

Canadian  
Forces  
College

Collège  
des  
Forces  
Canadiennes



## ORGANIZATIONAL ALIGNMENT: COMPLETING THE NEXT STEP IN ADM(IE) TRANSFORMATION

Maj John Geen

### JCSP 44

#### *Exercise Solo Flight*

##### **Disclaimer**

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence, 2018.

### PCEMI 44

#### *Exercice Solo Flight*

##### **Avertissement**

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale, 2018.

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES  
JCSP 44 – PCEMI 44  
2017 – 2018

EXERCISE *SOLO FLIGHT* – EXERCICE *SOLO FLIGHT*

**ORGANIZATIONAL ALIGNMENT:  
COMPLETING THE NEXT STEP IN ADM(IE) TRANSFORMATION**

Maj John Geen

*“This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”*

Word Count: 4965

*“La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.”*

Compte de mots: 4965

## **ORGANIZATIONAL ALIGNMENT: COMPLETING THE NEXT STEP IN ADM(IE) TRANSFORMATION**

### **INTRODUCTION**

Although infrastructure is not generally viewed as a mechanism of war it is indispensable to the current and future Canadian Armed Forces (CAF).<sup>1</sup> It shelters our biggest resource - the men and women of the CAF allowing them to work and train. It also houses our critical communications and network infrastructure systems and it protects and extends the life of material, equipment, and vehicles.

In addition to being one of the CAF's biggest assets, it is also one of the CAF largest costs. Next to people, and material, it is the biggest annual expense.<sup>2</sup> The Department of National Defence (DND) Real Property Replacement Cost (RPRC) is in excess of \$26B and in order to maintain the portfolio of over 20k buildings and over 18k municipal works, DND expends over \$2B annually. This accounts for roughly 10% of the average annual DND budget.<sup>3</sup>

When managed correctly, immense savings are possible. These savings can be used to support DND's *raison d'être*. Which according to the 2017-2018 departmental plan is "Protecting Canada and defending our sovereignty; Defending North America in cooperation

---

<sup>1</sup> Government of Canada, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa: DND Canada, 2017), 76.

<sup>2</sup> Government of Canada, "Upcoming evaluations over the next five fiscal years," last modified 16 March 2017, <http://www.forces.gc.ca/en/about-reports-pubs-report-plan-priorities/2017-upcoming-evaluations-over-the-next-five-fiscal-years.page>

<sup>3</sup> Government of Canada, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa: DND Canada, 2017), 76.

with the United States, Canada's closest ally; and contributing to international peace and security through operations around the world, most often in partnership with allies from other countries.”<sup>4</sup>

When managed incorrectly, not only will it lead to a negative impact on operations and result in significant financial waste, it can lead to unhealthy and unsafe work environments that can lead to injury and even kill. Impacts of radon, lead, and asbestos exposure have been well-documented, but the unwillingness to properly manage tactical infrastructure in November 2014, led to the collapse of an Observation Post and the death of Private Steven Allen.<sup>5</sup> In Elliot Lake, poor asset management resulted in the deaths of two people when a shopping mall roof gave way.<sup>6</sup>

Prior to 2012, DND infrastructure was the responsibility of nine different custodians within DND. The management of Real Property (RP) was largely a tactical enterprise lacking a coherent strategic and operational framework. This tactical level consisted of Base and Wing Construction Engineering Squadrons which reported directly to the Base/Wing Commanders. The strategic and operational guidance belonged to the custodian and was typically focused on military operations and training. Some task-specific direction and guidance flowed through a technical network that established and enforced engineering and financial standards. Overall, the structure inhibited proper asset management as those in positions to properly guide and resource the plan lacked the required expertise. Infrastructure was simply a supporting element to those in a position of power and influence and not core business.

---

<sup>4</sup> Government of Canada, “Raison d’être, mandate and role: who we are and what we do,” last modified 9 March 2017, <http://www.forces.gc.ca/en/about-reports-pubs-report-plan-priorities/2017-raison-detre-mandate-and-role-who-we-are-and-what-we-do.page>.

<sup>5</sup> Tyler Anderson, “Canadian Soldier Killed in Training,” *National Post*, 7 November 2014.

<sup>6</sup> Office of Commissioner, “The Elliot Lake Commission of Inquiry” In *Remarkable by Commissioner Paul R. Belanger*, Ottawa: The Province of Ontario, 2014, 51.

The impacts of the budget cuts and a lack of expertise within each of the custodians resulted in a huge infrastructure debt.<sup>7</sup> A scathing report on the governance of infrastructure within the DND was released by the Office of the Auditor General.<sup>8</sup> This spurred drastic change and what was to be known as Assistant Deputy Minister (Infrastructure Environment) (ADM (IE)) Transformation. This centralized all RP under one authority. The Royal Canadian Navy, Canadian Army, Royal Canadian Air Force and the six other custodians relinquished ownership of their infrastructure.

The transformation set aggressive targets for completion. ADM (IE) needed to quickly assess the portfolio, transfer authorities, people, and resources, and establish a working process to ensure continuity of services. Now that centralization is complete and a new business modernization process has been implemented, it is possible to better align processes to industry best practices in order to enhance levels of service, and increase overall efficiency. This paper will show that the current ADM (IE) management system, CAF levels of leadership, and the new industry standards for asset management are not properly aligned and will clearly identify what adjustments ADM (IE) requires to better situate the organization to correspond to best practices and support key stakeholders. As terminology varies between the CAF, ADM (IE) and industry, this paper will define and connect the organizational levels establishing how ADM (IE) should characterize the different levels within its organization and demonstrate how each will link to the stakeholders and industry accepted standards. By taking these measures to align the organization ADM (IE) will increase its overall agility and efficiency in three ways:

---

<sup>7</sup> John Hallett, “Crumbling Infrastructure Crippling the Army” (Joint Command and Staff Program Briefing Note, Canadian Forces College (2018) 4.

<sup>8</sup> Office of the Auditor General, “Report of the Auditor General of Canada to the House of Commons, Chapter 5 Real Property.” Ottawa: OAG (Fall 2012) 2.

- Timeliness.<sup>9</sup> Well-defined responsibilities and clear alignment will allow timely planning, issuance of direction, and reporting structures, thus permitting operations to adhere to the principles of asset management while complying with the timelines and strategic constraints of the organization;
- Training.<sup>10</sup> It will allow focused training to reduce overlaps in responsibilities and increase confidence in lower levels to solve problems and achieve organizational goals, thus alleviating the need for micromanagement and redundant reporting cycles; and
- Thinking. It will enhance critical thinking at all levels and enable the appropriate levels of planning to occur.

ADM (IE) is responsible for more than just the provision of asset management; however, the next largest portion of the organization, Canadian Forces Housing Agency, functions as a Special Operating Agency,<sup>11</sup> and the provision of environmental support and fire services remains within the LIs; therefore, this paper will focus on RP operations as it constitutes the bulk of ADM (IE)'s mandate.

## CURRENT ORGANIZATIONAL STRUCTURE

Centralization took major steps toward replacing custodian guidance with RP stewardship that was closely integrated with the former custodians. Changing ADM (IE)'s role from one of

---

<sup>9</sup> Currently, strategic documents are being released too late to be useful in operational and tactic levels. Example: the Integrated Resource Plan for Fiscal Year 2017-2018 was signed on 18 April 2017, three weeks after the beginning of the fiscal year Assistant Deputy Minister (Infrastructure Environment), *Integrated Resource Plan 2017-2018*, Ottawa 2017, 1. In order to be effective this document needs to be released 6-8 months sooner, to allow for contracts to be awarded and implemented within the proper timeframe -- author's opinion.

<sup>10</sup> Currently, members at the local and regional levels receive no formal training in asset management – author's observation.

<sup>11</sup> Assistant Deputy Minister (Infrastructure Environment), *Integrated Resource Plan 2017-2018*, Ottawa 2017, 27.

technical authority to full command highlighted the importance of proper asset management and began the process of aligning personnel to be successful. As centralization occurred there was a fundamental realignment of the strategic and operational levels as those responsible for the implementation of asset management moved to ADM (IE).

Over the past few years, the ADM (IE) structure has been in a state of evolution. Given the recent transformation, existing skill sets and functions have been organized within cells at the national level. Despite reporting to a new chain of command the day-to-day operations and local structure in place at the bases/wings remains largely unchanged.

The ADM (IE) Integrated Resource Plan 17-18 explains the organizational structure as follows: “Our organization is structured based on a split strategic and delivery-focused business model and all roles are organized based on a functional model of Strategic (Strategy & Policy), Management, Operational, and Internal services.”<sup>12</sup> These functions are depicted in the following table:

**Table 1 – Key Functions of ADM (IE)**

LEVEL	FUNCTIONS
<b>STRATEGIC:</b>	<p><b>Strategy and policy development;</b></p> <p><b>Portfolio strategy and asset management strategies;</b></p> <p><b>IE service and standards development;</b></p> <p><b>Legislative and regulatory advice;</b></p>

<sup>12</sup> Assistant Deputy Minister (Infrastructure Environment), *Integrated Resource Plan 2017-2018*, Ottawa 2017, 27.

	<p><b>Compliance management;</b></p> <p><b>Client and partners service level agreements development;</b></p> <p><b>Investment Program management development;</b></p> <p><b>Integrated planning;</b></p> <p><b>Corporate reporting;</b></p> <p><b>In-year financial management; and</b></p> <p><b>Functional authority.</b></p>
<b>MANAGEMENT:</b>	<p><b>Property acquisitions;</b></p> <p><b>Property disposals;</b></p> <p><b>Leases (including licences and agreements);</b></p> <p><b>Environmental due diligence; Monitoring and optimizing utilization; Land use;</b></p> <p><b>Project management;</b></p> <p><b>Project development;</b></p> <p><b>Management of infrastructure, facilities, and utilities services;</b></p> <p><b>Environmental management;</b></p> <p><b>Sourcing;</b></p> <p><b>Contract management;</b></p> <p><b>Asset management plans; and Specialized services (civil,</b></p>

	aerospace, electrical, mechanical, architecture).
<b>OPERATIONAL:</b>	<p><b>End user support (including contract centre);</b></p> <p><b>Coordination of moves, additions, changes;</b></p> <p><b>Infrastructure and property services related to operating RP;</b></p> <p><b>Asset maintenance and repairs;</b></p> <p><b>Support major and minor capital initiatives;</b></p> <p><b>Minor project management and delivery;</b></p> <p><b>Business continuity planning and emergency preparedness;</b></p> <p><b>Environmental sustainability programs;</b></p> <p><b>Environmental remediation;</b></p> <p><b>Hazardous waste disposal;</b></p> <p><b>Investigations and inspections;</b></p> <p><b>Support to RJTF domestic operations and support to CAF training; and</b></p> <p><b>Vendor management.</b></p>

Source: ADM (IE), Integrated Resource Plan, 27.

The functions described are not necessarily aligned with a specific level of the organization. As elements of the strategic functions are conducted at the base/wing level and many of the management functions permeate all levels. Although necessary and well-defined, these functions fail to clearly delineate and align organizational levels.

At the strategic level, the ADM (IE)'s stated vision is to "deliver the right assets, in the right place, at the right time, for the right cost, supported by the right workforce for the Defence Team."<sup>13</sup> This is no easy endeavour. With the complexity and the unique needs of the CAF across the defence portfolio and the highly regulated nature of Treasury Board policies, this requires a highly agile implementation of asset management. These management and operational functions, without clear assignment to organizational levels, fail to translate the organizational vision into the key responsibilities and tasks at the regional and base/wing level. This results in difficulty in correlating to either industry standards or the CAF. A better understanding of these levels will allow a better appreciation of how actions that are taken affect the overall organization and help fulfill the mandate.

Level 1 (L1) organizations,<sup>14</sup> which formally managed their own infrastructure, now integrate with ADM (IE) Real Property Operations Group (RPOG) at the tactical level in a tiered manner. Each year a series of open and transparent meetings are held to discuss the state of infrastructure and prioritization of projects. The first of these meeting occurs at the base level. The Real Property Coordination Committee (RPCC) consists of the Officer Commanding of the RP section or detachment, the base/wing commander, and the various Commanding Officers (COs) that are located at the base/wing. The next level meeting is the Real Property Operation Committee (RPOC) and consists of the formation commanders and the Real Property Operations Unit (RPOU) CO. This meeting merges the prioritizations list created at the base level. The

---

<sup>13</sup> Canada. Assistant Deputy Minister (Infrastructure Environment). "Defence Real Property Strategy: Efficiently Enabling Defence Capability," (Ottawa: DND 2012), 2.

<sup>14</sup> L1 organizations are those that report directly to the Chief of Defense Staff and consist of Royal Canadian Navy, Canadian Army, Royal Canadian Air Force, Military Personnel Command, Canadian Special Operations Forces Command, Canadian Joint Operations Command, Canadian Forces Intelligence Command, Strategic Joint Staff, and North American Aerospace Defense Command (NORAD).

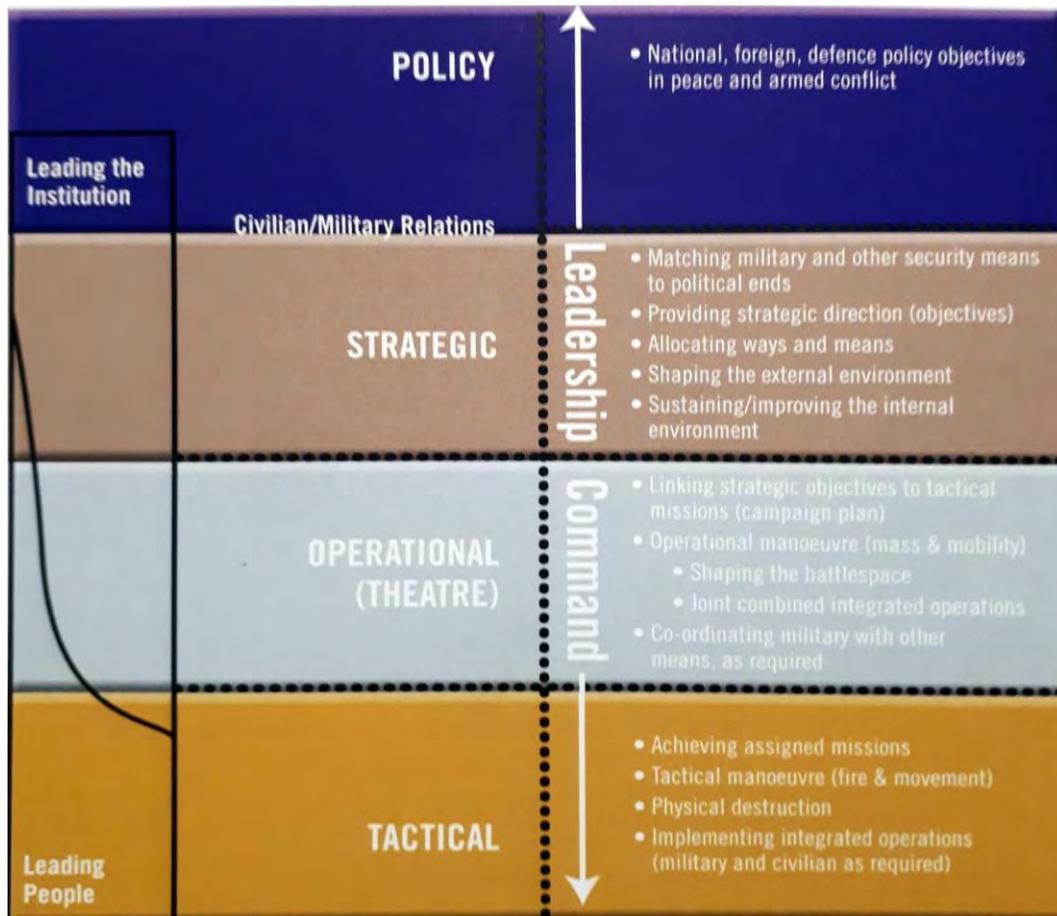
final meeting is the Real Property Steering Committee (RPSC) hosted by the Commander of the RPOG and the various L1 organizations.

This interaction clearly positions the RPOG at the tactical level of ADM (IE). It was intended to alleviate the concerns of the L1 as they relinquished control of the RP; however, it stymies the agility and efficiency of asset management within ADM (IE). It results in a list of projects which must be completed the following year without taking into several considerations. It reduces critical thinking down to a checklist. Major asset management principles such as project sequencing and life-cycle costing which would result in an increase of efficiency are ignored and it eliminates the agility of local commanders to adapt as the situation changes. The timeliness of the direction often makes it impossible to complete the list due to personnel shortages, length of tendering process, construction season, weather limitations, and late financial allocations. It also erodes stakeholder confidence and the credibility of the base-level detachments and sections as badly needed projects may not be approved simply because the training of those assigning and interpreting the scoring criteria for other projects may not understand or purposely over rank their projects.

## **STAKEHOLDER ALIGNMENT**

The CAF is by far the largest and most important client and stakeholder for ADM (IE) and the implementation of RP operations is its most pressing task. Therefore, alignment to best support and communicate with the CAF is essential to achieving ADM (IE)'s strategic, operational, and tactical goals. In addition, most of the leadership responsible for the implementation of the RP operations have held leadership positions in the CAF; therefore, it makes sense to mirror the leadership levels to breed familiarity and ease transition.

In the military context, there are four distinct levels of leadership. The Policy level provides overarching guidance at the political and national level.<sup>15</sup> The strategic level articulates how military power achieves political purposes.<sup>16</sup> The operational level takes the often vague strategic direction and applies it to the situation to create a campaign plan of objectives and tasks in a language that is fully understood at the tactical level.<sup>17</sup> The tactical level is where physical actions accomplish the objectives and tasks.<sup>18</sup>



**Figure 1 – DND Hierarchy**

Source: DND, *Leading the Institution*, 48.

<sup>15</sup> Department of National Defence, *Leadership in the Canadian Forces: Leading the Institution* (Ottawa: Canadian Defence Academy – Canadian Forces Leadership Institute, 2007), 52.

<sup>16</sup> *Ibid.*, 155.

<sup>17</sup> *Ibid.*, 156.

<sup>18</sup> *Ibid.*, 157.

Figure 1 depicts the levels of leadership within the organizational hierarchy of DND. At the policy level, the benchmark document is entitled "Strong, Secure, Engaged." It outlines the government of Canada's long-term vision and plans for the defence of Canada and how the CAF will contribute globally.

The strategic nucleus of the CAF resides in Ottawa. The Strategic Joint Staff (SJS) represent the core of this level and identifies how Canada wields its military power to satisfy the political objectives. Organized as a small staff, the SJS supports the highest level of leadership by providing advice, analysing, and shaping the external environment and formulating ways and means for the operational level to achieve their strategic objectives. They play a critical role in ensuring the relevance of the CAF and managing and maintaining the internal conditions necessary for mission success.

The purpose of the operational level within the military is "shaping the battlespace to enable tactical success."<sup>19</sup> In the CAF this role is filled by the Canadian Joint Operations Centre (CJOC). This organization is filled with a robust cadre of individuals with a wealth of tactical experience and training in operational planning. As the CAF's primary force employer, in addition to campaign planning and aligning resources to support operations, it is the reach back for the tactical forces while deployed.

Domestically, the formations within the Royal Canadian Navy, Canadian Army, and Royal Canadian Air Force make up the tactical level. This level maintains a robust skill set which enables them to achieve the various operational objectives. As force generators, the units within these formations develop military individual and collective proficiency in combat and support functions and bring these skills to bear when required. With over 100 unique trades, the

---

<sup>19</sup> *Ibid.*, 46.

variety of skills and the corresponding environment needed to develop them varies considerably from unit-to-unit across the country.

In a deployed context, these forces apply the necessary skills to achieve the objectives of the CAF. This involves a natural hierarchy of planning to realise the objectives in the context of enemy threat and environment. The transformation of objectives to physical movements and activities is critically important as missteps in their application will almost certainly result in mission failure. The agility and efficiency at the tactical level are imperative as the variables of a mission often are not appreciated at the strategic and operational levels. These are achieved through timely issuance of direction, a high degree of individual and collective training, and the enabling of critical thinking. In the Army, the unwritten rule for issuing timely direction is the one-third/two-thirds rule. This suggests that any section of the organization that is required to conduct planning and issue guidance and direction utilize no more than one-third of the planning time available.

The training is the main focus of a force generating organization and the benefits of a regimented, skill-specific program are critical to the unit's success. Critical thinking is enabled by the use of mission command. This is where a Commander delivers his intent and the access to the necessary resources and allows the subordinate commander to create a plan that meets the overarching objectives.

The large bulk of ADM (IE)'s support is focused on the diverse tactical level. This is where the troops, training, and associated infrastructure reside. To best manage the stakeholders at this level the tactical level must reflect and comply with the military norms. In addition to proper alignment to the CAF to allow proper stakeholder engagement the elements of the CAF

structure, which allow agility and efficiency at the tactical level and include planning timelines, a focus on training and mission command needs to be replicated in the ADM (IE) structure.

## **INDUSTRY STANDARDS**

Business and different levels of government have often redefined their practices with new buzzwords and management strategies. From building maintenance and services, to facility/facilities management the actions of maintaining the portfolio of the CAF have evolved over the years. Industries have been built around these terms and the functions which they entail. However, the assets on Canadian bases and wings go beyond simply buildings and facilities. The collection of utility and transportation networks, parks and recreation facilities, office space, industrial space, and training areas closely mirrors the diverse collection of assets found within municipalities. With the emergence of robust international standards, asset management principles have become the norm in municipalities in North America, Europe, and Australia.

The first internationally recognized standard in asset management was released in 2004 by the British Standards Institute. The International Organization for Standardisation (ISO) built upon the body of work and in 2014 released the ISO 55000 series.<sup>20</sup> It quickly became the benchmark. The International Infrastructure Management Manual (IIMM), currently in its fifth edition, published by the Institute of Public Works Engineering Australasia (IPWEA) has been at the forefront of asset management. In collaboration with experts from Australia, Canada, New Zealand, South Africa, the United States and the United Kingdom, it has incorporated the ISO 55000 series into its latest edition. It provides the knowledge, tools and case studies to

---

<sup>20</sup> International Organization for Standardization (2014), *Asset Management – Overview Principles and Terminology* (ISO 55000). <https://www.iso.org/obp/ui/#iso:std:iso:55000:ed-1:v2:en>.

effectively practice asset management in accordance with the standards.<sup>21</sup> The Canadian Network of Asset Managers (CNAM) have adopted these principles and has brought together a community of Canadian municipalities to share best practices. With this body of knowledge and network of like-minded professional, Canadian municipalities have shown excellent progress in their asset management and stewardship.

Although the tenants and structure of the IIMM are useful in all asset management applications, the key focus is on publicly owned infrastructure. For this reason, the standard is being adopted by municipalities in developed countries all over the world.<sup>22</sup>

The terminology and structure of the asset management standards differ greatly from the structure of the CAF. The IIMM describes The Asset Management System as “A set of interrelated or interacting elements of an organisation, including the Asset Management Policy, Asset Management Objectives, Asset Management Strategy, Asset Management Plan, and the processes to achieve those objectives.”<sup>23</sup> This system breaks down into the main planning outputs from each level as follows:

---

<sup>21</sup> Institute of Public Works Engineering Australasia (IPWEA), *International Infrastructure Management Manual, Version 5*, (n.p. The SOS Print + Media Group, 2015), v.

<sup>22</sup> A quick review of publicly available city level asset management plans from virtually all English speaking countries shows strong correlations to the principles espoused by the IIMM.

<sup>23</sup> Institute of Public Works Engineering Australasia (IPWEA), *International Infrastructure Management Manual, Version 5*, (n.p. The SOS Print + Media Group, 2015), 1|8.



**Figure 2 – IIMM AM Hierarchy**

Source: IIMM, 1|8.

Organizational Policy sets the overarching vision and goals for which the infrastructure is required to support.<sup>24</sup> Asset Management Policy describes the manner in which the infrastructure supports the organization's vision and how it will be integrated into the organization's processes.<sup>25</sup> Asset Management Strategy typically spans 10-30 years and articulates the long-term goals for the organization's assets classes. The Asset Management Plan translates the organization's strategic goals into asset management objectives and is typically broken down into:

<sup>24</sup> *Ibid.*

<sup>25</sup> *Ibid.*, 1|9.

- Strategic Planning. Long-term planning for specific assets. Integrates stakeholder expectations and considers financial, operational, social and environmental factors;<sup>26</sup>
- Tactical Planning. Aligns the AM management processes to organizational operational tempo. Sets the conditions for program implementation;<sup>27</sup> and
- Operational Planning – Contrary to the military terminology the operational level within asset management doctrine describes the day-to-day activities and execution of tasks.<sup>28</sup>



**Figure 3 – AM Planning Levels**

Source – IIMM, 1|10.

<sup>26</sup> *Ibid.*

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*

Planning is highly detailed at this level and typically results in a one-year prescriptive plan and an additional two-year indicative plan. It covers all aspects of financial, human resourcing, and asset lifecycle management.

When undergoing transformation it is often useful to find success stories to emulate.<sup>29</sup> One area where asset management has been successful is within municipalities. With many similarities to bases/wings, these organizations have been successfully adopting and applying the tenants of asset management. The difference in overall size and state of infrastructure gives many solid examples to emulate at the base/wing level.

The municipal level is where the bulk of infrastructure is managed within Canada.<sup>30</sup> Therefore, contrary to the ADM (IE) which manages a portfolio from coast to coast to coast, the organizations are local. This necessarily sees that all IIMM levels occur within the same organization. Without a direct command relationship with provincial or federal levels of government, this is difficult to equate to our military way of doing things. Within the military mindset, the local level that implements tasks and achieves objectives is viewed as the tactical level but is labelled the operational level within the IIMM. All levels of planning must occur at each level of government, creating challenges when attempting to align and categorize. The provincial and federal infrastructure organizations provide guidance and funding, when conditions are met, while managing their own portfolios.

The federal government regularly issues action plans to direct the management of infrastructure. It outlines the national vision and identifies strategic goals. Two organizations

---

<sup>29</sup> Chip and Dan Heath, *Switch: How to Change Things When Change is Hard* (New York: Random House, 2010), 47.

<sup>30</sup> Federation of Canadian Municipalities, "Infrastructure," last accessed 7 May 2018, <https://fcm.ca/home/issues/infrastructure.htm>.

are involved at the national level: Infrastructure Canada (IC) and Public Service and Procurement Canada (PSPC). PSPC primarily manages assets which belong directly to federal departments, other than DND. IC manages national public infrastructure and supports the provincial and municipal levels through the allocation of equalization payments, grants, and technical support.

At the Provincial level, each province is very unique and their approach to infrastructure reflects this fact. In addition to managing their own infrastructure and supporting the infrastructure support to meet their health-care and education infrastructure requirements through arm's length arrangements, they create the regulatory and financial environment in which the municipalities operate.

The Province of Ontario has recognized the benefit of agile and efficient asset management within its municipalities. Once a very municipality-centric process, the Government of Ontario has realized that enabling critical thinking through better training and providing timely direction and resources will better serve the citizens of the province and save money over the long-term. It has provided money to ensure that the local level governments have the resources required to train staff and prepare and articulate a long-term plan.<sup>31</sup> In a recent discussion paper, the province identified as primary considerations: “significant differences between municipalities, integrated asset management planning, [and] an asset management plan is a living document.”<sup>32</sup> By acknowledging these key considerations the province can understand its role in asset management. It goes on to provide the clear and concise

---

<sup>31</sup> Ministry of Infrastructure, “Building together – Guide for municipal asset management plans,” last modified 9 June 2016, <https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans>.

<sup>32</sup> Ministry of Infrastructure, “Discussion paper - potential municipal asset management planning regulation,” last modified 22 Aug 2016, <https://www.ontario.ca/page/discussion-paper-potential-municipal-asset-management-planning-regulation>.

vision: “sustainability, ensuring evidence-based decisions, comprehensive planning across the province, and creating an asset management culture.”<sup>33</sup> In addition, it set a framework and resources to allow even the smaller municipalities that previously did not have the resources and training to adopt industry best practices.

This demonstrates that ADM (IE) can derive value from a layer between their strategic and delivery-focused model. This level can increase both the agility and efficiency of the organization by establishing a positive framework and ensuring comprehensive planning. Once supported by the proper training this framework could improve timeliness and enhance critical thinking and planning at the local level.

At the municipal level of government, the tenants of the IIMM are being embraced. Strategic Asset Management Plans (SAMPs), Asset Management Plans (AMPs), and Levels of Service (LoS) are being created and implemented. This allows transparent long-term planning, efficient use of resources to achieve objectives, and an agile system to consider risk and be financially responsible. By replicating these principles of asset management within regions and bases, ADM (IE) can also capitalize on these benefits.

## **ALIGNING FOR THE FUTURE**

Although significant improvements have been made with centralization to the implementation of asset management by ADM (IE),<sup>34</sup> the timeliness of strategic and operational direction and allocation of resources to the tactical level, the lack of asset management training to the various levels of the organization, and the current policies that inhibit critical thinking

---

<sup>33</sup> *Ibid.*

<sup>34</sup> Assistant Deputy Minister (Infrastructure Environment), *Integrated Resource Plan 2017-2018*, (Ottawa: 2017), 18.

have severely hampered the organization's agility and efficiency. Through better alignment of strategic, operational, and tactical levels with the CAF and industry standards, ADM (IE) will enhance the stewardship of the many resources entrusted to its care.

Canada's Defence Policy – Strong, Secure, Engaged, serves as the departmental policy guidance and outlines the ADM (IE)'s and CAF's shared strategic interests. This document aligns with the industry standard for organizational policy as it provides the vision and identifies the long-term goals of the department. This level of ADM (IE) leadership is properly aligned with its key stakeholder and industry standards.

The Assistant Deputy Minister and Chief of Staff's (COS IE) integration with the Chief of Defence Staff (CDS) and key command positions within the L1s is critical to align the strategic vision of ADM (IE) to the CAF. Through a shared vision, the various parts can interweave a support plan that caters to the long-term vision. The Governance, Policy, and Strategy Cell and the Strategic Portfolio Initiatives Cell within ADM (IE) play a critical role in this level. In order to enhance the overall agility and efficiency, this level must maintain a strategic view. The guidance and direction from this level must be high level in terms of timelines and the wealth of experience and knowledge must resist the urge to solve short-term and specific problems or risk jeopardizing the agility of the lower levels. Having strategic direction issued that reflects specific deliverables and tasks or operational imperatives with short timelines does not reflect industry timelines. It also inhibits agility and initiative at the lower levels as the descriptive nature forces compliance above problem-solving and critical thinking. Strategic guidance must be issued far in advance to allow the necessary processes to unfold and critical thinking to occur at the operational and tactical levels.

The mid or tactical level within the industry standard has been referred to as the “fuzzy interface between the strategic and the operational.”<sup>35</sup> It should be focused on allowing and enhancing decision-making at the lowest level and bridging the timeline between strategic direction and operational planning. Given the increase in data management, this level must resist the urge to automate decisions. The value that it provides is through the establishment of a framework that translates the strategic into the operational and generates a feedback loop for constant improvements at all levels.

Qantas Airlines Flight QF32 Pilot, Richard Champion de Crespigny, who is credited with successfully landing the most severely damaged commercial airline ever, credits his survival and the survival of the passengers on the crew’s ability to think through the problem. “You can't delegate thinking”...“Computers fail, checklists fail, everything can fail. But people can't. We have to make decisions, and that includes deciding what deserves our attention. The key is forcing yourself to think.”<sup>36</sup> Although managing the CAF’s infrastructure does not have the immediate impacts of flying a damaged plane, the mental and procedural agility to think through a problem can have a large impact on the end results. Proper organizational alignment and the corresponding training and procedures will ensure that optimal decisions are made vice reliance on checklists and computer programs to make decisions.

The current prescriptive and cumbersome project approval system requires thousands of potential projects from across Canada to fit into a limited scoring model. An immense effort is then applied to the process to justify (and often manipulate) the scoring, defending the process,

---

<sup>35</sup> Bjornar Henriksen, “Is there a tactical level of business processes? Emphasizing processes that enable adaptability, change, and improvement,” *The TQM Journal Vol 22, No 5* (West Yorkshire: Emerald Group), 2010, 517.

<sup>36</sup> Charles Duhigg, *Smarter Faster Better: The Secrets of Productivity in Life and Business* (New York: Random House), 2016. 115.

and collating and disseminating the results. Proper alignment will enable the delegation of decision-making authority to the local level and greatly improve the efficiency of the project approval process. This, in turn, will optimize the various local programs allowing for proper sequencing and delivery of key projects, prioritization of critical maintenance, and asset management that is more in line with industry standards. The Portfolio Requirements and Engineer Services cells best constitute an operational level for ADM (IE). This allows the RPOG to fully align with the tactical elements of the CAF.

The tactical level is the most involved. The criticality and variety of infrastructure and the composition of stakeholders present are drastically different at each of the 32 bases/wings and satellite locations. Different conditions for contracting exist in various communities and bases rely on these communities for services with varying degrees at each location. Therefore, the regional and national levels cannot micromanage the local bases or apply generic solutions evenly across the portfolio. They simply cannot grasp the unique nature of each base and the processes and procedures cannot be implemented without an understanding of the nuances of each location. Therefore, it is necessary to ensure that the sections and detachments have the required training and resources to apply industry standard asset management to maximize the effect. A critical training delta exists in order to be able to inculcate asset management thinking into everyday procedures. Although the full implementation of the IIMM and ISO 55000 series is highly recommended at the tactical level, the details of adopting these processes are beyond the scope of this paper.

Once the system has been optimized then the all-important training can be structured to enhance individual and group outputs. This training will increase the organization's agility. As the organization is aligned and training is implemented that closely corresponds to the levels a

hierarchy of documents and plans can be generated.<sup>37</sup> This will help address the timeliness of direction and feedback and increase the efficiency of the organization. The RPOG must take the lead in all tactical interactions with the CAF and be responsible for all aspects of the AM Strategy as defined by the IIMM. By identifying the whole of the RPOG at a tactical level meaningful engagement can occur with stakeholders on national level issues that have implications across the country. A key example is a long-term strategy for asset classes such as ammo storage that require a common approach to ensure the ammo depot footprint is the proper size and in the right locations to support operations and training.

The following table illustrates the required alignment of ADM (IE) with the CAF and industry standards:

**Table 2 – Required Alignment of ADM (IE)**

CAF		ADM (IE)	IIMM
<p><b>Leading the Institution</b></p> <p>Civilian/Military Relations</p> <p><b>STRATEGIC</b></p> <p>OPERATIONAL (THEATRE)</p> <p><b>TACTICAL</b></p> <p><b>Leading People</b></p>	<b>POLICY</b>	Government of Canada Policy DND Policy – Strong, Secure, Engaged.	Higher Levels of Government  National/Provincial Vision
		ADM (IE), COS (IE) DGIEGPS DGIESPI Vision Goals Objectives	National/Provincial Strategic Plan goals and objectives
		DGIEPR DGIEES AM Structure AM Policy	<b>Organisational Strategic Plan:</b> Organisational vision, goals and objectives.
		RPOG AM Strategy L1 and national level asset classes Audits and reviews	<b>AM Policy.</b> Principles, requirements and responsibilities for AM, linked to organisational strategic objectives.
	RPOU Regional AM Plans Levels of Service	<b>AM Strategy (Strategic AM Plan).</b> AM Objectives, AM Practices, Action Plans for AM improvement, Audit and Review processes.	
	RPOD and RPOS 1-3 year AM plans Implementation	<b>AM Plans.</b> Asset/Service Description, Levels of service, Demand Forecasts, Lifecycle Activities, Cashflow forecasts.	
		<b>Operational Plans and Work Programmes.</b> Guide day to day activities of staff and contractors.	

<sup>37</sup> New Zealand Asset Management Support (NAMS), *Developing Levels of Service and Performance Measures: Creating Customer Value from Community Assets* (Wellington, N.Z.: NAMS, 2007), A4/5.

Having the organization structure to ensure that the tactical level appreciates exactly what is expected and has the latitude and built-in agility to make smart decisions will enable the sections and detachments to achieve excellence in asset management while adhering to the strategic vision of ADM (IE).

The alignment shown in this paper contradicts how levels of ADM (IE) currently self-identify and see themselves and their echelon of the organization.<sup>38</sup> Geographic separation is perhaps the most common as a way to push all levels located in Ottawa into the Strategic level, all regional based HQs into the Operational and all base and wing level activities into the tactical. Although it clearly defines each level, it neither aligns with the CAF nor industry standards and creates confusion regarding task and purpose. Without establishing clear, industry-defined roles that best enable support to the CAF, ADM (IE) will stymie the organization's vision of "optimizing [their] work"<sup>39</sup>

## CONCLUSION

This confirmation of roles will allow ADM (IE) to better achieve two key objectives within the Government of Canada's Policy on Results which identifies the following: "Departments are clear on what they are trying to achieve and how they assess success;"<sup>40</sup> and "Resources are allocated based on performance to optimize results, including through Treasury

---

<sup>38</sup> From the author's personal observation when employed within ADM (IE).

<sup>39</sup> Assistant Deputy Minister (Infrastructure Environment), *Integrated Resource Plan 2017-2018*, Ottawa 2017, 7.

<sup>40</sup> Treasury Board, "Policy on Results," last modified 1 Jul 2016, <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=31300>.

Board submissions, through resource alignment reviews, and internally by departments themselves,”<sup>41</sup>

By adopting the industry standard at the base or tactical level and providing the operational and strategic support and resources necessary ADM (IE) has an opportunity to avoid fashionable trends and create a long-term vision for the future of CAF infrastructure. By recognizing the levels that each element of the organization occupies and how they align with both industry and the key stakeholders, ADM (IE) can begin to optimize the business procedures and maximise their outputs. With constant leadership turnover, it is easy to become complacent and lose focus on the bigger picture. With clear visibility, one can reflect on how their work impacts the organization and ultimately its service delivery.

These minor adjustments, once ingrained into the organization by proper terms of reference and reinforced through positive leadership, will increase the overall agility and efficiency of the organization by empowering the tactical level with increased training, and realistic timelines for direction to apply critical thinking to AM planning.

---

<sup>41</sup> *Ibid.*

## BIBLIOGRAPHY

- Berry, Jason. "A Modest Infrastructure Proposal." *IE Focus*. Summer 2016. 10-11.
- Canada. Assistant Deputy Minister (Infrastructure Environment). *Defence Portfolio 2030: Towards a Sustainable Real Property Footprint*. Ottawa: 2016.
- Canada. Assistant Deputy Minister (Infrastructure Environment). *Defence Real Property Strategy: Efficiently Enabling Defence Capability*. Ottawa: 2012.
- Canada. Assistant Deputy Minister (Infrastructure Environment). *Integrated Resource Plan 2017-2018*. Ottawa: 2017.
- Canada. Assistant Deputy Minister (Review Services). *Audit of Municipal Works*. Ottawa: 2016.
- Canada. Department of National Defence. *2017-18 Departmental Plan*. Last modified 3 Sep 2017. <http://www.forces.gc.ca/en/about-reports-pubs-report-plan-priorities/2017-raison-detre-mandate-and-role-who-we-are-and-what-we-do.page>.
- Canada. Department of National Defence. *Leadership in the Canadian Forces: Leading the Institution*. Ottawa: Canadian Defence Academy – Canadian Forces Leadership Institute, 2007.
- Canada. Department of National Defence. *Strong, Secure, Engaged: Canada's Defence Policy*. Ottawa: 2017.
- Canada, Office of the Auditor General, "Report of the Auditor General of Canada to the House of Commons, Chapter 5 Real Property." National Defence, Fall 2012.
- Canada. Treasury Board. "Policy on Results." Last modified 1 Jul 2016. <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=31300>.
- CH2M. *Infrastructure Asset Management Training Course Manual*. n.p. 2016.
- Duhigg, Charles. *Smarter Faster Better: The Secrets of Productivity in Life and Business*. New York: Random House, 2016.
- Education Program Innovations Center. *Infrastructure Asset Management: A Strategic Approach toward Sustainability*. Mississauga: 2015.
- Federation of Canadian Municipalities. "Infrastructure," Last accessed 7 May 2018. <https://fcm.ca/home/issues/infrastructure.htm>.
- Ferguson, Michael. *Report of the Auditor General of Canada to the House of Commons: Matters of special importance*. Ottawa: Office of the Auditor General of Canada, 2012.

- Government of Canada. “Upcoming evaluations over the next five fiscal years.” Last modified 16 March 2017. <http://www.forces.gc.ca/en/about-reports-pubs-report-plan-priorities/2017-upcoming-evaluations-over-the-next-five-fiscal-years.page>
- Government of Canada. “Raison d’être, mandate and role: who we are and what we do.” Last modified 9 March 2017. <http://www.forces.gc.ca/en/about-reports-pubs-report-plan-priorities/2017-raison-detre-mandate-and-role-who-we-are-and-what-we-do.page>
- Hallett, John. “Crumbling Infrastructure Crippling the Army.” Joint Command and Staff Program Briefing Note, Canadian Forces College, 2018. 4.
- Heath, Chip, and Dan Heath. *Switch: How to Change Things When Change is Hard*. New York: Random House, 2010.
- Henriksen, Bjornar. “Is there a tactical level of business processes? Emphasizing processes that enable adaptability, change, and improvement.” *The TQM Journal Vol 22, No 5*. West Yorkshire: Emerald Group, 2010. 516-528.
- Institute of Public Works Engineering Australasia (IPWEA). *International Infrastructure Management Manual, Version 5*. n.p. The SOS Print + Media Group, 2015.
- International Organization for Standardization (2014). *Asset Management – Overview Principles and Terminology (ISO 55000)*. <https://www.iso.org/obp/ui/#iso:std:iso:55000:ed-1:v2:en>.
- New Zealand Asset Management Support (NAMS). *Developing Levels of Service and Performance Measures: Creating Customer Value from Community Assets*. Wellington, N.Z.: NAMS, 2007.
- New Zealand Asset Management Support (NAMS). *Optimised Decision Making Guidelines: A Sustainable Approach to Managing Infrastructure*. Wellington, N.Z.: NAMS, 2004.
- Ontario, Ministry of Infrastructure. “Building together – Guide for municipal asset management plans.” Last modified 9 June 2016. <https://www.ontario.ca/page/building-together-guide-municipal-asset-management-plans>.
- Ontario, Ministry of Infrastructure. “Discussion paper - potential municipal asset management planning regulation.” Last modified 22 Aug 2016. <https://www.ontario.ca/page/discussion-paper-potential-municipal-asset-management-planning-regulation>.
- Ontario, Office of Commissioner. “The Elliot Lake Commission of Inquiry” In Remarks by Commissioner Paul R Belanger, Ottawa: Province of Ontario, 2014.