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## THE FUNCTIONAL WING OPERATIONAL HEADQUARTERS

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By Lieutenant Colonel Matthew Parsons

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# THE FUNCTIONAL WING OPERATIONAL HEADQUARTERS

## AIM

1. This service paper will assess whether the current RCAF Wing command structure aligns with RCAF Command doctrine. This paper will compare the concepts of a composite wing and a functional wing to demonstrate why an operational level headquarters in a functional wing better aligns with doctrine. Using the Search and Rescue (SAR) capability as an example, this paper will describe a possible implementation of a functional wing with an operational level headquarters that does not create increased manning requirements. Although focused on change within 1 Canadian Air Division (1CAD), it is recognized that the resulting recommendations will affect many other organizations, so this paper includes definitions and discussion on command structures within 1CAD.

## INTRODUCTION

2. The hierarchical structures of the military are proven command structures. Efficiencies demanded of the military may introduce structures that have demonstrated efficiencies in non-military organizations. This can result in 'flat' organizations where one may be subordinate to many,<sup>1</sup> and administrative functions (equivalent to military staff functions) become centralized or devolved.<sup>2</sup> However effective such structures are towards efficiency, in a military they cannot subvert the principles of command. Unfortunately, through numerous well-intentioned reorganizations<sup>3</sup>, the RCAF has build a command structure that does not align with the RCAF Principles of Command.<sup>4</sup>

3. A review of the different wing and base command structures and an examination of the existing structures in the RCAF, will identify areas where command structure leads to doctrinal misalignment. The effect of the changes will be illustrated by reviewing the current Search and Rescue capability command structure and recommending a change to a functional and development of a decentralized operational headquarters. Finally, recommendations will be provided to make changes to existing 1CAD structures and to conduct further research for more complex organizations.

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<sup>1</sup> Jacob Morgan, 'The 5 Types of Organizational Structures', *Forbes*, 15 July 2015, <https://www.forbes.com/sites/jacobmorgan/2015/07/15/the-5-types-of-organizational-structures-part-4-flatarchies/?sh=656824176707>.

<sup>2</sup> David Anker, 'Devolved vs Centralised Approach to Management - or Why Napoleon Lost to the Prussians (Second Time Around)!', *Cranfield University Blogs*, 21 October 2017, <https://blogs.cranfield.ac.uk/leadership-management/cbp/devolved-vs-centralised-approach-to-management-or-why-napoleon-lost-to-the-prussians-second-time-around>.

<sup>3</sup> Allen English and John Westrop, 'Canadian Air Force Leadership And Command: Implications For The Human Dimension Of Expeditionary Air Force Operations' (Toronto: Defence R&D Canada, November 2006).

<sup>4</sup> Canada. Department of National Defence, *Royal Canadian Air Force Doctrine: Command and Control*, 2nd ed. (Ottawa, Canada: Royal Canadian Air Force, 2018), 3, <https://www.deslibris.ca/ID/10097376>.

## DISCUSSION

4. The RCAF operational command structures have evolved to better suit the different functions of the RCAF and to respond to pressures to do more with less. With each Wing providing different capabilities, each Wing has changed differently. Thus, there is not one operational level command structure to examine and it is unlikely that one structure will suit all RCAF functions. However, regardless of the function, the command structure should observe the RCAF Principles of Command (*Unity of Command, Span of Control, Chain of Command, Delegation of Authority, Freedom of Action, and Continuity of Command*).<sup>5</sup>

### RCAF Wings

5. The *RCAF Wing* is a versatile command structure that encompasses an array of responsibilities, authorities, and formations. It may be inferred to mean a base, a group of squadrons, one of two different command formations, or a specific aerospace power capability. For clarity, the terms used in this paper are:

- a. A Canadian Forces Base, or commonly a *base*, is a unit that provides “accommodation and support services for assigned units.”<sup>6</sup>
- b. A *Main Operating Bases* (MOB) is “a base responsible for supporting the generation, employment and sustainment of assigned forces.”<sup>7</sup>
- c. A *capability* is the aerospace power effect that is provided by the associated personnel and assets.
- d. Historically, a *wing* was “an operational organization, comprising two or more squadrons, usually tasked for the same function (i.e., air transport, air defence, etc.) and under the command of a single commander.”<sup>8</sup>
- e. The term *composite wing* arose from the restructuring of Canadian Forces air bases as RCAF Wings where Air Command<sup>9</sup> made the wing commander responsible both for the base and the conduct of operations from that base. These wings included squadrons that provided vastly different functions, so no longer aligned with the historical definition.

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<sup>5</sup> Ibid.

<sup>6</sup> Canada. Department of National Defence, ‘Defence Terminology Database (DTB)’, *Canadian Armed Forces*, accessed 5 February 2021, <http://terminology.mil.ca/term-eng.asp>. Record #3124.

<sup>7</sup> Ibid. Record #41464.

<sup>8</sup> English and Westrop, ‘Canadian Air Force Leadership And Command: Implications For The Human Dimension Of Expeditionary Air Force Operations’, 65.

<sup>9</sup> English and Westrop, ‘Canadian Air Force Leadership And Command: Implications For The Human Dimension Of Expeditionary Air Force Operations’. From 1975 to 2011 the RCAF was called Air Command, but the current Air Division and Wing structures were first used in 1993.

f. A *functional wing* is a command formation containing squadrons and support elements operating towards a common capability. The units may be geographically separated.

6. The composite wings were developed with an administrative vice an operational headquarters. They maintained the Base Commander and support functions (i.e., Operations, Personnel, Technical Services, Comptroller<sup>10</sup>) but the operational headquarters functions, such as doctrine, training requirements, personnel, etc. were centralized to 1CAD.

### **Principles of Command**

7. Comparing the composite wing structure to the RCAF Principles of Command<sup>11</sup> reveals some problematic misalignment. One wing commander can oversee multiple operations, creating a vast *Span of Control*. One operation using squadrons from the same capability may have different commanders, which does not align with the *Unity of Command* principle.

8. A functional wing appears to be a viable solution to this doctrinal misalignment as it limits the commander's *Span of Control* to the single capability and allows *Unity of Command* in multi-squadron operations. However, the operational headquarters functions of the RCAF Wings were established at the air division level (1CAD) and other higher headquarters (HHQ). For a squadron commander to have the *Freedom of Action* to properly plan and conduct the operation may require integration with headquarters functions. This makes the *Chain of Command* during an operation go through the wing commander, the Commander 1CAD, then down through 1CAD headquarters to the appropriate function. This is further complicated with Commander Joint Operations Command (CJOC) responsible for Force Employment as the operations function of the headquarters lies within a different level one organization, and thus formally includes the Chief of Defence Staff (see Appendix A, Figure A-1). In practice, there are delegations and direct liaison authorized to avoid inefficiency, but those only enable efficiency and do not realign the structure with the Principles of Command.

### **Capability Advisory Groups**

9. The functions of an operational headquarters, to some extent, have been transferred to a Capability Advisory Group (CAG). A CAG is an organization that advises the Commander 1CAD on issues related to a particular capability. CAG membership varies but includes Wing Commanders supporting the capability and engineering organizations that support the aircraft and equipment. It is led by the CAG Chair, who is selected by the Commander 1CAD, and is typically one of the Wing Commanders. The CAG enables subject matter experts to “augment and complement existing staffing and associated processes.”<sup>12</sup> The CAG mandate includes personnel

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<sup>10</sup> Ibid., 36.

<sup>11</sup> Canada. Department of National Defence, *Royal Canadian Air Force Doctrine*, 2018, 3.

<sup>12</sup> Canada. Department of National Defence, ‘Canadian Air Division Orders (CADO)’, *Royal Canadian Air Force*, 2021, <http://rcaf.mil.ca/en/1-cad/cado.page>. Vol 1, 1-624.

management, strategic planning, tactical doctrine development, identification of communication/capability issues, and to advise Commander 1CAD on CAG issues.

10. It is important to note that the CAG Chair is not given additional command authority. However, the mandate of the CAG is well aligned with some of the functions of a typical headquarters. Using the continental staff system to illustrate this, the CAG could be considered to perform some of the A1 functions (personnel management), A5 functions (strategic planning), A4 functions (aircraft engineering organizations), A6 functions (identification of communication issues) and A7 (tactical doctrine development).

11. 1CAD includes eleven Wings that deliver and support the RCAF core capabilities.<sup>13</sup> These core capabilities are assigned to six CAGs, which are organized as follows:

#### Fighter

a. The Fighter capability includes two squadrons within 3 Wing, and two squadrons and one training squadron within 4 Wing. All squadrons are located at the two MOBs linked to the wings. Each Wing Commander only supports the Fighter capability. The Fighter capability effectively has two functional wings, although with a shared training squadron. Both fighter wings rely on operational headquarter functions within HHQ, which may be efficient but challenges the *Chain of Command* and *Freedom of Action* principles.

#### Maritime Air

b. The Maritime Air capability has two main sub-capabilities: Maritime Helicopter (MH) and Maritime Patrol (MP).

i. MH includes three squadrons within 12 Wing, located at two different MOBs. MH is already setup as a functional wing, but with an operational headquarters within HHQ

ii. MP includes two squadrons within 14 Wing and one squadron within 19 Wing. MP could become a functional wing by making the squadron at 19 Wing a part of 14 Wing. With a similar move of a SAR squadron from 14 Wing to 19 Wing, the Commander 14 Wing will command a single capability and would make 14 Wing into a functional wing, with headquarters functions at HHQ.

c. Maritime Air is somewhat unique in that it employs two sub-capabilities that need to cooperate to be effective at Anti-Submarine Warfare and Anti-Surface Warfare, roles that are “not just a tactical but also a theatre-level activity.”<sup>14</sup> MP and MH require synchronized doctrine to be effective. While one

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<sup>13</sup> Canada. Department of National Defence, *Royal Canadian Air Force Doctrine*, 2nd ed (Ottawa: RCAF, 2015).

<sup>14</sup> Commander Peter Sproule, ‘Canada and the Fourth Battle of the Atlantic’, *Canadian Naval Review* 16, no. 3 (2021): 7.

functional wing for each sub-capability is consistent with principles of command, an operational headquarters that supports both capabilities would provide a stronger *Unity of Command* and help ensure *Freedom of Action*.

#### Air Mobility.

d. All Air Mobility Squadrons are a part of 8 Wing Trenton, including one located in Ottawa, and one located in Yellowknife, North West Territories. Air Mobility is already a functional wing with operational headquarter functions within HHQ.

#### Tactical Aviation.

e. All seven tactical aviation squadrons are a part of 1 Wing and are located across Canada. Tactical Aviation already is a functional wing. Because Tactical Aviation maintains alignment with the Canadian Army concept of “Tactically Self-Sufficient Units”<sup>15</sup> it has had an operational headquarters within the wing since its reformation in 1997.

#### Aerospace Control and Warning (AC&W)

f. AC&W includes two squadrons within 22 Wing and one squadron each within 3 Wing and 4 Wing. The value and method to establish a functional wing has already been identified<sup>16</sup> however, the necessary integration of AC&W with the Fighter capability may benefit from a common operational headquarters by ensuring *Unity of Command*.

#### Search and Rescue

g. SAR includes six squadrons at four wings. Three of the Wing Commanders each have two capabilities under their command. The operational headquarters functions are split between multiple HHQ. SAR has been identified as a capability that that could be vastly improved by implementing a functional wing. It needs this because:

...while the RCAF is tactically effective at meeting its national SAR mandate, it is inefficient at delivering that mandate due to organizational leadership anemia. The lack of leadership has transpired at many levels, including a lack of capability development, a challenged force generation sustainment, difficulties in communicating operational risk, and a lack of unity of command.<sup>17</sup>

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<sup>15</sup> English and Westrop, ‘Canadian Air Force Leadership And Command: Implications For The Human Dimension Of Expeditionary Air Force Operations’, 229.

<sup>16</sup> Bryan Millard, ‘Time to Consolidate: 22 Air Control Wing’ (Toronto, ON: Canadian Forces College, 2020).

<sup>17</sup> Jean Leroux, ‘RCAF Search and Rescue Leadership: Checkmate’ (Canadian Forces College, 2018), 91.



## Operational Headquarters

12. With the six capabilities discussed, there are at least four implementations of an operational headquarters that could be considered.

- a. An Integrated Wing Headquarters, such as 1 Wing has established should work well for most of the wings but would require a significant increase in personnel.
- b. A Decentralized Wing Headquarters formed of personnel embedded in other organizations should meet the requirements of the operational headquarters, without requiring additional people. It would create some challenging personnel management issues with individuals working in two separate command structures. However, there are already RCAF personnel working in two command structures such as those in Standards and Evaluation Teams.
- c. A Group Headquarters (borrowing from older RCAF terminology) would provide a common operational headquarters for capabilities that are employed with multiple functional wings such as Maritime Air or Fighters.
- d. Finally, assigning command responsibility to a CAG Chair who is also a Commander of a functional wing may fulfill the command element by changing the dynamic of the CAG from advisory to controlling.

13. To clarify the decentralized wing headquarters, two command and control (C2) organizational charts for the SAR capability are provided at Appendix A. Figure A-1 shows the current C2 structure of the SAR capability. The permanent membership of the SAR CAG is shown with thick edges. The continental staff system is used to illustrate where the operational headquarter functions are provided.

- a. A3 – FE is conducted by CJOC
- b. A4R & A4F – Rotary and Fixed wing aircraft maintenance and engineering is provided by ADM(Mat)
- c. A5 – Strategic planning is conducted by SJS
- d. A7 – 1CAD SSOSAR is responsible for SAR training (along with many other headquarters duties)<sup>18</sup>
- e. A1 – SAR personnel are managed by a SAR Lieutenant-Colonel in a staff position.

14. As expected from a composite wing, the current C2 structure illustrates poor *Unity of Command* by not having a common operational commander and constrained

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<sup>18</sup> LCol Jay Nelles, text chat with author, 24 January 2021

*Freedom of Action* by having four level one organizations involved in a single operational capability.

15. Figure A-2 shows the same SAR capability with a functional wing implemented and with a decentralized operational headquarters. The dashed lines indicate the dual chain of command for the subordinate positions that will require clear demarcation of duties. Commander SAR Wing would have OpCom over the decentralized headquarters, so many of the higher positions are eliminated in the C2 structure. CJOC, as the Force Employer, and CAG membership all remain in the C2 structure.

16. The notion of assigning command to a CAG chair has appeal in its ease of execution, but Figure A-2 shows that it still suffers a lack of *Unity of Command*, plus it is likely to become ineffective due to the wide *Span of Control* and long *Chain of Command*.

17. The intent of this construct was to provide unity of command within the SAR capability, for both the operational units and the headquarters. The elimination of three Wing Commanders from the organization reduces the size of the CAG. It allows the 8 Wing and 14 Wing Commanders to focus on Air Mobility or MP capabilities. The 9 Wing Commander does not have any other operational capabilities on the wing, so may be a suitable SAR Wing Deputy Commander. Support to operations that is not embedded in a squadron (e.g., airfield services) remains an MOB function, under the local Wing Commander.

## **CONCLUSION**

18. The composite wing structure is misaligned with RCAF Command Doctrine, causing concerns primarily with *Unity of Command* and *Span of Control*. The functional wing eliminates those concerns, but without an operational headquarters concerns with *Chain of Command* and *Freedom of Action* are highlighted. The notion of creating a functional wing for the SAR capability with a decentralized operational headquarters is achievable with existing personnel and will eliminate the doctrinal misalignment. All RCAF core capabilities are likely to experience command issues due to the wing structure and may be resolved with functional wings and operational headquarters at the appropriate levels.

## **RECOMMENDATIONS**

19. Based on this study, I recommend Commander 1CAD considers establishing the SAR functional wing with a decentralized operational headquarters. The success of that reorganization can be used to substantiate establishing similar command structures with the Air Mobility capability.

20. Because of the value of two functional wings within a single aerospace capability for Fighters and Maritime Air, I recommend further research into the costs, value, and benefits of developing Groups containing functional wings as well as operational headquarters for these capabilities.

21. I recommend that AC&W is reorganized as a functional wing, which should be considered for inclusion with the Fighter capability under one Group.

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Figure 1 – Current Search and Rescue Command and Control Structure

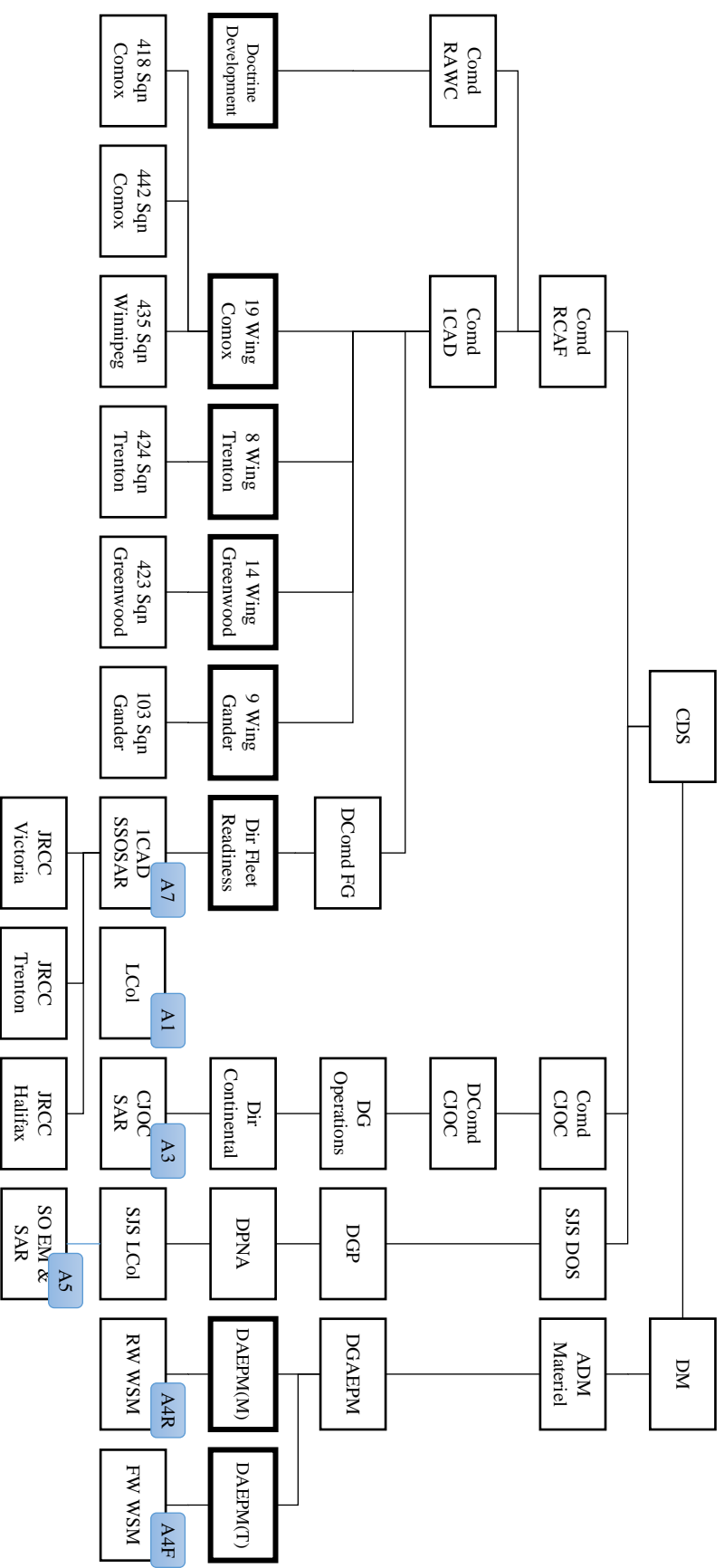


Figure 2 – Proposed Search and Rescue Command and Control Structure

