-purpose Army. The program will generate and sustain relevant, responsive, combat capable land forces that are effective across the spectrum of conflict, from peacekeeping and nation building to war fighting. The anticipated outcomes of the program are identified in the program logic model at [Annex C](#).

1.2.3 Stakeholders

The principle CAF / DND stakeholder for LR Program is the Canadian Joint Operations Command (CJOC)¹¹. Other CAF / DND elements that may be stakeholders, or partners, depending on the circumstances, include the Royal Canadian Air Force (RCAF), Royal Canadian Navy (RCN), and Canadian Special Operations Forces Command (CANSOFCOM), all of which may operate with the CA in joint training and operations, and receive varying degrees of materiel and personnel support from the CA. Other key partners include the Assistant Deputy Minister (Material) (ADM(Mat)), Chief of Military Personnel (CMP), ADM(Infrastructure and

⁹ The CA requires an enhanced ability to operate in harmony with joint, interagency, and other multinational partners, and take a coordinated approach to operations that recognizes that the public and media are crucial to the success of operations. *Land Operations 2021 Adaptive Dispersed Operations*.

¹⁰ Training for Land Operations B-GL-300-008-FP-001, 2014-06-14, Figure 6-4-1

¹¹ CJOC is the amalgamation, in October 2012, of the three former operational commands; Canada Command, Canadian Forces Expeditionary Command (CEFCOM), and the Canadian Operational Support Command (CANOSCOM).

Environment), and the ADM(Information Services). Other government department (OGD) stakeholders include Public Safety Canada and Global Affairs Canada¹².

1.3 Evaluation Scope

1.3.1 Coverage and Responsibilities

This evaluation covers fiscal year (FY) 2010-11 to 2014-15. The Department’s Program Activity Architecture (PAA) (2009) was substantially revised for FY 2014-15 in a new program alignment architecture with the resultant loss of coherence between program activities and cost capturing under PAA (2009) and the ability to compare FY 2014-15 with previous years’ data. Consequently, this evaluation has focused on activities under PAA (2009) Strategic Outcome 2 National Defence is ready to meet government defence expectations, Program 2.2 Land readiness, and the sub programs:

- 2.2.1 Primary International Commitment
- 2.2.2 Secondary International Commitment
- 2.2.3 Domestic and Standing Government of Canada Tasks
- 2.2.4 Sustain Land Forces

1.3.2 Resources

The table below describes the costs and personnel attributed to the LR Program in the PAA (2009).

2.2 Land Readiness	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14
Total Land Readiness Expenditures	\$3,350,735	\$3,626,299	\$3,624,786	\$3,308,404
CA Expenditure on Land Readiness	\$1,082,597	\$1,206,709	\$1,062,941	\$962,329
CMP (CA Military Pay)	\$1,161,689	\$1,224,644	\$1,345,675	\$1,260,118
Other Land Readiness Expenditures ¹³	\$1,106,449	\$1,194,946	\$1,216,170	\$1,085,957
Military (Reg F) PYs	17,471	15,173	16,479	17,003
Civilian FTEs	5,039	4,954	4,605	4,092

Table 2. Land Readiness Expenditures (\$ thousands) under the PAA (2009) Structure.

For the purpose of the evaluation, the focus will be on the CA LR expenditures and CA personnel.

¹² Formerly the Department of Foreign Affairs, Trade and Development (DFATD).

¹³ The total land readiness expenditures, military PYs, and civilian FTE data are taken from the annual DND / CAF Departmental Performance Reports. The CA land readiness expenditure data is taken from DND / CAF annual expenditure reports. The other land readiness expenditures are primarily attributed to ADM(Mat) for approx. \$635-849 million annually over the period, primarily national procurement, and to ADM(Fin CS) for approx. \$400 million annually, primarily for Canadian Forces Superannuation (pension), employment insurance (EI), and CPP (Canada Pension Plan) contributions.

1.3.3 Issues and Questions

In accordance with the Treasury Board Secretariat *Directive on the Evaluation Function* (2009),¹⁴ the evaluation addresses the five core issues related to relevance and performance. An evaluation matrix that lists each of the evaluation questions, with associated indicators and data sources, is provided at [Annex D](#). The methodology used to gather evidence in support of the evaluation questions can be found at [Annex B](#).

¹⁴ Treasury Board Secretariat, *Directive on the Evaluation Function*, April 1, 2009, <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=15681§ion=text> Consulted 4 July 2014.

2.0 Findings and Recommendations

The following sections evaluate the relevance and performance of the LR Program. The evaluation examined the extent to which the generation and delivery of LR addresses an ongoing need, is aligned with Government of Canada priorities and DND / CAF strategic outcomes and objectives, is appropriate to the role of the federal government, achieves its intended outcomes, and demonstrates efficiency and economy.

2.1 Relevance—Continued Need

Is there a continued need for the Land Readiness Program?

To determine whether land force readiness continues to address a demonstrable need, two key indicators were used:

- Evidence of past engagement of LR (number and type of actual operational employment of the Canadian Army over the past five years); and
- Requirement for LR in future security environment (FSE).

The following findings are based on evidence from document reviews and key informant interviews with CA and Canadian Joint Operations Command (CJOC) staff.

Key Finding 1: There is an ongoing and future need for land readiness for the Canadian Army to be prepared to conduct operations in support of Canada, Canadians, and Canadian national interests.

Indicator: Evidence of past engagement of land readiness (number and type of actual operational employment of Canada's Army over the past five years)

The LR Program ensures that the CA is ready to support a wide spectrum of operations as evidenced by their readiness to deploy both domestically and internationally. Over the past five years, the CA has been actively engaged in a wide range of defence and security activities, including domestic, continental, and international operations, ranging from major to minor operations¹⁵, as summarized in the table below. The decline in deployed personnel reflects the CA's evolving missions, from a large, highly complex combat mission in Afghanistan in 2010/11 to a large training mission in Afghanistan in 2011/12 and mission close out in Afghanistan in 2012/13. The increase in FY 2013/14 of CA personnel deployed to domestic operations was in support domestic disaster relief operations, such as extensive flood relief and mitigation operations in Alberta, and underscores the unpredictability of the number of CA personnel that may be required in these operations from one year to the next. As this report is prepared, the CA is deployed to central and eastern Europe as part of NATO assurance measures (Op REASSURANCE) and the multinational effort to build the professionalism and capacity of

¹⁵ For the purpose of this evaluation, major operations are identified as requiring more than 100 personnel, and minor operations are those requiring less than 100 personnel.

the Ukrainian Armed Forces (Op UNIFIER). Deployment of CA personnel to international operations is at the discretion of the GC based on the strategic situation and government priorities.

		FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
Number of CA Operations	Major	4	4	2	3	2
	Minor	16	17	16	14	13
Personnel Deployed	Intl	5562	2532	903	925	784
	Intl support	106	266	41	103	4
	Domestic	2636	1155	376	1989	512
	TOTAL	8304	3953	1320	3017	1300

Table 3 CA Total Number of Operational Deployments and Cumulative Number of Personnel Deployed FY 2010/11 to 2014/15

Indicator: Requirement for land readiness in the future security environment (FSE)

Current DND / CAF assessments of the future security environment¹⁶ indicate it will remain characterized by the activities of non-state actors and asymmetric threats while there are increased tensions between NATO and Russia over Russia’s annexation of Crimea, and increasing potential for conflict over disputed international boundaries and resources in the South China Sea. It is also acknowledged that the future environment will constantly challenge CAF capabilities. The LR Program is essential to ensure that CA elements are properly manned, trained and equipped to mitigate unpredictable defence and security risks and be a highly capable Force ready to meet future challenges.

Interviews with CJOC senior staff underscored and confirmed the relevance and future need of the LR Program to ensure that the CA is prepared for international, domestic, and continental operations, highlighting the CA’s annual support to provincial emergency services for floods and forest fires, and the CJOC’s ongoing contingency planning for an array of international operations. The LR Program provides a highly trained and responsive force that is uniquely equipped to support Canada’s defence needs in complex joint and combined operations¹⁷, and to assist civil authorities in domestic security and emergencies as necessary when requested.

Accordingly, there will be an ongoing need for the LR Program.

¹⁶ The Future Security Environment, 2013 – 2040, CFD (MND), 2014.

¹⁷ Joint operations are operations in which elements of more than one environment of the same nation participate. Combined operations involve the forces of more than one nation acting together to accomplish a single mission.

2.2 Relevance—Alignment with Federal Roles and Responsibilities

Does the Land Readiness Program align with federal roles and responsibilities and those of DND / CAF?

This section examines the extent to which the generation and delivery of LR by the CA aligns with departmental and federal roles and responsibilities. The findings in this section are based on documents reviewed and key informant interviews, including senior CA and CJOC staff.

The following indicators were used in the assessment of alignment with federal roles and responsibilities:

- Alignment with government acts, legislation and strategic direction; and
- The extent to which Canada's land forces, the Canadian Army, conduct activities that are the responsibilities of other government departments, other levels of government or the private sector.

Key Finding 2: There is alignment between the generation and delivery of the Land Readiness Program with departmental and federal roles and responsibilities.

Indicator: Alignment with government acts, legislation and strategic direction

Defence is a core federal government responsibility as articulated in the *Constitution Act*,¹⁸ which defines and outlines the responsibilities and duties of the federal government, including the Canadian Armed Forces and the Department of National Defence. Furthermore, the *National Defence Act*, Article 17 establishes the DND and CAF as separate entities, operating within an integrated National Defence Headquarters (NDHQ), as they pursue their primary responsibility of providing defence for Canada and Canadians. The *National Defence Act* and various federal government Orders in Council also provide for CAF assistance to federal and provincial civil authorities.

The government also provides strategic direction to the CAF with respect to the types of missions it is prepared to undertake and in which land forces played a central role. Those missions include being prepared to support civilian authorities during a crisis in Canada, such as natural disasters, as well as the ability to lead or conduct a major international operation for an extended period of time, and deploy forces to crises elsewhere in the world for shorter periods.

Indicator: The extent to which Canada's land forces, the Canadian Army, conduct activities that are the responsibilities of other government departments, other levels of government or the private sector

Land Force operations have occurred in direct support of other federal and provincial government departments and agencies and their provincial and community counterparts, within a whole-of-government framework, and as provided for in the *Federal Emergency Response Plan*.

¹⁸ 1867 *Constitution Act*, section 91.

In each case, the CA has played a complimentary role, augmenting civil agencies when they have become overwhelmed or required a unique CA capability in support of the domestic crisis or security operations for which they were the lead department. When conditions are established to permit civil authorities to assume full responsibility for managing a crisis, such as a flood or wildfire, or a special support task has been completed, the CA involvement is terminated.

2.3 Relevance—Alignment with Government Priorities

Does the Land Readiness Program align with federal government priorities and defence strategic outcomes?

This section examines the extent to which the generation and delivery of LR is consistent with federal government priorities and DND strategic objectives. The findings in this section are based on evidence from documents reviewed for the evaluation, which include Federal Budget Plans (2010-2014), Speeches from the Throne, policy, and Reports on Plans and Priorities.

The following indicators were used to make this determination:

- Alignment with or inclusion of land readiness in stated government priorities; and
- Alignment with or inclusion of land readiness in DND / CAF priorities or strategic outcomes.

Key Finding 3: The generation and delivery of land readiness is consistent with federal government and the DND / CAF roles of defending Canada, defending North America and contributing to international peace and security.

Indicator: Alignment with or inclusion of land readiness in stated government priorities

The 2013 Speech from the Throne pledged the government to renew defence policy. It stipulated, “now and in the future, Canada’s Armed Forces will defend Canada and protect our borders; maintain sovereignty over our Northern lands and waters; fight alongside our allies to defend our interests; and respond to emergencies within Canada and around the world”.¹⁹ The Government’s continued financial support to the LR Program, and employment of the CA as one of its instruments of foreign policy, is further evidence of the LR Program’s alignment with the Government’s priorities.

Indicator: Alignment with or inclusion of land readiness in DND / CAF priorities or strategic outcomes

Document review clearly indicates that the delivery of combat-ready land forces by the LR Program is directly aligned with the DND / CAF priority of “ensuring operational excellence both at home and abroad” and in accordance with CDS Force Readiness and Posture direction. The LR Program activities, which generate deployable, combat-ready land forces, provides direct

¹⁹ Speech from the Throne – 2013, accessed at <http://globalnews.ca/news/906578/full-text-throne-speech-2013/>

support to CAF combat-ready forces in support of the CAF's enduring missions.²⁰ The program continues to generate and sustain relevant, responsive, combat capable land forces that are effective across the spectrum of conflict, from peacekeeping and nation-building to war fighting.²¹

The CA also aligned to the DND / CAF priority of “reconstituting and aligning the CAF post-Afghanistan.” Alignment over the evaluation period includes disengaging from the Afghanistan combat mission, implementing the training mission, and reconstituting personnel and equipment, as addressed in the CA's plan. Further, this reorientation and reorganization supported land forces' alignment to fulfill the CAF's six enduring missions.

Finally, the Report on Plans and Priorities for the Department (FYs 2010/11 to 2013/14) placed specific emphasis on providing Canada with combat-capable, multi-purpose land forces. These reports consistently included the priority to “generate and sustain relevant, responsive, combat capable land forces that are effective across the spectrum of conflict, from peacekeeping and nation-building to war fighting. The CA embodies this by “bringing land forces to a state of readiness for operations, assembling and organizing land personnel, supplies, and materiel as well as the provision of individual and collective training to prepare land forces to defend Canadian interests domestically, continentally and internationally”.²²

Therefore, the LR Program is deemed to be a high priority for the DND / CAF.

2.4 Performance—Achievement of Expected Outcomes (Effectiveness)

This section presents the assessment of the effectiveness of the LR Program. To make this assessment, the evaluation examined the ability of the program to achieve the following outcomes:

- Immediate outcome: The Land Readiness Program brings land forces to a state of readiness for operations; and
- Intermediate outcome: The Land Readiness Program provides Canada with an operationally effective combat-capable multi-purpose Army.

²⁰ The CAF's enduring missions are: (1) conduct daily domestic and continental operations, including in the Arctic and through NORAD; (2) support a major event in Canada, such as the 2010 Olympics; (3) respond to a major terrorist attack; (4) support civilian authorities during a crisis in Canada such as a natural disaster; (5) lead and/or conduct a major international operation for an extended period; and (6) deploy Forces in response to crisis elsewhere in the world for shorter periods.

²¹ Strategic Outcomes, DND RPP 2011/12, accessed at <http://www.tbs-sct.gc.ca/rpp/2011-2012/inst/dnd/dnd02-eng.asp#sec2b-b>

²² National Defence RPP 2013-14

2.4.1 Immediate Outcome

The LR Program brings land forces to a state of readiness for operations

Broadly speaking, readiness refers to the operational capability and responsiveness of land forces to conduct the operations or tasks that they are assigned. Operational capability is a function of three factors²³:

- Personnel—numbers, qualification levels and deploy ability from a physical and mental health perspective;
- Training—individual and collective; and
- Equipment—availability and serviceability.

Responsiveness is defined by the ability of a unit or Task Force to meet a prescribed Notice to Move: a warning order that specifies the time given to a unit to be ready to deploy.²⁴

The following indicators were used to assess achievement of the immediate outcome:

- Land Unit / Brigade (Bde) manning and training are confirmed against stated CCA’s requirements (High Readiness (HR) and Normal Readiness (NR))²⁵;
- Land operational equipment and materiel availability meet CCA’s requirements;
- Land infrastructure meets CCA’s training and operational requirements;
- Land Force governance structure and function support CCA’s requirements; and
- CCA’s readiness requirements comply with CDS force posture and readiness direction.

Indicator: Land Unit / Bde manning and training are confirmed against stated CCA’s requirements (HR and NR)

Key Finding 4: The LR Program has met all actual operational requirements to-date; however certain concurrent operational requirements could ||| in the support trades and enablers, such as the intelligence and signals trades.

Document review and key informant interviews indicate that Reg F units consistently achieve the foundation NR and HR training that they are required to complete, however HR units are challenged by the portion of their personnel who are deployable. For example, the portion of CA Reg F personnel deployable was ||| percent in September 2012 and was ||| percent in

²³ Training for Land Operations B-GL-300-008-FP-001, 2014-06-14, p.2-2-3.

²⁴ North Atlantic Treaty Organization (2013) AAP-6 Glossary of Terms and Definitions: NATO Standardization Agency 2013, 01 October 2013, p. 2-N-5.

²⁵ The CA maintains IRUs, TBGs and ARCGs at normal readiness but high responsiveness for domestic contingencies. Ref: CA PAA-PM Dashboard FY 12-13. For domestic operations, units are required to be at Normal Readiness vs international operations at HR. The HR CMBG has also completed enhanced “foundation” level training and confirmation, and will undergo Theatre Mission Specific Training (TMST) prior to an international commitment, as may be appropriate.

September 2015.²⁶ Consequently, HR units may be reliant on augmentation from other units from within or, occasionally, outside their Division, depending on an assigned mission's requirements. In fact, the portion of personnel that is deployable means that the three infantry battalions in a CMBG are required in order to generate two that are fully manned. The CA MRP requires only two of the three infantry battalions within the HR CMBG be assigned to HR tasks; one on standby for deployment with the HR battle group (BG) to a major international operation and the other on standby for a minor international surge operation. The MRP leaves the third battalion to augment the two HR battalions, as required, and provide elements to the 1st Cdn Division HQ in support of a non-combatant evacuation operation and the Disaster Assistance Response Team.

Notwithstanding the augmentation available from the CMBG's third battalion, the CA is seeking to increase its number of deployable personnel by implementing an integrated program of resources and services to strengthen the personal readiness and resilience of its soldiers and to assist Army families and DND Army civilians in preparing for the demands of Army life.²⁷

As already alluded to, the CA has an extensive list of tasks related to the CAF FP&R direction and CA elements are assigned against these tasks in the CA's MRP and Force Generation Task Organization Matrix that are promulgated annually in the CA Op Plan.²⁸ The MRP and Task Organization Matrix cover a five year period in the Op Plan, and are updated annually or as may be required by operational requirements. In each case, the adequacy of the assigned elements for an operational TF will be determined by the actual size and complexity of the mission assigned. Depending on circumstances, an infantry battalion, company or a brigade HQ assigned to a mission may require augmentation from other elements within the brigade or from another division. As well, some specialty / support elements in the Task Organization Matrix are assigned more than one task that may create concurrency issues if they are required for simultaneous tasks. An example cited by the 4th Cdn Div HQ staff was that one of the Royal Canadian Regiment's battalions in Petawawa was part of the HR Div for Domestic Ops, the Immediate Response Unit (IRU) for the Division, and also tasked to support the 1st Cdn Div in the event it was required to deploy. They also stated that there is |||
|||
|||²⁹

A study was conducted to assess personnel operational requirements reflecting a similar level of commitment (and casualties) as when the CA was deployed to its combat mission in Afghanistan, with simultaneous missions for the lead mounting divisions supporting a CA line of

²⁶ CA G1 Personnel Report. The percentage of deployable figures for CA personnel have been fairly consistent in this range.

²⁷ Program Outline (Narrative) - Canadian Army Integrated Performance Program, CCA letter 4500-1 (CA PD) 14 May 2015.

²⁸ Principle CA operational tasks identified in the CA's Task Organization Matrix for the HR division include a sustained major international operation TF with Bde HQ, BG, Force Support Group, and affiliated CBG elements; Minor International Surge Operation TF with Bn and affiliated CBG elements and Normal Readiness Joint Support – NEO Force Protection Company, Joint Enablers, CBRN response. All divisions are also responsible for maintaining the following Normal Readiness forces for domestic operations: a Reg F Infantry Company as an Immediate Response Unit (IRU), and a Reserve TBG and ARCG to augment or replace the IRU.

²⁹ Key informant interviews, 4th Cdn Div HQ, Toronto, 16 June 2015.

operation (LoO) 3 (major international mission) and CA LoO 4 (response to crisis elsewhere in the world for shorter periods).³⁰ Modelling for several different operational cycles (e.g. 24 and 36 month cycles) revealed the lead mounting divisions required ever increasing augmentation to force generate multiple rotations, as depicted at Figure 1 below.

The level of personnel shortages and augmentation varied for each mission rotation of the CA divisions (at the time of the study referred to as Land Force Western Area (LFWA), Land Force Central Area (LFCA), and Land Force Quebec Area (LFQA) for the 3rd, 4th and 2nd Canadian divisions, respectively). As seen in Figure 1, there is a diminishing number of personnel available from the primary HR brigade (bright green in the figure) over repeated operational rotations, with increasing levels of other CAF and Reserve personnel from both within and from outside the division, and varying levels of personnel shortages (red) that could not be filled from any source. Identifying the required augmentees was a continual challenge during the CA's combat mission in Afghanistan and there were consistently personnel shortages, as indicated in red in the modelling at Figure 1.

The total number of deployable personnel required is only a part of the challenge the CA faces as it has also had to deal with shortages in certain critical officer classifications and non-commissioned member occupations (part of the personnel shortages in the red in Figure 1). These have been most pronounced in specialty and support trades (combat engineers, crewman, and vehicle technicians), which has necessitated a further CA wide approach to sourcing required personnel.

³⁰ Force 2013 Modelling Information Brief presented by LCol Jayne (DFLD), LCol Labelle (DLCD), and Mike Ormrod (CORA), 17 November 2011.

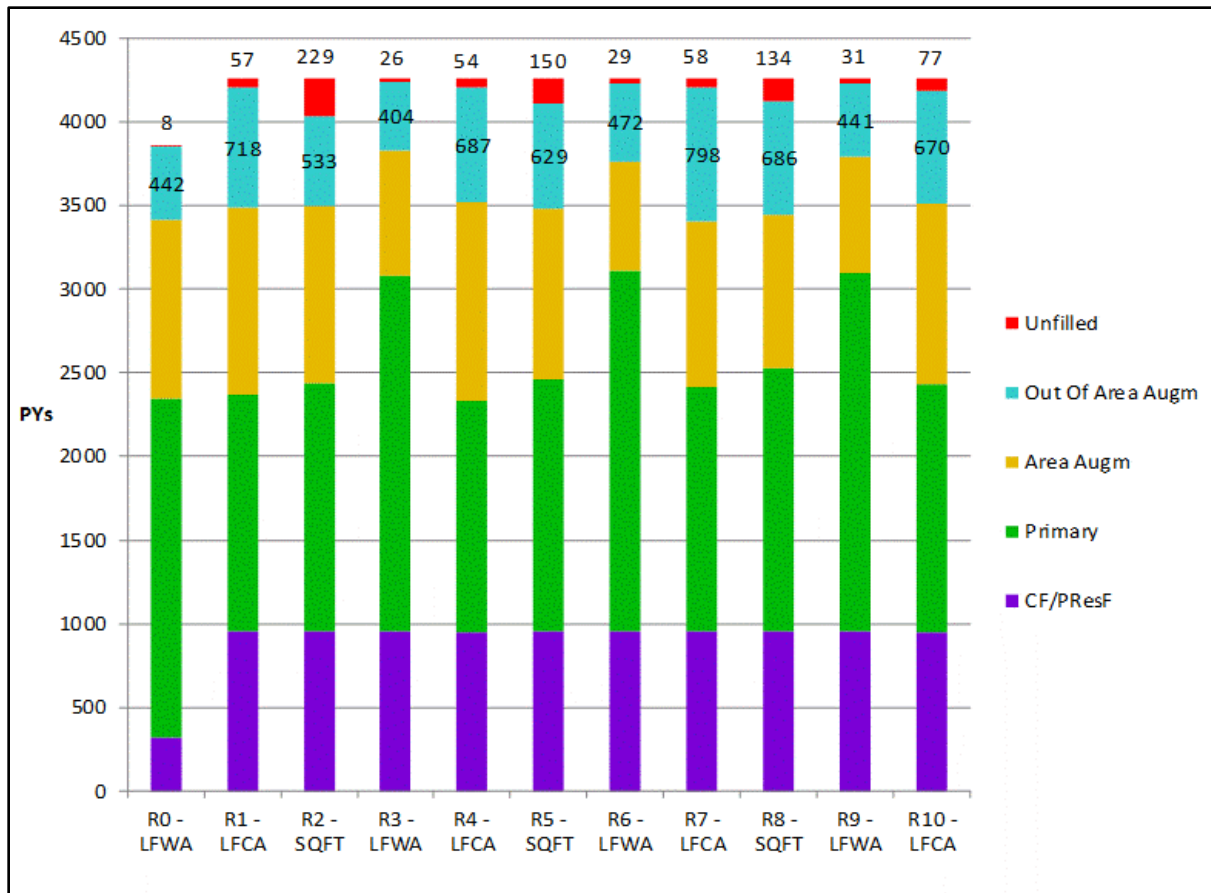


Figure 1. Combined Sustained Major Operation and Minor Surge Operation with 16 months between personnel deployments (24 month cycle) and pan-Army augmentation.³¹

Key Finding 5: The LR Program is based on personnel numbers and availability in the absence of an operational mission.

Figure 1 also reveals the critical augmentation role of the Reserves in CA operations, reflecting the Army’s moto, “One Army”. However, the CA Reserves have also been assigned specific operational tasks beyond individual augmentation for CA Reg F units. The CA Res F is responsible for generating ten TBGs of personnel each, one per CBG and four ARCGs of personnel each, one per division as tasked in the CA Op Plan. The role of these two force employment models is to augment or replace the CA Reg F IRU within each division. Each division’s CBGs are additionally responsible for generating up to more than personnel for other Reserve specific HR elements that may be required for international operations.

³¹ Force 2013 Modelling Information Brief presented by LCol Jayne (DFLD), LCol Labelle (DLCD), and Mike Ormrod (CORA), 17 November 2011. **Note:** R = Rotation, R0 is normally without Reserves augmentation, LFWA = 2nd Cdn Div, LFCA = 4th Cdn Div, and SQFT = 2nd Cdn Div.

In all cases, the current FG tasks assigned to the Reserves do not take into account the Reserves available in the CBGs assigned to the divisions. The number of personnel, their availability, rank and military occupation all vary significantly between each of the CBGs. The CA has also estimated that five Reservists are required to generate just one (5:1 ratio) for international operations and that three Reservists are required to generate one (3:1 ratio) for domestic operations, which may be ||| of the Reserves.³² As well, in 2015, only ||| percent of Reservists were normally deployable, albeit this was still significantly higher than the ||| percent that were available when Reservists were deploying to Afghanistan in September 2012.³³

Reserve readiness information, which is tracked at the division level, was not reviewed by this evaluation. However key informant interviews indicated that the Reserves have inconsistent confirmation methods, which are not captured systematically. Interviews also indicated that CBGs have successfully mobilized company sized elements of a TBG and each year the TBG HQ and other key staffs complete a readiness confirmation CPX / CAX conducted by their respective division. All that said, the viability of the ARCG and HR Reserve elements, such as the Convoy Escort, Influence Activity Company, or Force Protection Company remain to be confirmed.

When the CA is not force generating for a named mission there is currently no direction similar to the CA Op Plan regarding managed readiness to force generate HR Reserve elements. The current plan is the Reserves will not participate in Roto 0 of an international mission (except for some small influence activity and intelligence capability elements) as participation in the RTHR becomes potentially wasteful of training resources if there is no mission for the Reserves to be assigned to. Ideally, CBG elements will be tasked to achieve a higher state of readiness at a moment in time when they may be integrated into the Reg F RTHR training for Roto 1 of a mission.³⁴

In the meanwhile, it remains uncertain whether, in any circumstance, a division could successfully field the required HR Reserve elements solely from its own CBGs. That said, after the first rotation of a prolonged mission, and with a pan-Army effort, the CA would likely be able to assemble most of the individual Reserve augmentees required and the Reserve-specific HR elements for follow on mission rotations, and ensure their full integration with the Reg F RTHR training prior to deployment.

The CA also trains to be ready for operations in the arctic through annual division level exercises, including IRU and ARCG exercises, and the conduct of joint sovereignty operations such as Op NANOOK³⁵. Reg F and Reserve Arctic training has also been enhanced by increased integration of the Canadian Rangers in their training to improve soldiers' non-combat skills in the harsh northern environment.³⁶ Additional improvements are required however, through

³² Info Brief Canadian Army Reserve Managed Readiness, LCol MacKay, DARes 2, 20 January 2015

³³ CA G1 Personnel Report, email from Beck AC@C Army DA Pers M/G1@Ottawa-Hull, 26 January 2016 at 3:11 PM.

³⁴ Info Brief Canadian Army Reserve Managed Readiness, LCol MacKay, DARes 2, 20 January 2015

³⁵ CJOC Plan for the North, p. A2 – 18/18

³⁶ Adam Lajeunesse, PhD, *The Canadian Armed Forces in the Arctic: Purpose, Capabilities, and Requirements*, Executive Summary, May, 2015

training and the acquisition of improved transport and communication capabilities³⁷, for the CA to achieve a sustainable response capability for the Arctic³⁸.

Finally, regarding the Canadian Rangers, they are not trained to Reg F or Reserve standards, but receive their own “foundational” training. Through their training, and their local / environmental knowledge, they provide valuable support to both Reg F and Reserve training and operations, and are available to support crisis operations, such as Search and Rescue within their local areas.

ADM(RS) Recommendation

1. The CA continue current efforts to increase the deployability level of available personnel through the Canadian Army Integrated Performance Strategy (CAIPS) and other similar initiatives to enhance the personal readiness and resilience of individual soldiers.

OPI: CCA
OCIs: CMP

ADM(RS) Recommendation

2. The CA work with CMP to address ||| Reg F and Reserve trades and enhanced Reserve recruiting while building on the success of well manned and supported Reserve units and maintaining less sustainable units until such time as those units can demonstrate growth potential.

OPI: CCA
OCI: CMP, C Res

³⁷ See follow on discussion regarding land operational equipment and materiel availability.

³⁸ Interview notes 5 CMBG

- Delays and cancellations in major equipment programs ||| on original program delivery schedules. || Significant major equipment transition gaps and risks are highlighted in Figure 2 below.

The new Leopard 2 fleet of vehicles (Leo 2 FoV), confronted with several of the above challenges, epitomizes CA’s current equipment difficulties.⁴³

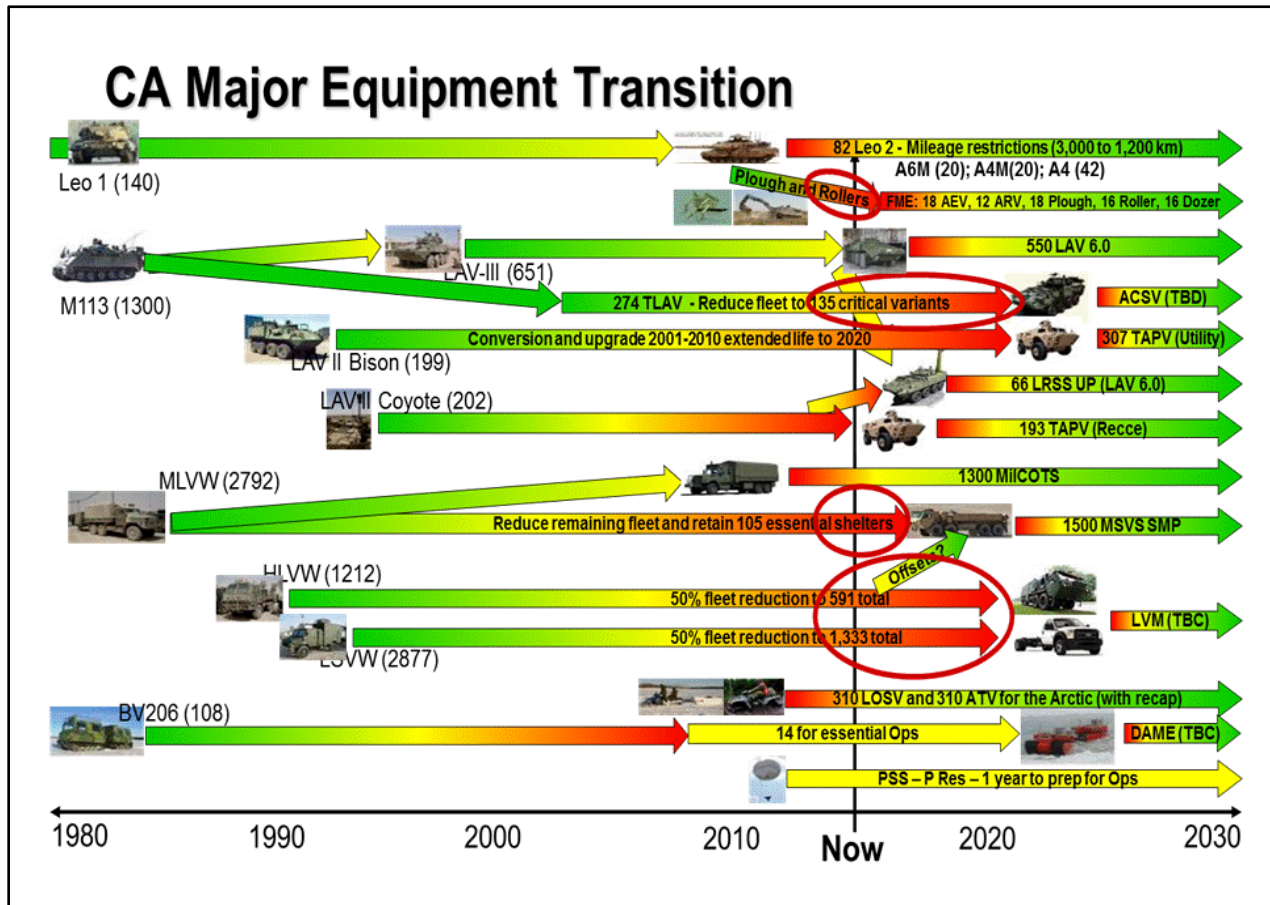


Figure 2. Canadian Army Major Equipment Transition.⁴⁴

⁴³ The CA has acknowledged there will be particularly significant challenges for the ||| until FY 2018/19 when qualified technicians have achieved a steady state, required infrastructure exists, and parts are available in the right quantities and in the right locations to service the fleet. Meanwhile the fleet VOR rate since June 2014 has remained between ||| due to a combination of these issues and the ||| will only be employable for exercises and limited operations until FY 2018/19.

⁴⁴ Sustaining the Army, P Res Unit Command Training Course presentation, Army G4 (Major Titus), 6 July 2015. Key acronyms in slide are: Leo 1 – Leopard 1 Main Battle Tanks (MBT); Leo 2 – Leopard 2 MBT; LAV – Light Armoured Vehicle; TLAV – Tracked LAV; ACSV – Armoured Combat Support Vehicle; TAPV – Tactical Armoured Patrol Vehicle; LRSS UP – LAV Reconnaissance Surveillance System Upgrade; MLVW – Medium Logistics Vehicle – Wheeled; MilCOTS – Militarized Commercial Off-The-Shelf; MSVS SMP – Medium Support Vehicle System – Standard Military Pattern; HLVW – Heavy Logistics Vehicle – Wheeled; LSVW – Light Service Vehicle – Wheeled; LVM – Logistics Vehicle Modernization [Project]; LOSV – Light Over Snow Vehicle; DAME – Domestic and Arctic Mobility Enhancement [Project]

The Canadian Army Equipment Readiness Strategy⁴⁵, promulgated 27 May 2013, noted that equipment availability was the |||, with most standard military pattern vehicles achieving CA-wide operability levels of ||| as of January 2013. It also noted that each Lead Mounting Division had ||| to force generate routine domestic and international operational commitments without reinforcement from other divisions, and this was projected to remain ||| for the duration of the LAV upgrade (LAV 6) program and introduction of the tactical armoured patrol vehicle (TAPV). The |||, as of 9 June 2015, was ||| LAVs among the three principal divisions.⁴⁶

The CA's overall armoured vehicle fleet also declined from ||| in 2014 to ||| in 2015 as leopard tank / engineering variants, and particularly tracked LAV (TLAV) (M113 variants), were reduced and a smaller number of new light armoured vehicle (LAV) 6 vehicles entered service than the number of LAV IIIs removed from service.⁴⁷

The CA has sought to ||| through:

- Whole fleet management, assigning vehicles and equipment to divisions based on their organizations and operational requirements, prioritizing support to divisions for their RTHR training and HR standby periods;
- Establishment of a Managed Readiness Training Fleet assigned to divisions on the RTHR;
- A quarantine fleet of vehicles and equipment maintained and preserved for a major international operation, |||⁴⁸;
- The Canadian Army Equipment Readiness Strategy that seeks to reduce vehicle VOR rates through a variety of initiatives⁴⁹; and
- Extensive leasing of commercial utility vehicles.

While there is a persistent ||| for the Reg F Divisions, the ||| for their respective CBGs and Reserve units. Many of the Reserve's B fleet vehicles were taken by the Reg F to meet their requirements resulting in an increased dependence by the Reserves on commercial vehicles to meet their training requirements.⁵⁰

⁴⁵ 3350-1 (CA G4 Ops) dated 27 May 2013, Canadian Army (CA) Equipment Readiness Strategy. The detailed strategy document's annexes included a resource-to-task analysis and logistic vehicle gap analysis.

⁴⁶ Army Equipment Working Group (AEWG) Main Presentation, July 2015.

⁴⁷ DRMIS / CA vehicle fleet data, March 2016.

⁴⁸ As reported in the Army Equipment Fielding Centre CA G4 Handover Presentation, 7 July 2015, shortages in the AEFC Notice (N) +60 days to deploy fleet included 11 missing vehicles including 3 x T-LAV, 1 x LSVW, 2 x Lift King, 1 x MLVW and other equipment, while the N+90 fleet was missing 51 additional vehicles including 33 x T-LAV, 5 x AHSVS water pods, 1 x LSVW, and other key support equipment.

⁴⁹ The Canadian Army Equipment Readiness Strategy seeks to reduce vehicle VOR rates by fostering an equipment culture of ownership and responsibility, increasing equipment sustainability, rationalising equipment requirements, increasing work force capabilities, increasing spares availability, and mitigating project delivery gaps.

⁵⁰ Key informant interview, 5 CMBG Valcartier, 9 July 2015.

In addition to the Reserves' [redacted] of B fleet vehicles, the maintenance of their military vehicles is [redacted] and accessibility to the limited Reg F maintenance services.

While CA [redacted] have been the focus of the above analysis, the CA also has a [redacted] of other smaller but also critical equipment. Those deficiencies are epitomized by the [redacted] impacts both training and operations as the CA awaits delivery of its new communications equipment, and has led to Reserve units having to use commercially available radios and walkie-talkies in their field training exercises.⁵¹

Key Finding 7: The CA's readiness for Arctic Operations [redacted] required for those operations.

Finally, both Reg F and Reserve capabilities in the Arctic are [redacted] to support CA training and operations in the region. The most important vehicle available to support Army activity in the north is the BV-206 tracked carrier that is used primarily by the CA IRUs and ARCGs for domestic operations and training in the North. The BV-206 [redacted]; having entered service in [redacted] The Army has been slowly divesting these vehicles over the past 20 years and the numbers have now been reduced to [redacted] as per Figure 2 above. The lack of a replacement vehicle for the foreseeable future will be a significant constraint on the Army's responsiveness and capabilities in the Arctic.

ADM(RS) Recommendation

3. The CA continue to implement and refine the CA Equipment Readiness Strategy to achieve CA VOR targets.

OPI: CCA

OCI: ADM(Mat) / DGLEPM

Indicator: Land infrastructure meets CCA's training and operational requirements

The CA is supported by extensive, and largely aged infrastructure, which has not been adequately maintained for many years as reported by the Office of the Auditor General⁵², and much of which is not optimized for today's CA training and operational requirements. Notwithstanding these impediments, to-date, the CA has been able to meet its training and operational requirements.

⁵¹ Various key informant interviews and briefings.

⁵² Report of the Auditor General of Canada to the House of Commons, Chapter 5 Real Property – National Defence, Fall 2012.

ADM(RS) Recommendation

4. The CA work with ADM(Mat) and ADM(IE) to document current infrastructure deficiencies and develop a plan to address inadequate facilities that are being used to warehouse and repair new equipment and to enhance equipment availability for training and operations.

OPI: CCA

OCI: ADM(Mat) / DGLEPM and ADM(IE)

Indicator: Land Force governance structure and function against CCA's requirements

The CA is comprised of a highly developed governance structure that entails training and professional development, capability development and force management, which support Army command decisions and informs CA engagements with CAF command and department resource authorities. The various governance bodies inform in-year CA resource allocation, the CA's force development, and priority of work to meet both its near-term and long-term requirements. During the course of the CA's Afghanistan operations, it successfully fielded new doctrine, Tactics, Techniques, and Procedures and equipment to meet the CA's immediate operational needs, while still planning for the post-Afghanistan CA as reflected in its strategic concept documents⁵⁶.

Notwithstanding these success stories, the CA Army Training Authority and the Chief of Staff Land Strategy (now Chief of Staff Army Strategy) recognized in 2010 that the CA needed to update its existing governance structure.⁵⁷ As the governance structure was reviewed, it was concluded in early 2014⁵⁸ that:

- As a result of changes in leadership at the strategic and operational levels, the manner in which the CAF/DND is governed had changed. Various decision-making boards / committees had changed, been created, or eliminated and it was noted:
 - The Defence Renewal Team was examining the governance of DND / CAF, and
 - Both the RCAF and RCN had changed their governance models to better align with that of the higher NDHQ DND / CAF governance model; and
- The CA had a strategy (*Advancing with Purpose*) and was producing an annual Op Plan that governed its allocation of resources and key readiness activities. However, it did not have a campaign plan to operationalize the strategy, nor to link it to the Op Plan, and had not identified the timeframe or the ends, ways and means to achieve the strategy.

In July 2014, the CCA issued direction to review the Army's Strategic Decision Making Handbook, originally published in July 2004, to reinvigorate the effectiveness and discipline in

⁵⁶ CA concept documents include: Land Operations 2021: Adaptive Dispersed Operations, the Force Employment Concept for Canada's Army of Tomorrow, Directorate of Land Concepts and Design, Kingston, ON, 2007; *Advancing with Purpose: the Army Strategy*, Department of National Defence, 2014; *Waypoint 2018: The Canadian Army Advancing Towards Land Operations 2021*, The Canadian Army Land Warfare Centre, 2015; and *Northern Approaches: The Army Arctic Concept 2021*, Canadian Army Land Warfare Centre, 2013.

⁵⁷ Presentation, "Army Governance – Decision Brief to the Army Strategic Planning Team, 5 December 2011

⁵⁸ Briefing note (BN) – Governance in the Canadian Army, 29 May 2014.

confirmation, a declaration of operational readiness is submitted by the CCA to CJOC⁶³. As a mission progresses and an operational environment evolves, as it did in Afghanistan, a robust lessons learned process informed requirements of the next RTHR training cycle and Theatre Mission Specific Training, which were then confirmed during the final HR exercise, MAPLE RESOLVE⁶⁴.

Interviewees in Dr Windsor's 2013 study of Op ATHENA⁶⁵ unanimously agreed that the Road to High Readiness training model worked in preparing their platoons, companies and battalions for the Kandahar campaign. With but few exceptions, they felt collective training exercises at the CMTC in Wainwright, Alberta, and at locations in the southwestern United States provided opportunities for sub-units to develop cohesion and hone small-task confidence and flexibility. Senior veterans who recalled pre-deployment training for missions in the 1990s were especially positive about the system, including the opportunity to work through the unique rules of engagement that evolved through the campaign. Among other things, the centralized CMTC collective training system served as a vehicle for disseminating the latest lessons learned coming out of the theatre. It was arguably always a tool for transmitting the most recent experience but, by 2009, the process became more systematic. In particular, by 2009, CMTC collective training included the latest air-land tactics, the importance of gathering "white situational awareness" or information about the local population, and the latest methods of conducting influence and information operations. The one exception to this highly adaptive training was the training for the Task Force closing out the combat mission, prior to commencement of CA training for the Afghanistan Army training mission centred on Kabul, Op ATTENTION. That TF was prepared for the former combat mission, but not optimally prepared or structured to be most effective in the close out of Op ATHENA.⁶⁶

Domestic Operations: The CA has been highly responsive and effective when deployed to the nine domestic operations that occurred during the evaluation reporting period,⁶⁷ consistently meeting the requesting agency's expectations⁶⁸. Reg F Immediate Response Units have responded to short notice requests for assistance, and have been reinforced by Reserve TBG elements in accordance with their notices to move. In 2013, Op LENTUS 13-01, the CAF flood relief operation in Alberta, had a significant CA component that clearly demonstrated effective integration of Reg F units, a Reserve TBG, and specialist elements. Assigned units had commenced disaster relief operations within 24 hours of reconnaissance elements being deployed.⁶⁹ That said, as with expeditionary operations, interoperability and operational effectiveness would be further enhanced by greater routine engagement of provincial and local levels of government, particularly in regions that are commonly victims of floods or forest fires.

⁶³ Training for Land Operations (2014). Page 6-3-11.

⁶⁴ CJOC interviews, 15 October 2015

⁶⁵ Dr Lee Windsor, *Infantry In Kandahar An Introduction to Canada's Experience during Operation ATHENA Phase II, 2006–2011*, *The Canadian Army Journal*, 15.2, Autumn 2013, p. 24.

⁶⁶ MMTF ETR App 2 to Ann F 3500-1(JLLO) December 2011, p. F2-2/5

⁶⁷ CA Army provided docs. Annual sovereignty operations not included except for Op NANOOK 13 which resulted in an actual domestic call out.

⁶⁸ CJOC interview

⁶⁹ <http://www.army-armee.forces.gc.ca/en/exercises-operations/op-lentus.page> supported by comments sourced from CJOC interviews

operations but improving Afghanistan.⁷⁴ CJOC interviews echoed these assessments, stating that the CA's success on missions at home and abroad was a testament to the effectiveness of its RTHR training program, and its training as a whole.⁷⁵

Additionally, while outside the period covered by this evaluation, the CA demonstrated its ability to lead operations when it assumed command of the Multi-National Brigade (Regional Command South) based in Kandahar as part of International Security Assistance Force (ISAF) in February 2006 and again in February 2008. Both these appointments reflected the CA's ability to command operations and our allies' confidence in the CA to assume those command appointments. In 2006, and later, the U.S. also placed U.S. forces under Canadian operational command in Afghanistan which is something that is not normally permitted by the U.S. and a further indication of its confidence in the quality of CA leadership.

Key Finding 13: CA operations with OGDs would be further enhanced through greater engagement with civil authorities / agencies in planning and exercises to improve familiarity and interoperability.

CA operations in Afghanistan also reflected the WoG approach in expeditionary operations, which requires removal of military and OGD "stovepipes" to reduce "friction" between the various organizations and enhance operational effectiveness, communication and integration with OGDs, which had not traditionally been done in expeditionary operations prior to Afghanistan.⁷⁶ While there were successes in WoG operations in Afghanistan, it was noted the WoG approach was hampered by the experience and capacity of each department, and their different organizational behaviour, politics, and departmental cultures.⁷⁷

Since completion of operations in Afghanistan, the CA has continued to invite OGDs and other civilian agencies to participate in Ex MAPLE RESOLVE to enhance their effectiveness when they are working together in operations. This initiative needs to continue and expand in order to enhance interoperability and effectiveness with the various OGDs and agencies for both international operations and domestic security and disaster relief operations.

⁷⁴ National Post, Canada left Taliban 'on its knees': Afghan commander, 13 June 2011.

⁷⁵ CJOC Interviews, 15 October 2015

⁷⁶ Explaining Collaboration Failures in Canada's Mission in Afghanistan, Canadian Military Journal Vol 14. No 4; and Counterinsurgency through Whole of Government, Canadian Military Journal, Vol. 13, No. 3

⁷⁷ Ibid.

Indicator: The CA has demonstrated ability to respond to a secondary crisis elsewhere in the world for a shorter period of time with WoG and allies.

Key Finding 14: The CA has demonstrated an effective response capability to a variety of crisis in the world as part of WoG disaster relief operations as well as allied operations.

The CA's MRP has been designed to allow for multiple, simultaneous deployments; the most demanding of which would be a sustained major international operation concurrent with a smaller international operation of shorter duration. The CA demonstrated its ability to conduct concurrent operations in 2010 when it was deployed to combat operations in Afghanistan, and a major disaster relief operation in Haiti (Op HESTIA). Later, there was an overlap of operations during three months in 2011 when HR forces were deployed to the combat mission being closed out in Kandahar at the same time as it was commencing the NATO training mission in Kabul, Op ATTENTION.⁷⁸

These concurrent missions were successfully executed, with the CA able to achieve success; maintaining ongoing operations in Afghanistan while also deploying to Haiti within 24 hours⁷⁹ and providing a major contribution to security at the Vancouver Olympics. Although the CA was able to FG sufficient resources to meet all three obligations, it is assessed that prolonged concurrent deployments such as these could have been unsustainable for the CA in terms of personnel and equipment required for such significant simultaneous operations⁸⁰.

More recently, since completing Op ATTENTION, the CA has deployed elements of its HR Brigade to Operation UNIFIER, Canada's contribution to the multinational effort to build the professionalism and capacity of the Ukrainian Armed Forces, and as part of Op REASSURANCE in support of NATO's reassurance measures for NATO's eastern European allies following Russia's annexation of Crimea. The CA is also providing a number of support elements to Op IMPACT, Canada's contribution to the coalition assisting the Republic of Iraq's security forces that are fighting Daesh.

2.5 Performance—Demonstration of Efficiency and Economy

Evaluation of the efficiency and economy for the LR Program was derived using data from the Army's fund centres and PAA. Expenditures for FY 2014/15 were not analyzed as changes in the PAA structure precluded any comparative analyses with earlier years' data.

Has the LR Program used resources efficiently?

Six key indicators were used to determine whether the LR Program used resources efficiently:

- Trends in program costs;
- Trends in training costs;

⁷⁸ MRP 2011 – 2015, 14 June 2011.

⁷⁹ <http://www.forces.gc.ca/en/operations-abroad-recurring/dart.page>

⁸⁰ Interviews CJOC, 15 October 2015.

- Trends in cost of equipment sustainment;
- Trends in cost of infrastructure sustainment;
- Trends in cost of governance; and
- Use of business information to optimize resource efficiency.

The trend analysis of LR Program costs, largely “indirect” indicators of efficiency, made it clear that the CA successfully identified and introduced a variety of efficiency measures to achieve and maintain readiness levels during a period of particularly challenging operations and ever changing budgetary resources.

Key Finding 15: Reduced financial and material resources have driven the CA to redistribute available resources to preserve readiness training levels.

Key Finding 16: There has been some degradation of the CA infrastructure portfolio as a result of the CA prioritizing available funding to other requirements.

Indicator: Trends in program costs.

As seen below in Table 4, the CA is one of the two principle contributors to the LR Program along with the Chief of Military Personnel (CMP) who provides the CA Reg F pay. Other contributing organizations, which were not assessed in this evaluation, include ADM(Mat) / Director General Land Equipment Program Management (DGLPEM), which was recently the subject of a separate evaluation, the ADM(Fin CS), which covers CA personnel benefits and statutory payments, and the RCAF and RCN, which provide minor support to the LR Program.

The approximately \$1.0 billion annual expenditures by the CA and \$1.3 billion annual expenditures by CMP constitute the primary financial inputs for this evaluation, but the CA’s budget is the basis of the evaluation’s assessment of the efficiency and economy of the LR Program. CA expenditures have continuously decreased since the peak year in FY 2011/12. The total (CA + CMP land expenditures) has remained relatively constant since FY 2011/12 with the exception of a marginal decrease (-7.73 percent) in FY 2013/14.

	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14
2.2 Land Readiness (Source: DPR)	\$3,350,735,000	\$3,626,299,000	\$3,624,786,000	\$3,308,404,817
CA Expenditure on Land Readiness	\$1,082,597,223	\$1,206,709,475	\$1,062,941,347	\$962,329,076
CA Expenditure Percentage of Change	N/A	11.46%	-11.91%	-9.47%
CMP Expenditure on Land Readiness (CA Reg F Pay)	\$1,161,688,523	\$1,224,643,936	\$1,345,674,830	\$1,260,118,280
Total (CA + CMP Land Readiness Expenditures)	\$2,244,285,746	\$2,431,353,411	\$2,408,616,177	\$2,222,447,356
Percentage of change (CA + CMP Land Readiness Expenditures)	N/A	8.34%	-0.94%	-7.73%
Other L1 Contributions to Land Readiness (e.g. ADM(Fin CS), VCDS)	\$1,106,449,254	\$1,194,945,589	\$1,216,169,823	\$1,085,957,461

Table 4. CA Readiness Expenditures.⁸¹

As seen below in Table 5, the LR Program’s funding peaked in FY 2011/12. This coincided with an infusion of funds to each of the CAF Force Generators (RCN, CA, RCAF, and Canadian Special Forces Operations Command). The increase for the CA in FY 2011/12 was particularly important as it was necessary to support a period of intense activity to close out the combat mission in Afghanistan, Op ATHENA, which included the recovery and reconstitution of the Army’s equipment from Afghanistan, and stand-up the new training mission in Afghanistan, Op ATTENTION. The 3rd Cdn Division, which was assigned both the close-out and stand-up missions, and the 4th Cdn Division, assigned the next rotation (ROTO) for Op ATTENTION, were the key recipients of the additional funding. An increase in equipment maintenance expenditures in FY 2013/14 was largely attributable to an ambitious and expensive training program (3rd Cdn Div) that included three major exercises, with higher equipment maintenance expenditures to ensure the required equipment was prepared and maintained for those exercises.

The increase in funding to the Force Generators in 2012 was followed by a reduction in 2013. Otherwise, except for the FY 2011/12 anomaly, there has been a relatively steady decline in expenditures for all activities over the four year period after 2010/11, which was primarily attributable to the decline in the Army’s operating budget, as seen in Table 5.

⁸¹ Total CA land readiness figure includes civilians, rangers, and Reserve salaries. Sources: DND Departmental Performance Reports, SAP Universe Web(i) Tool (ADM Finance)

	2010/11	2011/12	2012/13	2013/14
2.2 - Land Readiness	\$1,082,597,223	\$1,206,709,475	\$1,062,941,347	\$962,329,076
2.2.1.0 - Primary Int'l Commitment	\$0	\$0	\$0	\$0
2.2.2.0 - Secondary Int'l Commitment	\$0	\$0	\$0	\$0
2.2.3.0 – Domestic / Standing GOC Task	\$9,789,497	\$8,771,810	\$7,913,372	\$7,300,316
2.2.4.1 – Training	\$536,488,618	\$575,258,370	\$506,022,737	\$438,864,716
2.2.4.2 – Infrastructure Maintenance and Base Support	\$431,546,260	\$489,203,824	\$444,799,270	\$419,192,472
2.2.4.3 - Equipment Maintenance	\$22,192,787	\$41,146,331	\$18,400,587	\$27,110,559
2.2.4.4 - Command and Control	\$82,580,060	\$92,329,140	\$85,805,381	\$69,861,013

Table 5. CA Contributions to Land Readiness Sub-programs by PAA (2009).

* Note that totals may not add up due to rounding. ⁸² Note that the costs of actual operational commitments (Force employment) for sub-sub programs 2.2.1.0 and 2.2.2.0 are covered by the Canadian Joint Operations Command (CJOC) and not the CA budget which covers force generation.

Indicator: Trends in training costs

As seen in the Table 6, overall, expenditures attributed to “training” activities have declined over the period, except for FY 2011/12 when training for the CA’s evolving Afghanistan missions peaked.

While the CA has continued to prioritize and protect resources required for readiness training, the decreased training expenditure is also reflective of the decreased CA budget, cessation of Op ATTENTION, and a revised CA readiness cycle – 18 months to 36 months with a reduction in HR confirmation exercises from two previously in some FYs to only one each FY. The CA’s training expenditures for ongoing missions and post-Afghanistan collective training for HR units have been based on the CDS’ annual FP&R directives, which are reflected in the CA’s annual Op Plan and MRP.

⁸² SAP Universe Web(i) Tool (ADM Finance).

Training	FY 2010/2011	FY 2011/12	FY 2012/13	FY 2013/14
Reg F	\$536,488,618	\$575,258,370	\$506,022,737	\$438,864,716
Res F	\$48,533,189	\$61,349,091	\$52,412,084	\$42,789,838
Cdn Rangers	\$5,691,233	\$7,607,929	\$6,934,580	\$6,716,259
Grand Total	\$590,713,040	\$644,215,389	\$565,369,402	\$488,370,813
Percentage of Change Year-to-Year	N/A	9.06%	-12.24%	-13.62%

Table 6. CA Training Expenditures.

* Note that totals may not add up due to rounding.⁸³

Also, as previously noted, the CA is driven to produce efficiencies to achieve readiness levels with reduced financial and material resources. The average training costs per person declined, starting in FY 2012/13, from about \$38,000 per person in FY 2011/12 to \$26,000 in FY 2013/14.⁸⁴

The evaluation noted the following efficiency measures:

- **Managed Readiness Plan:** The CA officially transitioned to a 12 months readiness cycle resulting in an efficiency of \$41 million over three years, and improved synchronization with the military’s annual posting season and FY, and a division’s sustain / support (formerly reconstitution) period;⁸⁵ and
- **Army Training Review.** The review, undertaken post-Afghanistan, introduced a variety of measures to achieve efficiencies, while realizing economies and being balanced against effectiveness. The first elements of implementation were completed in 2012. Elements included:
 - create networked learner-centric solutions,
 - rationalize training delivery to enable experiential based learning,
 - integrate regular and Reserve Force training,
 - blend individual and collective training,
 - reduce the footprint of permanent centralized residential training structures, and
 - rationalize training staff augmentation requirements.

In addition to the training review, 2014 saw a renewed focus on identifying qualitative and quantitative performance metrics to further refine and develop future efficiencies.⁸⁶

⁸³ SAP Universe Web(i) Tool (ADM Finance). **Note** that Res F and Ranger training expenditures are primarily for pay.

⁸⁴ SAP Universe Web(i) Tool (ADM Finance). Personnel data source: Defence Departmental Performance Reports.

⁸⁵ Briefing to Army Council, LGen Hainse, 18 September 2014, slide 12

⁸⁶ BN for CCA_ Army Training Review In-Progress Review_140504

Some of these initiatives have reduced in-house training and increased distance learning for occupational courses. Distant learning and unit-based occupation training, both study and on-the-job training, is a growing trend in military training to reduce overhead costs and time in the classroom. In some cases these initiatives have placed an additional burden on individuals on top of their “day jobs.” The increased distant learning and unit based training is achievable for the Reg F, however as advised during interviews, this poses greater difficulty for the Reserves. The Reserves are challenged to achieve the required training because of the lack of time, availability of certain resources required for the training, and their often irregular participation in unit training. This has been mitigated to some extent by training efficiencies that have been achieved by units leveraging training with other units and sharing resources.

Finally, the number of collective training / exercise days for units has been maintained and, in certain instances, increased over the evaluation period. This highlights the Army Commander’s high priority on training and readiness. Efficiencies are also being realized through increased simulation in training, ranging from individual training on weapons systems and equipment to computer assisted exercises (CAX) to train HQ staffs. Nonetheless, projected O&M budget reductions of 10 percent in future years will further stress the CA’s ability to maintain current training and readiness levels.⁸⁷

Indicator: Trends in cost of equipment sustainment

As seen in Table 7, with the exception of the 3rd Cdn Div expenditures, the cost of sustaining CA equipment over the evaluation period has remained relatively stable. The spike in FY 2011/12 reflects the additional expenditures at the 3rd Cdn Div that was receiving the bulk of the CA equipment from Afghanistan following the closeout of Op ATHENA, along with fielding the new Leopard 2 tanks. The rise in 3rd Cdn Div expenditures again in FY 2013/14 is attributable to its equipment maintenance activities in support of two major divisional exercises and Ex MAPLE RESOLVE.

Equipment	FY 2010/2011	FY 2011/12	FY 2012/13	FY 2013/14
3 rd Cdn Div	\$9,164,198	\$24,686,991	\$4,361,259	\$11,179,682
2 nd Cdn Div	\$2,533,479	\$3,256,142	\$4,388,959	\$3,889,959
4 th Cdn Div	\$2,739,336	\$3,607,600	\$2,198,829	\$3,702,849
5 th Cdn Div	\$7,755,774	\$9,595,597	\$7,451,540	\$8,338,069
Total	\$22,192,787	\$41,146,331	\$18,400,587	\$27,110,559
Percentage of Change Year-to-Year	N/A	85.40%	-55.28%	47.34%

Table 7. CA Division Equipment Sustainment Expenditures.

⁸⁷ CA Comptroller Brief to Army Council, September 2014

* Note that totals may not add up due to rounding.⁸⁸

The costs of maintaining A and B fleet vehicles and equipment are presented in Table 8 below. The significant reduction in A fleet maintenance expenditures between FYs 2012/13 and 2013/14 reflects both the decline in the CA’s budget for FY 2013-14 and the end of the additional funding provided in 2012/13 for the restoration/ reconstitution of Op ATHENA equipment. The reduction in B fleet maintenance costs between FYs 2013/14 and 2014/15 reflects maintenance saving made by the Army when it divested approximately ||| as a cost saving measure and to reduce the burden on their undermanned vehicle technicians of maintaining the remaining CA vehicle fleets. The ||| reduced maintenance expenditures and briefly increased spare parts availability from cannibalization of the |||

Fleets	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15
A Fleet	\$94,522,684	\$104,165,259	\$107,476,241	\$86,015,676	\$81,728,395
Percentage of Change	N/A	10.20%	3.18%	-19.97%	-4.98%
B Fleet	\$25,026,781	\$23,366,338	\$23,813,854	\$23,355,527	\$15,987,682
Percentage of Change	N/A	-6.63%	1.92%	-1.92%	-31.55%
Total Maintenance Costs	\$119,549,464	\$127,531,597	\$131,290,096	\$109,371,203	\$97,716,077
Overall Percentage of Change	N/A	6.68%	2.95%	-16.70%	-10.66%

Table 8. CA Vehicle Maintenance Expenditures.

* Note that totals may not add up due to rounding.⁸⁹

Finally, future costs of sustaining equipment are expected to continue to grow as a result of:

- |||
- |||

Indicator: Trends in costs of infrastructure sustainment

The DND model for real property funding requirements to sustain property, based on realty replacement costs (RRC), has established a minimum rate of 1.4 percent of RRC for maintenance and repair (L119) and 2.5 percent of RRC for recapitalization (L518) to maintain the Department’s capital infrastructure. In the past five years, CA infrastructure spending has been significantly below these targets, and as the CA budget was reduced it focused its available funding on readiness training and other areas that were considered a higher priority. The table below illustrates the downward trend of expenditures beginning FY 2012/13. An impact of

⁸⁸ SAP Universe Web(i) Tool (ADM Finance)
⁸⁹ Land Force Fleet Maintenance Expenditures.xls

insufficient funding has been some degradation of CA infrastructure portfolio. To-date, this has not had a notable impact on the LR Program.

For the past five years, the CA has received a \$20 million injection of additional funding to offset infrastructure pressures; this funding was not sustained through FY 13/14 but the CA was able to get an in-year increase of \$20 million from departmental expenditure allocations.

Infrastructure	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14
3 rd Cdn Div	\$107,895,067	\$120,609,836	\$106,070,566	\$105,418,905
2 nd Cdn Div	\$126,886,576	\$141,653,175	\$130,197,853	\$123,693,757
4 th Cdn Div	\$123,713,223	\$146,537,208	\$137,259,515	\$119,786,886
5 th Cdn Div	\$72,095,689	\$80,390,655	\$71,271,336	\$70,292,924
CA HQ	\$955,706	\$12,950		
Total	\$431,546,260	\$489,203,824	\$444,799,270	\$419,192,472
Percentage of Change Year-to-Year	N/A	13.36%	-9.08%	-5.76%

Table 9. CA Infrastructure Sustainment Expenditures.

* Note that totals may not add up due to rounding.⁹⁰

In 2011 the CA noted that it had ||||||||||||||||||||||||||||||||||||||||⁹¹ Then the Strategic Review and Deficit Reduction Action Plans resulted in the closure of division support units and an Army garrison⁹², which led to a proposal to the Army Board in early 2013 to optimize and rationalize CA infrastructure.⁹³ This has led to the rationalization of CA real property holdings for savings that will accrue in future years to mitigate increasing costs and possible future budget reductions. It will also free up scarce resources for the CA to direct towards maintaining LR.

ADM(RS) Recommendation

5. The CA continue to rationalize and consolidate its infrastructure.

OPI: CCA
 OCI: ADM(IE)

Indicator: Trends in cost of governance

The evaluation examined levels of CA and division HQ staff over the evaluation period to determine trends in cost of governance. The table below presents HQ staff numbers over the period.

⁹⁰ SAP Universe Web(i) Tool (ADM Finance)
⁹¹ Infrastructure Brief to Army Council, 28 November 2011
⁹² Infrastructure Program Challenges Brief to Army Council, September 2012
⁹³ Infrastructure Decision Brief to Army Program Board, 15 January 2013.

Overall, between 2010 and 2015, there was a 7.57 percent (555 to 513 personnel) decrease in total HQ staffs, with the most significant reduction in the CA HQ. The increases in the CA HQ between 2010 and 2012 were to address the CA’s high operation tempo during that period, and were followed by reductions attributable to round two of DND / CAF transformation, the Government’s Deficit Reduction Action Plan (DRAP), and the CAF’s Primary Reserve Employment Capacity Study. The latter were intended to produce economies and led the LR Program to develop efficiencies to maintain its output with fewer resources.

Unit	2010	2011	2012	2013	2014	07-Feb-15
CA HQ	241	238	280	265	248	214
2 nd Cdn Div	69	71	64	61	72	71
3 rd Cdn Div	82	85	77	83	84	81
4 th Cdn Div	82	84	76	75	81	77
5 th Cdn Div	81	83	79	76	70	70
Total HQ	555	561	576	560	555	513
Year-to-Year Percentage Change	N/A	1.08%	2.67%	-2.78%	-0.89%	-7.57%

Table 10. CA Headquarters Personnel Numbers.⁹⁴

Indicator: Use of business information to optimize resource efficiency

Key Finding 17: The CA effectively employs a broad range of data to inform financial and other resource decisions and continues to develop its Performance Measurement Framework.

The evaluation examined use of performance data / business intelligence to inform business decisions and found that the CA has developed some promising practices for this purpose and continues to develop this capacity.

The CA has been developing a Performance Measurement Framework since 2011 however it remains a “work in progress” following recent revision of the PAA. The CA has nonetheless utilized business information for evidence-based decision making as an integral component of its business planning, including the allocation of vehicles, equipment, ammunition, other materiel and funding in support of the MRP / RTHR in its annual Op Plan. Budget allocations were also made based on current and projected (current year + 2 year) requirements that the CA used to prioritize and, in cases, defer activities / expenditures.

Finally, the evaluation identified the 4th Cdn Div activity based accounting model (Integrated Task Matrix) (ITM) as a promising practice / tool to optimize the efficient use of resources by assigning costs of activities to the CA’s operating framework and PAA. The model serves to answer whether the funding allocation by PAA is correct. The evaluation also identified a

⁹⁴ Brief to Army Council, CA PY Growth and movements, 15 March 2015.ppt

Resource Management Tool (2nd Cdn Div) as a promising practice to optimize efficient use of resources.

ADM(RS) Recommendation

6. The CA continue development of a comprehensive Performance Measurement Framework and activity based accounting, leveraging Divisions' "best practices" as appropriate.

OPI: CCA

Has the LR used resources economically?

The following three key indicators were used to determine whether the LR Program used resources economically:

- Trends in cost of the LR Program;
- Demonstrated efforts to reduce or stabilize input resources (e.g., leveraging); and
- Adequacy of input resources to produce operational effect.

The period of this evaluation was characterized a very high operational tempo for the LR Program and increasing budgetary constraints. Analysis indicates that the CA successfully identified economies that it was compelled to make over that period to consistently meet its operational readiness requirements.

Key Finding 18: The Land Readiness Program is assessed to be an affordable program.

Key Finding 19: The CA has effectively maintained a high readiness output while its budget has been reduced.

Indicator: Trends in cost of Land Readiness Program

As seen in the table below, the importance of LR Program in the CA is indicated by the approximately 67-70 percent of the total annual CA budget expenditures being made on readiness. The LR budget has remained almost constant over the evaluation period as a portion of the declining CA budget. It has also remained constant as a portion of the declining DND budget at approximately 11.8 percent of the annual DND budget, while the CA represents 44 percent of the CAF strength.

	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14
Total CA Expenditures	\$1,599,520,247	\$1,772,856,771	\$1,503,370,160	\$1,373,138,797
Total CA Land Readiness Expenditures	\$1,082,597,223	\$1,206,709,475	\$1,062,941,347	\$962,329,076
Percentage of CA Expenditures (Readiness)	67.68%	68.07%	70.70%	70.08%
Total DND Expenditures	\$20,298,257,000	\$20,218,757,861	\$19,978,190,131	\$18,764,374,206
Total CA Readiness Expenditures (including military pay)	\$2,244,285,746	\$2,431,353,411	\$2,408,616,177	\$2,222,447,356
Percentage of Overall DND Expenditures	11.06%	12.03%	12.06%	11.84%

Table 11. CA Land Readiness Expenditures as Percentage of CAF Budget.⁹⁵

Budget reductions are further reflected in the CA’s declining O&M cost per person for its Reg F and civilian staff, as detailed in the table below.

Personnel and O&M Expenditures	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14
Military	17,471	15,173	16,479	17,003
Civilian	5,039	4,954	4,605	4,092
Grand Total	22,510	20,127	21,084	21,095
O&M Total	\$343,385,233	\$363,627,615	\$310,914,465	\$239,388,388
Average O&M Cost Per Personnel	\$15,254.79	\$18,066.66	\$14,746.46	\$11,348.11
Average Percentage of Change	N/A	18.43%	-18.38%	-23.05%

Table 12. CA O&M Expenditures per Person.⁹⁶

Comparison between the CA, RCAF and RCN also revealed that the Army has taken the brunt of budget reductions over the evaluation period, with almost a 32 percent reduction in its budget, compared to 20 percent and 27 percent for the RCAF and Navy respectively over the period 2012-2015. Overall, the total DND budget has been reduced eight percent during the period FY 2010/11 to FY 2014/15. The bottom line is that while the CA budget has been reduced, the Army has effectively maintained a high level of readiness output, and so LR is deemed to be an economical program.

⁹⁵ DND Departmental Performance Reports, SAP Universe Web(i) Tool (ADM Finance).

⁹⁶ DND Departmental Performance Reports, SAP Universe Web(i) Tool (ADM Finance).

Indicator: Demonstrated efforts to reduce or stabilize input resources (e.g., leveraging)

Key Finding 20: The CCA has introduced initiatives to mitigate funding pressures across the Army.

The evaluation noted several examples of input optimization activities with regards to personnel, equipment, real property, and operational enablers. Interviews with the Army general staff, corroborated with documentary evidence, confirm achievement of the CCA intent: “By overlapping training objectives and audiences, Army Training Authority will seek to increase the overall effectiveness of resources, rather than strictly looking at short term, or narrowly interpreted efficiencies.”⁹⁷ Key initiatives noted over the evaluation period include:

- Increased use of training simulation Small Arms Trainer, CAX;
- Concurrent exercises at different levels, at single-locations (critical mass);
- Leveraging allied training exercises; and
- Reserves leveraging collective training opportunities, including with Reg F units, for multiple units / training audiences.

Indicator: Adequacy of input resources to produce operational effect

Evidence indicates that the CA has been able to achieve the desired operational effect within its allocated resources. However the LR Program will be further challenged in the future by constrained / reduced financial resources (O&M)⁹⁸ and increasing training, equipment, and infrastructure costs. These cost increases are associated with maintenance, sustainment, and acquisition requirements in addition to inflation.

What is the relative efficiency and economy of the CA compared with allied armies?

Benchmarking was conducted (see Annex F for additional detailed analysis) against several allied armies for comparison using the following indicators:

- Cost per military member;
- Relative O&M expenditures;
- Number of personnel per armoured vehicle; and
- Personnel expenditures percentage as part of Army budget.

⁹⁷ Op Plan FY 14-15

⁹⁸ There was a directed CA program reduction of 10 percent (O&M) for FY 2014/15 through 2016/17 (new baseline) (approximately \$23 million annually) that was distribute primarily across Reg F training and support, Reserve training, and Rangers training. Ref: Army Comptroller Briefing to Army Council, 18-19 September 2014.

Key Finding 21: The CA provides a relatively efficient and economical Land Readiness Program (Army) in comparison to the armies of some of Canada’s closest allies.

Data was collected and analyzed using Jane’s sources, as referenced in the table below, to assess relative efficiencies and economies for the LR Program (CA) with key allies in the Five Eyes community. Jane’s data was employed for all nations, including Canada, for the purposes of data standardization and ease of comparison.⁹⁹

Benchmarking - CA, NZ, Australian, and UK Armies (2014)				
	CA¹⁰⁰	NZ¹⁰¹	AUS¹⁰²	UK¹⁰³
Reg F pers	21,600	4,500	28,600	80,900
Res F pers	24,000	1,700	14,700	21,000
Budget (\$B)(USD)	4.978 ¹⁰⁴	0.734 ¹⁰⁵	6.291 ¹⁰⁶	23.114 ¹⁰⁷
Cost Per Reg F (USD)	\$230,463	\$163,111	\$219,965	\$285,711
Cost Per Military Member (Reg + Reserve) (USD)	\$109,167	\$118,387	\$145,289	\$226,830
Armoured vehicles	1267	140	1708	7671
Personnel Per Armoured Vehicle	36	44	25	13
Army O&M (\$B)(USD)	\$1.07	\$0.16	\$1.55	\$7.628
O&M Expenditures as a Percentage of Total Army Budget	21.49%	21.80%	24.64%	33.00%
Army Personnel Costs (\$B)(USD)¹⁰⁸	\$3.23	\$0.502	\$3.292	\$12.019
Personnel Expenditures as a Percentage of Total Army Budget	64.89%	68.39%	52.33%	52.00%

Table 13. Benchmarking Comparison of Allied Armies. All financial data is in U.S. dollars (USD).

⁹⁹ The following key assumptions have been made for the benchmarking: allied armies deployed on operations have similar levels of readiness and are equally effective; allied nations employ similar operational concepts and common tactics, techniques and procedures to the CA; and comparisons do not account for vehicle availability, fleet age, general usability or method of employment or take into consideration that some allied armies possess their own aviation elements.

¹⁰⁰ Jane’s Online, “World Armies: Canada”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/1319198>.

¹⁰¹ Jane’s Online, “World Armies: New Zealand”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/1319277>.

¹⁰² Jane’s Online, “World Armies: Australia”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/131917>.

¹⁰³ Jane’s Online, “World Armies: United Kingdom”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/1319326>.

¹⁰⁴ Jane’s Online, “Canada Defence Budget”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/1327470>.

¹⁰⁵ Jane’s Online, “New Zealand Defence Budget”, last accessed 29 March 2015, <https://janes.ihs.com/Janes/Display/1327425>.

¹⁰⁶ Jane’s Online, “Australia Defence Budget”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/1327406>.

¹⁰⁷ Jane’s Online, “United Kingdom Defence Budget”, last accessed 29 March 2016, <https://janes.ihs.com/Janes/Display/1327389>.

¹⁰⁸ Jane’s includes all expenditures associated with Army pay and benefits. The exact breakdown is unknown.

Indicator: Cost per military member

The CA is assessed to be more economical than several of its allies based on a cost per military member, with the lowest cost per soldier. The dollar value for all nations includes all expenditures attributable to the Army including pay, operations and maintenance. The principle reason for this relatively low personnel cost is the CA Reserve Force, which is not only a large number, but represents a significantly greater portion of the entire CA than the Reserves of its allied armies. The CA Reserves represent a proven “Force in waiting” that can be mobilized when required for operations, as demonstrated over many years in Afghanistan and domestic disaster relief operations. This speaks to the economy of maintaining a larger Reserve element, and is probably one of the principle reasons that while the British Army is currently downsizing its regular Force, it is expanding its Reserves by almost 10,000 to a Force of 30,000.¹⁰⁹

Indicator: Relative O&M expenditures

For the purposes of this comparison, the Jane’s O&M figures include equipment support, stock consumption, property management, movements (transport), accommodation and utilities, professional fees, fuel, hospitality and entertainment, IT and communications. The CA’s O&M expenditures are very comparable to our partners with the exception of the UK which spends considerably more on the maintenance of their Army. This can be directly attributable to a generally larger vehicle fleet, as well as the British Army’s aviation branch. A key area identified in this report includes a declining trend in CA O&M expenditures. This speaks to the extent that other funding pressures in the CA budget have a negative impact on the funding available for O&M when the total CA budget includes Reserve and civilian pay, etc. The proportion of O&M in the CA’s budget is indicative of its need to use its available resources more efficiently.

Indicator: Number of personnel per armoured vehicle

The CA has one of the highest personnel to armoured vehicle ratios amongst the nations in this comparison. Both the UK and Australia have more fighting vehicles per Army member. This reflects, in part, the CA’s large number of Reserves. If we assume a standard operational output, we can say the CA is more efficient as we are achieving this output with less investment in vehicle fleets, however it also means that the CA has less depth in equipment for multiple commitments or replacement of battle damaged equipment, etc.

Indicator: Personnel expenditures as a percentage of the Army budget

The CA spends a higher than average percentage of the Army budget on pay and benefits than its partners. Although this could be interpreted as the CA being less economical than its partners, it actually reflects the relatively small budget available to the CA, compared to its allies, for both O&M and equipment. Personnel, O&M funds and equipment are not as well balanced in the CA as in the British and Australian armies, which are more comparable to the CA than the New Zealand Army.

¹⁰⁹ Report by the Comptroller and Auditor General – Army 2020, Ministry of Defence National Audit Office, 11 June 2014, p. 8.

Annex A—Management Action Plan

The CA was very pleased to have been brought into the evaluation process and subsequent production of this Land Readiness Report. The CA agrees with the key findings and recommendations found within, and is particularly happy with the assessment that the CA is operating in an economical and efficient manner, while continuing to meet its mandated readiness requirements across the full spectrum of operations. There were no surprises contained within, in fact, most of the recommendations are directly related to initiatives either currently being examined, or already in progress. More specifically, to address the CA personnel and equipment shortages highlighted in the overall assessment, the Land Vehicle Modernization Project and the Strengthening the Army Reserves initiatives are concurrently priorities which are receiving particular attention.

The CA is also looking forward to the results of the Defence Policy Review and aligning the Army of tomorrow to meet the land readiness requirements as mandated by the Government of Canada and the Canadian Armed Forces. Evaluations such as this one continue to validate the work done by the CA to train and equip its soldiers to fight across the full spectrum of operations in Canada and abroad when called upon by the Government.

ADM(RS) Recommendation

1. The CA continue current efforts to increase the deployability level of available personnel through the Canadian Army Integrated Performance Strategy (CAIPS) and other similar initiatives to enhance the personal readiness and resilience of individual soldiers.

OPI: CCA

OCI: CMP

Management Action

As articulated in the CAIPS Op Order signed on 24 November 2015, the Commander of the CA intends to establish a cultural change that integrates resilience into how the CA builds, strengthens, maintains and assesses soldiers' competencies across all six fitness domains. This will measurably increase individual and collective performance and readiness helping the CA to be better prepared for operational tasks and deployments. To this end, the CA will focus on the well-being of our people by institutionalizing a collection of performance, health and fitness training packages, guidance and tools. This focus on people will set the conditions for increased resilience of the entire Army team, thus greatly improving our readiness and setting the conditions for the high operational tempo expected in the Army's future. This effort will be sustained over many years until it becomes ingrained within the CA culture. Close collaboration and synergy with our CAF partners, in particular Military Personnel Command, and numerous DND civilian partners will be attained with a view to achieve unity of effort in this crucial endeavour.

CCA Lead - CADTC

Target Date: This is a strategy, so no end-date; rather it will be ingrained in CA culture.
Deliverables are: FRAGMENTARY ORDER 02 (April 2017).

ADM(RS) Recommendation

2. The CA work with CMP to address shortages in critically undermanned Reg F and Reserve trades and enhanced Reserve recruiting while building on the success of well manned and supported Reserve units and maintaining less sustainable units until such time as those units can demonstrate growth potential.

OPI: CCA

OCIs: CMP, C Res

Management Action

The CA is working with Military Personnel Command to address undermanned regular Force trades with an emphasis on the distressed signal trades (officers and non-commissioned) for which a specific recruitment initiative is being launched to rectify this situation.

Further on the Reserve Force side, as part of the strengthening the Army Reserves initiative, the CA will assume responsibility for CA Primary Reserve recruiting by 1 April 2017, with a view to make the process more efficient. The CA is also looking to apply the future growth in personnel to well-manned Reserve units in order to build on our current recruiting and retention success.

CCA Lead – G1

Target Date: 1 April 2017 (CA assumed responsibility for CA Primary Reserve recruiting)

ADM(RS) Recommendation

3. The CA continue to implement and refine the CA Equipment Readiness Strategy to achieve CA VOR targets.

OPI: CCA

OCI: ADM(Mat) / DGLEPM

Management Action

The CA is developing a Land Maintenance Strategy which is essentially an evolution of the CA Equipment Readiness Directive informed by other maintenance related initiatives such as the Defence Renewal Initiative and the Service Level Analysis. These initiatives have been derived through a diligent analysis of existing personnel and enterprise services, facilities, and procedural inefficiencies for which the recommended initiatives will permit a reinvestment to activities that will ultimately and effectively achieve CA VOR targets.

CCA Lead – G4

Target Date: December 2016 (Land Maintenance Strategy completed)

ADM(RS) Recommendation

4. The CA work with ADM(Mat) and ADM(IE) to document current infrastructure deficiencies and develop a plan to address inadequate facilities that are being used to warehouse and repair new equipment and to enhance equipment availability for training and operations.

OPI: CCA

OCI: ADM(Mat) / DGLEPM and ADM(IE)

Management Action

For each new vehicle or equipment platform, that procurement project will fund the construction or renovation of existing facilities for any storage, training or maintenance requirements. Through the Construction in Support of Capital Equipment (CISOE) Program, CA infrastructure project directors within the Directorate of Land Infrastructure (DLI) will work with the equipment procurement authority to articulate and validate the infrastructure requirements to ADM(IE) for design and construction. This process was exercised recently with the Tank Replacement Project which completed and opened a Leopard 2 main battle tank maintenance facility in Gagetown in April of this year. This new building will take significant pressure off of existing base vehicle maintenance facilities.

4.a. Currently, DLI is working with Defence Construction Canada (DCC) to complete a divisional infrastructure study entitled “Accommodate In-Service and Emerging Vehicle Capability” which will encompass all major Army facilities. This study will confirm if existing infrastructure space is sufficient to store, train and maintain all current and proposed future vehicle and equipment fleets. Through these studies, the CA will both document any deficiencies and make recommendations as to the required infrastructure to maximize the life-cycles of our equipment. All studies are expected to be complete by the end of November 2016 and one project for each division has been initiated to deal with any legacy infrastructure recommendations not associated with an existing procurement initiative.

CCA Lead – DLI

Target Date: End November 2016 (Studies)

4.b. The Force Mobility Enhancement Project started a 13-bay facility this year to house and maintain the Leopard 2 family of vehicles (FoV) being delivered to Edmonton.

CCA Lead – DLI

Target Date: December 2017

4.c. The Tactical Armoured Patrol Vehicle (TAPV) Project will involve new or upgraded facilities in Gagetown, Valcartier, Petawawa, Edmonton, Shilo and Meaford, with building occupancy dates (BOD) from February 2017 to December 2018.

CCA Lead – DLI

Target Date: December 2018 (TAPV Infrastructure completed)

4.d. The purchase of the LAV 3 platform included infrastructure money, but the purchase of the LAV 6 platform did not. The intent for the LAV 6 project was to utilize existing LAV 3 /

LORIT¹¹⁰ facilities. This worked in some cases; however, not in every facility due to the vehicle size. Solutions were sought to house LAV 6 vehicles in existing buildings on bases across the country, still leaving an infrastructure deficiency. Funding has been approved for the purchase of an additional 60 LAV 6 platforms, which includes infrastructure costing. This should provide enough room to accommodate the existing additional vehicles.

CCA Lead – DLI

Target Date: July 2020 (LAV 6 infrastructure completed)

ADM(RS) Recommendation

5. The CA continue to rationalize and consolidate its infrastructure.

OPI: CCA

OCI: ADM(IE)

Management Action

With ADM(IE) transformation on 1 April 2016, ADM(IE) has become the sole custodian of all real property (RP) in the CAF with the CA now a L1 tenant. As part of Defence portfolio 2030, ADM(IE) has initiated a facility condition index (FCI) study of all major RP assets within the CAF. This study will not only assess the condition of the buildings but also its utilization efficiency. The CA will work closely with ADM(IE) to validate the Army's RP requirements and help identify areas where rationalization makes sense. The FCI study is expected to be completed by December 2017 with options analysis to start in 2018.

CCA Lead – DLI

Target Date: December 2017 (FCI Study)

ADM(RS) Recommendation

6. The CA continue development of a comprehensive Performance Measurement Framework and activity based accounting, leveraging divisions' "best practices" as appropriate.

OPI: CCA

Management Action

The CA has been in the process of developing a comprehensive Performance Measurement Framework (PMF) and activity based accounting for over three years. The CA Performance Management strategy and direction was first published on 19 June 2014. Subsequently, CADTC training performance measurement strategy and direction (published on 26 July 2016), launched in-depth performance measurement initiatives which track the training and readiness efficacy of

¹¹⁰ The LAV III Upgrade Project was to carry out only chassis upgrades (mobility and protection) to some of the LAV III vehicles in the LAV III Upgrade Project creating a LAV operational requirements integration task (LORIT) variant.

the CA. Cost capturing of FP&R readiness activities is in the initial stages and other efforts will continue while waiting for updated direction from C Prog in light of the upcoming publication of new defence policy (expected in 2017) and the Departmental Results Framework (expected to be implemented in FY 18/19).

CCA Lead – DAS

Target Date: 1 April 2017 (CA PMF)

Annex B—Evaluation Methodology and Limitations

1.0 Methodology

1.1 Overview of Data Collection Methods

The evaluation of the LR Program considered multiple lines of evidence to assess the program's relevance and performance. The methodology established a consistent approach in the collection and analysis of data to help ensure the reliability of the evaluation process. Quantitative and qualitative data collection methods were used and included document review, financial data review, key informant interviews, and site visits. Qualitative information was used to establish the program profile and context, as well as interpret the significance of numerical data that was analysed. Comparison of both qualitative and quantitative assessments was used to validate the overall analysis and to develop the evaluation's findings and recommendations.

1.2 Details on Data Collection Methods

1.2.1 Document Review

A review of program and related departmental documents was conducted in the initial phase of the evaluation to establish a general understanding of the LR Program. This informed the scope of the evaluation and supported the creation of the logic model and evaluation questions. These documents included previous evaluations and audits, including audits by the Office of the Auditor General, and other strategic documents. A comprehensive document review was subsequently undertaken to collect evidence against indicators for relevance and performance. Reviewed documents included GC policy documents, CAF strategic directives and guidance, including annual Force posture and readiness directives, LR Program directives, program reports and assessments, business plans, departmental performance reports, and CAF post-operations reports.

1.2.2 Financial Data Review

Financial data was reviewed to assess the efficiency and economy of the program, i.e. sustained funding, and trends in resource utilization and operational costs associated with the LR Program and the CA. Financial data from the Defence Resource Management Information System (DRMIS), business plans (the CA's annual operations plans), and CA comptroller's financial reports and departmental financial reports.

1.2.3 Site Visits and Key Informant Interviews

Site visits were conducted to familiarize the evaluation team with the CA's organization and activities to generate LR. Site visits included the 1st Canadian Division HQ, the Canadian Army Doctrine and Training Centre in Kingston, ON, the 3rd Canadian Division HQ and 1 CMBG in Edmonton, Canadian Mechanized Training Centre in Wainwright, AB, to observe Exercise MAPLE RESOLVE, the 4th Cdn Division HQ in Toronto, 2 CMBG and the 4th Cdn Division Reserve Concentration in Petawawa, the 2nd Canadian Division HQ, 25 Canadian Forces Supply Depots in Montreal, and 5 CMBG in Valcartier, PQ.

The team was provided briefings on the activities and issues during each visit, and conducted further interviews with key staff, as well as the Commander CA and his principle HQ staff in Ottawa. Canadian Army (CA) HQ and divisional staff were further consulted as required with follow-up inquiries for additional information or clarification of facts. Finally, the Canadian Joint Operations Command (CJOC) operations and readiness staff were interviewed to obtain their assessment on whether the LR Program ensured CA elements were properly trained, equipped and supported to be effective in both domestic and international operations.

1.2.4 Data Analysis

Data from each of the sources was compiled against indicators for program relevance and performance identified in Annex D. A comparison was used to analyze resources and activities planned for readiness generation (e.g., training, maintenance, infrastructure, command and control) against resources consumed and readiness activities completed. The completion and assessment of readiness requirements was used to analyze the effectiveness of the readiness program and achievement of the immediate and intermediate outcomes. Fidelity of resource utilization was used to analyze the efficiency and economy of the program. Trend analysis of resource usage was also used to assess input and output costs of the LR Program and CA budgets, focusing primarily on personnel, maintenance, infrastructure, and training resources and activities. Observed trends in resource utilization were contextualized using qualitative data to understand variances and observed trends.

2.0 Limitations

The following table shows the limitations related to the data sources and methodologies used in the assessment of the LR Program and the mitigation strategies applied to them.

Limitation	Mitigation Strategy
Subjective assessment of land readiness by program authorities	Well defined and documented individual and collective training standards to be achieved through a highly developed readiness training plan, independent confirmation of completed training by CA commanders two ranks above the unit being confirmed, and supporting evidence from key informant interviews.
Attribution of program activities and outputs to program long term outcomes.	Focus was placed on the immediate and intermediate outcomes of the program to establish findings.
Possibility of interviewees providing biased information	A comparison was made between interview evidence and other sources (e.g. program documentation and financial records) to confirm fidelity of evidence, and weighted as appropriate based on the preponderance of other evidence.
Limited activity-based costing data was available to assess program efficiency and economy.	Estimates of activity-based costs were derived from CA fund centres (versus program alignment architecture) in consultation with CA staff.
Program data was inconsistently collected and reported in the departmental system over the valuation period.	Estimates of resource consumption and program costs were derived from the CA fund centres analysis in consultation with the CA comptroller and other CA staff.

Table B-1. Evaluation Limitations and Mitigation Strategies. List of the limitations of the evaluation and the corresponding mitigation strategy.

Annex C—Logic Model

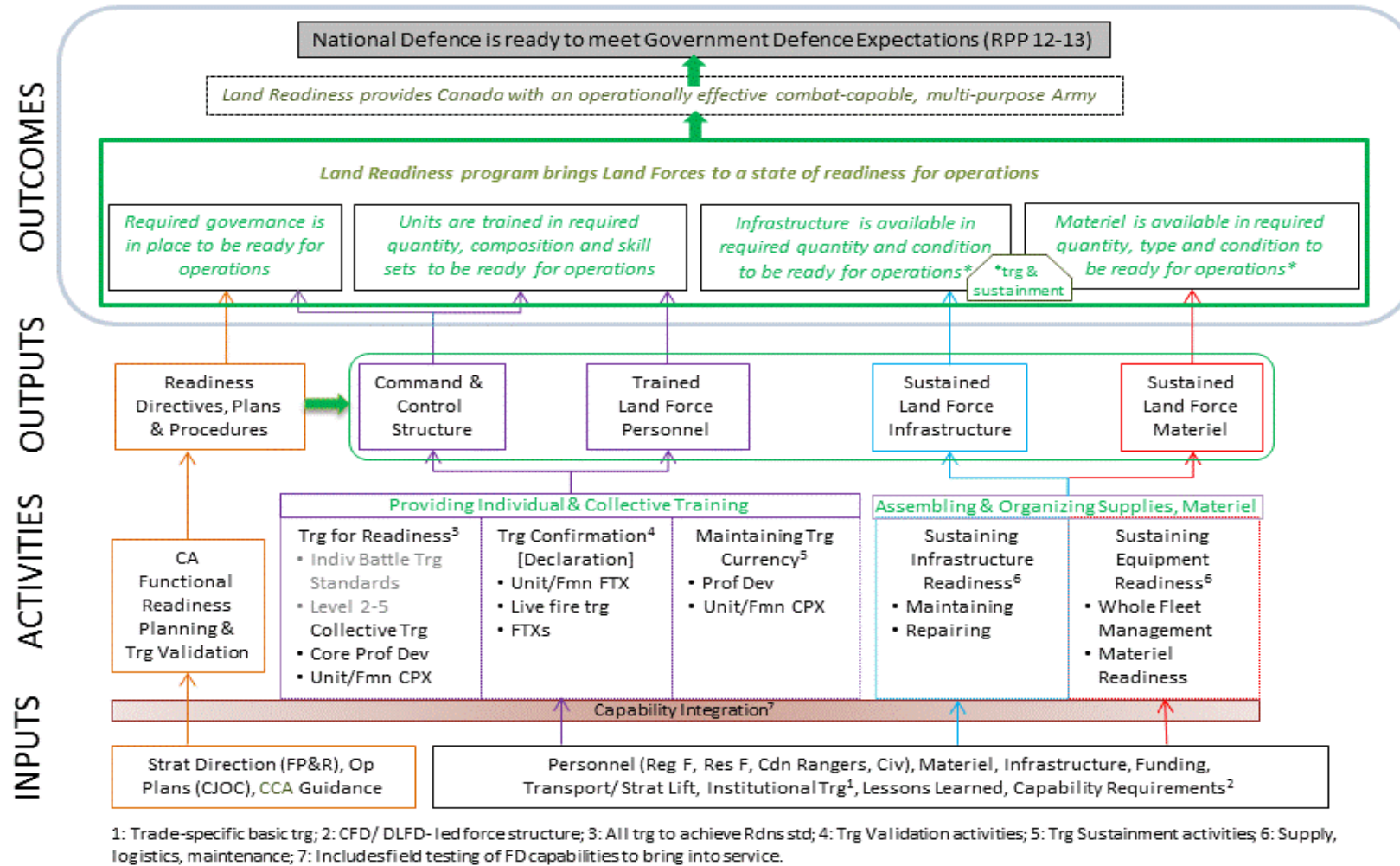


Figure C-1. Logic Model for the Land Readiness Program. This flowchart shows the relationship between the program’s main activities, outputs and expected outcomes.

Annex D—Evaluation Matrix

Evaluation Issues/ Questions	Measures/ Indicators	Document Review	Data Review (financial and other)	Key Informant Interviews
1.1 Is there a continued need for the Land Readiness Program?	1.1. 1 Evidence of past engagement of land readiness	Yes	No	Yes
	1.1.2 Requirement for land readiness in the future security environment (FSE)	Yes	No	Yes
1.2 Does the Land Readiness Program align with federal roles and responsibilities and those of DND / CAF?	1.2.1 Alignment with government Acts, legislation and strategic direction	Yes	No	Yes
	1.2.2 The extent to which Canada's land forces, the Canadian Army (CA), conduct activities that are the responsibilities of other government departments, other levels of government or the private sector	Yes	No	Yes
1.3 Does the Land Readiness Program align with federal government priorities and defence strategic outcomes?	1.3.1 Alignment with or inclusion of land readiness in stated government priorities	Yes	Yes	No
	1.3.2 Alignment with or inclusion of land readiness in DND / CAF priorities or strategic outcomes	Yes	Yes	No

Table D-1. Evaluation Matrix—Relevance. This table indicates the data collection methods used to assess the evaluation issues/questions for determining the Land Readiness Program's relevance.

Evaluation Issues/ Questions	Measures/ Indicators	Document Review	Data Review (financial and other)	Key informant interviews
2.1 Does the Land Readiness Program bring land forces to a state of readiness to defend Canadian interests domestically, continentally, and internationally? ¹¹¹ * Includes Reg F, Res F, and Rangers	2.1.1 Land unit- /Bde manning and training are confirmed against stated CCA’s requirements (HR and NR ¹¹²)	Yes	Yes	Yes
	2.1.2 Land operational equipment and materiel ¹¹³ availability meet CCA’s requirements	Yes	Yes	Yes
	2.1.3 Land infrastructure meets CCA’s training and operational requirements	Yes	No	Yes
	2.1.4 Land Force governance structure & function support CCA’s requirements	Yes	No	Yes
	2.1.5 CCA’s readiness requirements comply with CDS Force posture and readiness direction	Yes	No	Yes

¹¹¹ “The ability to provide a timely and appropriate military response to any threat; comprises of unit personnel strengths, qualifications of unit personnel and their status in screening for deployment, unit equipment serviceability, and individual and collective training”. (Training Canada’s Army (2001), p.17).

¹¹² The CA maintains IRUs, TBGs and ARCGs at normal readiness but high responsiveness for domestic contingencies. Ref: CA PAA-PM Dashboard FY 12-13. Note: for domestic operations, units are required to be at normal readiness vs international operations at HR. HR brigade has completed enhanced “foundation” level training and confirmation, but will undergo Theatre Mission Specific Training (TMST) prior to an international commitment.

¹¹³ “All public property, other than real property, immovable and money, provided for the Canadian Forces or for any other purpose under this Act, and includes any vessel, vehicle, aircraft, animal, missile, arms, ammunition, clothing, stores, provisions or equipment so provided.” (*National Defence Act*)

Evaluation Issues/ Questions	Measures/ Indicators	Document Review	Data Review (financial and other)	Key informant interviews
2.2 Does the Land Readiness Program provide Canada with an operationally effective combat-capable, multi-purpose Army?	2.2.1 The Land Readiness Program has demonstrated that it provides Canada with an operationally effective combat-capable, multi-purpose Army.	Yes	No	Yes
	2.2.2 • The CA has demonstrated the ability to lead or conduct a major international mission for an extended period with WoG and allies.	Yes	No	Yes
	2.2.3 • The CA has demonstrated ability to respond to a secondary crisis elsewhere in the world for a shorter period of time with WoG and allies.	Yes	No	Yes

Table D-2. Evaluation Matrix—Performance (Effectiveness). This table indicates the data collection methods used to assess the Land Readiness Program’s performance in terms of achievement of outcomes (effectiveness).

Evaluation Issues/ Questions	Measures/ Indicators	Document Review	Program Data Review (financial and other)	Key informant interviews
3.1 Has the Land Readiness Program used resources efficiently? [outputs]	3.1.1 Trends in program costs	Yes	Yes	Yes
	3.1.2 Trends in training costs	Yes	Yes	Yes
	3.1.3 Trends in cost of equipment sustainment	Yes	Yes	Yes
	3.1.4 Trends in cost of infrastructure sustainment	Yes	Yes	Yes
	3.1.5 Trends in cost of governance	Yes	Yes	Yes
	3.1.6 Use of business information to optimize resource efficiency	Yes	Yes	Yes
3.2 Has the Land Readiness Program used resources economically? [inputs]	3.2.1 Trends in cost of the Land Readiness Program	Yes	Yes	Yes
	3.2.2 Demonstrated efforts to reduce or stabilize input resources (e.g., leveraging)	Yes	Yes	Yes
	3.2.3 Adequacy of input resources to produce operational effect	Yes	Yes	Yes
3.3 What is the relative efficiency and economy of the CA compared with allied armies?	3.3.1 Cost per military member	Yes	Yes	Yes
	3.3.2 Relative O&M expenditures	Yes	Yes	Yes
	3.3.3 Number of personnel per armoured vehicle	Yes	Yes	Yes
	3.3.4 Personnel expenditures as a percentage of the Army budget	Yes	Yes	Yes

Table D-3. Evaluation Matrix—Performance (efficiency and economy). This table indicates the data collection methods used to assess the evaluation issues/questions for determining the Land Readiness Program's performance in terms of efficiency and economy.

Annex E—Key Training Elements of the Land Readiness Program and CA Organizations

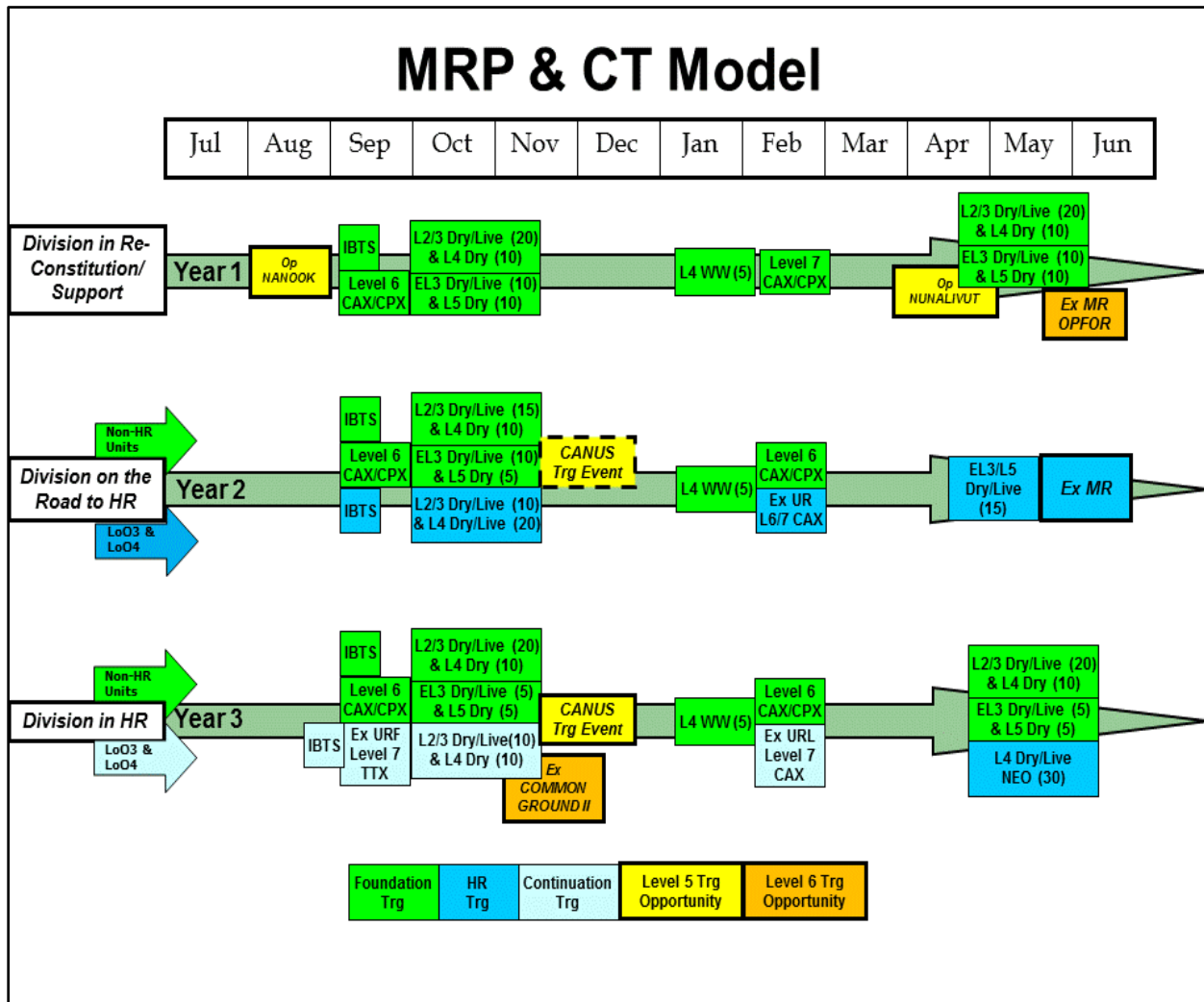


Figure E-1 Managed Readiness Program and Collective Training Model.¹¹⁴ The model depicts the level of CT and normal number of training days allocated for each exercise. See footnote for explanation of acronyms.

¹¹⁴ Taken from the Army Business Planning Symposium - Collective Training Update, 1 September 2015. Note: L – Level, as in Level 5 CT (see explanation of training levels at Table 1); Computer Assisted Exercise (CAX); Command Post (HQ) Exercise (CPX); Table Top Exercise (TTX); no live ammunition utilised in the exercise (Dry); Live ammunition utilised in exercise (Live); Canada – United States (CANUS); Winter Warfare (WW); Exercise MAPLE RESOLVE (Ex MR); Opposition (enemy) Force (OPFOR); Non-combatant Evacuation Operation (NEO). Foundation Training (Green in above figure) is the CT that all Reg F operational units are required to complete, while HR training (Blue in the figure above) is only required to be completed by units on the road to high readiness (RTHR) or at HR.

The CA's Force generation and training organizations, which are central to the LR Program, are as follows:

- 3rd Cdn Div is comprised of:
 - 1st Canadian Mechanized Brigade Group (1 CMBG), Edmonton, Reg F units,
 - Three Canadian Brigade Groups (CBGs), comprised of Reserve units across the Western region, and
 - Five division training areas;

- 4th Cdn Div is comprised of:
 - 2 CMBG, Petawawa, Reg F units,
 - Three CBGs, comprised of Reserve units across central region, and
 - Five division training areas;

- 2nd Cdn Div is comprised of:
 - 5 CMBG, Valcartier, Reg F units, and
 - Two CBGs, comprised of Reserve units across the Quebec region, and
 - Four division training areas;

- 5th Cdn Div is comprised of:
 - Several Reg F units in Gagetown, NB,
 - Two CBGs, comprised of Reserve units across the Atlantic region, and
 - Three division training areas; and

- The Canadian Army Doctrine and Training Centre (CADTC). The CADTC is responsible for developing the CA's operational doctrine (how it will "fight") and the development and conduct of the CA's individual training (IT), collective training (CT) and confirmation of high readiness training of the HR division through Ex Maple Resolve. It is supported by four training centres:
 - Canadian Manoeuvre Training Centre in Wainright, AB, which is responsible for the design and execution of immersive collective training (CT) for the Canadian Armed Forces in order to provide a realistic and challenging full spectrum, contemporary operating environment which enables learning and confirmation for designated high readiness (HR) Forces,
 - Combat Training Centre in Gagetown, NB, responsible for delivery of combat arms' individual training (IT) courses based on five distinct schools – armour, artillery, infantry, tactics, the Canadian Armed Forces School of Military Engineering, and the Canadian Armed Forces Electrical Mechanical Engineering School in Borden, ON,
 - Canadian Army Command and Staff College charged with training army officers in the command and staff functions in war. The Canadian Army Command and Staff

College is also the lead for the CA's synthetic environment training, simulation and experimentation, and responsible for the professional development of army officers and non-commissioned members, and

- Peace Support Training Centre in Kingston, ON, responsible to provide specific, individual training to prepare selected members of the Canadian Armed Forces, other government departments (OGD) and foreign military personnel for full-spectrum operations within the contemporary operating environment.

Annex F—Comparative Analysis

A Comparative Analysis of the United States, British, Australian, and Canadian Armies

With the exception of the Australian Defence Force, including the Australian Army, the Armed Forces of the U.S., UK, and Canada have been subject of a steady decline in their budgets over most of the period 2010/11 to 2014/15, which has been the focus of the CAF LR Program evaluation.

The following is a brief comparison of the challenges faced by these armies and the impact on their readiness.

- **Budget.**¹¹⁵ Each nation has endured budget reductions, although the Australian defence budget shall increase over the next several years.
 - U.S. Army. U.S.. Army base budget was reduced from \$143 billion (\$158 billion CAD) in FY 2011¹¹⁶ to \$121 billion (\$133.6 billion CAD) in FY 2015. The Army has sought to manage budget reductions through base realignment and closures, reductions in manpower, modernization, and training.¹¹⁷
 - British Army (BA). The BA budget is being reduced to save £10.6 billion (\$20.0 billion CAD) between 2011/12 and 2021/22¹¹⁸, from a total BA 2010/11 budget of £7.29 billion (\$13.26 billion CAD).¹¹⁹ As of FY 2014/15 the total BA budget was reduced 12.7 percent to £6.37 billion (\$11.59 billion CAD).¹²⁰ The budget reductions have required the Army to significantly reduce its regular Army strength, reduce major equipment, restructure, and consolidate basing and infrastructure, including the return of all BA elements in Germany to the UK.
 - Australian Army. Following a 10 percent cut in 2012, followed by growth and then a small decline in FY 2014/15 to \$6.25 billion (\$6.23 billion CAD), the Australian Army budget is now increasing along with the Australian defence budget, and is projected to continue growing for the next several years to \$7.096 billion (\$7.07 billion CAD) in 2019/20.¹²¹

¹¹⁵ Exchange rates over the period of comparison fluctuated from year to year. However, for the purpose of this comparison, the exchange rates for 2014 at <http://www.bankofcanada.ca/stats/assets/pdf/nraa-2014-en.pdf> may be considered. The average 2014 values of foreign currencies in Canadian Dollars (CAD) were: Australia \$1 = .996 CAD; UK £1 = 1.819 CAD; US \$1 = 1.104 CAD.

¹¹⁶ *Army Budget for FY 2011 Released*, Association of the United States Army, 2/1/2010 at <http://www.ausa.org/news/2010/Pages/ArmyBudgetforFY2011Released.aspx> accessed on 24 March 2016.

¹¹⁷ *U.S. Army Posture Statement 2015* (A Statement on the Posture of the United States Army 2015), The Honourable John M. McHugh and General Raymond T. Odierno, March 2015, p. 8, 12

¹¹⁸ Report by the Comptroller and Auditor General – Army 2020, Ministry of Defence National Audit Office, 11 June 2014.

¹¹⁹ Ministry of Defence Annual Report and Accounts 2010-11, p. 120.

¹²⁰ Ministry of Defence Annual Report and Accounts 2014-15, p. 135.

¹²¹ Australia Defence budget, Jane's defence budgets, [ihs.com](http://www.ihs.com), dated posted 21 January 2016.

- CA expenditures have declined 24 percent% from \$1.599 billion in 2011to \$1.22 billion in 2015¹²², with additional reductions projected in the future. This has had a significant impact on the CA’s |||||, and particularly the funds available for |||||. However, there has not been a parallel reduction in other resources as in the BA and the U.S. Army.
- **Personnel.** With the exception of the CA, other armies have reduced their Reg F strength, and in the case of the BA, while the Reg F has been significantly reduced, there is a plan to significantly expand the Reserves. All armies are currently facing recruiting and retention issues, however they appear to be most pronounced for the BA.
 - U.S. Army. From a wartime high of 575 thousand regular army, 358 thousand Army National Guard, and 205thousand Army Reserve, the U.S. Army is being reduced to total strengths 475 thousand (-17 percent), 342 thousand (-4.5 percent) and 198 thousand (-3.4percent) respectively¹²³ The U.S. Army Reserve is also facing recruiting and retention issues.¹²⁴
 - BA. The BA will be reduced by approximately 7000 personnel to 95,000 by 2015¹²⁵ and a final total of 82,000 in 2020.¹²⁶ In 2014, the BA reduced its regular strength by 4,060.¹²⁷ Reserves focussed this year on improving recruitment and retention to reverse the declines that have been experienced in recent years.¹²⁸ The BA also has a significant personnel shortfall in engineer logistics specialists, engineers armoured, and signals in electronic warfare and info systems and vehicle support specialists and Army recruiting is projecting a 30 percent (2940) shortfall.¹²⁹ The BA is restructuring its Force based upon budget and personnel reductions to achieve economies and efficiencies, and seeking to further increase the number of Reserves (from 19,000 to 30,000 by the end of FY 2018/19), integrate the BA Reserves into BA training and operations in certain Reserve specific domains, as well as augment regular BA units. The 2014 UK MoD National Audit Office review of the BA 2020 concept was concerned that the plan to recruit so many more reservists and integrate the Reserves may not be achievable and warned that “the cost related to the training, integration and preparation of Reserves for use in operations” might actually lead to increased

¹²² DRIMS CAF L1 vs CA expenditure analysis – FY 2010-11 to FY 2014-15

¹²³ U.S. Army Posture Statement 2015 (A statement on the posture of the United States Army 2015), The Honourable John M. McHugh and General Raymond T. Odierno, March 2015, p. 16

¹²⁴ U.S. Army Posture Statement 2015 (A statement on the posture of the United States Army 2015), The Honourable John M. McHugh and General Raymond T. Odierno, March 2015, p. 37

¹²⁵ Fact Sheet 7: Future Force 2020 – British Army, Crown Copyright.

¹²⁶ Army Restructuring Faces Big Challenges by James Blitz in Financial Times Limited, 2016

¹²⁷ Ministry of Defence Annual Report and Accounts 2013-14, Crown copyright 2014, p. 34

¹²⁸ Ministry of Defence Annual Report and Accounts 2013-14, Crown copyright 2014, p. 38

¹²⁹ Ministry of Defence Annual Report and Accounts 2013-14, Crown copyright 2014, p. 44-45

costs.¹³⁰ In 2013/14, the BA only achieved 70 percent of its Regular Army recruiting goal, and just over 30 percent of its Army Reserve recruiting goal.¹³¹

- Australian Army. The Australian Army represents 37 percent of the Australian Defence Force's work force. The permanent Force has declined by approximately 1 percent from 2012/13, to 28,568 and the Army Reserve declined 3.5 percent to 14,662¹³² but there has been no directed reduction in Army personnel. Consistently high levels of vacancy in some employment categories and corps hamper and constrain the Army's operational capability.¹³³ Finally, Australian Army Reserves have been assigned specific roles similar to CA Reserves in addition to their augmentation of regular Army units.¹³⁴
- CA. While the CA's budget has been reduced, the CA strength (PYs) has increased over the past several years concurrently with new operational tasks, e.g., Cyber Ops. However, growth has not been adequate to meet the demands of the new tasks and has required the CA to alter their existing Force structure and manning to field some of the new requirements. The CA also lacks personnel in certain critical trades, Reserves strength has declined, and recruiting has been a challenge. Recruitment, retention and training of Reserves to meet assigned operational tasks remain a challenge.
- **Training.** All armies are making increased use of simulation to provide training. Both CA and Australian Army have established foundation training levels for normal readiness units, which exceed readiness levels for U.S. Army units that are not at HR.
 - U.S. Army. The U.S. Army maintains the high readiness of 24 of 60 brigade combat teams (BCTs), which are analogous to CA CMBG but much larger. The remainder maintain minimum individual/crew/squad level training (levels 1, 2, 3 in CA and Australian Army terms).¹³⁵
 - BA. The BA employs both individual and collective training, similarly to other allied armies and Forces. Collective training in the BA comprises six training levels, from level 1 (team training in the context of a platoon) to level 6 at the

¹³⁰ Report by the Comptroller and Auditor General – Army 2020, Ministry of Defence National Audit Office, 11 June 2014, p. 8.

¹³¹ Report by the Comptroller and Auditor General – Army 2020, Ministry of Defence National Audit Office, 11 June 2014, p. 32.

¹³² Defence Annual Report 2013-14 Volume One Performance, governance, and accountability

¹³³ Australian Army: Our Future – An Army Modernisation Update, Version 2, April 2014, Copyright Commonwealth of Australia, p. 19.

¹³⁴ Australian Army: Our Future – An Army Modernisation Update, Version 2, April 2014, Copyright Commonwealth of Australia, p. 43.

¹³⁵ U.S. Army Posture Statement 2015 (A Statement on the Posture of the United States Army 2015), The Honourable John M. McHugh and General Raymond T. Odierno, March 2015, p. 19. BCTs may be categorized as infantry, armoured or other type. The infantry brigade, in 2014, comprised of approx. 4,400 soldiers organized around three infantry battalions. Ref: Wikipedia brigade combat team at https://en.wikipedia.org/wiki/Brigade_combat_team accessed 15 March 2016.

divisional level.¹³⁶ As well, similarly to the Australian Army and CA, the BA breaks its training into foundation training and mission specific training¹³⁷. Finally, the BA is developing an integrated Reserve and Regular Force training plan.¹³⁸

- Australian Army. The Australian Army has a similar training system to the CA collective training levels (see Table 1 of report), which are referred to as the “Army Training Continuum” with Levels 1 (individual training) through collective training levels 2/3 sub unit level, 3/4 unit level, 5/6 brigade (combined arms) and formation level 5/6/7 collective training and mission rehearsal (equivalent to CA Ex Maple Resolve). Finally, the Australian Army’s goal is to ultimately conduct 25 percent of unit training through simulation.¹³⁹
- CA. CA operational training is based on individual battle training standards, conducted primarily at the unit level, and collective training battle task standards conducted at the unit, brigade and division levels. The CCA has identified Foundation levels of training for the Reg F and Reserves, and the higher level of training to be achieved by HR divisions.
- **Readiness.** The Australian Army and the UK Army employ the same 36 month readiness cycle as the CA based on three brigades that, in the case of the CA and Australian Army, represent 1/3 of their conventional combat Force. On a much larger scale, the U.S. Army maintains approximately 1/3 of its BCTs at HR.
 - U.S. Army. The U.S. Army has 1/3 of BCTs at HR (24 BCTs), but desires 70 percent at HR. Overall, the U.S. Army readiness has been reduced, along with the number of BCTs at HR, by the lack of funding required for the BCTs to practice full spectrum operations at their combat training centres that are similar to the CA’s Canadian Mechanized Training Centre in Wainwright.¹⁴⁰ The Heritage Foundation 2016 Index of Military Strength scored the U.S. Army’s capacity as weak, capability as marginal, and readiness as weak, with an overall U.S. Army score of weak based on the aggregate of the capacity, capability and readiness assessment.¹⁴¹
 - BA. The BA will reduce by one the number of deployable brigades, restructuring a reaction Force comprised of three armoured infantry brigades, a logistics brigade and an aviation brigade. The three armoured infantry brigades and a divisional HQ will constitute the HR Force, with one brigade at HR. The Army

¹³⁶ [British] Army Doctrine Publication Operations, Crown copyright, December 2010, p. 2-35.

¹³⁷ Ibid, p. 2-34.

¹³⁸ Ministry of Defence Annual Report and Accounts 2013-14, Crown copyright 2014, p. 38

¹³⁹ Australian Army: Our Future – An Army Modernisation Update, Version 2, April 2014, Copyright Commonwealth of Australia, p. 30.

¹⁴⁰ U.S. Army Posture Statement 2015 (A Statement on the Posture of the United States Army 2015), The Honourable John M. McHugh and General Raymond T. Odierno, March 2015, p. 19.

¹⁴¹ 2016 Index of U.S. Military Strength: Assessing America’s Ability to Provide for the Common Defense, Heritage Foundation, accessed at <http://index.heritage.org/military/2016/> on 17 March 2016.

will also maintain an adaptable Force, comprised of seven infantry brigades and a logistics brigade, with regular units paired directly with Reserve units, to provide a pool of resources for a wide range of tasks ranging from combat missions to civil engagement and domestic operations.¹⁴²

- Australian Army. The Australian Army's Force generation cycle ensures that [three] combat brigades, specialist capabilities and part time Forces consistently train together. The Army's conventional deployable combat Forces move through three 12 month phases in a 36 month cycle. The cycle concludes with the 'ready' phase when Force elements will be held at high readiness and be deployed if necessary. The 12 months prior to this is the readying phase, during which Force elements undergo an intense period of training and certification to ensure that they are ready to deploy. When Force elements return from an operational deployment, or conclude a period of being held at high readiness, they will enter the 'reset' phase which provides time to conduct individual training, including career courses, to prepare them to begin collective training again in the 'readying' phase.¹⁴³
- CA. The CA maintains a Managed Readiness Program (MRP) based on three divisions, each with a Reg F mechanized brigade group. During the Afghanistan conflict, the brigades were in an 18 month cycle in order to limit their deployment times to approximately six months followed by a six month period of reconstitution / normal Readiness, during which they were available for domestic operations, followed by six months of training, including Theatre Mission Specific Training, to achieve HR prior to deployment. This cycle was also intended to provide soldiers a full 12 month period out of operations. Following Afghanistan, the CA revised the 18 month readiness cycle to 36 months in order to reduce training costs.
- **Equipment.** Allied armies are going through similar transitions and modernization to the CA, albeit the U.S. Army procurement budget has possibly had the greatest proportionate reduction. In the case of the U.S. Army, with BCTs being reduced, the remaining BCTs will have more equipment as it is redistributed among them. The BA is undergoing significant reductions in major combat equipment, which will significantly reduce its combat capability, while the Australian Army is being essentially maintained and renewed. While major CA equipment is not being replaced "one for one", the CA is faring relatively well compared to the equipment reductions in the U.S. and British armies.
 - U.S. Army. The U.S. Army has reduced its number of BCTs, but at the same time elements of the de-activated BCTs are being consolidated into the remaining BCTs. In particular, this includes a third maneuver battalion, and additional engineering and firepower capabilities being added to each armoured and infantry

¹⁴² Transforming the British Army: An Update – July 2013, p. 6-8.

¹⁴³ Pan BEERSHEBA – Army's Future Structure, Australian Army, 22 November 2015 at <http://www.army.gov.au/Our-future/Projects/Plan-BEERSHEBA> accessed on 11 March 2016.

- Aging fleets and reduced budgets having necessitated a ||| prior to delivery of the replacement vehicles, and
 - |||
- **Infrastructure.** Allied armies, like the CA, have sought to achieve budget savings by rationalization of major infrastructure, however the U.S. and UK have made far more substantial cuts reflecting their significantly greater budget reductions and infrastructure holdings.
 - U.S. Army. Since 2012 the U.S. Army has implemented several rounds of budget reductions, and installation programs have seen dramatically reduced services and sustainment. Although they have survived for two years at these reduced funding levels, by deferring critical facility maintenance and cutting back on services, without increased funding the facilities will be seriously compromised. The Army has identified the need for another round of base realignment and closures, as it has too much surplus infrastructure that will be further increased as it downsizes.¹⁵⁰
 - BA. In FY 2014/15 the BA completed 30 unit moves and/or functional re-rolling of units within the UK; and one unit move to the UK from Germany. Part 2 of the program will include a number of intra-UK moves and the return of a further 14 units from Germany and have all UK military units back from Germany by 2020.¹⁵¹ By 2020 the British Army will be predominantly UK-based. The proposed geographical laydown will seek to maximise training resources and the provision of logistic and administrative support. The final laydown will be determined by the basing optimization plan which is being developed by the Defence infrastructure organization.¹⁵²
 - Australian Army. The Australia Army is rationalizing its unit basing for economies and efficiencies, based on several criterion including alignment with strategic requirements and to ensure critical capabilities are dispersed for security reasons and so that functions at the joint and service levels should be aligned to consolidate units into fewer, larger and sustainable multi-user bases.¹⁵³
 - CA. The CA has begun rationalizing it's infrastructure to reflect current / future needs and to reduce costs. This has included the organization of area/division

¹⁵⁰ U.S.Army Posture Statement 2015 (A Statement on the Posture of the United States Army 2015), The Honourable John M. McHugh and General Raymond T. Odierno, March 2015, p. 29

¹⁵¹ UK MOD Annual Report and Accounts 2014-15, p. 31.

¹⁵² Transforming the British Army: An Update – July 2013, p. 10

¹⁵³ Australian Army: Our Future – An Army Modernisation Update, Version 2, April 2014, Copyright Commonwealth of Australia, p. 56.

support groups, centralizing many of the services and support that were once common to all CAF Bases. However, neither Reserve armouries nor CAF bases have been closed, or Reg F units moved to achieve economies and efficiencies in more than a decade. There could be further rationalization by the CA, if authorized, by consolidating Reserve units and armouries.