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THE CANADIAN ARMED FORCES OF TOMORROW: OPERATIONAL EFFECTIVENESS IN THE FUTURE SECURITY ENVIRONMENT

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Exercise Solo Flight

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EXERCISE *SOLO FLIGHT* – EXERCICE *SOLO FLIGHT*

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THE CANADIAN ARMED FORCES OF TOMORROW: OPERATIONAL EFFECTIVENESS IN THE FUTURE SECURITY ENVIRONMENT

The future security environment has been the subject of numerous analyses conducted by Canada and its allies. In particular, the analyses conducted by Canada, the United States (US) and the United Kingdom (UK) were reviewed within the scope of this paper. While each document examines existing trends and extrapolates using linear logical progression, each of these studies underscores the potential for technological and strategic surprise. Further, common themes emerge from each analysis including assertions that the future security environment will be characterized by complexity, volatility and ambiguity. Against these forecasts, Canada and its allies face a daunting task in defining future force requirements. In order to be comprehensive, requirements for operational forces must be reflected in identified requirements of each country's institutional military, including those training establishments, schools and administrative organizations that generate and support operational forces.

The Canadian Armed Forces (CAF) of tomorrow (2021) and of the future is being shaped by external and internal drivers. Externally, Canada's defence strategy, funding and procurement policies will shape the CAF of tomorrow as much as the demands of Canada's future domestic and foreign policy objectives. While the Government of Canada's (GoC) defence strategy will assign broad roles and missions, the funding allocation and procurement policies will enable the CAF of tomorrow and the future to be recruited, trained and equipped. Internally, initiatives have sought to define future military requirements and develop conceptual road-maps for transformation of today's force into an operationally effective CAF of tomorrow. The concepts for structure, capabilities and operational employment for the CAF of tomorrow and the future align

well with deductions and conclusions on this topic by its allies in the US and the UK. While conceptually sound, these may not be achievable given the divergence between the resources necessary to build the CAF of tomorrow and the resources apportioned by the GoC to realize them. This paper argues that while the concepts for the CAF of tomorrow are sound, it will only be operationally effective in bi-national or multi-national missions unless its apportioned resources and procurement policies are changed.

Before proceeding further, the strategic roles and missions of the CAF must be examined in order to clarify Canada's current and future expectations of its armed forces. The Canada First Defence Strategy (CFDS) is the only GoC document that focuses on defining the nation's requirements of the CAF. This document formally articulated and assigned three strategic roles and six core missions to the CAF. These three roles are to defend Canada, defend North America, and contribute to international peace and security.¹ The six core missions assigned to the CAF include: conducting daily domestic and continental operations; supporting major international events in Canada; responding to terrorist attacks; supporting civilian authorities during a crisis; leading or conducting a major international operation for an extended period; and deploying forces elsewhere in the world in response to crises for shorter periods.² Issued in 2008, the CFDS has not been refreshed since but remains the basis for authorized government procurement³ and

¹ Department of National Defence, *Canada First Defence Strategy*, (Ottawa: Department of National Defence, 2008): 7-9.

²*Ibid*, 10.

³ Department of National Defence, "Defence Acquisition Guide 2015," last modified 25 June 2014, <http://www.forces.gc.ca/en/business-defence-acquisition-guide-2015/index.page>

its strategic direction is used in directives by both the Chief of Defence Staff⁴ and the Chief of Force Development.⁵

The CAF has adopted an iterative approach to analysing the future security environment and the most recent publication on this topic, *The Future Security Environment 2013-2040*, was issued by the Chief of Force Development in 2014. The study included analysis on geopolitical, economic, environmental, social, scientific, technological and military trends. It resulted in 72 separate findings with defence and security implications for Canada⁶; however, there exists some overlap of subject matter amongst these points which allows grouping into more manageable, broader trends.

Geopolitical trends analysis suggested significant shifts in the balance of power politically, economically and financially.⁷ These shifts are deemed to feature the rise of China as a global power; the emergence of a number of global and regional strategic influencers (including India and Brazil); and continued instability in the Middle East and North Africa.⁸ Nation-states will continue to be the primary agents of interaction in the geopolitical arena, although the influence of non-state actors will increase.⁹ Potential areas of friction in the future, such as competition for increasingly scarce natural resources (including fresh water) and population growth, will complicate potential future conflicts in regions with weak governance.¹⁰

⁴ Department of National Defence, *Chief of the Defence Staff Guidance to the Canadian Armed Forces*, (Ottawa: Department of National Defence, 2013): 10.

⁵ Department of National Defence, *Future Security Environment: 2013-2040*, (Winnipeg: 17 Wing Winnipeg Publishing Office, 2014): XI.

⁶ *Ibid*, 129-138.

⁷ *Ibid*, 29-30.

⁸ *Ibid*, 1-30.

⁹ *Ibid*, 30.

¹⁰ *Ibid*, 55.

Advances in science and technology will generate opportunities but also challenges. Accessibility and affordability of some types of technology will cause security concerns for governments as much through over-dependence as through increased interconnectivity and unforeseen surprise advances.¹¹ Simultaneously, current trends predict an erosion of the technological superiority that Western militaries have enjoyed in the modern era as well as advances in the extension of the human frontier.¹²

Military trends combine with those earlier lines of analysis. State and non-state actors will combine conventional and irregular methods of war to achieve their goals across environments and domains.¹³ Advanced weaponry will be more easily available and may potentially include weapons of mass destruction as the science and technology necessary make manufacturing both easy and inexpensive.¹⁴ Future battle-spaces will likely include geographic choke points and involve preservation of the global commons.¹⁵ Such operations will likely include a multitude of state and non-state actors, including partners as well as adversaries while resource constraints will see a continued use of private sector contractors.¹⁶

Analysis of the future security environment by the U.S. and the U.K. align thematically with Canada's. In the case of the U.S., the same themes are noted including an altered balance of power with competitors on the global stage and new regional powers.¹⁷ Demographic implications and the likelihood of conducting operations in

¹¹ *Ibid*, 79.

¹² *Ibid*, 66.

¹³ *Ibid*, 96.

¹⁴ *Ibid*, 97.

¹⁵ *Ibid*, 114.

¹⁶ *Ibid*, 103-106.

¹⁷ Department of the Army, *TRADOC Pamphlet 525-3-1 The U.S. Army Operating Concept: Win in a Complex World 2020-2040*, (Fort Eustance: U.S. Army Training and Doctrine Command, 31 October 2014): 12-13.

complex terrain and in close proximity to indigenous populations is another theme.¹⁸ The declining technological advantage, proliferation of weapons (potentially including weapons of mass destruction) and the increasing influence of non-state actors are also highlighted.¹⁹ The most recent U.K. document covers the very same topics,²⁰ with a notation on the central role of influence and the importance of the contest between competing narratives.²¹

Against the trend analysis and its military implications, the CAF's ability to fulfil its three mandated roles and six strategic tasks will depend on the well-reasoned and deliberate transformation from the CAF of today to the CAF of tomorrow and onward to the force of the future. Much of the necessary deliberate thought is evident in CAF publications describing the CAF of tomorrow and waypoints towards the CAF of the future. In particular, the Land Force 2021 series of documents outlines the theoretical and operational concepts which will enable it to operate in the future security environment in theory. Each successive document within the series has refreshed and refined concepts to increase relevance.

The 3rd Edition of the Army Strategy was published in 2014. Conceptually, it first examined the necessities of the CAF as a whole. It asserted that in order to fulfil both roles and tasks from the CFDS, the CAF of tomorrow and also the future must be sufficiently responsive, flexible and mobile to deploy sea, air, land and special forces

¹⁸ *Ibid*, 12.

¹⁹ *Ibid*, 11-15.

²⁰ Ministry of Defence. *Global Strategic Trends Out to 2045*, 5th Ed., (London: Development, Concepts and Doctrine Centre, 29 August 2014): XXI-XXII.

²¹ Ministry of Defence, *Future Character of Conflict*, (London: Development, Concepts and Doctrine Centre, 2 February 2010): 12.

rapidly for full spectrum operations.²² It must be able to sustain this effort and the proper levels of readiness within its operational organizations.²³ The CAF must be responsive and adaptable to trends in the global security environment, able to integrate into comprehensive GoC efforts and interoperable with interagency, multi-national and public partners both domestically and internationally.²⁴ Environmental changes and increased access to the Arctic region will mean it is necessary for the CAF to be capable of demonstrating and enforcing sovereignty in the region.²⁵ Based projected trends and the potential range of missions, the CAF needs to be as adept at humanitarian, disaster relief, stability and capacity-building operations as it is at kinetic joint combined arms operations.²⁶ It must be capable leading or supporting and sustaining these kinds of missions as necessary in order to contribute to international peace and security.²⁷

These operating concepts are similar to those arrived at by the U.S. in their Capstone Concept for Joint Operations in 2020. In addition to emphasizing globally integrated operations in a multi-national and multi-partner environment, the concept focuses on globally agile joint forces that are able of rapidly concentrating, reorganizing and dispersing seamlessly.²⁸ The requirement for precision and discrimination to ensure that only intended targets are affected by the use of force, a commitment to mission command to empower dispersed joint force elements and mission-tailoring joint task forces both demonstrate similarities in deduction between the CAF and the U.S.

²² Department of National Defence, *Advancing With Purpose: The Army Strategy*, 3rd Ed., (Ottawa: Director Army Staff, 2014): 7.

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ *Ibid.*

²⁷ *Ibid.*, 8.

²⁸ Department of Defence, *Capstone Concept for Joint Force Operations: 2020*, (Washington D.C.: Joint Concepts Division, 2013): 4.

military.²⁹ The concept takes into account the necessity of operating in a technology-degraded environment by outlining both the need for resilient systems and the need for joint forces to be capable of operating in low-technology conditions.³⁰ The similarities between CAF and U.S. military studies and deductions regarding the requirements of future forces demonstrate alignment in methodology and perspective between two close allies at worst and at best theoretical validation.

In the case of the U.K., the implications of future conflict for the military are also similar to those of the CAF. While the CAF's recognizes the requirement to be capable of operating across the full spectrum, the U.K. military requirement is articulated as a broad range of capabilities and the ability to integrate into a comprehensive approach.³¹ Their assessment recognizes the need for multi-lateral and inter-organizational partnerships, institutional and operational agility as well as the adaptability.³² Of particular note, the U.K. implications propose prevention as a method of early engagement that may enable avoidance of lengthy mission commitments.³³ Nonetheless, in general terms, the U.K. assessment of implications is similar to both the U.S. and CAF work. Again, this demonstrates alignment between allies at worst and at least theoretical validation.

In the present day, the Royal Canadian Navy (RCN) is ill equipped to meet the roles and missions assigned in the CFDS in any more than a token sense. Despite this, the future force structure of the RCN is considerably brighter. The CFDS was

²⁹ *Ibid.*

³⁰ *Ibid.*, 9.

³¹ Ministry of Defence, *Future Character of Conflict*, (London: Development, Concepts and Doctrine Centre, 2 February 2010): 34-35.

³² *Ibid.*, 35-38.

³³ *Ibid.*, 36.

particularly generous to the RCN, with an ambitious plan to construct and field fifteen surface combatant vessels, two joint support ships, six to eight arctic offshore patrol vessels and ten to twelve maritime patrol aircraft.³⁴ While there have been numerous delays with many elements of Canada's defence procurement, what is clear is that by the mid 2020s (the CAF of tomorrow), the RCN will possess modernized frigates and should be taking delivery of the major equipment outlined in the CFDS.³⁵ This assumes that the procurement problems are surmounted and deals signed for the delivery of these platforms. Bureaucratic processes and policies have stood as obstacles to the delivery of these necessary RCN equipment upgrades. Without these tools, the RCN will not be able to deploy an independent task force for expeditionary operations or defend Canada's extensive coastal territory, let alone sustain such efforts for extended periods. Thus, while the plan to equip the RCN of tomorrow showed promise, the actual apportionment of resources and procurement policies have been obstacles to effectiveness of the RCN of tomorrow.

The operational necessities envisaged by the CAF are taken into account with the proposed operating concept for the Canadian Army. Under this operating concept, the Canadian Army will be able to provide a menu of modular and scalable capabilities that can be specifically tailored to each mission and supplemented by its reserve force for niche and conventional capabilities.³⁶ Adaptive dispersed operations is an operating concept which envisions fully networked adaptive and agile forces dispersed in time,

³⁴ Department of National Defence, *Canada First Defence Strategy*, (Ottawa: Department of National Defence, 2008): 7-9.

³⁵ Ferry de Kerckhove, *2015: The Strategic Outlook for Canada*. Vimy Paper Volume 22, (Ottawa: Conference of Defence Associations Institute, 2015): 28.

³⁶ Department of National Defence, *Waypoint 2018: The Canadian Army Advancing Towards Land Operations 2012*, (Kingston: Army Publishing Office, 2015): 14.

space and purpose.³⁷ Empowered by technology, superior training and mission command, these expert forces are sufficiently mobile in mind-set and on the physical plane to be capable of concentrating to fight near-peer or conventional adversaries as necessary.³⁸ Such forces will be networked and will be supported by a wide variety of platforms and fires for precision effects to enable all operational functions, including enhanced lethality, mobility, protection and sensing.³⁹ In order to achieve the organizational, structural and performance benchmarks within this concept, the Army has developed a plan to integrate essential capabilities and enablers into both its institutional establishments and its operational field forces.⁴⁰ The logic behind the operating concept is sound and the plan to realize these is sound on paper. In practice, the resources allocated to the Army have been directed towards the preservation of manning levels and also capital equipment spending with the effect of reducing operations, maintenance and training.⁴¹ This reduction in training activity in the present will have a follow-on effect on the ability of the Army of tomorrow and its operational readiness. Further, a major capital equipment project for the Army was cancelled outright and there issues in the Army's administration and use of its reserve force.⁴² At best, the Army of tomorrow may have the conceptual and intellectual ability to command but not the capacity to exercise the range of capabilities in practice without international partners. This might be acceptable for expeditionary operations but is far from the case domestically. Thus, while the Army's operating concept is grounded in reasonable assumptions and logic,

³⁷ *Ibid.*, 7-13.

³⁸ *Ibid.*

³⁹ *Ibid.*, 15-17.

⁴⁰ *Ibid.*, 43-55.

⁴¹ *Ibid.*, 52.

⁴² Ferry de Kerckhove, 2015: *The Strategic Outlook for Canada*. Vimy Paper Volume 22, (Ottawa: Conference of Defence Associations Institute, 2015): 31.

thus far the apportionment of resources and procurement policies have negatively affected its path towards the Army of tomorrow.

Similar to the RCN, the Royal Canadian Air Force (RCAF) requirement for a fighter replacement was taken into account in the CFDS. Specifically, the strategy called for 65 next generation fighters to be introduced into the RCAF starting in 2017.⁴³ Additional acquisitions for strategic and tactical airlift (C-17, C-130J and Chinook helicopters) have gone well for the RCAF. While this allows the RCAF to support other operations, its ability to exercise air power and achieve all the roles and tasks assigned in the CFDS are reliant upon aging CF-18 fighter aircraft given the difficulties experienced in the procurement of a next-generation fighter.⁴⁴ Given that the CF-18 has been extended past its recommended life cycle to 2025,⁴⁵ the ability of the RCAF of tomorrow to execute the roles and tasks assigned by in the CFDS will be limited to non-peer adversaries while the numbers of serviceable fighter aircraft are likely to be lower than at present. Against the trends of emerging powers, proliferation of weaponry and accessibility of advanced science and technology predicted in the CAF's analysis of the future security environment, the use of smaller numbers of previous generation fighter aircraft scarcely seems to be sufficient without the support of international partners that can provide the necessary air power capabilities. As with the RCN and the Army, this may work for expeditionary operations but it is not acceptable domestically. Thus, while the plan to equip the RCAF of tomorrow was sound, in application the apportioned

⁴³ Department of National Defence, *Canada First Defence Strategy*, (Ottawa: Department of National Defence, 2008): 17.

⁴⁴ Ferry de Kerckhove, 2015: *The Strategic Outlook for Canada*. Vimy Paper Volume 22, (Ottawa: Conference of Defence Associations Institute, 2015): 34.

⁴⁵ *Ibid*, 34.

resources and unwieldy procurement policies have combined to confound this vision from being realized.

The CFDS was established by the GoC in order to define the roles and tasks of the CAF, secure stable funding and prepare the CAF as Canada's military instrument of the future. Since the CFDS was implemented, reductions to defence budgets aimed at reducing the deficit, spending freezes, delays in procurement and other administrative measures (such as capital re-profiling) have not only prevented progress, but acted to degrade current operational readiness.⁴⁶ While intellectual thought within the CAF on force employment concepts for the CAF of tomorrow and the future shows a great deal of promise, the fiscal and resource-restrained reality combined with cumbersome procurement policies act as anchors against real progress.

The CAF is not alone in this problem. It should be noted that the U.S. Capstone Concept for Joint Operations 2020 notes amongst its list of risks that the technology would may be unaffordable.⁴⁷ For this to be listed a risk for the world's biggest superpower is not just an indication of the expense of fielding such technology in high numbers, it is a recognition of the potential for further future fiscal constraints. Further, in the US Army operating concept, *Win in a Complex World: 2020-2040*, the risks of insufficient funding, insufficient industrial base are outright stated alongside the risk posed by bureaucracy in hindering the responsive development and fielding of new capabilities.⁴⁸

⁴⁶*Ibid*, 36.

⁴⁷ Department of Defence, *Capstone Concept for Joint Force Operations: 2020*, (Washington D.C.: Joint Concepts Division, 2013): 14.

⁴⁸ Department of the Army, *TRADOC Pamphlet 525-3-1 The U.S. Army Operating Concept: Win in a Complex World 2020-2040*, (Fort Eustance: U.S. Army Training and Doctrine Command, 31 October 2014): 41-42.

To conclude, while the concepts for the CAF of tomorrow are sound, the apportioned resources, procurement policies and a process-focussed bureaucracy have combined to hinder its operational effectiveness in the future security environment. CAF and allied studies have extrapolated on existing trends with results that predict a volatile and complex global security environment in the future. The plan for operational employment created by the CAF matched the requirements deduced by the U.S. and the U.K. The plan for equipment procurement outlined in the CFDS in 2008 seemed to assure that the CAF of tomorrow would be equipped to carry out the roles and missions assigned to it for defence of Canada, continental defence and contributions to international peace and security. In practice, however, numerous cuts to resource allocations and cumbersome procurement policies have combined to create a large divergence in the real application of the original strategy. Sufficient delays in procurement have occurred that even if many of these were solved in 2015, the CAF of tomorrow would be under-equipped for its mission in 2025. While reliance on capabilities provided by coalition partners may work for expeditionary operations, it is unacceptable for domestic operations where the nation's sovereignty must be reinforced.

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