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ADDRESSING THE NEED FOR A FUNCTIONAL WING CONCEPT

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ADDRESSING THE NEED FOR A FUNCTIONAL WING CONCEPT

AIM

1. This service paper will address the need to modify the Royal Canadian Air Force's (RCAF's)¹ current Wing structure. It will focus on returning to functional Wings while standardizing the organizational structures between them and removing the duties of the Base Commander (BComd) from the Wing Commander (WComd). This will increase RCAF efficiency by reducing its overall span of control, improve unity of command, and develop interoperability both within the RCAF and with external partners.

INTRODUCTION

2. For nearly 30 years, the RCAF has been organized using the Wing concept born of the Cold War force reductions. Between 1993 and 1997, the current Wing concept was born, which saw the functionally-aligned Air Groups disbanded and new composite or geographical Wings stood up in their place. Except for Tactical Aviation and Maritime Helicopters, these Wings were formed by operationally grouping all capabilities at a given base and placed one Commander in charge of both the Base and Wing. This was a marked departure from the previous Air Force organization and resulted in several different organizational structures and continues to challenge several of the Air Force's declared Principles of Command, including Unity of Command, Span of Control and Chain of Command.²

3. This paper will argue that a transition to functional Wings based on the RCAF's core capabilities is in the force's best interest. First, the paper will examine the historical background on how the Air Force has organized itself up to 2021. Second, a brief examination of the current theories of human organization management will be undertaken to determine the current best practices. Finally, recommendations will be proposed to chart a new way forward to ensure RCAF operational effectiveness while maintaining an efficient organization.

DISCUSSION

Background

4. The path to the current structure of the RCAF can be traced back to the post-Second World War restructure of the Air Force. Until 1951, RCAF assets in Canada were grouped in a geographical organization, with resources split domestically between Eastern, Central and Western area commands. However, during the war, RCAF overseas units had been incorporated into pre-existing RAF functional commands (e.g. Fighter Command, Bomber Command, etc.). Thus, in 1951, the RCAF reorganized its forces and reformed with seven functional commands: Air Defence Command (Canada); Air Defence Command (NATO); Maritime Air Command; Tactical Air Command; Training

¹ The RCAF moniker was restored in 2011. Prior to that time, it was known as the Canadian Air Force, air environment, and Air Command. All terms will be used interchangeably.

² Department of National Defence, B-GA-402-001/FP-001, *RCAF Doctrine: Command and Control* (Ottawa: DND Canada, 2018) 3.

Command; Air Transport Command; and Air Material Command.³ This structure formed the basis of the RCAF until the 1964-1968 unification process that culminated in the RCAF's disbandment and the creation of the Canadian Armed Forces (CAF). Throughout this period, the various flying functions remained grouped as capabilities but no central coordinating organization or leader advocated for airpower. In 1975, former senior air officers were able to successfully argue for and establish a new command, Air Command, which centralized all the CAF air elements under the command of an air officer and maintained the functional formations.

5. Air Command's functional organization remained unchanged until the 1990s when two major reorganizations reshaped the Air Force into the force structure of today. In 1993, Air Command adopted the Wing Concept, in which a geographically-focused organization was introduced. Unlike the regional geographical commands until 1951, these new formations would be focused on the airbase. Any units at that base would report to that wing commander regardless of function. The Wings reported to four Groups, which kept the span of control smaller, until 1997 when the Groups and their associated staff were removed. All Wings reported directly to the newly stood-up 1 Canadian Air Division (1 CAD).

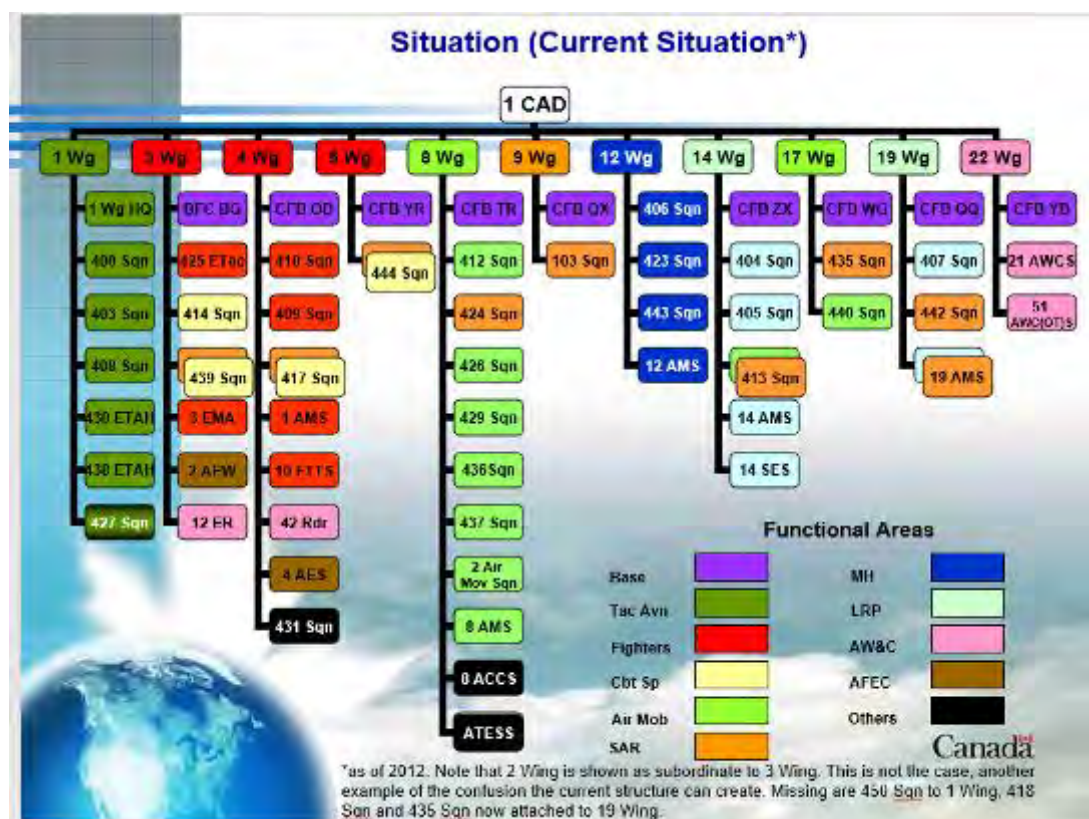


Figure 1: 1 CAD Structure as of 2012, with differences in 2021 noted

³ J.H. Roberts, "The RCAF's Functional Command Organization," *The Roundel*, Vol 4, No 10, November 1952, p22.

6. The organization of the RCAF in 2021 has three significant differences from its previous iterations prior to 1993:

- a. 1 CAD has 12 wings under it, plus the HQ in Winnipeg, making a span of control of 13 subordinate formations. As the Comd 1 CAD is also the Canadian Joint Force Air Component Commander (JFACC) to Canadian Joint Operations Command (CJOC), the span of control continues to increase, with deployed Air Task Forces (ATFs) reporting back to the JFACC for residual authorities. The Comd is also Commander of the Canadian NORAD Region and Commander of a Search and Rescue Region. This construct creates a span of control that is very large, specifically for the Division's staff to manage;⁴
- b. There are no single functional commanders except 1 Wing (Tactical Aviation) and 12 Wing (Maritime Helicopters) to lead and develop their capabilities. Capability Advisory Groups (CAG) have been developed to backfill this missing oversight of the remaining functions. Though influential, the CAGs are outside of the chain of command, hold no authority, and are not supported by additional staff required to push concepts through the staff process. The result has been a lack of unity of effort within non-functional wings and an increase in workload to manage the capabilities;⁵ and
- c. Wings across the RCAF differ in their staff structures. Some Wings, such as 1 Wing and 1 CAD HQ, use the Continental Staff System, as directed by Flight Plan 97.⁶ Some wings use the Operational Support Squadron (OSS)/Mission Support Squadron (MSS) construct, and others retained the Wing staff concept laid out in the 1993 Wing Concept direction.⁷ This outcome affects the Chain of Command principle as it makes the flow of information between various organizations unclear, specifically amongst the staff. For example, in terms of operations, a Wing may have a CO OSS, another uses a Wing Operations Officer (WOpsO) and a final one may have an A3. For the geographical wings where the WComd became the BComd, the staff became double-hatted, responsible not only for flying operations but also for base issues, increasing their span of control.

Organizational Theories

7. Current theories of human organization reveals potential issues with the current Wing structure. While these theories have been developed through academic circles analyzing civilian organizations, the approaches can also be applied to the profession of

⁴ Col (ret'd) Jim Irvine, email message to the author, 19 January 2021.

⁵ Col Brendan Cook, email message to the author, 26 January 2021.

⁶ Department of National Defence, *Flight Plan 97 Executive Summary* (Winnipeg, Canadian Air Force, 23 May 1997), 6.

⁷ Department of National Defence, *Commemorative Booklet -- The Formation of Wings in Air Command* (Winnipeg: Air Command Headquarters, 1993), 10.

arms. Military commanders have unique authority to resort to large-scale lethal force and compel subordinates to go into harm's way.⁸ They must also manage humans; a fundamental task shared with their counterparts in the civilian industry where these theories are developed. These factors will be used to demonstrate how organizational theory can improve the current Wing structure.

8. There are three main grouping methods to organize humans to complete tasks: geographically-based; client-focused; or product focused. All have been seen within the RCAF, and all the groupings can be combined together at different levels depending on the required effects of the organization. In the geographical model, personnel are subdivided into regional divisions and then further sub-divided into another organizational model. The former regional commands up to 1951 or the current Wing concept are examples. They are recommended in situations in which an organization needs to be physically close to customers or are required to be seen as being local.⁹ Product focused, also referred to as functionally-aligned or organization by major purpose, brings together people in one organization who work to render a specific outcome. While stove-piping between the various functions is a risk with this structure, the benefit includes managers of these divisions' ability to have a degree of operating freedom and a unity of overall effort within a specific organization to achieve the best results.¹⁰ The current structures of 1 Wing, 8 Wing and 12 Wing would fit these models as they are all organized to provide similar effects within their Wings. Finally, a client-based organization brings together personnel into a department, regardless of their purpose, to serve a customer.¹¹ During Unification, Long Range Patrol and Maritime Helicopter effects were grouped within CAF Maritime Command to support one customer, the Maritime component, as an example. It could be argued that 1 Wing and 12 Wing also fit these models today as their force generation is orientated towards their customers, the Canadian Army (CA) and the Royal Canadian Navy (RCN), but that 8 Wing as the Air Mobility formation does not, as it has many different customers.

9. A manager's specific span of control is the second area of concern. This refers to the number of people directly reporting to a manager. In 1933, Vytautas Graicunas was able to quantify with his research that "no supervisor can supervise the work of more than five directly, or at the most six subordinates whose work interlocks."¹² Over the last 88 years, many in the business world have attempted to refute this claim, believing that supervisors can manage many more direct subordinates, leading to flatter organizations. When the work is straightforward, it has been shown that larger spans of control can be

⁸ Department of National Defence. A-PA-005-000/AP-004, *Leadership in the Canadian Forces: Conceptual Foundations* (Kingston, ON: Canadian Defence Academy — Canadian Forces Leadership Institute, 2005), vii.

⁹ Jay Galbraith, Diane Downey and Amy Kates, *Designing Dynamic Organizations*. 1st ed. AMACOM, 2001, 67.

¹⁰ Richard Hall and Pamela Tolbert, *Organizations: Structures, Processes and Outcomes*, New York: Routledge, 2009, 55.

¹¹ Luther Gulick, "Notes on the Theory of Organization." *International Journal of Public Administration*, Volume 21, Number. 2-4 (1998), 469.

¹² L.F. Urwick, "V.A Graicunas and the Span of Control," *Academy of Management Journal*, Volume 17, Number 2 (June 1974), 351.

managed.¹³ This is generally found at the lower levels of an organization. As an example, a Master Corporal airframe technician, working with their team of similarly-qualified personnel on the same aircraft, could sustain a span of control greater than six individuals. As tasks become more complex and less homogeneous, the theory states that there becomes a limit on a supervisor's knowledge, time and energy to focus effectively. Thus over time, large spans of control have been shown in many instances to see decreases in overall performance.¹⁴ Supervisors spend much of their effort and time working with their many subordinates instead of allowing themselves time to think strategically towards the future. And vice versa, subordinates with supervisors having large spans of control may find it difficult to get time with their boss to discuss their concerns, resulting in potential communication failures or lack of overall mentorship and feedback.

10. Applying these theories to the RCAF Wing structure in its current form illustrates some of the issues seen today. First, while there is nothing inherently wrong in structuring by geography in an air force, it would likely be more beneficial to focus on the specific functions and capabilities to achieve a unity of effort. For example, the CA is structured geographically in Canada; however, within each geographical division are the same functional elements, all of which are integrated to achieve their specific outcome.¹⁵ As a contrast, 19 Wing Comox, while geographically centred at Comox, BC, only has command of two RCAF capabilities (SAR and maritime patrol), neither of which is functionally aligned with the other.

11. Secondly, span of control for personnel within the RCAF has grown over the last three decades. 1 CAD has a span that is much larger than recommended by the theory. The staff of Division HQ, which work with the staff at the Wings, conducts the overall coordination of the force. The double-hatting of Wing staff positions has caused an increased span of control and punishing workload for Wing staff members, thus reducing their overall productivity and effectiveness. As an example, the CO 4 OSS in Cold Lake spends approximately 80% of their time on base-specific issues.¹⁶

Proposed Way Forward.

12. Based on the organizational theory and the current construct of the RCAF, it is proposed that the most pressing issue is to reorganize the operational elements of 1 CAD back into functional alignment. This system was the backbone of the RCAF until 1993, and proved to be extremely effective at developing and sustaining necessary air capabilities. The reality is that the RCAF in 2021 is too small to justify the group level's stand-up again. A streamlined process in which the specific functional Wing Commanders are given the necessary authorities, autonomy and resources to build and generate their particular force, and allowing their community a unity of effort through a

¹³ Galbraith et al, *Designing Dynamic Organizations*, 2001, 91.

¹⁴ Nick Theobald and Sean Nicholson-Crotty, "The Many Faces of Span of Control: Organizational Structure Across Multiple Goals," *Administration and Society*, January 2005, 649.

¹⁵ Government of Canada. "The Canadian Army of Today," last accessed 01 February 2021, <http://www.army-armee.forces.gc.ca/en/about-army/organization.page>.

¹⁶ Col Moar, email to the author, 02 Feb 2021

clear structure. These Wings should be established with the A-staff structure to provide commonality both up and across the organization. The recommended restructure is similar to one proposed by LCol Lee Smith in 2009 in the *Canadian Air Force Journal*.¹⁷ It would see the following groupings:

- a. 8 Air Transport Wing, to include all Air Mobility Assets, and include 440 Sqn in Yellowknife;
- b. 19 Search and Rescue (SAR) Wing, to include all SAR Sqns and CSS Sqns;
- c. 14 Long Range Patrol (LRP) Wing;
- d. 12 Maritime Helicopter (MH) Wing (no change);
- e. 1 Tactical Aviation (TA) Wing (no change); and
- f. 2 Expeditionary Operations Wing (no change from 2 Wing).

13. It is recommended to keep 22 Wing (Airspace Control) with 3 Wing and 4 Wing (Fighter Force) within their current structure. These Wings are already functionally aligned, with the only exception being that 1 CAD would still have these three wings reporting to it along with the six proposed functional wings. This still reduces the span of control from 12 to nine subordinate organizations for the Division HQ staff to manage.

14. Finally, with the functional alignment, the role of base commander (BComd) must be removed from the wing commander role and provided with it's own staff to run the base. This would allow a wing commander and their functional Wing staff the opportunity to fully focus on the generation and employment of their capability without needing to look inward on base issues. Two other arguments support this proposal:

- a. The authorities that Wing commanders have had concerning base issues are eroding since the stand up of the Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)) and the Real Property (RP) Operations concept.¹⁸ Realigning base functions under a base commander, as seen pre-1993, would provide more staff horsepower to manage the RP Ops relationship. This could increase air force influence over ensuring adequate access to the limited funds of the infrastructure program while also providing a better span of control for base and infrastructure issues and opening up more senior positions to non-aircrew; and
- b. Finally, removing the base from the Wing would standardize terminology within the RCAF, saving the word "Wing" as a functional capability, and orientating "Base" back to its original definition as "an establishment

¹⁷ A. Lee Smith, "The Wing Concept Revisited: The Adoption of Capability-based Wings as an Alternative to Groups," *The Canadian Air Force Journal*, Spring 2009, Volume 2, Number 2, 60.

¹⁸ Col Brendan Cook, email to the author, 26 January 2021.

which comprises the installations, facilities, and activities required by and provided for the operations, maintenance, repair and supply of air units."¹⁹

CONCLUSION

15. The reorganizations of 1993 and 1997 had the best of overall intentions to command the RCAF following the Cold War more efficiently. Upon reflection, this paper has demonstrated prevalent operational effectiveness issues with the current structure, specifically due to increased spans of controls, confusing reporting chains, and a lack of personnel to oversee the functional capabilities properly.

16. This paper recommends establishing functional Wings, returning the RCAF to the concepts it embraced in its pre-1993 roots. This change will allow the principles of unity of command, span of control, and chain of command to be more effectively applied at all levels and allow for a clear definition of a Wing and a Base. There will be costs involved in such a change, such as adding new positions to the required training requirements, but the benefits of improving personnel efficiency will outweigh the up-front financial cost of this necessary endeavour.

¹⁹ Royal Canadian Air Force, *RCAF Glossary of Military Terms* (Ottawa, RCAF, January 1957), page BAB-BAS.

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