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by Ross Fetterly
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POLICY PERSPECTIVE

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“Over-planning is an important risk-management tool which can be used by organizations within the Department to manage the risk of non-execution of certain projects/activities by having additional projects or activities that align with Defence priorities and can be carried out during the fiscal year.”¹

The Canadian government allocates funds to departments through the annual federal budgetary process. With a Department of National Defence (DND) budget in the fiscal year 2019-20 of close to \$22 billion,² and expenditures spread out across a broad range of very different and distinct activities, expending the full allocation can be a significant challenge. While federal departments are permitted some carry-forward of eligible lapsing funds from one fiscal year to the next, in fiscal year 2018-19 the amount designated was up to five per cent of the operating budgets in their Main Estimates.³ With the federal government projecting significant budgetary deficits in the coming years, restricting or eliminating carry-forward of funding may be limited or eliminated to reduce deficits. Past practice within the department has been for the Investment Resource Management Committee (IRMC), chaired by the deputy minister, to decide on funding allocations of the carry-forward, based on departmental corporate priorities. While from an institutional perspective that aligns funding with optimal funding requirements, the consequence to organizations such as the Royal Canadian Air Force (RCAF) is that only a limited amount of lapsed funding may be allocated the following fiscal year. Thus, the air force has a significant incentive regarding its budget: to “use it or lose it”.⁴

RCAF corporate over-planning (COP) is a principal in-year strategy to maximize the use of allocated financial resources. Yet, at the operational and tactical level, the concept and application of in-year over-planning is not sufficiently understood. This paper will frame over-planning within the context of the RCAF and then recommend strategies to integrate over-planning into the air force culture. Corporate over-planning is essentially a means toward an end; specifically, that of maximizing output given by defined resource allocation. The paper will first consider defence planning approaches and budget allocations, and then consider the strategic environment within which the organization operates. The third section will emphasize the need for change in how the RCAF manages financial resources, followed by a section on adapting to change. The fifth section will review the concept of over-planning. That will be followed by a discussion of RCAF institutional corporate over-planning. The seventh section will consider budgeting as communication and how this supports maintenance of a common operating picture within the RCAF on over-planning. The final section will focus on RCAF corporate over-planning by discussing the structural unexpended rate, applying an absorption rate in operations and maintenance activities, and planning investment opportunities.

¹ Chief Review Services, 2012, *Audit of Departmental Budget Management*, 2012: 12.

² DND (2019) *Department of National Defence and Canadian Armed Forces 2019-20 Departmental Plan*, 2019: 47. Available at <https://www.canada.ca/content/dam/dnd-mdn/documents/departmental-results-report/2019/english/DP%202019-20%20DND%20English.pdf>

³ Treasury Board Secretariat, *Sources and Uses of the Budget Implementation Vote by Department and Program*, 2018. Available at <https://www.canada.ca/en/treasury-board-secretariat/services/planned-government-spending/budgets-expenditures.html>

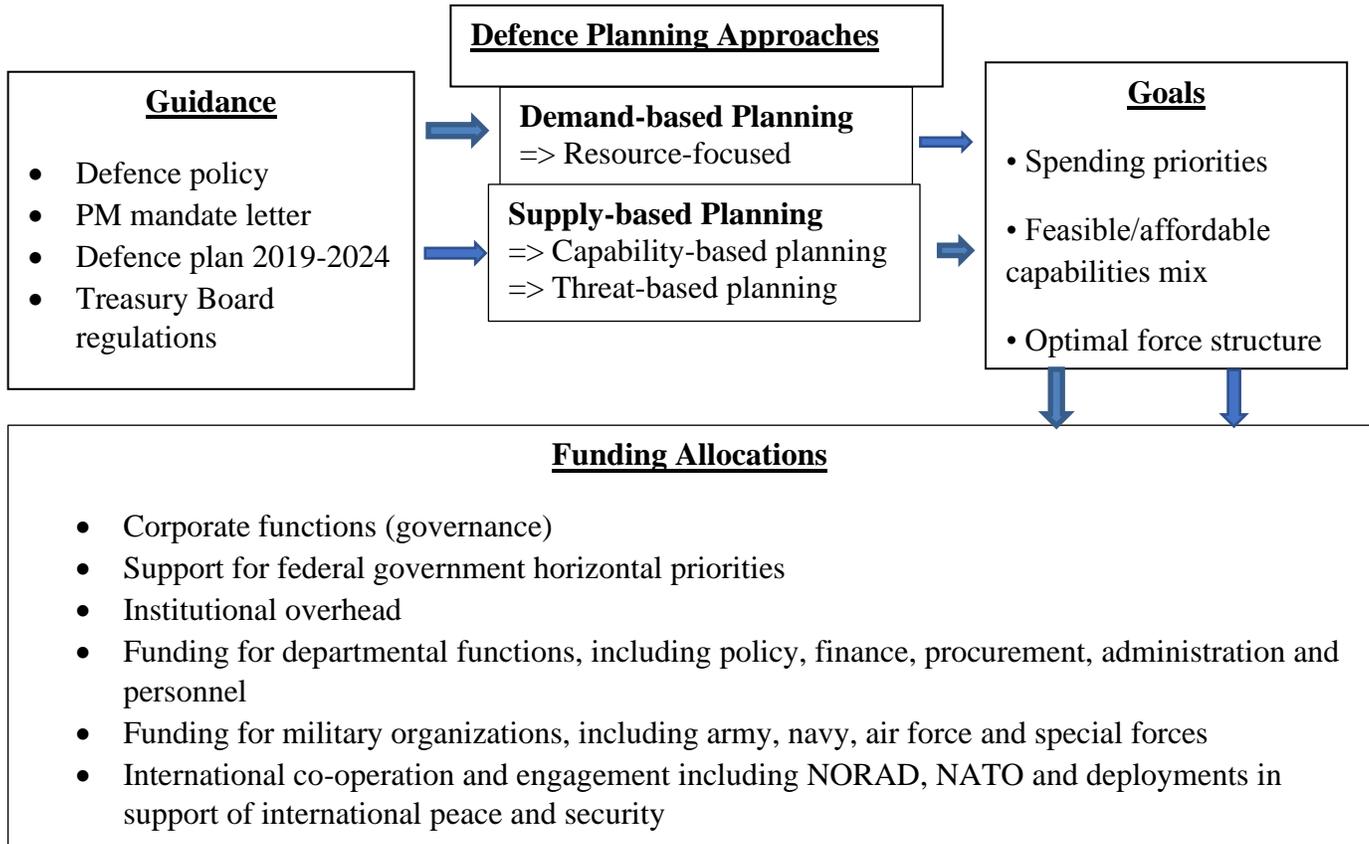
⁴ W.J. Hurley, Jack Brimberg and Brent Fisher, “Use it or Lose it: On the Incentives to Spend Annual Defence Operating Budgets,” *Defence and Peace Economics* 25:4, 2014:401-413.



Defence Planning Approaches and Budget Allocations

The defence planning process transforms resources into military capabilities in a relevant manner and in accordance with government policy. This is represented by the equation of *Ends = Ways + Means*.⁵ The defence budget provides the monetary resources for the means: people, equipment, operations and maintenance funds, as well as infrastructure. This is integrated with the ways: tactics, standard operating procedures, practices. Strategies that employ the ways and means are devised to achieve the desired ends. To accomplish government direction articulated through defence policy, resources are put through a deliberate business-process mechanism. The desired objective is to establish and execute a rational method of documenting organizational priorities and objectives, while communicating them internally and addressing any perceived constraints.⁶ While the defence policy remains the framework under which defence is resourced, annual defence allocations can vary for a number of reasons. Figure 1 outlines the process of translating federal guidance into annual funding allocations.⁷

Figure 1 - Process of Translating Guidance into Allocations



⁵ U.S. Department of Defense, “Joint Doctrine Note 1-18 – Strategy,” 2018. Available at https://fas.org/irp/doddir/dod/jdn1_18.pdf

⁶ Ross Fetterly, “Defence Business Planning in Canada,” Canadian Global Affairs Institute, 2018. Available at https://d3n8a8pro7vnm.cloudfront.net/cdfai/pages/4069/attachments/original/1540421032/Defence_Business_Planning_in_Canada.pdf?1540421032

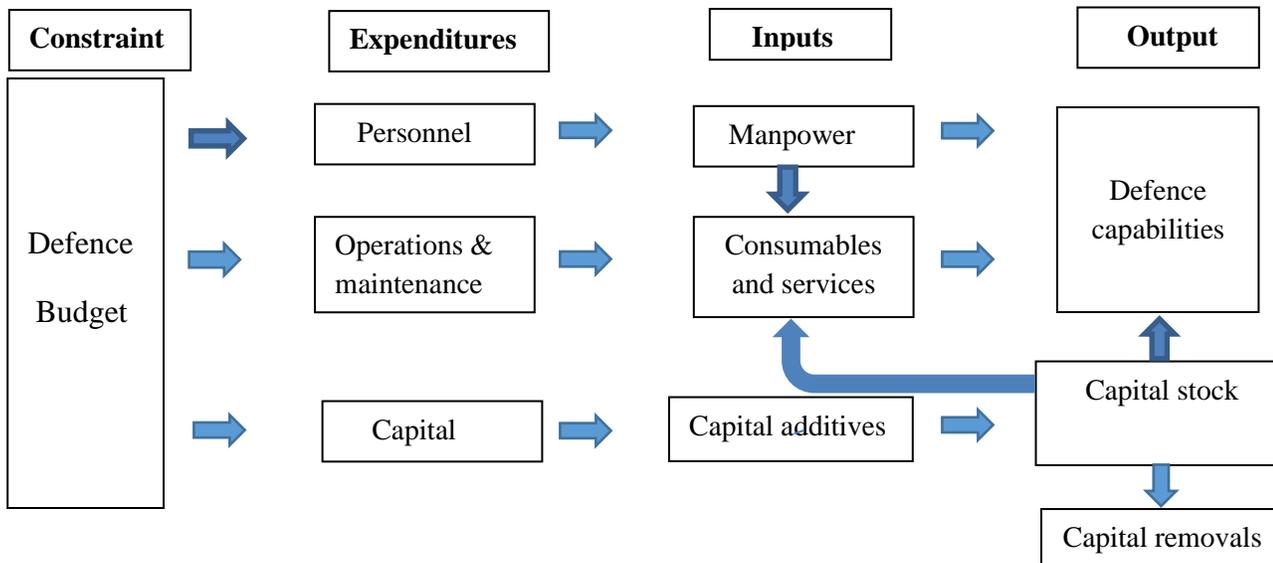
⁷ This chart was adapted from the RAND publication, “The U.S. Department of Defense’s Planning Process: Components and Challenges, Figure 2.1 - Overview of Defense Planning Approaches,” 8. Available at https://www.rand.org/content/dam/rand/pubs/research_reports/RR2100/RR2173z2/RAND_RR2173z2.pdf



The reason for a comprehensive long-term defence resource management approach is that governments do not explicitly incorporate the differences of costs over time. This is particularly the case with the DND, which has the largest discretionary budget and capital equipment procurement program. In times of fiscal constraint, the temptation is to delay capital acquisition, and also cut equipment maintenance funding and life-cycle maintenance of infrastructure, to provide short-term financial relief to national governments. However, in the long term, dramatic swings in defence funding can increase the cost of equipment or infrastructure investments, and result in a sub-optimal allocation of scarce defence resources. Slippage in large capital expenditure programs for new latest-generation weapon systems, such as military aircraft, ships and land vehicles, can create delays in availability of advanced weapon systems for use by the Canadian Armed Forces (CAF). As “no single department or minister is in charge of Canada’s multi-departmental defence procurement system”,⁸ slippage in capital funding impacts defence department funding directly. In contrast, in-year operations and maintenance expenditures are expenditures for forces-in-being. Consequently, over-planning maximizes the use of available in-year funding for those activities.

The process by which output is generated in defence to achieve defence capabilities is illustrated in Figure 2, based on the intermediate inputs of personnel, operations and maintenance expenditures, and purchases of equipment.⁹ These three categories have a very complex interdependency. The greater number of military personnel and quantities of weapon systems – as well as activity rates – all impact on the level of operations and maintenance expenditures.

Figure 2 - The Defence Output Generation Process



⁸ Martin Auger, *Defence Procurement Organizations: A Global Comparison*, Library of Parliament, Ottawa, 2014. Available at <https://lop.parl.ca/staticfiles/PublicWebsite/Home/ResearchPublications/BackgroundPapers/PDF/2014-82-e.pdf>

⁹ John M. Treddenick, “Distributing the Defence Budget: Choosing between Capital and Manpower,” in *Issues in Defence Management*, School of Policy Studies, Queen’s University, 1998: 57-82, 60.



The Context for Corporate Over-planning in the RCAF

“The past few years have been a reminder that stability is not the natural state of the international environment, that peace is not self-perpetuating, and that whole regions can descend suddenly into anarchy.”¹⁰

The longstanding unipolar world that emerged following the end of the Cold War was indeed not the end of history,¹¹ but an extended period of time of American supremacy. Over the past two decades, the world has become a much more challenging and contested place. Indeed, the international security environment is “measurably worse”¹² than it was only a few years ago. China has increased its defence expenditure by double digits since 1989¹³ and Russia has significantly modernized its armed forces and expanded its military presence in the Arctic. These factors place a premium on the responsiveness and effectiveness within Western defence establishments. This means that during periods of a deteriorating international security environment, we cannot simply reset our plans and objectives, but need to evolve with the situation as it develops. In practical terms, this means we have to continually adjust to the reality that “simultaneously maintaining aging equipment, supporting new equipment, adapting to a transforming military force, and coping with shifting activities and activity levels compounds budgetary difficulties”.¹⁴ This adds complexity and difficulty to defence resource management.

In the current international strategic environment, the application of military force by governments is becoming less and less definitive. The world has become more complex, and recent history has demonstrated that areas of unrest and conflict can be resistant to intervention and reform. While the United States may maintain less command of the commons,¹⁵ threats emanating from failed or failing states have also become more of a challenge to the international community. In addition, the global security environment is undergoing a pronounced strategic transition from a period dominated internationally by counterterrorism and counterinsurgency “to a new era of renewed rivalry among world powers”.¹⁶ Furthermore, military engagements overseas can now be multi-year and multi-faceted – not linear. In effect, the traditional deployment cycle, where reconstitution of personnel and equipment in a unit takes place after the return from an expeditionary operation, followed by an extended period of normal activity, is being overtaken by an environment that generates constant demands for further and complicated deployed operations. Circumstances can bring multiple requests for engagement in ongoing overseas operations, or for participation with diverse coalitions. To thrive in this environment,

¹⁰ James Dobbins, Richard H. Solomon, Michael S. Chase, Ryan Henry, F. Stephen Larrabee, Robert J. Lempert, Andrew M. Liepman, Jeffrey Martini, David Ochmanek and Howard J. Shatz, *Choices for America in a Turbulent World*, RAND, 2015: xiv. Available at http://www.rand.org/content/dam/rand/pubs/research_reports/RR1100/RR1114/RAND_RR1114.pdf

¹¹ Francis Fukuyama, *The End of History and the Last Man* (New York: Avon Books, 1992).

¹² Bruce Jones, Charles T. Call and Daniel Toubolets, “Managing the New Threat Landscape: Adapting the Tools of International Peace and Security,” The Brookings Institution, 2018: 1. Available at https://www.brookings.edu/wp-content/uploads/2018/09/FP_20180919_prevention_agenda1.pdf

¹³ Dong Ryul Lee, “The Prospect and Trend of Military Spending and Strategy in Rising China,” East Asia Institute, 2019.

¹⁴ Ross Fetterly, “Budgeting within Defence – Who Gets What,” in *The Public Management of Defence in Canada*, Craig Stone, ed. 2009: 53-92, 86.

¹⁵ Barry Posen, “Command of the Commons: The Military Foundation of U.S. Hegemony,” *International Security* 28:1, 2003: 5-46.

¹⁶ Ash Carter, *Inside the Five-Sided Box* (New York: Dutton, 2019) 262-3.



the method with which the RCAF approaches in-year budget management strategy, being pragmatic and adaptive to shifting demands and opportunities, needs to evolve. In effect, the department needs to be bolder in resource management by positioning the RCAF at leading-edge best practices and in being more sensitive to changes in the strategic environment.

Change in RCAF Management of Financial Resources

At a time when national defence budgets are growing, in-year and medium-term strategies are needed to maximize the use of available financial resources. Indeed, the current manner in which the RCAF budget is managed presents leadership with a classic innovator's dilemma. One significant focus is on ongoing near-term transactional processes. This can be at the expense of investing institutional time and effort into creative approaches to budget expenditure, with the objective of adding incremental long-term value to RCAF personnel, equipment and assets. While the current institutional effort is to fully expend the RCAF budget, and to take advantage of in-year investment opportunities, this regularly falls short due to capacity, structural and procedural issues. Employing a deliberate and formal in-year over-planning strategy is an effective and necessary mechanism to take full advantage of allocated financial resources. To be sure, in-year metrics such as expenditure rates are important and a primary focus, but they need to be congruent with the RCAF's longer term focus and vision.

The DND's and CAF's financial circumstances can provide the RCAF with significant investment opportunities. To accomplish this transformational approach to resource management, the culture in the RCAF needs to change to accept more risk. This requires increasingly embedding risk management into current processes instead of treating risk largely as a separate management function. While the department is working to bring integrated risk management into resource management practices on an institutional basis, at the RCAF level capacity issues limit adoption. Nevertheless, organizations that are structured to manage risks effectively have a greater likelihood of achieving their objectives. A 2017 audit of DND and CAF risk management practices¹⁷ noted there were opportunities to improve the institutional integrated risk management processes.

Military readiness represents a cornerstone of the RCAF, and one of the four pillars of military capability. Combined with the other pillars, which include force structure, modernization and sustainability,¹⁸ they represent primary cost drivers to the RCAF. Indeed, in the current environment, analyzing the defence budget is "in many respects, a debate over readiness. Nearly every part of the defense budget is related to readiness in one form or another, whether through pay and benefits for military personnel, funding for training and maintenance, or the

¹⁷ Assistant Deputy Minister (Review Services), "Review of Integrated Risk Management, Department of National Defence," 2017: 18 Available at https://www.canada.ca/content/dam/dnd-mdn/migration/assets/FORCES_Internet/docs/en/about-reports-pubs-audit-eval/291p1850-3-012-eng.pdf

¹⁸ Craig Moore, J.A. Stockfish, Matthew S. Goldberg, Suzanne M. Holroyd and Gregory G. Hildebrandt, *Measuring Military Readiness and Sustainability*, RAND, 1991. Available at <https://www.rand.org/content/dam/rand/pubs/reports/2007/R3842.pdf>



development and procurement of weapon systems.”¹⁹ Viewed from this perspective, readiness involves training and preparing for operations, personnel, equipment and weapon systems, stocks and supplies, and appropriate maintenance. The defence department and military, through adapting to change, can enhance their risk management and readiness posture.

Adapting to Change

Canada benefited from an extended period of high oil prices over a period of decades, and to a certain extent was therefore isolated from many global economic problems. However, with oil prices sensitive to disruptions in the international security environment, limitations in infrastructure for oil and gas exports and a struggling global natural resource industry, Canada is now much more impacted by global events. These events include the Chinese government’s retaliatory trade and economic measures against Canadian businesses and farmers as a result of the arrest of Huawei executive Meng Wanzhou, which the U.S. government requested. Just as the Canadian economy must now rapidly adapt to change, so too must DND and CAF to succeed. The RCAF is better positioned than it was at the end of fiscal year 2013-14 – as a result of the combined impact of a strategic review (SR), the deficit reduction action plan and the program mitigation resource adjustment (PMRA), as well as a number of smaller initiatives. However, baseline funding was significantly reduced. With additional baseline funding received in fiscal year 2014-15 for operational readiness and training, and a stabilized budgetary environment in the DND, the RCAF leveraged this stability with a re-invigorated campaign plan and internal planning. This was followed up in June 2019 with a series of programs related to the RCAF’s continuing health and its ability to achieve mission success.²⁰

The RCAF is exceptional in operations, both domestic and expeditionary. Indeed, the air force can be both flexible and adaptive in operations; for example, demonstrating considerable learning in Afghanistan by adapting operational processes to match the environment. However, in managing defence resources, the RCAF is much less adaptive, and like many defence organizations it can be bureaucratic. Why the difference? One explanation is that responsibilities are much more diverse than in many other national organizations and consequently, effecting change is much more difficult. A sustained organizational effort, direction and resources are needed to substantially effect change. Indeed, “strategy is fundamentally about identifying or creating asymmetric advantages that can be exploited to help achieve one’s ultimate objectives despite resource and other constraints”²¹ and maximizing the use of allocated resources supports this approach.

The RCAF’s leaders need to genuinely take the economic concept of resource scarcity seriously and over-plan to fully use their allocated budget to maximize capability and output. Allowing

¹⁹ Todd Harrison, “Rethinking Readiness,” *Strategic Studies Quarterly* 8:3, 2014: 38-68, 38. Available at www.au.af.mil/au/ssq/digital/pdf/fall_2014/Harrison.pdf

²⁰ RCAF, “RCAF Initiatives,” 2019. Available at https://ml-fd.caf-fac.ca/wp-content/uploads/2019/06/op-experience_op-talent_fact-sheet_e.pdf

²¹ Andrew F. Krepinevich and Barry D. Watts, “*Regaining Strategic Competence: Strategy for the Long Haul*,” Center for Strategic and Budgetary Assessment, 2009: viii. Available at <http://csbaonline.org/publications/2009/09/regaining-strategic-competence/2/>



millions of dollars to go unspent annually undermines their resource utilization performance. The challenge, therefore, is that while the objective of defence management is to produce “building and sustaining of combat capabilities”,²² the link is not always linear. The conundrum in defence management for the army, navy and air force is how to provide them with “incentives to face up to hard choices and get the most capability for the money they spend does not lend itself to simple solution.”²³ Within the current defence environment, the RCAF budget generates capability through the integration of strategy, resources and people.

The military can be viewed as a complex system “that in peacetime transforms resources (inputs) into ready forces (outputs). Because this transformation involves a set of interactions among the inputs, many of which may be nonlinear, the output can at times appear random or unexpected. An additional complexity is that the system itself is dynamic. The rules by which it is governed are constantly changing as technology, threats, operational concepts, and the military itself change.”²⁴ Similarly, military historian Martin van Creveld observed that “all warfare consists of an endless series of difficulties, things that go wrong, is a commonplace, and is precisely what Clausewitz meant when talking about the ‘friction’ of war.”²⁵ Whereas the Second World War ushered in a new era of mobility in warfare, both on land and in the air through technological advances in vehicles and aircraft, it also multiplied supply chain demands and the role of logistics resupply in-theatre. Ensuring full expenditure of defence budgets to maintain readiness levels, as well as keeping inventories of spare parts for aircraft, ships and army combat vehicles well stocked during fluctuating activity levels is a combat multiplier. RCAF corporate over-planning supports this critical operational requirement. Within the RCAF, the institution needs to create a common understanding and collective application of over-planning.

In an edited version of Col. John Boyd’s renowned *Discourse on Winning and Losing*, he developed a conceptual spiral as part of his research on how to learn better and refine existing processes.²⁶ Figure 3 summarizes the conceptual spiral. In terms of the RCAF including corporate over-programming formally into the defence management framework, two elements of this spiral are material. First is learning-unlearning-relearning, and second is comprehending-shaping-adapting. Any time there is a paradigm shift, or circumstances change and current practices are outdated, there is a challenging and iterative process of learning, unlearning and then relearning to better function in a transforming environment while simultaneously shaping and adapting processes to focus resource allocation. This intensive and institutional-level activity illustrates the conceptual framework process that supports and shapes the RCAF toward transitioning to a more formal and established over-planning process.

²² DND, *Handbook 201 – Accrual Accounting for Capital Assets in DND*, Assistant Deputy Minister, Finance and Corporate Services, 2006: 5.

²³ Alain C. Enthoven and K. Wayne Smith, “How Much is Enough? Shaping the Defense Program 1961-1969,” RAND, 1971: 327.

²⁴ Harrison, “Rethinking Readiness” *Strategic Studies Quarterly* 8:3, 2014: 38-68, 54.

²⁵ Martin van Creveld, *Supplying War: Logistics from Wallenstein to Patton* (New York: Cambridge University Press, 1977), 231.

²⁶ John Boyd, *A Discourse on Winning and Losing*, Grant T. Hammond, ed. (Montgomery, AL: Maxwell Air Force Base, Air University Press, 2018) 10. Available at https://www.airuniversity.af.edu/Portals/10/AUPress/Books/B_0151_Boyd_Discourse_Winning_Losing.pdf



Figure 3 - The Conceptual Spiral

Exploration => Discovery => Innovation

Thinking => Doing => Achieving

Learning => Unlearning => Relearning

Comprehending => Shaping => Adapting

Insight => Imagination => Initiative

Over-Planning

The DND and CAF have historically struggled to expend their annual funding allocations. By adapting RCAF processes to increase the ability to capitalize on available funds, the air force as a whole will benefit. The current business planning process within the department is geared toward just-in-time decision-making immediately prior to the start of the next fiscal year. In order to effectively plan and execute the program to ensure the timely expenditure of financial resources, the RCAF needs to adjust processes to reduce the impact of existing system limitations. Corporate over-planning is fundamental to advantageously position the RCAF as it goes through a period of engagement in operations and capability renewal.

The Assistant Deputy Minister (Finance) Director, Budget, defines over-planning as:

“L1s²⁷ have committed, expended, and planned to execute a level of programmed activity for which funding may not be available initially, but through anticipated slippage, reprioritization of internal resources, and execution of internal off-ramps, the plan of that L1 is to balance at year-end within their allocated budget. L1s are authorized over-planning in Vote 1, with the provision that they are to articulate in their returns the plan and measures they have put in place to balance at year-end within their allocated budget.”²⁸

The definition highlights the importance in defence of over-planning; specifically, that over-planning is both a primary expenditure and risk management tool. Organizations within the RCAF can use it to manage the risk of under-spending, or by adding additional projects or activities that align with air force priorities that can be executed during the fiscal year. As the RCAF is held accountable for its performance, based on the management of allotted financial resources, the air force determines its own level of over-planning. Nevertheless, determining the appropriate level of over-planning is a complex endeavour and subject to a changing environment.

²⁷ L1 organizations are those that report directly to the Deputy Minister (such as the Assistant Deputy Minister, Materiel) and the Chief of Defence Staff (such as the army or air force).

²⁸ Chief of Review Services, *Audit of Departmental Budget Management*, Department of National Defence, 2012: 12. Available at <http://www.crs.forces.gc.ca/reports-rapports/2012/201p0962-eng.aspx>



The challenge in budget management in defence is succinctly described as:

“the character of the budget process does not stimulate tendencies to risk-taking and innovation in relation to programs. Much the reverse, it is a vehicle for the questioning of invention and expansion, which are more characteristically associated with program planning and planners. The budget is properly associated with balance, and budgeting itself serves as a balance to the more positive elements of planning.”²⁹

Over-planning in the RCAF is managed at the corporate level. This also needs to transcend individual communities and organizations within the air force, and become a practice employed systematically from wing supply, engineering and infrastructure organizations, as well as squadrons and up to the RCAF’s corporate level. Over-planning in a large, dispersed organization like the RCAF needs considerable co-ordination and alignment of effort. For example, procurement and financial management personnel are often in different organizations from the end user of the resources. Whereas the RCAF has the necessary level of scale to materially take advantage of over-planning, the tactical, operational and strategic levels of planning increase complexity and require coherence and managed execution for success.

RCAF Corporate Over-Planning

“Corporate Over-Planning strategies are designed to identify mitigation measures (such as program activities) that can increase and cease spending to ensure efficient allocations of funds within each fiscal year, while remaining within the department’s expenditure authorities by year’s end. The mitigation strategies have the ability to off-ramp spending as required.”³⁰

The fundamental concept in defence management is that “resources are always limited in comparison to our wants, always constraining our action.”³¹ Institutional over-planning can maximize resource use through a deliberate and sustained corporate effort. A central concept in national defence establishments is that they have both an immediate and long-term organizational focus. Consequently, significant fluctuations of funding levels adversely affect the efficiency with which resources are employed in the present, as well as over the long term. During periods of rapid budget declines, reduced activity levels adversely affect air crew proficiency and force generation. Similarly, in periods of substantial budgetary increases, the institutional capacity to absorb that funding and to spend it on increasing capacity in the near term is limited due to the planning and execution time required. This has implications throughout the CAF, as the RCAF is the essence of the joint force. The RCAF is the service that binds the CAF together.

²⁹ Frederick C. Mosher, *Program Budgeting: Theory and Practice* (New York: Stratford Press, 1954), 49.

³⁰ B. Solomon and P.E. Desmier, *Forecasting Slippage and Suggested Over-Programming*, DRDC, 2013: 2.

³¹ Charles J. Hitch and Ronald N. McKean, *The Economics of Defense in the Nuclear Age* (Cambridge, MA: Harvard University Press, 1960), 23.



Managing financial risk by its very nature is variable. Furthermore, uncertainty and a shifting international security environment can significantly impact risk levels in-year. Consequently, if the objective is to provide stable funding or expenditure authorization over time, managing variations in risk becomes a critical institutional enabler. This is a key concept that needs to be understood and applied at all levels.

There is an asymmetry of information within defence planning that adds complexity and impedes informed decision-making. At the wing or base level, (squadron, supply, transport, construction engineering, operations or administration) leaders understand their capacity to directly expend resources. However, they are not always aware of the departmental fiscal position, or the potential availability of funds. At the operational level represented by 1 Canadian Air Division (responsible for wings and flying operations) and 2 Canadian Air Division (responsible for air force training), leaders can re-allocate resources across their span of responsibility, and prioritize activities at the wing or base level. However, personnel expending resources at the wing or base level do not always know, or understand, institutional priorities. Similarly, at the operational level, leaders many have incomplete information regarding funding surpluses or pressures across the bases or wings. Hence, at various levels, personnel are not aware of opportunities and their actions due to incomplete information.

Limited information on optimal risk levels is evident in often low levels of risk at the base or wing level. Regular turnover of military personnel at the wing or base level, and the fact that experience and rank levels are generally lower at the wing level than at an operational level at headquarters, contribute to risk aversion. Further, air force wings are led by operators with limited experience managing financial risk, although they have been selected for command due to their operational excellence and leadership skills. This reflects the operational military focus. The shortfall in this equation is that these leaders generally do not have sufficient financial risk management training and experience, or the time, to understand and apply financial risk techniques in defence resource management. And once they better understand the cost drivers and institutional capacity, they are often moved to other positions with greater responsibility. To help mitigate this impact, the RCAF needs to develop and train this capacity in institutional leaders at all levels on a continuous basis.

In fiscal year 2015-16, the RCAF began the practice of operational-level headquarters reporting its in-year level of over-planning. This initiative provided a concrete mechanism for air force leadership to discuss the level of over-planning deemed to be appropriate, and to provide a common operating picture of existing financial risk levels. Although reviewing over-planning levels as part of trimester reviews helps ensure that over-planning is considered formally thrice during a fiscal year, the RCAF needs to integrate this as a risk management practice into its institutional culture. Fundamentally, this is not about defence accounting, but about informed and pro-active defence planning. Indeed, at the midway point in a fiscal year, it is appropriate to begin consideration of over-planning levels for the following fiscal year. The 1 Canadian Air Division budget represents approximately 63 per cent of overall RCAF funding. As the air force operational-level headquarters responsible for operations on the wings, the level of over-planning within 1 Canadian Air Division and management of that over-planning are important contributors



to the success of in-year budget management. The 2 Canadian Air Division, as the operational-level training organization with a budget representing seven per cent of air force spending, is also a significant contributor to an over-planning strategy. The cost drivers in 2 Canadian Air Division and that headquarters' responsibilities are necessarily focused on a one- to three-year window. Contracted pilot training is approximately a further 20 per cent, air staff funding represents approximately nine per cent and the Canadian Air Forces Aerospace Warfare Centre one per cent.

Over-planning in the RCAF that operates from a tactical to strategic level poses distinct and challenging problems. Consequently, effectively addressing and managing risk at multiple levels is inherently difficult. Unless established processes are in place regarding over-planning, active management in this sphere can be limited. This can be due to inexperience, the frequent rotation of military personnel, low risk tolerance and restrictions in the *Financial Administration Act* (FAA).

Budgeting as Communication

Budgets communicate information objectively, consistently and accurately at various organizational levels. This linkage is important when managing an organization the size and complexity of the RCAF. Indeed, it is a practical mechanism to support the execution of the RCAF's campaign plan. From that perspective, the central concept behind budgets is to facilitate and drive planning, monitor expenditure and to measure performance. Thus, both budgeting and planning are fundamentally linked, with budgets driving resource allocation and institutional discipline.

To a considerable extent, budget management is separate and distinct from operational planning in many different organizations, including the RCAF. Nevertheless, in the defence environment, which functions under a certain level of uncertainty, integrated planning and budgeting are essential for program execution. While the RCAF needs to be effective in budget management, it must excel at knowledge management by aggregating and using information, understanding costs and maintaining a focused and timely internal procurement timeline. The RCAF's organizational structure inherently supports decentralized decision-making within the context of the campaign plan, at the operational and wing levels, to support timely budget execution

The RCAF needs to get away from "fiscal year thinking" and to focus on both in-year and across fiscal year strategies. Indeed, the most important budgetary decisions are those that impact future fiscal years. Furthermore, "resource constraints require a more integrated approach"³² within defence.

³² Michèle A Flourmoy, Julianne Smith, Guy Ben-Ari, Kathleen McInnis and David Scrugg, "European Defense Integration: Bridging the Gap between Strategy and Capabilities," Center for Strategic and International Studies, 2005: 8.



Corporate Over-planning Strategy

The RCAF's efforts to redefine budget management need to focus on over-planning, which will be emblematic of the resource transformation that the organization now needs to make. In the current strategic environment, the RCAF faces the combined impact of increasing complexity and volatility, as well as diverse emerging threats across a broad spectrum of conflict. A recent study on the implications for the Canadian military's force development in an environment that includes hybrid warfare concluded that "conventional military capabilities remain relevant but they must be adaptable."³³ To maximize effect, we need to start commitments during the January to March timeframe, prior to the start of the next fiscal year. This period should be viewed as "influence space" that can be employed to increase the contracting capacity for the upcoming fiscal year. In particular, vehicle fleets such as flight line vehicles or firefighting vehicles that require long lead times are candidates for contracting prior to the start of the fiscal year. This requires a coordinated effort between 1 Canadian Air Division and the director, air program, in the vice-chief of defence staff organization. This pro-active investment opportunity approach should also be applied at the wing level through the establishment and execution of investment opportunities.

The RCAF needs to create "accelerators" to incubate new budget management and over-planning ideas. This could include internally, in collaboration with the other services, or through external advice. Surveying allied military partners for resource management innovation, as well as academic research, also supports this advancement in defence resource management processes or approaches.

At the wing or base level, the activity rate is relatively constant on an annual basis, depending on flying training and operational flying demands, as well as with cyclical patterns depending on the weather and seasons. This accounts for the majority of expenditures and is represented by the annual business plan. The approved yearly flying rate (YFR) is the air force's currency and this is the primary determinant of non-personnel related expenses. Four distinct factors influence deviation from planned expenditures and these are listed in Figure 4. They include fluctuations in planned activity due to training and operations, the air force's structural unexpended rate (SUR), the absorption rate in operations and maintenance activities, and investment opportunity planning. All four are different in how they occur and in how they need to be addressed in terms of funding, expenditure and risk management.

Figure 4 - Distinct Factors Influencing Deviation from Planned Expenditures

- Fluctuations in planned activity due to training and operations
- Air force structural unexpended rate (SUR)
- Absorption rate in operations and maintenance activities
- Investment opportunity planning

³³ N. Chuka and J.F. Born, "Hybrid Warfare: Implications for CAD Force Development," *Defence Research and Development Canada*, 2014: 23.



Fluctuations in Planned Activity Due to Training and Operations

Military expenditure can be optimized under a constant activity rate and stable organization. Under that construct, medium- to long-term planning is facilitated, uncertainty is greatly reduced and options to alternatively deliver effects can be considered. Unfortunately, the defence environment is distinguished by unrelenting technological advancement, the constantly changing nature of security threats, and the need for defence to compete for funding with other national government programs. Historically, during periods of significant budgetary deficits the DND has been subject to substantial budget cuts. Consequently, the impact of both near-term unforecasted budget reductions in defence and rapid periods of growth in the size of military strength or in the capital equipment procurement program can lead to sub-optimal decisions and expenditure. RCAF corporate over-planning can act to optimize key air force outputs of training and operations, within the budgetary envelope, in periods of either budgetary increase or decline.

Structural Unexpended Rate

The RCAF expends funds on a wide range of costs from personnel, to operations and maintenance, equipment, and contracted air force training. Within a budget exceeding \$1 billion, managing this diverse funding allocation generally results in millions of unexpended dollars at year-end. Patterns of under-expenditure can become evident in different cost drivers over a period of years. Taken collectively, this can be viewed as a SUR. Therefore, as a primary strategy to fully expend the budget, air force leaders can explicitly over-plan to the SUR at the start of the fiscal year. A change in approach would provide air force resource managers the ability to manage at that planning level, rather than managing to the spending authority level. While this approach requires active management, it explicitly prioritizes activities funded through the SUR in a systematic and institutionally planned manner. This is the primary benefit of over-planning to the SUR. Formal, planned and rational decision-making by air force leadership on funded activities through the SUR ensures that resulting expenditures support and enhance campaign plan objectives. This avoids the requirement for late fiscal year on-ramps that may be of lesser value to the organization and can significantly reduce year-end spending initiatives through timely decision-making prior to the fiscal year or early in the year. As the fiscal year progresses, slippage will bring down the over-planning. Active monitoring and the availability of potential off-ramps ensure that expenditure does not exceed the spending authority level by fiscal year-end. The nature of air force activities is that they transcend fiscal years and over-planning supports enhanced maintenance of capabilities as part of a multi-year strategy.

Applying an Absorption Rate in Operations & Maintenance

The ability of the capital and personnel components of the defence budget to absorb incremental funding in-year is limited. Capital projects are multi-year programs with multiple sequential steps and as a result, are poor candidates for significant injections of in-year funding. Similarly, the hiring process for both military and civilian personnel is slow and cumbersome. Consequently, the primary contender within the air force to absorb funding is operations and maintenance. The absorption rate or “ability to spend any uncommitted or new incremental



funding, can be increased to the extent that a strategic planning process is in place to identify and evaluate valuable capabilities and projects and to have them ready for contracts as soon as funding becomes available.”³⁴ In fact, the constant pressures inherent in activities funded within the operations and maintenance category make them prime candidates for pre-planned investment opportunities for either business plan requests for the upcoming fiscal year, or for supplemental funding early in a fiscal year.

Investment Opportunity Planning

A primary planning tool for the RCAF that complements the corporate over-planning is investment opportunity planning. Historical underspending of the RCAF’s budget on a recurring basis underscores the need to have planned investments that are ready to be implemented if funding comes available in-year. Given the inability of military recruitment to match and exceed attrition, the department will likely have a surplus in regular force pay for a number of fiscal years. Consequently, it can be expected that the deputy minister and vice-chief of defence staff will look for strategies to expend that money in an effective manner to both support readiness and to invest for the future. Air staff are engaged with the chief of program in the vice-chief of defence staff organization to review the RCAF business plan.

Conclusion

The global strategic environment is evolving in a manner that will probably be profoundly unlike what the RCAF has planned for previously and dissimilar from what it is training for in 2020. Just as we need both agility and adaptability in operations, we need to apply that same construct toward defence resource management. External threats have, out of necessity, frequently accelerated either improvements or reforms in defence departments or military organizations. In the current deteriorating international strategic environment, the Canadian national defence establishment – consisting of the DND and CAF – needs to be pro-active and lead change in defence management practices. Unfortunately, process reform and innovation are needed simply to remain adaptive to shifting threats.

Resource management in the RCAF has been complicated in recent years by the integration of several new aircraft fleets, or next-generation fleets of existing aircraft, resulting in the RCAF being in continuous transformation, which can put the focus overwhelmingly on equipment at the expense of institutional change. Although the RCAF has the size to over-plan effectively, the tactical, operational and strategic levels of planning increase complexity. One approach could be harvesting the impact of network effects. The more air force personnel who use over-planning, the more valuable that resource management tool becomes.

³⁴ Ross Fetterly and Binyam Solomon, “Facing Future Funding Realities: Forecasting Budgets beyond the Future Year Defense Plan,” in *Military Cost-Benefit Analysis: Theory and Practice*, eds. Francois Melese, Anke Richter and Binyam Solomon (New York: Routledge, 2015), 161-194, 170.



The RCAF is operating in an environment where risks have become more systematic and global. Furthermore, their volatility and interconnectedness distinctly amplify and affect them. Addressing the need for increased over-planning in the RCAF will come from shifting organizational behaviour, not from changes in policy. We live in a data-driven world, and we need to harness and use defence data to our advantage. Finally, prioritization of over-planning in the RCAF is about outcomes, not effort. Consequently, the organization needs to establish the risk level that it is willing to take on in order to achieve the desired outcome.

► About the Author

Ross Fetterly retired in 2017 from the Canadian Forces after a 34-year career as the Royal Canadian Air Force's director of air comptrollership and business management. He previously served as the military personnel command comptroller, and in other senior positions with the Department of National Defence Assistant Deputy Minister (Finance).

Retired Col. Fetterly completed a tour in February 2009 as the chief CJ8 at the NATO base headquarters at Kandahar airfield, Afghanistan, where he was responsible for finance, contracting and procurement. While deployed he wrote a paper entitled *Methodology for Estimating the Fiscal Impact of the Costs Incurred by the Government of Canada in Support of the Mission in Afghanistan* with staff from the Parliamentary Budget Office. Col. Fetterly was employed as the deputy commanding officer of the Canadian contingent in the United Nations Disengagement Observer Force in the Golan Heights during the second intifada in 2000-2001. He has served as an air force squadron logistics officer and as a finance officer at military bases across Canada.

An adjunct professor at the Royal Military College of Canada (RMC) department of management and economics, and a Senior Fellow with the Centre for Security Governance, Dr. Fetterly has a B.Comm (McGill), M.Admin (University of Regina) and an MA and PhD in war studies from RMC. His PhD fields of study included defence economics, defence policy and defence cost analysis. His primary research focus is defence resource management. Dr. Fetterly also teaches courses in financial decision-making, defence resource management and government procurement at RMC. Through his company, Ross Fetterly Consulting Inc., he teaches a defence resource management course and a business planning course internationally for the Department of National Defence to senior military officers and defence executives in developing countries.

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