



National Défense  
Defence nationale

**B-GA-402-001/FP-001**

## **Royal Canadian Air Force Doctrine: Command and Control**

**Issued on authority of Commander Royal Canadian Air Force**

**Custodian: Royal Canadian Air Force Aerospace Warfare Centre**

**2017-06-22**

**Canada** 

This Page Intentionally Blank

## TABLE OF CONTENTS

List of figures .....	iv
List of tables.....	iv
Preface.....	v
Keynotes .....	vii
<b>CHAPTER 1 COMMAND AND CONTROL FUNDAMENTALS.....</b>	<b>1-1</b>
SECTION 1 – Command and control.....	1-1
Introduction.....	1-1
Characteristics of air power .....	1-1
Principles of command.....	1-2
Command and control defined.....	1-3
Command and control activities.....	1-4
Command and control systems .....	1-4
Authorities and relationships .....	1-5
Risk and residual authorities .....	1-8
SECTION 2 – Command and control in joint operations.....	1-9
Types of operations .....	1-9
Joint task force concept.....	1-10
Command and control methodologies .....	1-11
Centralized control and decentralized execution .....	1-12
SECTION 3 – Supporting command and control: Support relationships.....	1-15
Reachback .....	1-16
Mission and task.....	1-17
Line and staff.....	1-17
Summary .....	1-18
<b>CHAPTER 2 COMMAND AND CONTROL OF THE RCAF.....</b>	<b>2-1</b>
SECTION 1 – RCAF command and control structure during force generation.....	2-1
Command and control in the RCAF.....	2-1
RCAF organizational structure .....	2-1
RCAF organization by activity .....	2-3
SECTION 2 – RCAF command and control structure during force employment.....	2-4
RCAF theatre air control system.....	2-4
C2 roles and responsibilities during force employment operations .....	2-8
<b>CHAPTER 3 RCAF FORCE EMPLOYMENT COMMAND AND CONTROL PROCESSES .....</b>	<b>3-1</b>
SECTION 1 – Operational-level C2 processes.....	3-1
Introduction.....	3-1
RCAF C2 principles.....	3-1
The CAF JFACC.....	3-2

RCAF combined aerospace operations centre .....	3-3
SECTION 2 – Air task force commander.....	3-5
SECTION 3 – RCAF command and control models.....	3-8
Introduction.....	3-8
Summary .....	3-17
Glossary .....	Gloss-1
Abbreviations.....	Abbrev-1
References.....	Ref-1

## LIST OF FIGURES

Figure 1-1. CAF joint task force employing the component command method .....	1-11
Figure 1-2. CAF joint task force employing the direct command method .....	1-12
Figure 1-3. Spectrum of centralized control in air operations .....	1-15
Figure 2-1. Hierarchical organization of the RCAF .....	2-3
Figure 2-2. ATFHQ and ATFCE structure .....	2-6
Figure 2-3. The CAF JFACC: CAF’s standing air component commander.....	2-9
Figure 3-1. RCAF operations when the CAF JFACC exercises OPCOM .....	3-9
Figure 3-2. RCAF supporting an RJTF .....	3-11
Figure 3-3. RCAF as part of a CAF JTF employing the component command method .....	3-13
Figure 3-4. RCAF as part of a CAF JTF employing the direct command method.....	3-14
Figure 3-5. RCAF as part of an allied/coalition operation.....	3-16
Figure 3-6. RCAF as part of NORAD operations.....	3-17

## LIST OF TABLES

Table 1-1. The principles of command.....	1-3
Table 1-2. Command, control and C2.....	1-4
Table 1-3. Command and control authorities and relationships .....	1-7
Table 2-1. CAF air forces C2 structure in joint force employment .....	2-11

## PREFACE

1. This manual provides the keystone-level doctrine for command and control (C2) of the Royal Canadian Air Force (RCAF). While intended primarily for the operational level, it also describes fundamentals applicable to the tactical level. This manual is designed for use by the following:
  - a. Canadian Armed Forces (CAF) schools and academies that train and develop personnel in C2;
  - b. RCAF formations, units and headquarters; and
  - c. other CAF elements that command, control or support RCAF forces.
2. This manual is presented in three chapters:
  - a. **Chapter 1 – Command and Control Fundamentals.** This chapter outlines the fundamental concepts of C2 as they relate to air power and the delivery of air effects during joint operations.
  - b. **Chapter 2 – Command and Control of the RCAF.** This chapter focuses on how established C2 concepts translate into RCAF structure and organization at all levels. Importantly, this chapter defines the roles, responsibilities and relationships of commanders in both force generation and force employment (FE).
  - c. **Chapter 3 – RCAF Force Employment Command and Control Processes.** Focusing on FE, this chapter outlines the C2 processes of key operational-level commanders and organizations as they exercise C2 during FE. In order to provide a starting point for the RCAF planners and commanders, six distinct C2 models are detailed.
3. This manual supersedes B-GA-401-000/FP-001, *Canadian Forces Aerospace Command Doctrine* and Air Doctrine Note 14/01, RCAF Air Task Force Commander Definitions, Roles and Responsibilities, and is to be used in conjunction with:
  - a. AJP-3.3(A), *NATO Joint Air and Space Operations*;
  - b. B-GA-400-000/FP-001, *Royal Canadian Air Force Doctrine*; and
  - c. B-GJ-005-300/FP-001, Canadian Forces Joint Publication (CFJP 3.0), *Operations*.
4. Recommendations for amendments to this publication are welcome and should be forwarded to the Canadian Forces Aerospace Warfare Centre, attention: Doctrine Development Branch.
5. The Commander 1 Canadian Air Division is the approval authority for this doctrine.

This Page Intentionally Blank

## KEYNOTES

These keynotes are the fundamental beliefs upon which command and control (C2) doctrine is built.

- ❖ As a Royal Canadian Air Force (RCAF) enabling capability, Command and Control is the authority that plans, directs, coordinates, monitors and assesses all of the other RCAF functions (Sense, Act, Shield, Sustain and Generate) in order to deliver air effects to accomplish assigned missions and tasks.
- ❖ Command is “the authority vested in an individual of the armed forces for the direction, coordination and control of military forces.”<sup>1</sup>
- ❖ Control is “the authority exercised by commanders over part of the activities of subordinate organizations, or other organizations not normally under their command, which encompasses the responsibility for implementing orders or directives.”<sup>2</sup>
- ❖ C2 is “the exercise of authority and direction by a commander over assigned, allocated and attached forces in the accomplishment of a mission.”<sup>3</sup>
- ❖ Centralized control and decentralized execution is the fundamental tenet of air power operations, because the speed, reach, impermanence and span of control of air forces allow for a relatively greater degree of centralization of control than seen in other environments.
- ❖ There are four areas of activity required by any air force in order to be able to exert power: command, air operations, operations support and mission support.
- ❖ A C2 system is made up of three constituent elements: people, infrastructure and processes.
- ❖ Air power C2 systems are heavily reliant on effective communications and computer systems that are interoperable, agile and trusted.

This Page Intentionally Blank



# CHAPTER 1

## COMMAND AND CONTROL FUNDAMENTALS

*To conquer the command of the air means victory; to be beaten in the air means defeat and acceptance of whatever terms the enemy may be pleased to impose.<sup>1</sup>*

– Giulio Douhet

### SECTION 1 – COMMAND AND CONTROL

#### INTRODUCTION

1. Air forces exist to exercise air power on behalf of the nation. This is accomplished primarily through exploiting the air environment to achieve assigned objectives. A century of air warfare has demonstrated that for air forces to be both capable and effective, they must be commanded and controlled in ways that consider the unique environment in which they operate. Canadian Armed Forces (CAF) philosophy of command demands the highest standards of leadership, doctrine, training, effective decision making and mutual trust between leaders and their subordinates.

2. To be effective, command of air power normally should be decentralized to the greatest degree practicable in order to cope with the uncertainty, disorder, complexity and confusion that are often present at the tactical level. At the same time, air power operations—encompassing challenges that differ in many respects from land and maritime environments—require a command philosophy that embraces the concept of centralized control; this concept allows air power to be employed most effectively within a given theatre of operations.

#### CHARACTERISTICS OF AIR POWER

3. The air environment is unique and demands a distinct and considered approach to operations within it. For optimal employment of air power, a fundamental understanding of the characteristics of air power is essential. Commanders at all levels must consider the following strengths and limitations that, together, constitute the characteristics of air power:

- a. **Elevation.** The capacity to employ air power above the surface of the Earth offers the ability to observe and influence activities on the surface as well as beneath the ocean's surface.
- b. **Fragility.** Air vehicles tend to be more fragile than surface vehicles and, therefore, require special handling to keep them in operation.
- c. **Impermanence.** Typically, air platforms cannot remain aloft indefinitely and, therefore, cannot hold a station permanently. This can be offset by committing air platforms in rotation to maintain a posture of relative permanence or by repeating missions as required.

- d. **Payload.** Payloads of some air vehicles are limited in comparison to those carried by maritime and land forces; although, it is possible to compensate for small payloads by using high sortie rates. In addition, a small payload delivered quickly may have greater effect than a large payload delivered later.
- e. **Precision.** Air power can be employed with great accuracy and minimal collateral damage because of inherent capabilities provided by precision guided munitions and satellites.
- f. **Reach.** Air power can be projected globally, unimpeded by surface features such as mountain barriers or water expanses.
- g. **Sensitivity to environmental conditions.** Air power is typically sensitive to environmental conditions. Bad weather, for example, creates difficulties with take-off and landing, navigation, target acquisition and weapons delivery.
- h. **Sensitivity to technology.** Relatively small innovations in technology can have a significant impact on the effectiveness of air power. Technological advances dictate an ongoing requirement for continuous improvement and development of air power.
- i. **Speed.** The inherent speed of air vehicles provides a rapid response capability that can be projected over great distances. Speed can also be used to achieve surprise and allows for a reduced time of exposure to hostile action, thus increasing survivability.
- j. **Stealth.** Stealth (tactics and technology) gives air power the ability to be employed with minimal risk of detection, increasing survivability and allowing for surprise.
- k. **Support dependency.** Air power requires a high level of technical and logistical support that must be provided from a support base of operations.

## PRINCIPLES OF COMMAND

4. Experience has shown that certain fundamental principles in the command of forces exist that are formally articulated as the principles of command, as outlined in Table 1-1. When the principles of command are respected, military operations will be executed under the command of one officer who has an appropriate span of control. In order to permit the maximum freedom of action at the tactical level, command authority should be delegated as far down the chain of command as possible. Ignoring the principles of command erodes the effectiveness of military operations and introduces potential confusion at subordinate levels, even before facing the enemy.

Principle	Application
<b>Unity of Command</b>	A single, clearly identified commander must be appointed for each operation. The commander has the authority to plan and direct operations and will be held responsible for an operation's success or failure.
<b>Span of Control</b>	Assigned resources and activities must be such that one person can exercise effective command or control of the formation or unit.
<b>Chain of Command</b>	The structure of the C2 process is hierarchical and must be respected. Bypassing the chain of command is justified only in the most exceptional circumstances.
<b>Delegation of Authority</b>	Commanders must be clear when delegating all or part of their authority.
<b>Freedom of Action</b>	Once the task or mission has been established and the necessary orders have been given, subordinate commanders must be permitted maximum freedom of action to take initiative and exercise their skills and knowledge of the local situation in the planning and conduct of the operation.
<b>Continuity of Command</b>	A clear and well understood succession of command is essential.

Table 1-1. The principles of command

## COMMAND AND CONTROL DEFINED

5. Effective and efficient projection of air power permits an air force to deliver air effects. A well-defined C2 structure is fundamental to the success of this process. Personnel at all levels must understand the fundamentals behind the terms command, control, and C2 (see Table 1-2).

- a. **Command** is “the *authority vested in an individual* of the armed forces for the direction, coordination, and control of military forces.”<sup>2</sup> [emphasis added] All or part of this authority may be delegated.
- b. **Control** is “the *authority exercised by commanders* over part of the activities of subordinate organizations, or other organizations not normally under their command, which encompasses the responsibility for implementing orders or directives. All or part of this authority may be delegated.”<sup>3</sup> [emphasis added] Control provides a means of exercising effective command.
- c. **Command and control** is “the *exercise of authority and direction by a commander* over assigned, allocated and attached forces in the accomplishment of a mission.”<sup>4</sup> [emphasis added] In practice, the C2 process is performed through an arrangement of personnel, equipment, communications, facilities and procedures employed by a commander in planning, directing, coordinating, monitoring and assessing forces in accomplishing the mission.

Command	Control
<ul style="list-style-type: none"> <li>constitutes formal authority</li> </ul>	<ul style="list-style-type: none"> <li>derived by delegation from command</li> </ul>
<ul style="list-style-type: none"> <li>provides oversight, unifying all action</li> </ul>	<ul style="list-style-type: none"> <li>supports command in detail</li> </ul>
<ul style="list-style-type: none"> <li>is focused on establishing common intent</li> </ul>	<ul style="list-style-type: none"> <li>is focused upon the details of execution</li> </ul>
<ul style="list-style-type: none"> <li>Together as “command and control” the following five activities are performed:</li> </ul>	
<p>PLANNING – DIRECTING – COORDINATING – MONITORING - ASSESSING</p>	

Table 1-2. Command, control and C2

### COMMAND AND CONTROL ACTIVITIES

6. Effective C2 requires the ongoing coordination of specific activities. When the following activities are performed in concert, they constitute the basis of a C2 process.

- a. **Planning** is the logical process by which command decisions are made; planning air operations is an ongoing activity.
- b. **Directing** is the act of command authority giving specific instructions to subordinates and supporting units. Commanders must provide all required guidance in order to maximize efficiency and effectiveness as well as to reduce uncertainty throughout the spectrum of conflict. Directing should also ensure that subordinate commanders are given the chance to exercise initiative in order to capitalize on opportunities that present themselves in the tactical environment.
- c. **Coordinating** is the sharing of information to gain consensus and organize activities. Effective coordination should integrate, synchronize and deconflict operations between different organizations. Normally, commanders at all levels delegate considerable authority to their staffs to coordinate air power operations.
- d. **Monitoring** is the process of observing and reporting on the full spectrum of factors within the operational space, in order to provide accurate situational awareness.
- e. **Assessing** is the process of estimating the capabilities and performance of organizations, individuals, materiel or systems, in order to advise the commander.

### COMMAND AND CONTROL SYSTEMS

7. Effective C2 requires a range of capabilities, both human and technical. C2 systems are made up of the following three constituent elements:

- a. **People.** The most important component of any C2 system comprises the people who operate within it. Properly educated, trained and qualified personnel are critical to handling the complex activities involved in air power operations.
- b. **Infrastructure.** Equipment, including information technology in particular, is a critical element of any C2 system. Infrastructure requirements also include headquarters, operations centres as well as computer and communications systems.
- c. **Processes.** Specific processes must be developed to enable effective C2. These processes are intended to facilitate the flow of information and to support command decision making. The operations planning process and the air tasking cycle are examples of C2 processes.

## AUTHORITIES AND RELATIONSHIPS

8. In order to perform effectively, all personnel must have a complete understanding of the definition of various C2 authorities and relationships and also must appreciate where they and their commander fit into the overall C2 structure. C2 authorities and relationships have been developed to ensure the effective direction of military forces at the strategic, operational and tactical levels. At each level, commanders can elect to either retain or delegate C2 authorities in order to effectively accomplish their force generation (FG) or force employment (FE). During FE, temporary C2 authorities and relationships are used that differ from those used during the steady state of FG.

9. **Changing from FG to FE.** C2 authorities and relationships differ greatly when forces change from FG to FE. During FG, the Commander (Comd) Royal Canadian Air Force (RCAF), formation commanders and commanding officers (COs) exercise full command over air forces assigned to them. In contrast, during FE, commanders at all levels are delegated specific C2 authorities according to their position within the chain of command for that operation.

10. **Command** can be exercised at three different levels: full, operational and tactical. As a basic principle during multinational operations, CAF members normally remain under the command of a CAF officer. Command, therefore, is synonymous with *national command*. While command authority may be delegated, a commander's responsibility cannot be. Ultimately, responsibility remains with the commander it was originally vested in. C2 authorities and relationships are summarized in Table 1-3. The three levels of command are:

- a. **Full command (FULLCOM)** is “the military authority and responsibility of a commander to issue orders to subordinates. It covers every aspect of military operations and administration and exists only within national services.”<sup>5</sup> It applies to all levels, from the Chief of the Defence Staff (CDS) down to the unit commanding officer. FULLCOM includes all C2 authorities (at the applicable strategic, operational or tactical level) and permits the accomplishment of day-to-day FG.
- b. **Operational command (OPCOM)** is “the authority granted to a commander to assign missions or tasks to subordinate commanders, to deploy units, to reallocate forces, and to retain or delegate operational control, tactical command (TACOM),

and/or tactical control [TACON] as the commander deems necessary.”<sup>6</sup> OPCOM is normally exercised by operational-level commanders. OPCOM does not necessarily include responsibility for administration. While OPCOM allows a commander to assign separate employment to elements of assigned forces, it cannot be used to disrupt the basic organization of a unit to the extent that the unit cannot readily be given a new task or be redeployed.

- c. **Tactical command (TACOM)** is “the authority delegated to commanders to assign tasks to forces under their command for the accomplishment of missions assigned by higher authority.”<sup>7</sup> TACOM is normally exercised by tactical-level commanders.

11. **Control** can be exercised at the operational, tactical and administrative levels.

- a. **Operational control (OPCON)** is “the authority delegated to a commander to direct allocated forces to accomplish specific missions or tasks that are usually limited by function, time, or location, to deploy units concerned, and to retain or delegate tactical control of those units.”<sup>8</sup> OPCON is normally exercised by operational-level commanders during air power operations. Commanders who have been delegated OPCON over specific air power forces may further delegate OPCON and TACON to another commander. OPCON permits commanders to benefit from the immediate employment of assigned forces without further reference to a senior authority.
- b. **Tactical control (TACON)** permits effective “local direction and control of movements or manoeuvres necessary to accomplish missions or tasks assigned.”<sup>9</sup> TACON is normally exercised by tactical-level commanders during air power operations. During air power operations, TACON is normally delegated to a commander capable of managing a complex operational environment for a specified period of time.
- c. **Administrative control (ADCON)** is the “direction or exercise of authority over subordinate or other organizations in respect to administrative matters such as personnel management, supply, services, and other matters not included in the operational missions of the subordinate or other organizations.”<sup>10</sup> Commanders exercising FULLCOM exercise ADCON during FG. ADCON is designated to specific commanders during FE.

	FG		FE			
	Full Command (FULLCOM)	Administrative Control (ADCON)	Operational		Tactical	
			Operational Command (OPCOM)	Operational Control (OPCON)	Tactical Command (TACOM)	Tactical Control (TACON)
Assign separate employment of components of units/formations	X		X			
Assign missions	X		X	X		
Assign tasks	X		X	X	X	
Delegate OPCOM	X		X			
Delegate TACOM	X		X		X	
Delegate OPCON	X		X	X		
Delegate TACON	X		X	X	X	X
Coordinate tactical positioning and flow, local movement and defence at installations	X		X	X	X	X
Plan and coordinate	X		X	X	X	X
Administrative responsibility	X	X				

Table 1-3. Command and control authorities and relationships

12. **Planning authority** may be delegated by an FG or FE commander at any level where there is potential for a new C2 relationship in the future. Planning authority gives air forces the ability to liaise directly for planning purposes but does not constitute a change in the existing C2 relationship. Normally, commanders employ direct liaison authority between their forces to formalize the establishment of planning authority.

13. **Transfer of command authority (TOCA)** is “the formal transfer of a specified degree of authority over forces allocated to an operation from a force or capability generator to a force employer, as well as from force employer to a force or capability generator upon return from operations.”<sup>11</sup> Air forces are transferred after the Comd RCAF approves their operational readiness (OPRED) status. Normally, a TOCA is the mechanism by which OPCOM of RCAF personnel and equipment passes from Comd RCAF to the Comd Canadian Joint Operations Command (CJOC) or Canadian Special Operations Forces Command (CANSOFCOM) for deployment and back again for redeployment. The TOCA normally occurs once air forces arrive

in the area of operations and the Comd CJOC is satisfied with OPRED for employment. The TOCA process also represents the opportunity for the Comd RCAF to specify agreed-to parameters for employment, such as C2 arrangements, approved missions and maximum flying hours.

14. **Transfer of authority (TOA)** is “the formal transfer, between commanders, of a specified degree of authority over forces allocated to an operation.”<sup>12</sup> A TOA is used during FE to ensure commanders fully understand the type of command or control authority being transferred. The TOA can also formalize any restrictions or limitations being placed on the transfer. Normally, a TOA is used when OPCON or TACON of forces is transferred to another national commander or a commander within an allied/coalition C2 structure.

## **RISK AND RESIDUAL AUTHORITIES**

15. **Risk** is inherent in military operations. It is incumbent on commanders to avoid unnecessary risk to conserve lives and resources. The most efficient means to accomplish this is through effective risk management. Risk management should not inhibit a commander’s flexibility and initiative to perform assigned missions. While risk management does not remove risk entirely, it does allow a commander to control and minimize risk to an acceptable level.

16. **Operational risk management** is the process of identifying, evaluating and mitigating hazards and/or threats, the results of which are derived from probability and severity. It is the responsibility of designated commanders to constantly assess the operational risk inherent to air power activities. Processes such as mission acceptance and launch authority weigh the operational risk of any mission or task and ensure the appropriate authority provides approval while providing further opportunity for risk mitigation.

17. **Residual authorities** are those that remain with the applicable FG commander and are therefore retained outside the FE chain of command. For air operations, these are specified authorities retained by the Comd RCAF to manage risk inherent with air power operations. Residual authorities are based on a body of knowledge gained by the RCAF through experience in air operations and are codified into regulations and orders that cannot be waived by any commander other than the Comd RCAF, after a risk assessment is performed. Residual authorities are not intended to restrict air operations but, rather, to ensure that RCAF personnel at all levels follow sound practices that maximize flexibility, initiative and effectiveness while protecting personnel and equipment from unnecessary risk. There are five residual authorities:

- a. **Air doctrine.** RCAF air doctrine establishes officially sanctioned beliefs and principles that describe and guide the proper use of air power in military operations. Air doctrine is developed and promulgated under the authority of the Comd RCAF, who fulfils the role of RCAF Air Doctrine Authority.
- b. **Aircrew training and standards.** The Comd RCAF is responsible for establishing and maintaining collective training and standards of proficiency.



- c. **Flight safety.** The Comd RCAF is responsible for the Flight Safety Program (FSP), which is designed to enhance combat effectiveness by preventing accidental loss of air power resources. The FSP conducts independent investigation of matters concerning air safety.
- d. **Operational airworthiness.** The Comd 1 Canadian Air Division (1 Cdn Air Div) is the Operational Airworthiness Authority, responsible for the operational airworthiness programme to the Airworthiness Authority, the Comd RCAF. The airworthiness programme is based on the fundamental principles that airworthiness-related activities are completed to accepted standards, performed by authorized individuals, accomplished within accredited organizations and done using approved procedures.
- e. **Technical airworthiness.** The Director General Aerospace Equipment Program Management is the RCAF Technical Airworthiness Authority and is responsible for technical airworthiness, a standard of safety for an aeronautical product as it relates to product design, manufacture, maintenance and materiel support. The term applies collectively to those technical airworthiness aspects of the product's conformity with its approved type design, manufacture and maintenance standards as well as the product's operation within its design limits. The technical airworthiness programme is governed by Director Technical Airworthiness & Engineering Support (Materiel).

## SECTION 2 – COMMAND AND CONTROL IN JOINT OPERATIONS

### TYPES OF OPERATIONS

18. CAF operations are normally joint by nature but may be undertaken in a national, allied or coalition context. These are defined as follows:
- a. **Domestic operations** are those conducted on Canadian territory or approaches.<sup>13</sup>
  - b. **Expeditionary operations** refer to “any operation conducted away from the main operating base. Expeditionary operations may be conducted from a domestic, continental or international location.”<sup>14</sup>
  - c. **Single environment operations** are those undertaken by the forces of an individual environment (e.g., navy, army, air force or special operations force). Other countries, such as the United States, use the word “service” to define environment.
  - d. **Joint operations** are those “executed by a temporary grouping of forces from at least two components, in which the application of capabilities is coordinated to achieve a common objective.”<sup>15</sup> “Component” in this context represents the word “environment,” as described in the preceding subparagraph.
  - e. **National operations** are those involving elements of CAF only.

- f. **Multinational operations** describe operations “conducted by forces of two or more nations acting together.”<sup>16</sup> The term is synonymous with “combined operations.”
- g. **Allied operations** are those involving forces from member states of formal military agreements or treaties of which Canada is a member or signatory. Operations of this type are based on collaborative standing doctrine, agreements and practices. An example of an allied operation is one conducted in combination with the North Atlantic Treaty Organization (NATO).
- h. **Coalition operations** are those involving forces from states with which Canada is not in a formal military agreement or treaty. Operations are based on either ad hoc planning, agreements and practices or the agreements and practices of lead members. An example of a coalition operation is a reaction to a humanitarian or natural disaster where the international community organizes a response employing military forces.

### **JOINT TASK FORCE CONCEPT**

- 19. CAF operations are normally comprised of task forces from more than one component and therefore are **joint** in nature. Joint forces are organized under a joint task force concept to ensure effective and efficient C2 of all assigned forces.
- 20. **A task force** is a “temporary grouping of units, under one commander, formed for the purpose of carrying out a specific operation or mission.”<sup>17</sup>
- 21. **An air task force (ATF)** is “a temporary grouping of RCAF operational/tactical formations, squadrons, units or detachments formed for the purpose of carrying out a specific operation, mission or task.”<sup>18</sup>
- 22. **A joint task force (JTF)** is “a temporary grouping of elements from more than one component, under one commander, formed for the purpose of carrying out a specific operation or mission.”<sup>19</sup>
- 23. **A Canadian Armed Forces joint task force (CAF JTF)** may be established for domestic, continental or international joint operations.<sup>20</sup> Joint task force commanders (JTF Comds) are provided with adequate resources, staff and specified command authority over forces in the specified area of operations. Domestic joint operations are normally commanded by a standing regional JTF Comd.
- 24. **A multinational joint task force** is a JTF consisting of the forces of more than one country. The term is synonymous with a combined joint task force. During allied/coalition operations, a CAF JTF provides forces to be employed in concert with those of other participant countries within the multinational JTF. During allied/coalition operations, all CAF personnel and equipment remain under the command of a single officer called the Canadian national commander (CNC). The CNC also performs the role of CAF JTF Comd in the event of a national tasking that is separate from allied/coalition operations.

## COMMAND AND CONTROL METHODOLOGIES

25. The C2 methodology used for a joint operation will depend on the resources allocated to the operation, the degree of authority delegated to the JTF Comd, the nature of the operation and the situation.<sup>21</sup> The two basic C2 methodologies available to the JTF Comd are the component command method and the direct command method.

26. **Component command method** is employed when a JTF Comd exercises authority through component commanders (see Figure 1-1). This is the most commonly used C2 method. The JTF Comd issues broad operational directives to each of the component commanders, who then translate the directives into detailed plans and orders. Each component command has a separate headquarters (HQ). The JTF HQ and component HQs may be either collocated or in separate locations. The RCAF does not normally deploy an air component commander (ACC) or air operations centre (AOC) for domestic or expeditionary operations. An ATF Comd and an air task force headquarters (ATFHQ) are deployed to perform air component duties.

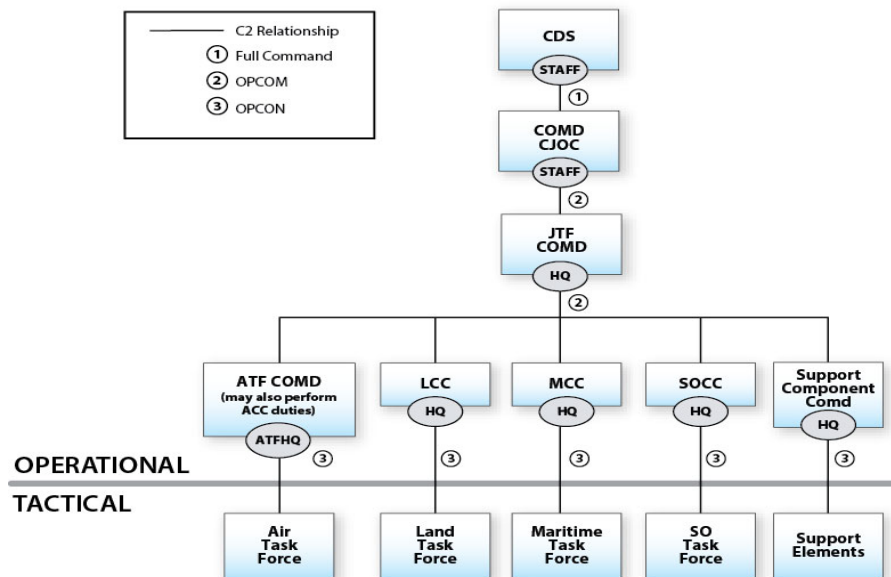


Figure 1-1. CAF joint task force employing the component command method

27. **Direct command method** is employed when a JTF Comd exercises command authority by issuing detailed orders directly to subordinate elements (see Figure 1-2). The direct method is an alternative method of command, normally used when size, complexity and time span of an operation are limited. In order to exercise direct command, a JTF Comd requires the staff and facilities that make it possible to manage all details required for the assumed span of control, including those unique to the efficient and effective integration of air power.

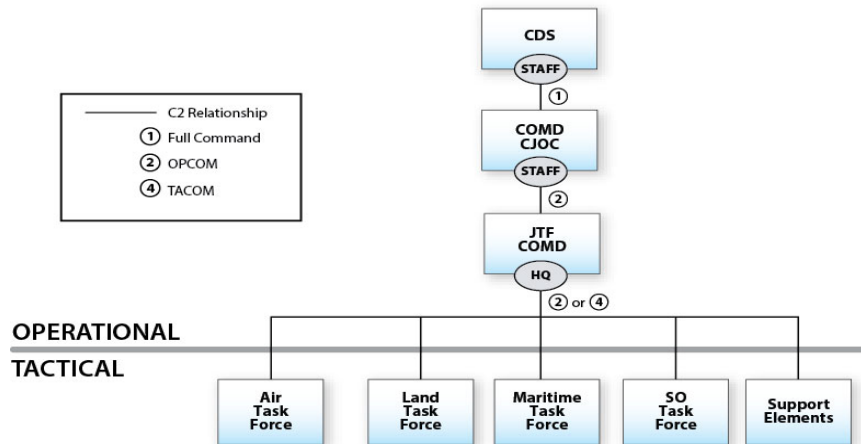


Figure 1-2. CAF joint task force employing the direct command method

## CENTRALIZED CONTROL AND DECENTRALIZED EXECUTION

28. **Centralized control and decentralized execution** is the fundamental tenet of air power as it relates to C2. Air forces are organized on sound C2 principles with the purpose of achieving operational effectiveness across the spectrum of conflict. Centralized control is required to ensure the most efficient use of limited air power, permitting air power activities to be refocused quickly to exploit fleeting opportunities, to respond to the changing demands and priorities of the operational situation, and to be concentrated at the critical place and time to achieve decisive results. Decentralized execution of air operations permits assigned activities and missions to be performed simultaneously by lower-level commanders at different locations across the theatre. Finding the balance between how much centralization of control is required and how much decentralization of execution should be permitted will depend upon several factors. This section outlines these considerations.

29. **The ACC** is the officer who serves as the focal point for the concept of centralized control and decentralized execution of air power in an operation.<sup>22</sup> The ACC must consider the nature of the operation, the requirement for flexibility, the number and types of air power resources available and who has the best situational awareness when determining how to best apply the tenet of centralized control and decentralized execution.

30. **Centralized control** gives coherence, guidance and organization to the employment of air power. It is best achieved through a single officer, the ACC, possessing a theatre-wide perspective and the authority to assign air power to best achieve objectives. The ACC is responsible for the control (to include planning, direction, prioritization, allocation, synchronization, integration and deconfliction) of all assigned air forces. It is through a measure of centralized control that the ACC can ensure air power is best exploited to meet the goals of the JTF commander.

31. **Decentralized execution** is the delegation of authority to subordinate commanders to execute assigned missions and is subject to the commander's intent, rules of engagement and other parameters established by higher command. Decentralized execution fosters initiative and

situational responsiveness and provides subordinate commanders with the authority to apply their expertise and understanding of local conditions to accomplish the mission within the guidelines and overall intent of the ACC. It is through a measure of decentralized execution that the ACC can ensure air power remains flexible in operations that are characterized by complexity, uncertainty and a rapidly changing tactical situation.

32. **Strategy-to-task** is the concept whereby the finite resources of assigned air power are linked to the aim of the overall strategy. The strategic approach to any operation must be at the operational level to determine what realistically can be achieved with the air force assigned to the operation. In the application of air power, it is of prime importance that the ACC clearly understands how to link the strategic aims of the operation to the missions and tasks that are given to assigned air power.

33. **Finding the balance.** An ACC must consider the characteristics of air power when deciding the degree to which control will be centralized or decentralized and the degree to which execution will be centralized or decentralized.

34. **Factors affecting the degree of centralization** must be considered first, as they might impose specific limitations on the ability to centralize or decentralize control. These factors include:

- a. **Reach.** This characteristic of air power means that because aircraft are capable of ranging widely within a given theatre during a single mission, they add flexibility to the application of air power. In order to optimize the employment of air forces, centralized control can permit the execution of missions that involve considerable distance from operating bases.
- b. **Speed.** A characteristic of air power, the high speed typical of most aircraft contributes to their ability to reach any point within a theatre or between theatres in a relatively short time. Centralization of control enhances the ability of commanders to exploit the speed of air forces by ensuring joint operations are properly coordinated.
- c. **Impermanence.** This characteristic of air power strongly affects the degree of centralization possible. Most aircraft cannot remain in a local area, committed to a local commander, for extended periods of time. They must return to bases to refuel and reload, which argues for centralization of their control. However, some aircraft types (notably rotary wing) can work effectively from dispersed forward locations, which allows for greater decentralization of the control.
- d. **Span of control.** This principle of command affects how many forces can be effectively grouped under the control of one commander. Commanders must carefully consider how many forces they can effectively control given their ability to communicate, plan, coordinate, deconflict and assess mission success from their established location. For example, when an ACC is supported by an AOC to perform these functions, the span of control for the ACC can be theatre-wide.

35. **A higher degree of centralized control** may be required in some operations. Factors that support centralization include:

- a. **Unity of command.** According to this principle of command, it is always desirable to achieve the maximum possible unity of effort through unity of command.
- b. **Concentration of force.** According to this principle of war, it is desirable to focus effort at decisive points, rather than scatter resources widely. This can be best facilitated by centralizing control.
- c. **Economy of effort.** This principle of war is a corollary to concentration of force. If there is to be concentration at decisive points, economy of effort must be practised elsewhere within the theatre.

36. **A lesser degree of centralized control** may be suitable in some operations. Factors that support decentralization include:

- a. **Freedom of action.** This principle of command makes a decided case against an overly centralized control structure. It is desirable to decentralize the execution of operations to the greatest extent possible in order to maximize flexibility and encourage initiative by tactical commanders.
- b. **Flexibility.** This principle of war tends to argue against centralization, as speed of response to local circumstances and fleeting opportunities can be facilitated by a wider delegation of authority to local commanders.
- c. **Mission command.** The CAF philosophy of mission command, which emphasizes that only the requisite amount of control should be imposed on subordinates, argues in general for a greater decentralization of execution.

37. Commanders must analyse the situation and then centralize or decentralize their control measures as appropriate to the circumstances (see Figure 1-3). Generally speaking, the principles of war, principles of command and the characteristics of air power reinforce the fundamental tenet of centralized control and decentralized execution. In the end, however, exercising too much centralized control can rob air power of its flexibility, limiting the initiative of those at the tactical level who are executing operations. Conversely, exercising too little centralized control can result in a failure to capitalize on the advantages of coordination and synchronization of air power in joint operations.

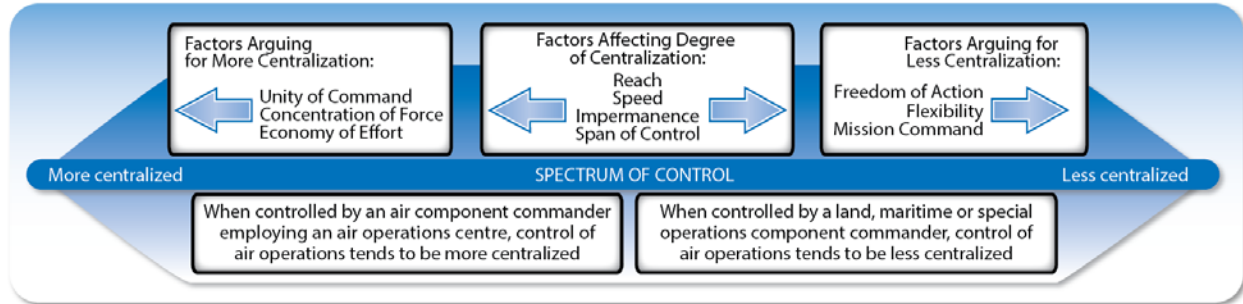


Figure 1-3. Spectrum of centralized control in air operations

### SECTION 3 – SUPPORTING COMMAND AND CONTROL: SUPPORT RELATIONSHIPS

38. While effective C2 processes demand that commanders be delegated sufficient authority to effectively lead assigned forces, joint/multinational operations often rely upon support relationships. Understanding the concept of support and how it enhances C2 is of critical importance to the delivery of air power in joint operations.

39. **Support** is “the action of a force, or portion thereof, which aids, protects, and complements, or sustains any other force.”<sup>23</sup> There are four lines of support:

- a. **First-line support** is “support capabilities that are organic or allocated to a unit.”<sup>24</sup>
- b. **Second-line support** is “support capabilities that are organic or allocated to a formation.”<sup>25</sup>
- c. **Third-line support** is “support capabilities provided to a military force within a theatre of operations or at installations established along the strategic lines of communication.”<sup>26</sup>
- d. **Fourth-line support** is “support capabilities provided by strategic-level resources. Strategic-level resources include national depots and industry.”<sup>27</sup>

40. **Support relationships.** A support relationship is established by a commander between subordinate commanders when one organization should aid, protect, complement or sustain another force. The designation of supporting relationships is important, as it conveys priorities to commanders and staffs that are planning or executing operations. The resulting command relationship is, by design, an unstructured and flexible arrangement. Supported/supporting commanders and their commands are defined as:

- a. **Supported command** is “a command that receives forces or other support from another command and has primary responsibility for all aspects of an assigned task.”<sup>28</sup>

- b. **Supported commander** is the commander “who has the primary responsibility for all aspects of an assigned military task and has the authority to give general direction for supporting efforts.”<sup>29</sup>
- c. **Supporting command** is “a command that provides forces or other support to another command.”<sup>30</sup> It should be noted that subordinate commands/commanders are not considered to be supporting the commands/commanders they are subordinate to.
- d. **Supporting commander** “provides a supported commander with forces, capabilities or other support and/or who develops a supporting plan.”<sup>31</sup> The supporting commander can perform this function regardless of rank in relation to the supported commander.

41. **Support responsibilities.** The common superior commander is responsible for ensuring that both the supported and supporting commanders understand the degree of authority that the supported commander is granted. The commander can establish supporting/supported command relationships during any phase of an operation to direct units to work together without having to transfer command authority or formally assign another command relationship. This relationship is further defined as follows:

- a. The **supported commander** should ensure that the supporting commanders understand the assistance required. It is the supported commander’s responsibility to ensure that intent and requirements are clearly articulated to supporting commanders and that they are consulted to help shape the plan.
- b. The **supporting commander** determines the forces, tactics, methods, procedures and communications required to provide this support, which is based on the consultation process with the supported commander and other supporting commanders.

## REACHBACK

42. **Reachback.** “The means by which a deployed force receives support from organizations external to the area of responsibility.”<sup>32</sup> During air power operations, reachback is embodied by a collaborative process where deployed personnel and organizations can call upon an AOC or HQ staff to provide a range of capabilities enabling the effective integration of air effects in a joint operation. Typically, reachback in an operation is by design, reducing duplication of effort and minimizing the RCAF’s deployed C2 footprint.

43. Reachback shares the same challenges of air power operations in general: it can be conducted at great distances between different theatres in vastly different time zones; it is often reliant upon secure communications, and it requires considerable coordination in order to be effective. It is, therefore, important that commanders at all levels clearly understand what reachback capabilities are to be provided, what resources are needed to support it and who will lead the process.



## MISSION AND TASK

44. **Mission.** In its simplest form, a mission is any “activity assigned to an individual, unit, [formation] or force.”<sup>33</sup> Missions are normally assigned via an air tasking order (ATO) or by a similar order to ensure that the mission has been planned and developed through a recognized process and is coordinated with other missions in a given time frame and geographical location.

45. **Task.** A task is defined as any “activity that contributes to the achievement of a mission.”<sup>34</sup> In air operations, a task can be assigned by commanders at any level and can be directed or implied.

## LINE AND STAFF

46. There is a fundamental distinction between the purpose of line and staff organizations and personnel in military operations. It is important to understand the differences between line and staff and how both contribute to the execution of air effects in joint operations.

47. **Line** refers to the formations, units, organizations and personnel whose primary purpose is to conduct air operations at any level—strategic, operational and tactical. Further:

- a. A line officer is defined as “an officer with command authority.”<sup>35</sup> Line officers are engaged in or directly supervising the actual conduct of air power in FE operations at the strategic, operational or tactical levels. Line officers also command formations, units and organizations whose primary purpose is to conduct FG activities. In practical terms, this means that any officer who exercises vested or delegated command is a line officer.
- b. Line personnel are those who are employed in formations, units and organizations whose primary purpose is to conduct and support air operations. Line personnel are always under the command of line officers.

48. **Staff** is “the military and civilian personnel assisting a commander in all functions.”<sup>36</sup> Personnel performing staff duties can participate in either FG activities or FE operations. Staff personnel are generally referred to as “the staff” and fill “staff positions.” Since only commanders may issue orders, staff personnel, regardless of rank, have no inherent authority over line officers, line personnel or staffs of subordinate formations, units or organizations. Although many processes are mediated and managed by staff personnel on a day-to-day basis, it is line officers at all levels who are ultimately responsible to ensure that a superior commander’s orders and intent, issued via the chain of command, are fulfilled.

49. It is imperative that the numerous administrative, logistic and technical reporting chains that exist during FG activities adhere to the operational chain of command during FE operations. At all times, personnel conducting air operations must respect the established chain of command or else run the risk of confusing the situation and degrading the RCAF’s ability to deliver air effects to accomplish operational goals.

**SUMMARY**

50. It is critically important to understand the principles, definitions and relationships associated with the C2 of air forces. Once personnel at all levels appreciate the concepts of command, control, support, mission and task, they can effectively exercise their roles and responsibilities within the organizational structure of the RCAF and CAF, leading to success in the employment of air power in the joint operational environment.

## CHAPTER 2

### COMMAND AND CONTROL OF THE RCAF

*Victorious warriors win first and then go to war, while defeated warriors go to war first and then seek to win.<sup>1</sup>*

– Sun Tzu

#### SECTION 1 – RCAF COMMAND AND CONTROL STRUCTURE DURING FORCE GENERATION

##### COMMAND AND CONTROL IN THE RCAF

1. The Commander (Comd) Royal Canadian Air Force (RCAF) exercises full command (FULLCOM) over the RCAF and is directly responsible to the Chief of the Defence Staff (CDS) for generating and sustaining a combat-capable, multipurpose air force to meet Canada's defence objectives. The Comd RCAF is also the Chief of the Air Force Staff and performs the role of advisor to the CDS on strategic RCAF issues. The Comd RCAF delegates FULLCOM to subordinate formation commanders and squadron (sqn) / unit commanding officers (COs) to perform force generation (FG).
2. Formation commanders and sqn/unit COs are delegated FULLCOM of personnel assigned to them. FULLCOM, exercised at the formation or sqn/unit level, permits commanders and COs to perform FG duties and responsibilities assigned to them.
3. **The leadership team.** Although the command and control (C2) process is normally focused on the commander, it is important to consider the importance that the senior non-commissioned member (NCM) of any RCAF organization plays in the delivery of air power. Dependent upon the situation, commanders delegate authority to senior NCMs to assist with developing courses of action and implementing decisions or change. In order to effectively perform their part in accomplishing the mission as part of the RCAF leadership team, the actions of senior NCMs must be grounded in their commander's direction and guidance. Commanders must, in turn, develop trust in the senior NCMs and afford them the latitude to help lead the organization, thereby ensuring the successful cohesiveness of the RCAF.

##### RCAF ORGANIZATIONAL STRUCTURE

4. In order to ensure unity of command, the RCAF has adopted a well-defined and logical organizational structure (see Figure 2-1). The names of various organizations reflect the distinct heritage of the RCAF.
  - a. **Royal Canadian Air Force (RCAF).** The environment of the Canadian Armed Forces (CAF) that provides relevant, responsive and effective air power to meet the defence challenges of today and into the future.<sup>2</sup>

- b. **Air division (air div).** An air division is an operational-level formation of air forces that conducts FG to ensure RCAF readiness. Normally, an air div is comprised of two or more wings.
- c. **Wing.** A wing is a tactical-level formation of air forces that conducts both FG and force employment (FE). A wing includes groupings of sqns, units, subunits and staffs that perform the air activities of command, air operations, operations support and mission support. A wing can either be established at a main operating base (MOB) or along functional lines with a headquarters (HQ) and dispersed units.
- d. **Air expeditionary wing (AEW).** An AEW is “a deployable, task-tailored, tactical-level force normally comprised of a command element, one or more air operations elements, an operations-support element, a mission-support element and a force-protection element.”<sup>3</sup> An AEW conducts FE.
- e. **Squadron/unit.** A sqn/unit is a tactical-level organization of air forces organized to conduct FG and FE. The RCAF organizes other units (schools, centres, establishments, etc.) to perform functions such as training, education and research. Whether located at an MOB, another base or while deployed, a sqn/unit normally requires the support of a wing in order to function fully. A sqn/unit consists of subunits, known as flights, which perform specific duties of the sqn/unit.
- f. **Flight (flt).** A flt is a tactical-level subunit of air forces that is organized for the conduct of FG and FE. A flt is normally a subunit of a sqn/unit and has a specific purpose such as operations, maintenance, standards, training or support.
- g. **Crew, section, team and others.** The smallest elements in the RCAF are individual crews, sections and teams (or similar name) that normally conduct air activities and operations. These elements are subunits of a flt.
- h. **Detachment.** A detachment is “a part of a unit separated from its main organization for duty elsewhere.”<sup>4</sup> The RCAF employs both *permanent* detachments that perform specialized activities at another base or installation and *temporary* detachments that normally deploy for limited periods of time. Detachments are further defined as performing either flying or non-flying duties.<sup>5</sup>

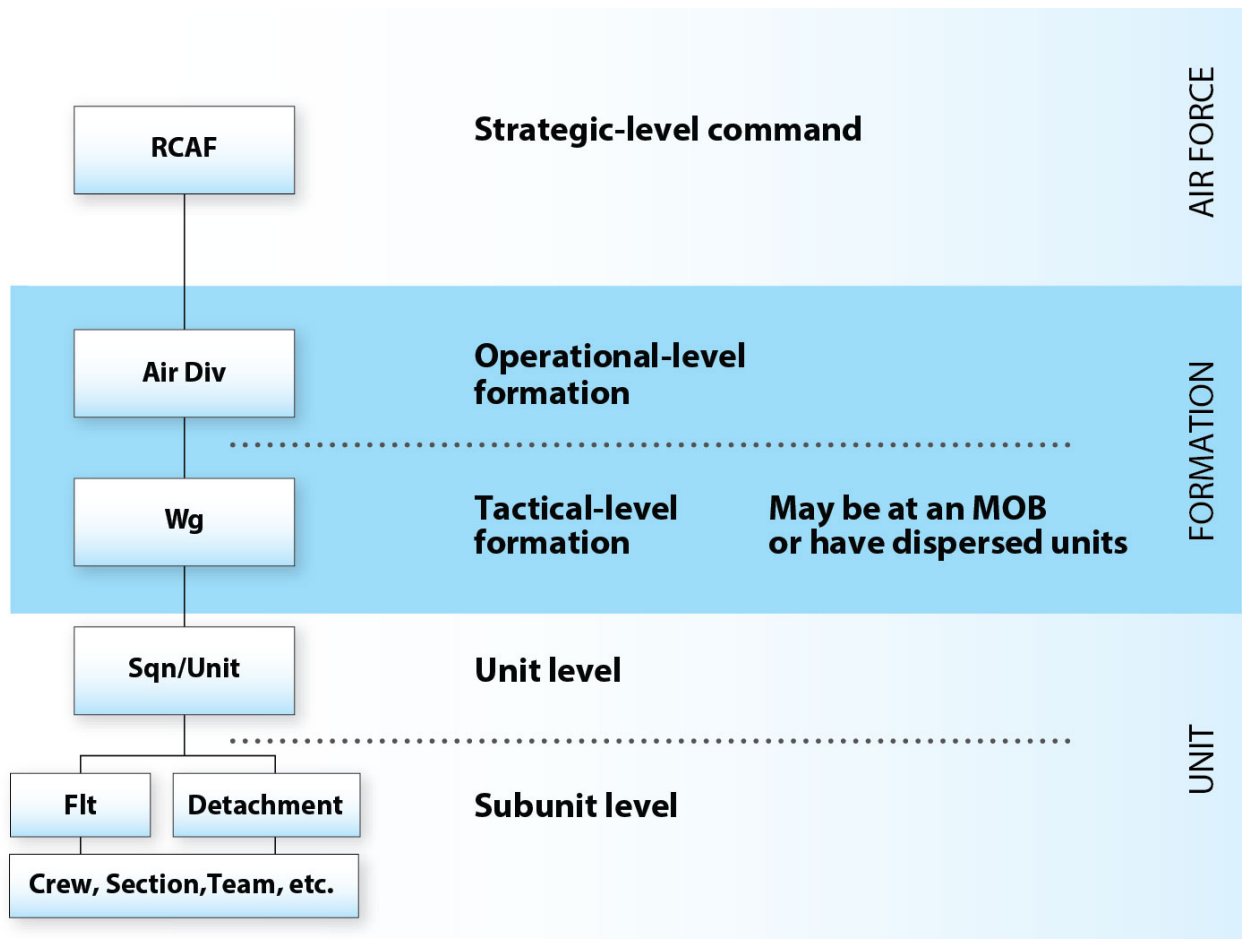


Figure 2-1. Hierarchical organization of the RCAF

## RCAF ORGANIZATION BY ACTIVITY

5. **Activities.** Air forces are organized by the activities they perform. RCAF formations and sqns/units define their activities in one of four distinct categories.

- a. **Command** is both an RCAF function and an activity. Command activities and the management of the C2 weapons system include directing, coordinating, monitoring and assessing all the other air functions in order to accomplish assigned missions.
- b. **Air operation** is “an activity, or series of activities, related to the planning and application of air power to achieve assigned objectives.”<sup>6</sup> Air operations normally involve missions in one or more roles including: offensive and defensive counter-air, counter sea, counter land, special air operations, strategic attack, influence operations and electronic warfare.<sup>7</sup>
- c. **Operations support** is “the provision of assistance that directly supports air operations.”<sup>8</sup> This includes, but is not necessarily limited to: communication and information systems; operations planning and coordination; management of the C2 weapons system; intelligence; airspace management and control services;

meteorology; aircraft maintenance; chemical, biological, radiological and nuclear (CBRN) detection; and explosive ordnance disposal / improvised explosive device disposal.

- d. **Force protection (FP)** is “all measures and means to minimize the vulnerability of personnel, facilities, equipment and operations to any threat and in all situations, to preserve freedom of action and the operational effectiveness of the force.”<sup>9</sup> This element of the air force support mechanism is an operations responsibility. At MOBs in Canada, the air force FP structure is configured to provide adequate security for air force assets, commensurate with the threat level, while ensuring maximum flexibility to provide the capability required for deployed operations. On deployed operations, the force protection element takes on a more robust and distinct role. Given the range of possible threat and hazard scenarios and possible deployed operating base limitations, deployed air forces may require unique FP capabilities that would be provided by existing air force assets, CAF assets, contractors, allied, coalition or host-nation support. Such complexity requires a force protection element with a C2 structure and dedicated resources.
- e. **Mission support** is an activity that provides “logistic, technical and administrative support to [air] operations.”<sup>10</sup> This includes, but is not necessarily limited to: construction engineering; crash response, firefighting and rescue; electrical and mechanical engineering; finance services; food services; human resources; supply; and transport.

## **SECTION 2 – RCAF COMMAND AND CONTROL STRUCTURE DURING FORCE EMPLOYMENT**

6. Critical to the success of any FE operation is the understanding of both the chain of command and the function of organizations at various levels. It is commanders who exercise the C2 of complex air activities, effectively integrating air effects into joint operations.

### **RCAF THEATRE AIR CONTROL SYSTEM**

7. RCAF operations are controlled through an overarching theatre air control system (TACS). In North Atlantic Treaty Organization (NATO) doctrine, this system is known as the air command and control system. The RCAF TACS is centred on the combined air operations centre (CAOC) and includes the organizations, units, personnel, equipment and procedures necessary to plan, direct and control air operations as well as to coordinate air operations with other components in the joint environment. The RCAF TACS includes the following elements of the air C2 chain that provides operational and tactical C2 of forces executing air power missions.

- a. **CAOC** is the principal centre from which air operations are directed, monitored, controlled and coordinated with the other components. It is structured to operate as a fully integrated facility and includes the personnel and equipment necessary to accomplish the planning, directing, controlling and coordinating of theatre-wide air operations. CAOC provides the air component commander (ACC) with the situational awareness required to execute successful air operations.<sup>11</sup> Below CAOC

are elements of the air C2 chain that provide tactical control of forces executing air missions.

- b. **Air component coordination element (ACCE).** An ACCE is a scalable planning and coordination team assigned by the RCAF joint force air component commander (JFACC) to support various operational-level commanders. An ACCE is responsible to conduct operational-level planning and coordination to facilitate the integration of air effects into joint operations. Whenever possible, an ACCE will leverage the capabilities of the CAOC by employing reachback. Deploying an ACCE is an option when the CAF JFACC is physically separated from a joint task force (JTF) HQ. An ACCE is normally employed at the following locations:
- (1) **Canadian Joint Operations Command (CJOC) HQ.** Normally, a standing ACCE is permanently located at CJOC HQ.
  - (2) **Regional joint task force (RJTF) HQ.** Normally, a standing ACCE is permanently located at each RJTF HQ.
  - (3) **JTF HQ.** When a JTF Comd, other than an RJTF Comd, is designated to command a domestic operation.
- c. **Air task force headquarters (ATFHQ)** is a scalable air staff (A staff) that performs planning, coordinating and administrative functions on behalf of the air task force commander (ATF Comd). An ATFHQ consists of experts from various disciplines functioning as one entity to ensure the ATF Comd's direction and guidance is carried out, all the while providing situational awareness and options for courses of action. As a unit, the A staff is structured in a similar fashion to the traditional continental staff system, possessing a core staff (A1–A9) whose activities are coordinated and synchronized by the Chief of Staff (COS). Core A staff positions include (but are not limited to): A1 (personnel), A2 (intelligence), A3 (operations), A4 (logistics, construction engineering and maintenance), A5 (plans), A6 (signals [communications and information technology]), A7 (training and lessons learned), A8 (finance) and A9 (civil-military cooperation). The ATF Comd normally has access to advisors for force protection, health-support services, legal issues, flight safety, policy, gender issues, chaplaincy as well as access to a provost marshal. Portions of the ATFHQ that are detached at other HQs are the air task force coordination element (ATFCE) and liaison officers (LOs). For more on the ATFHQ and ATFCE structure, see Figure 2-2.

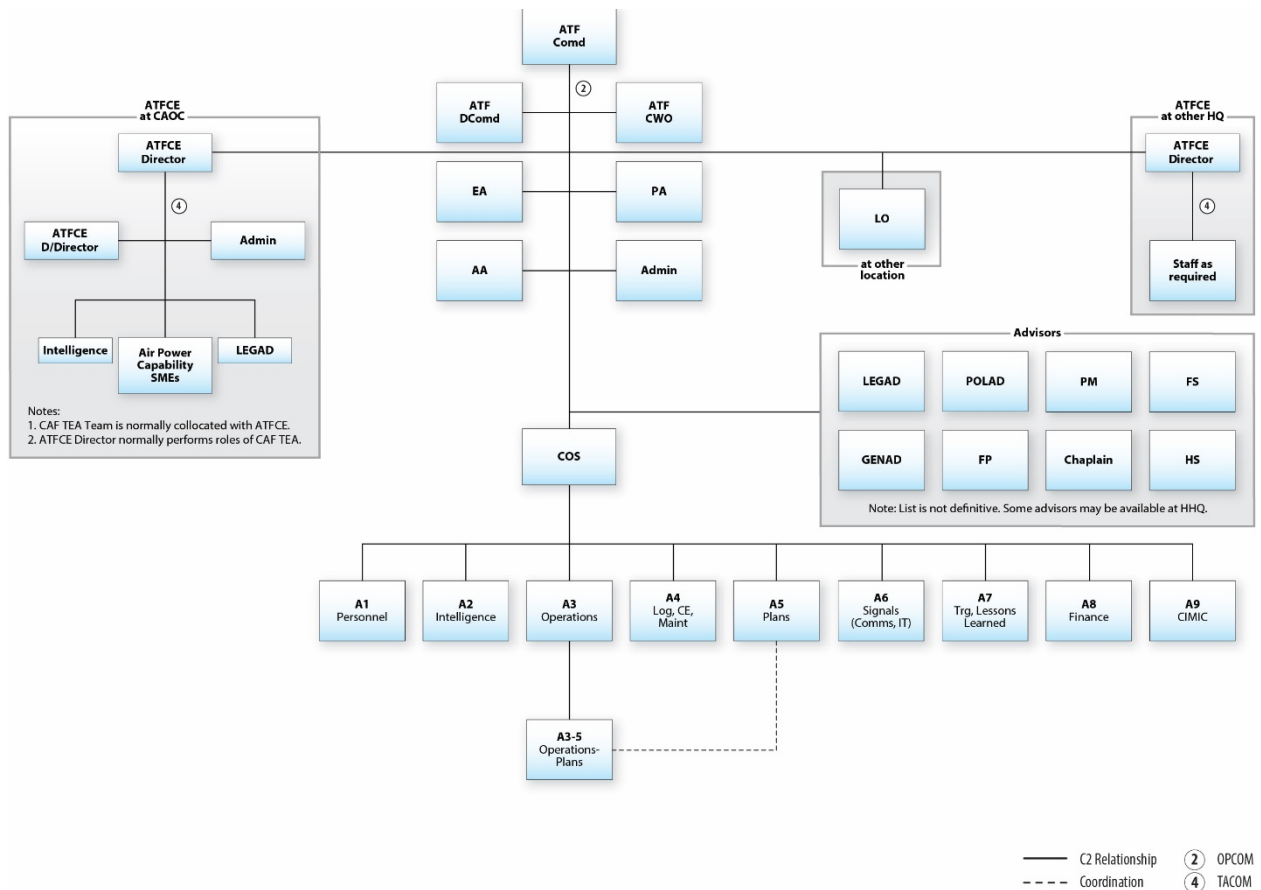


Figure 2-2. ATFHQ and ATFCE structure

- d. **ATFCE** is a scalable team that performs planning, coordinating and liaison functions at an allied/coalition CAOC (and other HQs as required) on behalf of the ATF Comd. An ATFCE is led by an ATFCE director who is responsible to ensure RCAF air power is properly employed by the allied/coalition ACC and to monitor and assess the effectiveness of ATF contributions. The ATFCE monitors and performs delegated mission acceptance on behalf of the ATF Comd within coalition CAOC, and the same coordinating function could be required within other component commands. When CAF employs a target engagement authority (TEA) team at an allied/coalition CAOC, the TEA team is normally part of the ATFCE.
- e. **Control and reporting centre (CRC)** is a ground-based, integrated C2 sqn/unit that may be static, mobile or deployable. Subordinate to the CAOC, the CRC is responsible for the decentralized execution of all defensive-air, offensive-air, and airspace-management activities within an assigned area. This is accomplished through surveillance, identification, weapons control, positive and procedural airspace control as well as data-link management. The CRC produces a recognized air picture (RAP) from multiple sensors that contributes to the overall common operating picture. A CRC may delegate control, surveillance and battle management to a subordinate radar unit capable of better interoperability due to superior radar and radio coverage. Canadian Air Defence Sector (CADS) is the



primary RCAF CRC. Limited, mobile CRC capability is provided by the RCAF's mobile radar squadrons.

- f. **Control and reporting element (CRE)** is a radar sqn/unit subordinate to a CRC that contributes to the RAP through augmented surveillance, identification and data-link management. A CRE may assume any of the duties normally assigned to a CRC.
- g. **Air support operations centre (ASOC)** is the air liaison element collocated with the senior fielded land formation (usually corps or division). ASOC coordinates assigned missions with the CAOC and subordinate tactical air control parties (TACPs) within its assigned area of control. The ACC can delegate limited operational control (OPCON) of assigned forces to the ASOC director so that air tasking order missions can be tactically retasked as required to meet land force requirements in a fluid battle situation.
- h. **Wing operations centre (WOC)** performs continuous coordination between the CAOC, wing and subordinate squadrons and verifies the feasibility of CAOC-assigned missions and tasks. The WOC monitors mission progress, ensures mission result reporting and provides continuous near real-time status information to the CAOC.
- i. **Squadron operations centre** performs continuous coordination with the WOC and is responsible for the preparation of assigned missions and tasks, their timely execution as well as the reporting of mission results through the WOC to the CAOC.
- j. **Combat operations centre (COC)** performs the role of C2 link between the CRC and Alert Force (AF) Comd or detachment commander (DETCO) for North American Aerospace Defence Command (NORAD) operations. The COC provides the CRC with continuous reporting and status of NORAD-assigned resources while providing the AF Comd / DETCO with situational awareness updates via secure connectivity. The COC represents a vital link in the C2 chain between the CAF JFACC and NORAD-assigned aircraft captains.
- k. **Tactical air control party** is the principal liaison and control element aligned with land force manoeuvre units from battalion to corps. The primary mission of a TACP is to advise the respective ground commanders on the capabilities and limitations of air power and to assist the ground commander in planning, requesting, coordinating and controlling air effects. The TACP is designed to leverage the maximum combined effect of air power while at the same time minimizing any restriction to the freedom of action of the commander's organic fire-support assets.

- l. **Forward air controller, or joint terminal attack controller**, is “a qualified individual who, from a forward position on the ground or in the air, directs the action of combat aircraft engaged in close air support of land forces.”<sup>12</sup>
- m. **Non-national elements** may be incorporated into the RCAF TACS to augment its capabilities. These may include allied elements such as the airborne warning control system (AWACS) aircraft, Joint Surveillance and Target Attack Radar System (JSTARS) aircraft or ground-based air and munitions defence (GBAD) systems.

## **C2 ROLES AND RESPONSIBILITIES DURING FORCE EMPLOYMENT OPERATIONS**

8. CAF joint and RCAF commanders at all levels have the inherent responsibility to effectively lead the forces assigned to them and to successfully accomplish their missions. Understanding the roles and responsibilities of operational- and tactical-level commanders and how they integrate, helps to define C2 responsibilities during FE.

9. **FE Comd.** The FE Comd is the designated operational-level commander who organizes assigned forces to best accomplish the mission. In Canada there are three FE commanders: Commander CJOC; Commander Canadian Special Operations Forces Command (CANSOFCOM) and the Commander Canadian NORAD Region (CANR). The FE Comd normally exercises operational command (OPCOM) of assigned forces. OPCOM or OPCON can then be further delegated to an RJTF/JTF Comd for a specific operation. The RCAF’s standing ACC, the CAF JFACC, is the designated commander responsible for making recommendations to the FE Comd on the proper employment of air power and on the C2 of all assigned, attached and made-available air forces. The CAF JFACC employs a standing ACCE director, supported by an ACCE, to facilitate operational-level planning and coordination with the Comd CJOC.

10. **RJTF/JTF Comd** is the operational-level commander who defines objectives, missions and tasks as well as provides guidance and a concept of operations for a specific operation. The RJTF/JTF Comd is responsible for successfully conducting an operation. The RJTF/JTF Comd normally exercises either OPCOM or OPCON of assigned forces, as delegated from the Comd CJOC. Further:

- a. The CAF JFACC normally assumes all the roles and responsibilities of the ACC for domestic operations and supports the RJTF/JTF Comd.
- b. The CAF JFACC employs a standing ACCE at the RJTF HQ to facilitate operational-level planning and coordination with the RJTF Comd for domestic operations.
- c. During domestic operations, the CAF JFACC deploys an ACCE to the JTF HQ to facilitate operational-level planning and coordination with the JTF.

11. **CAF JFACC.** As illustrated in Figure 2-3, the CAF JFACC is CAF’s standing ACC and fulfils three important roles, integrating air effects into joint, multinational operations:

- a. **JFACC to the FE Comd.** On a day-to-day basis, the CAF JFACC is the designated commander responsible for making recommendations to the FE Comd on the proper employment and C2 of all assigned, attached and made-available air forces. To accomplish these responsibilities, the CAF JFACC employs a standing ACCE at CJOC HQ to facilitate operational-level coordination and planning with Comds CJOC and CANSOFCOM.
- b. **JFACC to an RJTF/JTF Comd.** When assigned to an operation, the CAF JFACC performs all ACC roles. The CAF JFACC is responsible for all aspects of conducting the air campaign; conducting joint and component planning; tasking; executing and overseeing joint air power operations; and assessing the effectiveness of their air effects. In order to accomplish these responsibilities, the CAF JFACC normally exercises OPCOM of assigned, attached and made-available air forces. The CAF JFACC is also responsible to perform the roles of airspace control authority (responsible for coordinating all military and civilian air activities within a given operations area) and air defence commander (responsible for protecting the joint force from attack). To accomplish these responsibilities, the CAF JFACC employs the CAOC.
- c. **CANR Comd.** The CAF JFACC is also the CANR Comd and is accountable to the Comd NORAD to exercise C2 of all air forces assigned, attached and made available to the NORAD mission in CANR. To accomplish these responsibilities, the CAF JFACC employs the CAOC.

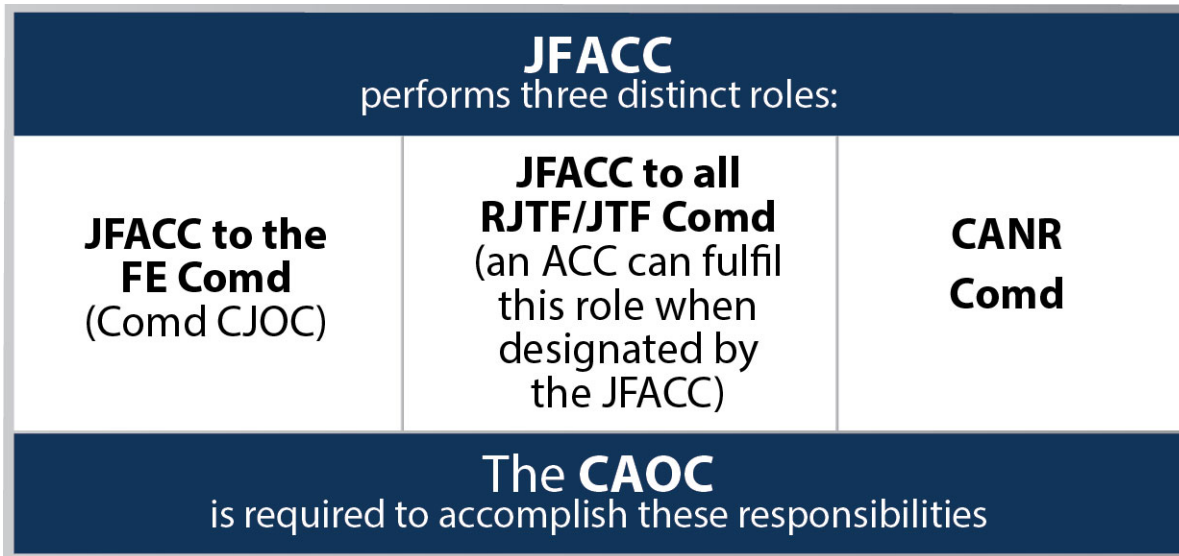


Figure 2-3. The CAF JFACC: CAF’s standing air component commander

12. **ACCE director.** An ACCE is led by an ACCE director, whose role is to “work forward” by representing the JFACC throughout the planning and execution of joint operations at the FE Comd / RJTF / JTF HQ. The ACCE director is normally under OPCOM of the JFACC and is normally delegated authority to recommend courses of action and to ensure that assigned RCAF air power is employed effectively in accordance with CAF JFACC guidance. The CAF JFACC

provides the ACCE director with specific guidance, clear expectations and the limits of their responsibilities. When deemed necessary to ensure timely tasking of assigned forces, the CAF JFACC may delegate OPCON over assigned forces to an ACCE director.

13. **ATF Comd.** An operational- or tactical-level commander, the ATF Comd normally exercises OPCOM or tactical command (TACOM) of an ATF. The Commander 1 Canadian Air Division designates an RCAF officer to perform the role of ATF Comd, who is responsible to the CAF JFACC / CAF JTF Comd to ensure all operational and administrative issues pertaining to the ATF are dealt with in a manner that supports the goals of the joint force commander. Where applicable, the duties of ATF Comd may be performed by a commander performing another role, such as ACCE director, wing/AEW Comd or DETCO. An ATF Comd employs an ATFHQ and an ATFCE when required (see Table 2-1).

Appointment	C2 Authority	Supporting Personnel	Liaison/Coordination	Focus
JTF Comd	OPCOM	JTF Staff	<ul style="list-style-type: none"> <li>Coordinates broadly theatre-wide</li> <li>Receives ACCE + Director (if one assigned)</li> </ul>	<ul style="list-style-type: none"> <li>Commands the joint force</li> <li>Operational planning of joint effects</li> </ul>
JFACC or ACC	OPCOM or OPCON (as delegated)	CAOC/AOC, A staff	<ul style="list-style-type: none"> <li>Deploys ACCE + Director</li> <li>Receives LOs</li> </ul>	<ul style="list-style-type: none"> <li>Commands air component</li> <li>Operational-level integration of air effects into joint warfare</li> <li>Assigns missions and tasks</li> </ul>
ACCE Director	OPCON (as delegated)	ACCE and/or reachback to CAOC/A staff	<ul style="list-style-type: none"> <li>Coordinates on behalf of the JFACC/ACC</li> </ul>	<ul style="list-style-type: none"> <li>Operational-level integration of air effects into joint warfare in a defined theatre</li> </ul>
ATF Comd	OPCOM or TACOM (as delegated)	ATFHQ	<ul style="list-style-type: none"> <li>Coordinates between JTF Comd and ATF elements</li> </ul>	<ul style="list-style-type: none"> <li>Commands the ATF</li> <li>Coordinates all ATF issues</li> </ul>
W Comd / AEW Comd / DETCO	TACOM	WOC	<ul style="list-style-type: none"> <li>Deploys/receives LO</li> </ul>	<ul style="list-style-type: none"> <li>Commands assigned forces</li> <li>Tactical-level planning and execution of missions and tasks</li> </ul>
Unit Commanding Officer / DETCO	TACOM	Unit Personnel	<ul style="list-style-type: none"> <li>Deploys/receives LO</li> </ul>	<ul style="list-style-type: none"> <li>Commands unit/detachment</li> <li>Tactical-level planning and execution of assigned missions and tasks</li> </ul>
TACON Unit Commanding Officer	TACON	Unit Personnel	<ul style="list-style-type: none"> <li>Deploys/receives LO</li> </ul>	<ul style="list-style-type: none"> <li>Conducts tactical-level warfare</li> <li>Controls assigned forces</li> <li>Coordinates the operational environment</li> </ul>

Table 2-1. CAF air forces C2 structure in joint force employment

14. **ATFCE.** An ATFCE is led by a director, whose role is to “work forward” by representing the ATF Comd throughout the planning, coordinating and liaison functions at an allied/coalition CAOC and other HQs as required. As a general rule, the ATFCE should be present wherever mission acceptance is being conducted. An ATFCE director is normally under the command of the ATF Comd. The ATFCE director is responsible to ensure RCAF air power is properly employed by the alliance/coalition and to monitor and assess the effectiveness of ATF contributions. When CAF employs a TEA team at an allied/coalition CAOC, the TEA team is normally part of the ATFCE and under the ATFCE director’s command.

15. **Wing commander (W Comd).** A tactical-level formation commander, the W Comd normally exercises TACOM over assigned forces, ensuring tasks are completed as required to support assigned missions. The W Comd is normally assigned forces to enable the execution of assigned missions and tasks. The W Comd is responsible for coordination between assigned forces and the CAOC and adjusts missions and tasks in coordination with the CAOC when necessary. To accomplish these responsibilities, the W Comd employs a WOC.

16. **AEW Comd.** When deployed on an expeditionary operation, a wing is commanded by an AEW Comd. A tactical-level formation commander, the AEW Comd is normally under OPCOM of the ATF Comd and is assigned forces to enable the execution of assigned missions and tasks. An AEW Comd normally exercises TACOM over assigned forces, assigning tasks as required to support assigned missions. The AEW Comd is responsible for coordination between assigned forces and the CAOC and adjusts assigned missions and tasks in coordination with the CAOC when necessary. To accomplish these responsibilities, the AEW Comd employs a WOC. In the CANR/ NORAD construct, CADS Comd through the CADS operations centre is responsible for the direction and employment of declared forces, and adjusts assigned missions and tasks in coordination with the CAOC when necessary.

17. **Sqn/unit CO.** A tactical-level commander, a sqn/unit CO commands assigned forces as well as plans and executes assigned missions and tasks. During FE, the sqn/unit CO exercises TACOM of assigned forces and is normally under the TACOM of a W Comd / AEW Comd.

18. **Flt comd.** A tactical-level commander subordinate to the sqn/unit CO, the flt comd commands assigned forces as well as plans and executes assigned missions and tasks. The authority and responsibility exercised by flt comds is delegated by the sqn/unit CO.

19. **Crew, section, team, etc., commander.** A tactical-level commander subordinate to the sqn/unit CO, these commanders command assigned forces and plan and execute assigned missions and tasks. The authority and responsibility exercised by these commanders is delegated by the sqn/unit CO.

20. **DETCO.** “A tactical-level commander who commands a detachment,”<sup>13</sup> a DETCO normally exercises TACOM over assigned forces. The primary responsibility of a DETCO is to execute assigned missions and tasks. Normally, a DETCO is under the OPCOM of the CAF JFACC or an ATF Comd. Normally, a DETCO is under the TACOM of a W Comd or AEW Comd.

21. **Liaison officer.** An LO is a tactical-level officer assigned to a unit or headquarters for the purpose of coordinating and advising on tactical matters. When approved by the W Comd or AEW Comd, a sqn/unit CO may deploy an LO to represent them at a tactical- or operational-level unit or HQ to facilitate the integration of air effects. While deployed, the LO normally remains under TACOM of the sqn/unit CO and under tactical control (TACON) of the CO of the unit or HQ to which the LO is deployed.

22. **Considerations.** The following factors must be carefully considered when determining the C2 construct of any operation.

- a. **Air power requirements of the FE Comd, RJTF/JTF Comd.** At all times, it is the responsibility of the JFACC to recommend the most appropriate organization of air forces that meets the supported commander's priorities by optimizing air effects, while respecting the tenets of air power and the principles of war.
- b. **Span of control.** The ability to effectively manage the actions of subordinates is based on the number of subordinates, the number of activities, the range of weapon systems and the size/complexity of the area of responsibility.
- c. **Expertise.** Expert personnel, C2 equipment and proven C2 processes are necessary to plan and prosecute the air campaign. This factor includes the requirement to deploy the air power expertise forward.
- d. **Complexity and scope of operation.** Balance must be achieved between the overall campaign focus and the directing of air operations, based on the complexity and the scope of joint air power operations.
- e. **Authority, responsibility, accountability and C2 relationships.** Commanders must have clearly articulated assigned authorities, responsibilities and accountabilities. Clarity is required at all levels of command and must be enunciated by all commanders in guidance to subordinate commanders. Ultimately, the CAF JFACC remains the authority to recommend the best application of air power with consideration for mission type, joint operations and unique C2 relationships that might be required.
- f. **Ability to reachback.** Depending upon the scale of an operation, it may be necessary for the CAOC to provide support to an ATF Comd or ACCE director. Reachback leverages the capabilities of the CAOC to support deployed C2 elements. A deployed ATF Comd or ACCE director employs the concept of reachback when they rely upon the CAOC to provide for aspects of the conduct of the air campaign. Reachback support can include conducting joint and component planning; tasking, executing and overseeing joint air power operations; and assessing the effectiveness of operations and effects.
- g. **Duration.** The length of the operations is an important consideration when one considers the sustainment and FG resources that will be required.

This Page Intentionally Blank



## CHAPTER 3

# RCAF FORCE EMPLOYMENT COMMAND AND CONTROL PROCESSES

*At the very heart of warfare lies doctrine.<sup>1</sup>*

– General Curtis LeMay

### SECTION 1 – OPERATIONAL-LEVEL C2 PROCESSES

#### INTRODUCTION

1. The Royal Canadian Air Force (RCAF) must be able to operate at both the tactical and operational levels for domestic / North American Aerospace Defence Command (NORAD) / Canadian Armed Forces (CAF) joint task force (JTF) operations while simultaneously deploying tactical-level air task forces (ATFs) that can understand and interface with the operational level of multinational allied/coalition operations. In order to exercise highly effective RCAF command and control (C2) solutions that joint force commanders (JFCs) can trust, the RCAF has developed a deployment-ready C2 process that can adapt to any operation. This chapter presents six basic C2 models that can be applied to any domestic, deployed CAF or allied/coalition operation. Like any plan developed for military use, these models represent a starting point for planners and commanders at all levels and can be adapted to suit the unique nature of each operation.

#### RCAF C2 PRINCIPLES

2. Before any C2 model is chosen as the basic plan to organize military forces for an operation, principles defining how the RCAF operates must be established. Rather than impose limitations on air power participation, these principles must be seen as necessary to ensure that the RCAF can deliver air effects globally while respecting the tenets of air power and leveraging its characteristics. No matter what C2 model is selected and how C2 relationships and authorities are defined for an operation, the following principles will apply:

- a. **Best practices.** The RCAF will operate within C2 structures that are based on CAF joint and allied joint doctrine which are recognized as the best practices that have evolved over time and been tested in actual operations. Untested, ad hoc C2 structures are to be avoided.
- b. **Commander (Comd) RCAF retains residual authorities.** The Comd RCAF retains residual authorities at all times and cannot be overruled by any commander at any level, except the Chief of the Defence Staff (CDS).
- c. **Comd RCAF declares air forces operationally ready for deployment** and transfers operational command (OPCOM) to the Comd Canadian Joint Operations Command (CJOC) or Comd Canadian Special Operations Forces Command (CANSOFCOM) via a transfer of command authority.

- d. **Centralized control and decentralized execution.** C2 relationships will be established that optimize air power while respecting the key air power tenet of centralized control and decentralized execution. As such, the CAF joint force air component commander (JFACC) is the authority responsible for all aspects of the conduct of air operations, and the Combined Aerospace Operations Centre (CAOC) is the focal point for planning, executing and assessing air power operations in joint operations. The CAF JFACC (and an allied/coalition air component commander [ACC]) focuses the effort of air power through commanders at all levels.
- e. **CAF JFACC as advisor.** The CAF JFACC is the designated officer that is responsible for advising Comd CJOC, Comd CANSOFCOM and regional joint task force (RJTF) / JTF comds on the proper employment and C2 of all assigned, attached and made-available air power. The CAF JFACC can recommend that certain C2 authority over air forces be delegated to land, maritime and special operations forces component commanders when appropriate.
- f. **OPCOM of RCAF air forces.** For domestic and global operations, the Comd CJOC normally delegates OPCOM of RCAF air forces to the CAF JFACC<sup>2</sup> in order to best fulfil the goals of the Comd CJOC or the supported RJTF/JTF Comd(s). For expeditionary operations involving a CAF JTF, the CAF JFACC normally recommends that OPCOM of an RCAF ATF be delegated to an ATF Comd.
- g. **Tactical command (TACOM) of RCAF air forces.** TACOM of RCAF air forces will normally be delegated to an RCAF ATF Comd, wing commander (W Comd), air expeditionary wing (AEW) Comd, squadron/unit commanding officer (CO) or detachment commander (DETCO) as applicable. This authority permits a designated commander/CO to execute assigned missions and tasks and to ensure the appropriate level of operations support and mission support is provided to assigned air forces.
- h. **Integration.** Special attention will be paid to how the RCAF integrates with the land, maritime and special operations forces that comprise the RJTF/JTF. This integration will be defined by RCAF tactical-level doctrine, known as tactics, techniques and procedures.
- i. **Operational chain of command has priority.** RCAF personnel will follow the operational chain of command while engaged in force employment. While employing administrative, technical, staff and specialist reporting chains as well as coordination processes is often necessary to ensure efficient air power operations, the operational chain of command has priority and constitutes the final authority.

## THE CAF JFACC

3. **CAF JFACC responsibilities.** In addition to the specific duties detailed in Chapter 2 of this manual, the CAF JFACC controls the overall RCAF C2 process when conducting domestic, expeditionary, multinational and joint operations. The Comd CJOC normally delegates OPCOM

over assigned air forces to the CAF JFACC. The CAF JFACC executes the following responsibilities through the CAOC, including but not limited to:

- a. planning air operations;
- b. apportionment recommendation for the joint air effort, in consultation with other component commanders;
- c. providing centralized direction for allocating and tasking assigned air forces;
- d. providing control, oversight and guidance during the execution of joint and multinational air operations;
- e. coordinating and integrating joint air operations with the operations of other component commanders and forces;
- f. assessing results of joint and multinational air operations;
- g. as air defence authority, the CAF JFACC is responsible for the overall air defence of domestic airspace and coordinates with other environments and components to develop a cohesive plan for air defence;
- h. as airspace control authority (ACA), the CAF JFACC has overall responsibility for security and control of domestic airspace. The ACA coordinates, develops and issues the airspace control plan and airspace control orders (ACOs), which provide guidance and procedures for the use of airspace and control of airspace activities; and
- i. functioning as supported and supporting commander as directed.

#### **RCAF COMBINED AEROSPACE OPERATIONS CENTRE**

4. **RCAF CAOC mission.** The RCAF CAOC provides operational-level C2 of air operations and is the focal point for planning, directing, coordinating, monitoring and assessing air operations in order to meet the goals of the CAF JFACC. Based on the tenet of centralized control and decentralized execution, the RCAF CAOC enables the CAF JFACC to exercise operational-level C2 of air forces. Due to the continuous nature of air operations, the RCAF CAOC maintains a high-readiness state. Although the RCAF CAOC is a self-supporting and fully integrated organization, it requires augmentation during deliberate and contingency operations and exercises. The RCAF CAOC coordinates closely with numerous C2 organizations, including operational- and tactical-level headquarters (HQs) and operations centres.

5. **RCAF CAOC and the theatre air control system (TACS).** The RCAF CAOC employs all required elements of the TACS to execute an operation. RCAF CAOC divisions perform directing, planning, coordination, monitoring and assessment actions. All personnel within the TACS must understand the C2 process for both the operational and tactical levels of command

for an operation so they can contribute to its success. As the most senior element of the TACS, the RCAF CAOC must provide guidance and direction on all facets of air power operations.

6. **Specific RCAF CAOC functions.** The RCAF CAOC accomplishes successful air operations by performing the following main functions while directing the TACS:
  - a. **Develop strategy and planning documents** that integrate air operations to meet CAF JFACC objectives and guidance.
  - b. **Task and execute day-to-day air operations**, provide rapid reaction and positive control as well as coordinate and deconflict weapons employment and integrate the overall effort.
  - c. **Receive, assemble, analyse, filter and disseminate** all intelligence, surveillance and reconnaissance (ISR) information to support air planning, execution and assessment.
  - d. **Issue airspace control procedures** and coordinate airspace control activities for the ACA role of the CAF JFACC.
  - e. **Provide overall direction of air defence**, including NORAD operations within the Canadian NORAD Region (CANR) area of operations.
  - f. **Plan, task and execute the RCAF ISR mission** as part of the overall JTF Comd's plan.
  - g. **Conduct operational- and tactical-level assessment** to determine mission and overall effectiveness as required by the JFC to support the theatre assessment.
  - h. **Produce and disseminate** the air tasking order (ATO), ACO, special instructions (SPINS), operational tasking data link (OPTASK LINK) and provide guidance for maintaining the common operating picture.
  - i. **Plan and task air mobility operations** to support the goals of the JTF Comd.
7. **RCAF CAOC organization.** Depending upon the size and complexity of the operation, the CAOC normally includes the following key personnel and divisions:
  - a. **The RCAF CAOC Director** commands RCAF CAOC personnel and directs activities on behalf of the CAF JFACC.
  - b. **Strategy Division (SRD).** The SRD concentrates on both long-range and near-term planning of air operations to achieve theatre objectives by developing, refining, disseminating and assessing the CAF JFACC strategy guidance. SRD activities are normally reflected in the air operations directive and other operational orders such as the air attack defence plan, air combat plan, joint air operations plan and SPINS.

- c. **Combat Plans Division (CPD).** The CPD has the responsibility for near-term RCAF CAOC planning. The CPD also produces the documents required to effect the air campaign at the tactical level (including the master air operations plan [MAOP],<sup>3</sup> ATO, ACO, SPINS, target matrix and the ISR synchronization matrix) and provides inputs to the OPTASK LINK message.
- d. **Combat Operations Division (COD).** The COD oversees the execution of the current ATO and ACO, normally in the 24-hour execution period defined in the ATO. On a day-to-day basis, the COD monitors air activity and coordinates with the TACS to ensure unplanned mission changes are coordinated at the tactical level. The COD also responds to the battlefield dynamics and operational friction.
- e. **Intelligence, Surveillance and Reconnaissance Division (ISRD).** The ISRD's primary mission is to maintain situational awareness in order to provide holistic intelligence, ISR and targeting input throughout the air operations centre and subordinate elements. The ISRD coordinates ISR assets and contributes to the ISR synchronization matrix.
- f. **Air Mobility Division (AMD).** The AMD plans and coordinates intra-theatre airlift, aeromedical evacuation and air refuelling missions. The AMD facilitates the executing and support of all air mobility missions.
- g. **Other specialty teams.** These include mission support, operations support, personnel training as well as standards and administrative teams that support RCAF CAOC operations.

## SECTION 2 – AIR TASK FORCE COMMANDER

8. **ATF Comd.** An operational- or tactical-level commander, the ATF Comd normally exercises OPCOM or TACOM over all elements of the ATF. The Comd 1 Canadian Air Division (1 Cdn Air Div) designates an RCAF officer to perform the role of ATF Comd. The ATF Comd is responsible to the JTF Comd to ensure all operational and administrative issues pertaining to the ATF are dealt with in a manner that meets the goals of the JFC.
9. **ATF Comd selection.** The Comd 1 Cdn Air Div designates an RCAF officer to perform the role of ATF Comd for a specific operation or exercise. Selection of an ATF Comd is based on a number of factors, including the individual's operational and command experience as well as the size and complexity of an operation. When an operation evolves over time to become either more complex or requires a larger ATF (or conversely, when an operation becomes less complex, requiring a smaller ATF), it may be necessary for the JFACC to recommend a change in the ATF Comd option in order to ensure the appropriate level of leadership is present in theatre.
10. **ATF Comd roles and responsibilities.** As a national (e.g., CAF) commander at the operational or tactical level (depending upon the scale and complexity of the operation), the ATF Comd normally exercises OPCOM or TACOM over all elements of the RCAF ATF. The ATF

Comd is responsible to ensure all national (CAF) operational and administrative issues pertaining to the ATF are dealt with in a manner that meets the goals of either:

- a. the CAF JFACC during domestic and global operations where OPCOM has been delegated to the JFACC; or
- b. the CAF JTF Comd during expeditionary operations where OPCOM has been delegated to the CAF JTF Comd.

11. In addition to commanding the RCAF ATF, the ATF Comd is responsible for the overall coordination of activities and acts as the single point of contact for issues affecting all elements of the ATF. The ATF Comd must implement and monitor standardized mission acceptance and launch authority processes, which bridge both the RCAF's residual authorities and the JFACC / CAF JTF Comd's operational risk-management authority.

12. **“Dual-hatting” the ATF Comd.** ATF Comd responsibilities are distinctly different from those of C2 roles such as the ACC, air component coordination element (ACCE) director, AEW Comd or DETCO. As such, factors such as the anticipated workload and geographic location must be carefully considered if the ATF Comd is to be dual-hatted with one of these other positions/roles, particularly if operational- and tactical-level responsibilities are assigned simultaneously to the ATF Comd.

13. **Options for ATF Comd employment.** When selecting the best option for the employment of an ATF Comd, the JFACC must weigh a number of factors, including the size, complexity and length of the operation.

#### **VIGNETTE:**

##### **CHOOSING AN ATF COMD OPTION**

Since the end of the Cold War, the RCAF has been involved in a variety of operations ranging from simple domestic events to complex, expeditionary operations involving alliance/coalition partners. Three recent examples illustrate why a different ATF Comd option was chosen to fit a particular operation and ensure the ATF was properly integrated into the JFC's overall plan.

##### **ATF Comd Option X: Operation (Op) MALI – DETCO as ATF Comd**

Responding to a request from France, which began offensive operations against an insurgency in Mali in early 2013, Canada sent a detachment of 1xCC177 Globemaster III aircraft and approximately 40 personnel to provide airlift between France and Mali. The DETCO was also designated the ATF Comd by the JFACC. The chain of command for Op MALI was: Comd CJOC delegated OPCOM to the JFACC; the JFACC delegated TACOM of the ATF to the DETCO; and operational control (OPCON) was delegated to the French CAOC, which assigned missions to be flown.

It is important to note that the authority of ATF Comd and DETCO, although vested in the same person, were significantly different in scope. As a DETCO, this officer was responsible to liaise with the JFACC, coordinate with the French Air Force for required operations/mission support at the host air base, command the detachment as well as ensure assigned missions were flown. As ATF Comd, the same officer was responsible for liaising with the French Air Force JFACC to coordinate missions and support on a wider level. The ATF Comd relied on reachback to the

RCAF CAOC to accomplish requirements such as diplomatic clearances and contract service agreements. In summary, this ATF Comd option worked well given the limited size and complexity of the operation and is a model for future operations.

**ATF Comd Option Y: Op NANOOK – ATF Comd  
Performs ACC Duties as Required**

During the summer of 2013, as part of an annual venture led by the federal government in Canada's Arctic and supported by CAF, a JTF was formed under the command of the standing RJTF Comd (Navy), who became the JTF Comd NANOOK. The RCAF deployed an ATF consisting of approximately 100 personnel to include an ATF Comd with an air task force headquarters (ATFHQ), ACCE elements deployed with flying detachments, two detachments of 2xCC138 Twin Otters, one detachment of 4xCH146 Griffons, and one detachment of 1xCH149 Cormorant. Airlift from CC130 Hercules, CC150 Polaris and CC177 Globemaster III as well as ISR support from CP140 Aurora aircraft were made available to the operation by the JFACC.

While not a large operation from a personnel or equipment point of view, Op NANOOK was based out of four geographic locations with an area of responsibility in excess of 3000 nautical miles [5556 kilometres] in width in challenging Arctic terrain. Because there was no W/AEW Comd assigned and the geography added considerable complexity to the operation, the JFACC chose ATF Comd Option Y, assigning the role of ACC to the ATF Comd. The chain of command for Op NANOOK was: Comd CJOC delegated OPCOM of assigned forces to the JTF Comd NANOOK, who delegated OPCOM of the ATF to the ATF Comd, who further delegated TACOM and tactical control (TACON) to the various DETCOs within the ATF. The JTF Comd NANOOK delegated OPCON of the assigned air power to the ATF Comd, who performed ACC duties (as required) to task missions to assigned air power.

Although the roles of ACC and ATF Comd were vested in the same RCAF officer, the responsibilities of each position were significantly different. The ATF Comd was responsible for coordinating activities of all assigned air power, including made-available forces, to support the goals of the JTF Comd NANOOK. The ATF Comd also commanded the ATF, ensuring that the operations/mission support of widely dispersed detachments was met in order to fly assigned missions. In the end, this ATF Comd option was a good fit when one considers the increased complexity of the operation and lack of a W/AEW Comd to provide TACOM of the ATF.

**ATF Comd Option Z: Op MOBILE – Assigning a Separate ATF Comd**

During 2011, the North Atlantic Treaty Organization (NATO) began Op UNIFIED PROTECTOR, a UN-sanctioned air campaign to enforce a no-fly zone during the civil war in Libya. Canada sent an ATF that, over time, would eventually include over 500 personnel including an ATF Comd, ACCE director, ACCE, AEW Comd with an AEW, a detachment of 6xCF188 Hornets, detachments of 2xCC150(T) Polaris and 2xCC130(T) Hercules (both in the air-to-air refuelling role) as well as a detachment of 2xCP140 Aurora. During the initial three months, the RCAF commitment to Op MOBILE grew to become a large and complex multinational, joint operation that required the focus of an operational-level ATF Comd.

Eventually, the CAF chain of command was established as Comd CJOC delegated OPCOM to the ATF Comd, who further delegated TACOM of assigned forces to the AEW Comd. DETCOs exercised TACOM over their detachments. In the allied chain of command, the ATF Comd delegated OPCON of the ATF to the allied multinational JTF Comd, who further delegated OPCON to the Combined Joint Force Air Component Commander who tasked missions to the ATF. The ATF Comd assigned the roles of national representative and target engagement

authority (TEA), otherwise known as the red card holder,<sup>4</sup> to the ACCE director who worked at the alliance CAOC to coordinate the employment of the ATF in accordance with Canada's intentions.

Due to the large size of the ATF and the inherently complex nature of multinational, joint operations, the use of ATF Comd Option Z was the best fit for Op MOBILE. By not "dual-hatting" another role such as ACCE director or AEW Comd, the ATF Comd was able to focus on the operational-level command of the ATF and perform critical coordination with the allied chain of command.

## SECTION 3 – RCAF COMMAND AND CONTROL MODELS

### INTRODUCTION

14. This section describes the six RCAF C2 models for joint operations. While military operations vary in many ways from each other, planners and commanders require a foundation from which to begin developing a sound C2 plan. In order for the RCAF to be prepared for the different types of operations it will be involved in, it is critical to have a set of "C2 solutions" to force generate to and for planners to start from. The mantra of "operate like we practice" applies not only to tactics but to C2 as well. The following C2 models are designed to enable the RCAF to fit into the established C2 frameworks of both CAF and its allies. While these models provide foundational guidance, it is the responsibility of commanders to adapt them as needed to the operation at hand. Changes to these models should be done for the right reasons, employing the sound and enduring principles this manual provides.

#### C2 MODEL 1 – RCAF OPERATIONS WHERE THE CAF JFACC EXERCISES OPCOM

15. **Description.** This model, illustrated in Figure 3-1, recognizes the fact that many RCAF activities occur outside of the CAF joint task force model, where the RCAF is operating alone and the CAF JFACC has been delegated OPCOM of assigned RCAF air forces. Examples of this type of operation include airlift, ISR as well as support to federal and provincial departments. This model uses the CAF component method of C2 with the CAF JFACC employing air power to meet the goals of Comd CJOC.



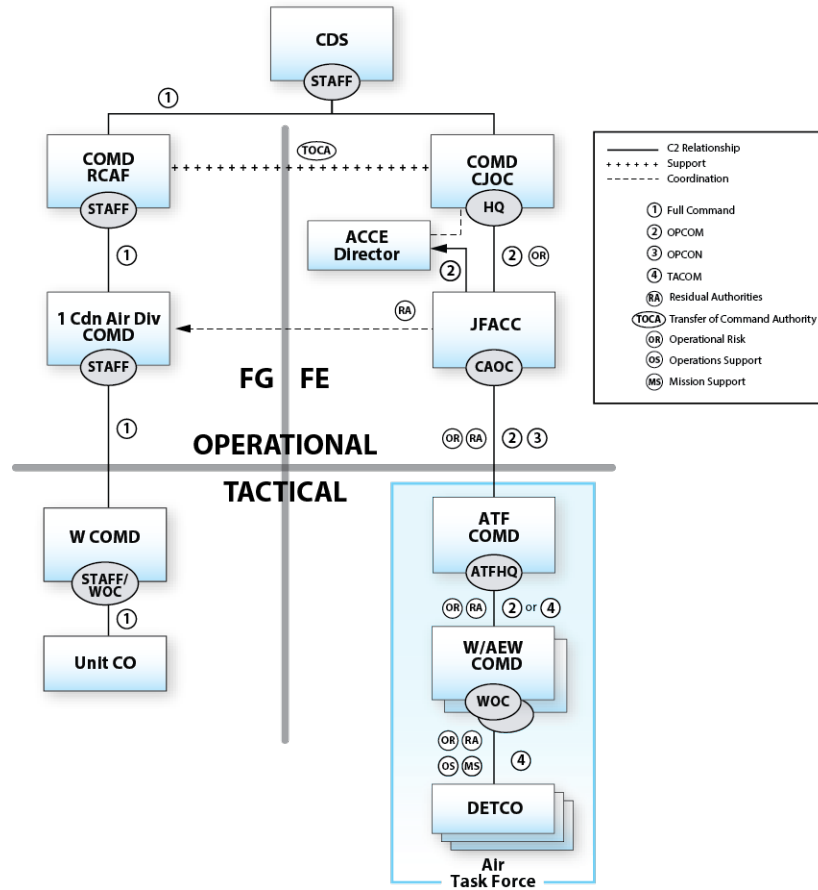


Figure 3-1. RCAF operations when the CAF JFACC exercises OPCOM

16. **Applications.** This model is suited for relatively small-scale, simple domestic and global CAF operations where the RCAF is the predominant participant.

17. **C2 architecture.** In order to ensure a seamless RCAF C2 solution that addresses the requirements of the Comd CJOC or Comd CANSOFCOM for a given operation, the following apply during the employment of this model:

- a. the Comd CJOC / Comd CANSOFCOM is the supported commander;
- b. the Comd CJOC exercises OPCOM over the CAF JFACC for a given operation;
- c. the Comd CJOC delegates OPCOM of assigned air power to the CAF JFACC;
- d. the CAF JFACC remains at the CAOC and performs all roles and responsibilities of an ACC for the operation;
- e. the CAOC will act as the focal point for planning, executing and assessing air power operations in the joint operation;
- f. the Comd 1 Cdn Air Div selects an ATF Comd for the operation; and

- g. normally, an ATF Comd will exercise TACOM of the ATF, executing missions and tasks assigned by the CAF JFACC.

## C2 MODEL 2 – RCAF IN SUPPORT OF A REGIONAL JOINT TASK FORCE

18. **Description.** This model, as seen in Figure 3-2, illustrates the normal C2 organization for domestic CAF operations. Typically, the RCAF supports the established RJTF structure, providing air power effects on a day-to-day basis to meet the goals of the RJTF Comd.

19. **Applications.** Suited for domestic CAF operations where the CDS directs that the RCAF support an RJTF Comd, this model is similar to C2 Model 1 in that it is designed to ensure that air forces can easily fit into any CAF joint operation with minimal changes to the day-to-day operations of the existing RCAF C2 structure.

20. **C2 architecture.** In order to ensure a seamless RCAF C2 solution that addresses the requirements of the RJTF Comd for a given operation, the following apply during the employment of this model:

- a. the RJTF Comd is the supported commander;
- b. the CAF JFACC is the supporting commander;
- c. the Comd CJOC exercises OPCOM over the CAF JFACC for a given operation;
- d. the Comd CJOC delegates OPCOM over assigned air forces to the CAF JFACC;
- e. the CAF JFACC remains at the CAOC and performs all roles and responsibilities of an ACC for the operation;
- f. the CAOC will act as the focal point for planning, executing and assessing of air operations in joint operations. The CAF JFACC will determine what CAOC duties are to be performed by the ACCE at the applicable RJTF HQ;
- g. the CAF JFACC will employ the ACCE director at the applicable RJTF HQ to effect planning and coordination as required;
- h. the Comd 1 Cdn Air Div selects an ATF Comd for the operation. Two options exist for ATF Comd employment:
  - (1) an ACCE director will be assigned the role of ATF Comd and exercise either OPCOM or TACOM of the RCAF ATF; or
  - (2) the CAF JFACC will exercise OPCOM of the ATF and a W Comd / AEW Comd / DETCO will be assigned the role of ATF Comd and will exercise TACOM of the RCAF ATF; and

- i. normally, an ACCE director, W Comd / AEW Comd or DETCO will be assigned the role of ATF Comd and will exercise OPCOM or TACOM of the ATF, executing missions and tasks assigned by the CAF JFACC.

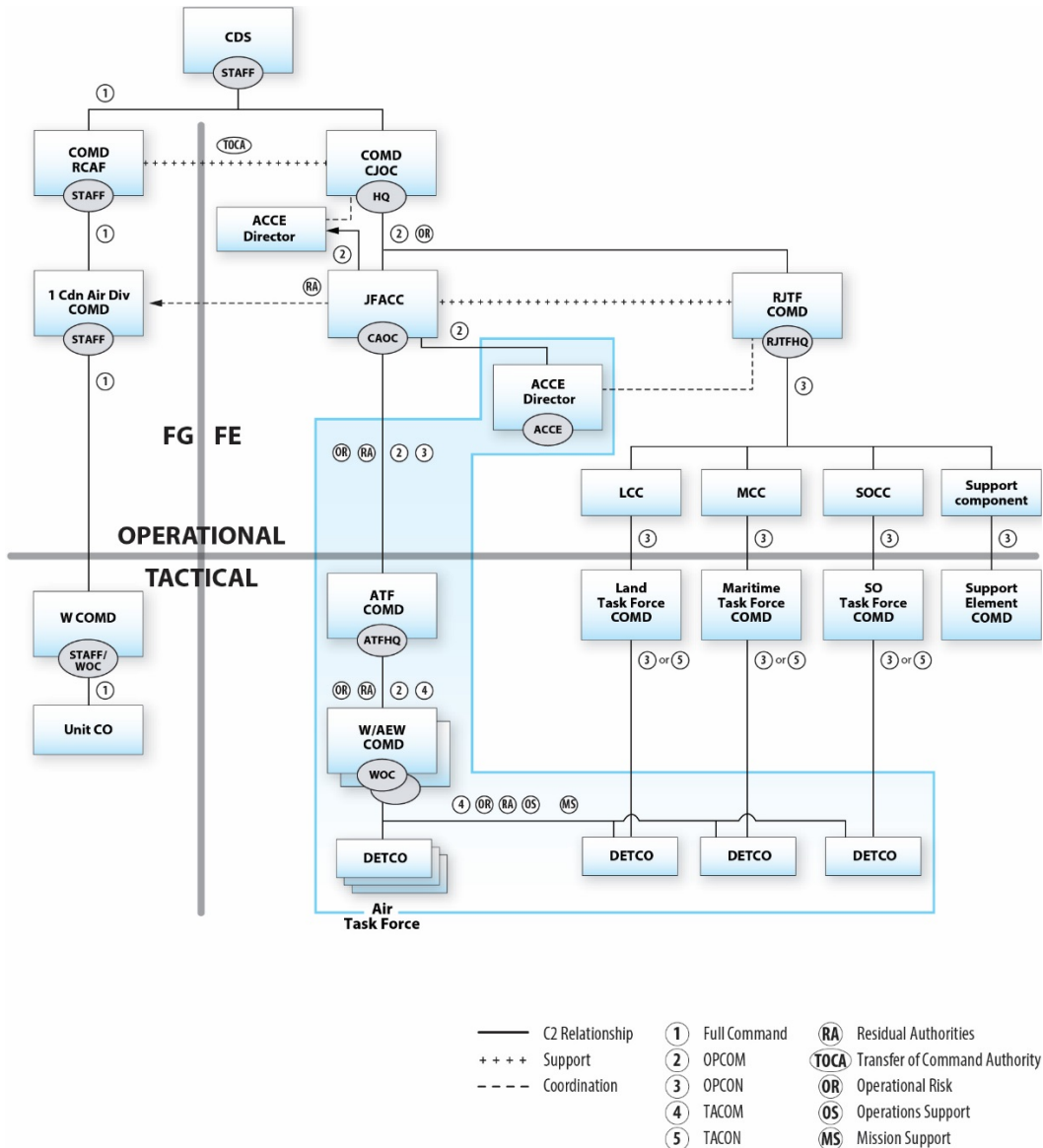


Figure 3-2. RCAF supporting an RJTF

**C2 MODEL 3A – RCAF AS PART OF A CAF JTF EMPLOYING THE COMPONENT COMMAND METHOD**

21. **Description.** This model, depicted in Figure 3-3, illustrates the C2 organization when the RCAF is part of a CAF JTF where the component command method is employed.

22. **Applications.** This model is suited for operations of all sizes and complexity in either a domestic or expeditionary setting when CAF is not part of a larger allied/coalition operation. The

RCAF provides an ATF Comd and scalable ATFHQ to ensure the RCAF ATF delivers the required air effects to support the goals of the JTF Comd.

23. **C2 architecture.** In order to ensure a seamless RCAF C2 solution that addresses the requirements of the JTF Comd, the following apply during the employment of this model:

- a. the CAF JFACC is responsible for making recommendations to the Comd CJOC on the proper employment of air power and on the C2 of all assigned RCAF air forces. The Comd 1 Cdn Air Div selects an ATF Comd for the operation;
- b. the Comd CJOC is the supported commander;
- c. the Comd CJOC exercises OPCOM over the JTF Comd;
- d. the JTF Comd delegates OPCOM or TACOM of assigned air forces to the ATF Comd;
- e. the ATF Comd deploys with a scalable ATFHQ and performs all roles and responsibilities of an ACC for the operation;
- f. the CAF JFACC and CAOC will provide reachback as required to assist in planning, executing and assessing air operations in the joint operation;
- g. the ATF Comd will exercise OPCOM or TACOM of the ATF and perform the role of ACC as required. An ACC will usually exercise OPCON over assigned air forces;
- h. the ATF Comd normally delegates TACOM to the AEW Comd;
- i. the AEW Comd normally delegates TACOM to the DETCOs; and
- j. the ATF Comd will execute missions and tasks assigned by the CAF JTF Comd.

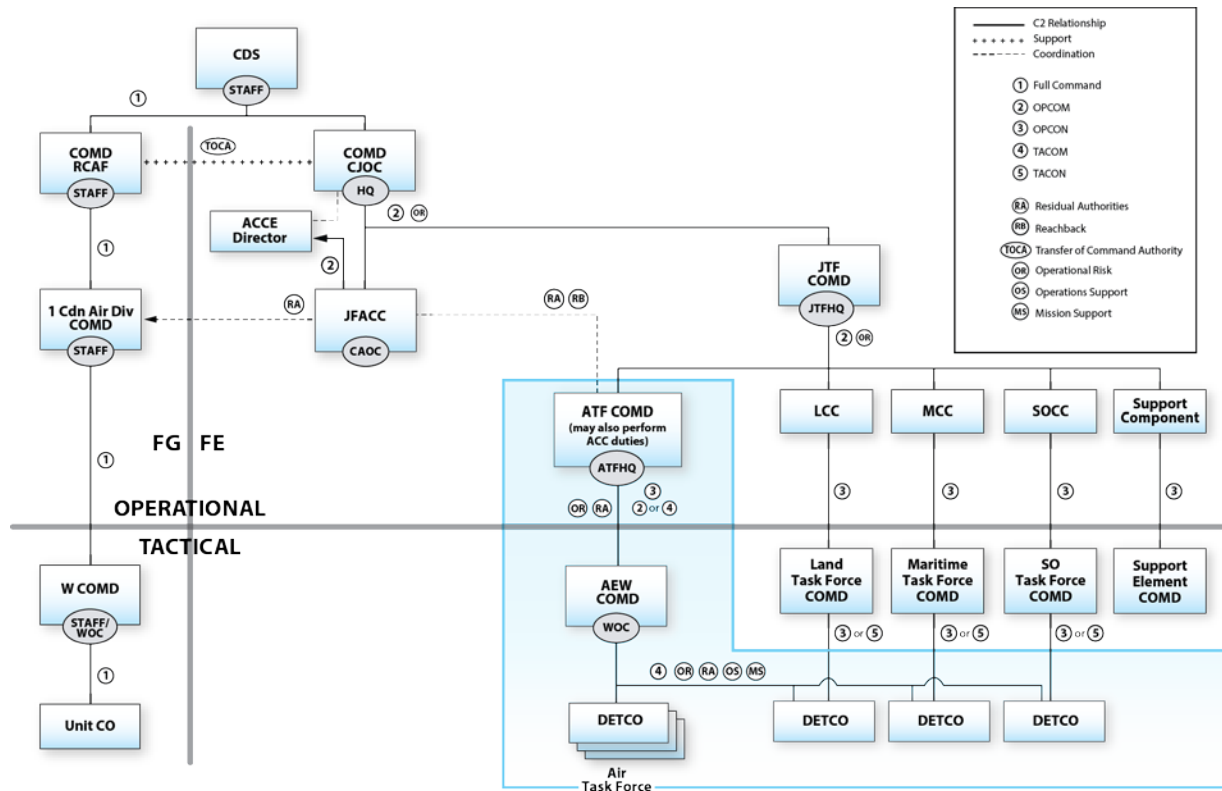


Figure 3-3. RCAF as part of a CAF JTF employing the component command method  
 C2 MODEL 3B – RCAF AS PART OF A CAF JOINT TASK FORCE (JTF) EMPLOYING THE DIRECT COMMAND METHOD

24. **Description.** This model, as shown in Figure 3-4, illustrates the C2 organization when the RCAF is part of a CAF JTF where the direct command method is employed.

25. **Applications.** This model is suited for operations of all sizes and complexity in either a domestic or expeditionary setting when CAF is not part of a larger allied/coalition operation. The RCAF provides an ATF Comd who employs a scalable ATFHQ to ensure the RCAF ATF delivers the required air effects to support the goals of the JTF Comd.

26. **C2 Architecture.** In order to ensure a seamless RCAF C2 solution that addresses the requirements of the JTF Comd, the following apply during the employment of this model:

- a. the JFACC is responsible for making recommendations to the Comd CJOC on the proper employment and C2 of all assigned RCAF air forces. The Comd 1 Cdn Air Div selects an ATF Comd for the operation;
- b. the Comd CJOC is the supported commander;
- c. The Comd CJOC exercises OPCOM over the JTF Comd;
- d. the JTF Comd delegates OPCOM or TACOM of assigned air forces to the ATF Comd;

- e. the ATF Comd normally delegates TACOM to the AEW Comd;
- f. the AEW Comd normally delegates TACOM to the DETCOs; and
- g. the CAF JFACC and CAOC will provide reachback as required to assist in the planning, execution and assessment of air operations in the joint operations.

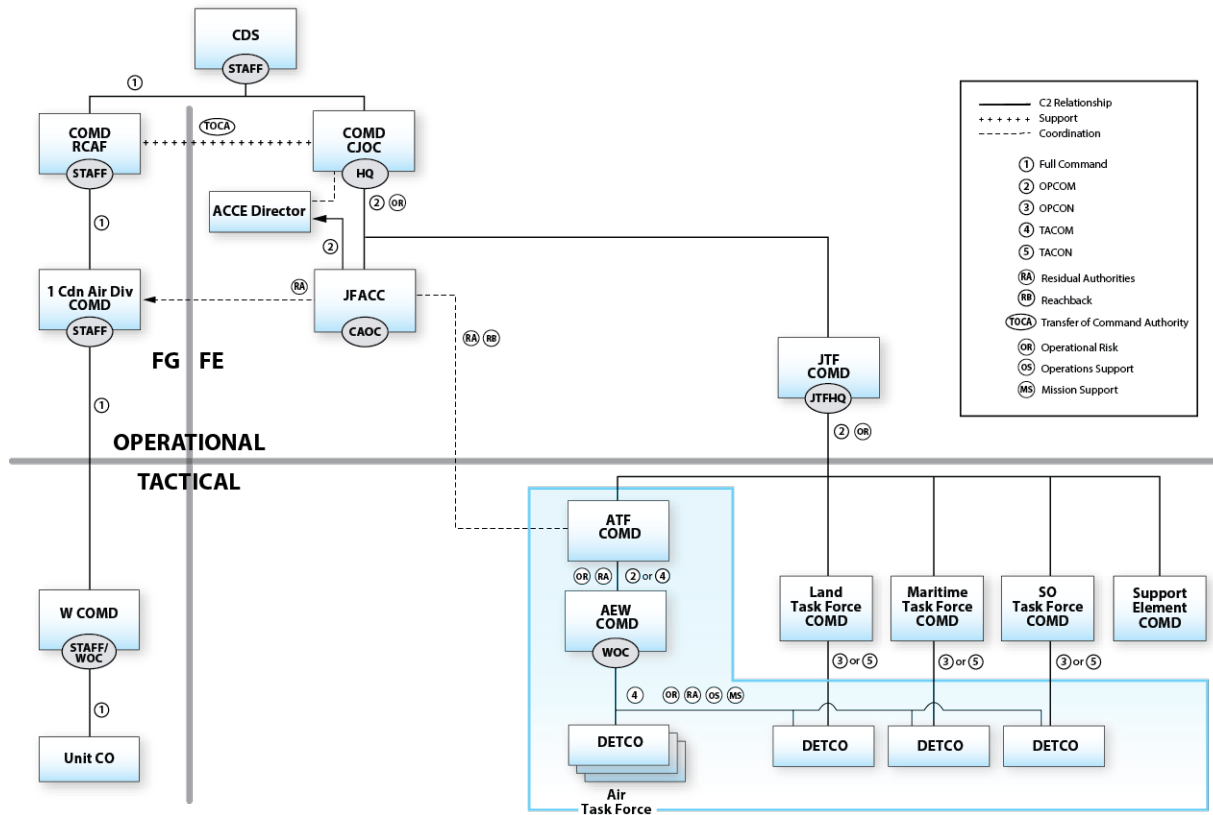


Figure 3-4. RCAF as part of a CAF JTF employing the direct command method

C2 MODEL 4 – RCAF AS PART OF AN ALLIED/COALITION OPERATION

27. **Description.** This model, as shown in Figure 3-5, illustrates the C2 organization when the RCAF is part of a CAF JTF participating in an allied/coalition operation.

28. **Applications.** This C2 model applies when the RCAF ATF is part of a larger CAF JTF under the command of a single JTF Comd, who also normally fulfils the role of Canadian national commander (CNC), who employs a national command element HQ. The CAF JTF is normally combined with the JTFs of other countries to form one allied/coalition multinational JTF.

29. **C2 architecture.** In order to ensure a seamless RCAF C2 solution that addresses the requirements of the CAF JTF Comd and the allied/coalition multinational JTF Comd, the following normally apply:

- a. the CAF JFACC is responsible for making recommendations to the Comd CJOC on the proper employment and C2 of all assigned RCAF air forces;
- b. the Comd CJOC exercises OPCOM over the CAF JTF Comd;
- c. employing a formal TOA, the CNC/JTF Comd normally transfers OPCON of RCAF forces to the alliance/coalition JTF Comd who will further delegate OPCON of RCAF forces to the alliance/coalition air component commander, the land component commander (LCC), maritime component commander (MCC) or special operations component command (SOCC) as applicable;
- d. an ATF Comd and ATFHQ are deployed to advise the CAF JTF Comd throughout the planning and execution of allied/coalition multinational operations;
- e. the CAF JTF Comd normally delegates OPCOM of the RCAF ATF to the ATF Comd;
- f. an air task force coordination element (ATFCE) is normally deployed to advise the allied/coalition ACC and represents the ATF Comd at the allied/coalition CAOC throughout the planning and execution of multinational operations. When CAF employs a TEA team at an allied/coalition CAOC, the TEA team is normally part of the ATFCE. The ATFCE performs mission acceptance on behalf of the ATF Comd;
- g. the allied/coalition CAOC will act as the focal point for planning, executing and assessing air power +operations in the multinational operation;
- h. the CAF JFACC and CAOC will provide reachback as required;
- i. the Comd 1 Cdn Air Div selects an ATF Comd for the operation;
- j. the ATF Comd normally delegates TACOM to the AEW Comd, who executes missions and tasks assigned by the allied/coalition ACC; and
- k. the AEW Comd normally delegates TACOM to the DETCOs.

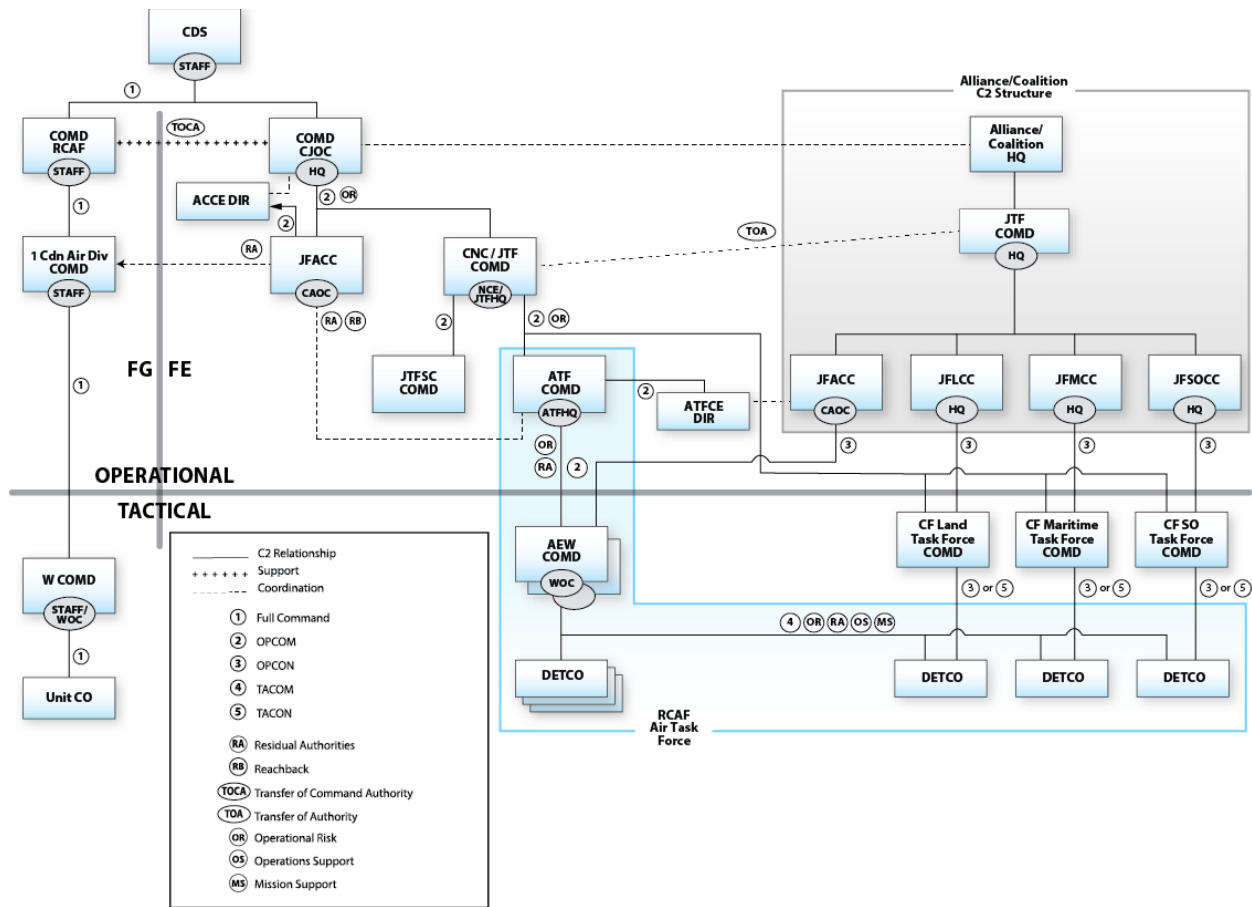


Figure 3-5. RCAF as part of an allied/coalition operation

C2 MODEL 5 – RCAF AS PART OF NORAD OPERATIONS

30. **Description.** This C2 model, illustrated in Figure 3-6, is based on the bi-national NORAD agreement between Canada and the United States (US)<sup>5</sup> and provides detailed processes for the C2 of the defence of North America. CAF conducts operations planning and executes continental operations in conjunction with the US through NORAD.

31. **Applications.** This model is used for NORAD continental defence operations.

32. **C2 architecture.** In order to ensure a seamless RCAF C2 solution that addresses the requirements of any NORAD operation, the following apply:

- a. the Commander NORAD (CDRNORAD) is responsible to the President of the United States and the Prime Minister of Canada and exercises OPCON over assigned NORAD forces. These forces are composed of HQ NORAD and three subordinate NORAD region commanders in Canada, Alaska and the continental US;
- b. the CDS exercises full command of all forces assigned or made available for the air defence of CANR;



- c. Comd CANR is accountable to CDRNORAD and exercises OPCON over all air forces assigned to the air defence of CANR;
- d. the CAF JFACC exercises OPCOM over all assigned RCAF air forces assigned or made available for the air defence of CANR;
- e. CAOC will act as the focal point for planning, executing and assessing of air operations for the air defence of CANR; and
- f. Comd Canadian Air Defence Sector (CADS) exercises OPCON over all air forces assigned or made available for the air defence of CANR.

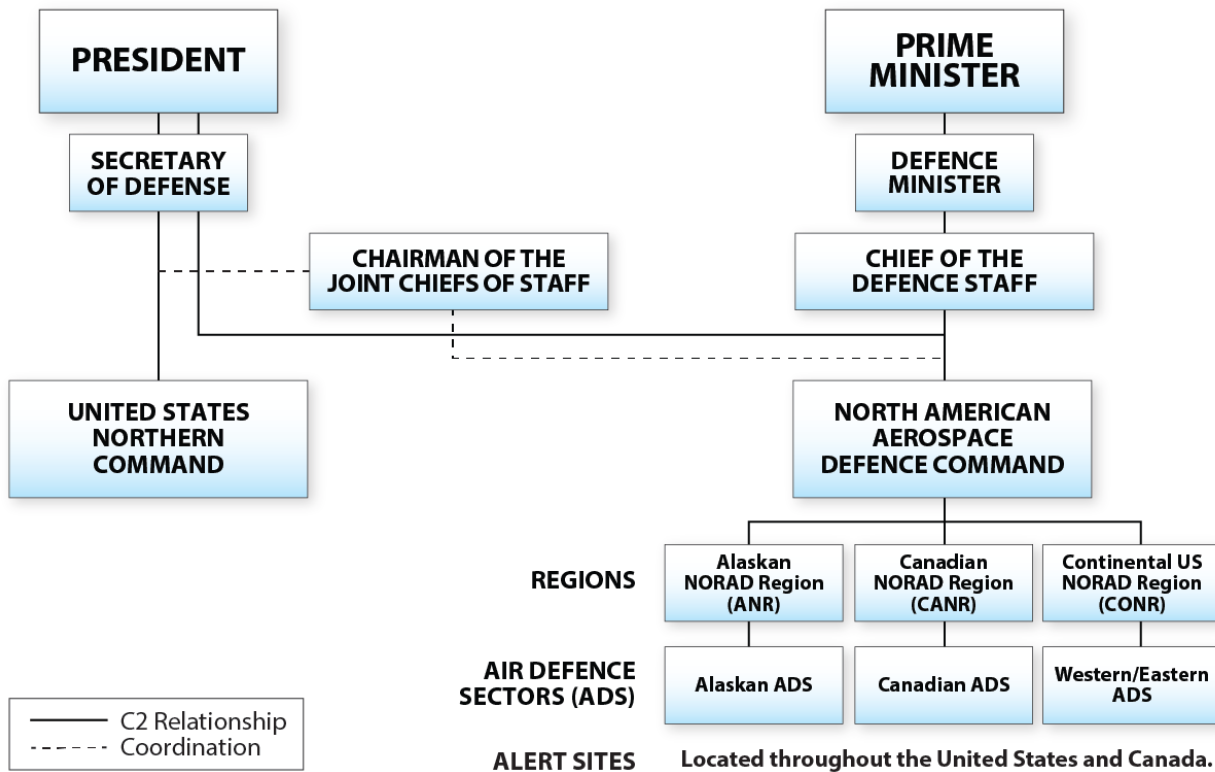


Figure 3-6. RCAF as part of NORAD operations

33. NORAD’s complex and continually evolving C2 arrangements are sufficiently distinct to warrant independent consideration. Consequently, NORAD C2 is not covered in detail here but will instead be expressed in a separate stand-alone publication.

### SUMMARY

34. The operation of C2 is powerfully affected by the way air forces are grouped and, in particular, how they interrelate. Command relationships must be clearly articulated and adhered to in order to regulate the interaction of all entities in the system. Likewise, the different roles and responsibilities of the various reporting chains must be clearly understood so as not to blur the lines of command relationships.

This Page Intentionally Blank

## GLOSSARY

1. The definitions contained in this glossary are derived primarily from the *Defence Terminology Bank (DTB)* <http://terminology.mil.ca/>. Where no source is indicated, this publication is the source of the definition.

<b>Term and abbreviation</b>	<b>Definition</b>
<b>administrative control (ADCON)</b>	Direction or exercise of authority over subordinate or other organizations in respect to administrative matters such as personnel management, supplies, services, and other matters not included in the operational missions of the subordinate or other organizations. ( <i>DTB</i> record 3289)
<b>aerospace operations centre (AOC)</b>	An operational-level organization that supports an air component commander to facilitate the command and control of air and space operations. ( <i>DTB</i> record 43721)
<b>air component commander (ACC)</b>	A designated, operational-level commander responsible for making recommendations to a supported commander on the proper employment of assigned, allocated, attached and/or made-available forces; planning and coordinating aerospace operations; assigning missions and tasks; and accomplishing such missions as may be directed by the supported commander. ( <i>DTB</i> record 34079)
<b>air component coordination element (ACCE)</b>	An operational-level liaison and coordination team that facilitates the integration of air power throughout the planning and execution of joint operations. ( <i>DTB</i> record 28241)

Term and abbreviation	Definition
<b>Air expeditionary support detachment (AESD)</b>	The air expeditionary support detachment (AESD), a deployable, task-tailored, tactical-level detachment that provides support to expeditionary operations, is an example of a non-flying detachment. The AESD can be utilized to plan, activate, support and, ultimately, sustain operations at deployed operating bases should the operating conditions necessitate its use. An AESD will normally be comprised of an operations-support element (OSE), mission-support element (MSE) and force-protection element (FPE).
<b>air expeditionary wing (AEW)</b>	A deployable, task-tailored, tactical-level force normally comprised of a command element, one or more air operations elements, an operations-support element, a mission-support element and a force-protection element. ( <i>DTB</i> record 34903)
<b>air operation (AO)</b>	An activity, or series of activities, related to the planning and application of air power to achieve assigned objectives. ( <i>DTB</i> record 30555)
<b>air power</b>	The element of military power that is applied within or from the air operating environment to create effects above, on or below the surface of the Earth. ( <i>DTB</i> record 43951)
<b>airspace control authority (ACA)</b>	The commander designated to assume overall responsibility for the operation of the airspace control system in his or her assigned area. ( <i>DTB</i> record 19471)
<b>air tasking order (ATO)</b>	A document issued by an aerospace operations centre under the authority of the air component commander directing subordinate forces to execute aerospace missions. Note: An air tasking order is authoritative and is the product of the air planning process. It is valid for a prescribed period and provides sufficient tactical detail for subordinate commanders to execute missions. ( <i>DTB</i> record 30607)

Term and abbreviation	Definition
<b>allocated force</b>	A force placed in an organization or under the command authority of a commander. (DTB record 35693)
<b>assigned force</b>	A force in being that has been permanently placed in an organization or under the authority of a commander. (DTB record 33930)
<b>campaign</b>	A set of military operations planned and conducted to achieve a strategic objective. (DTB record 18743)
<b>Canadian national commander (CNC)</b>	The commander who is responsible for the execution of purely Canadian functions in a specific geographic area. (DTB record 35681)
<b>coalition</b>	An ad hoc agreement between two or more nations for a common action. (DTB record 21755)
<b>coalition operation</b>	A multinational operation based on agreements, standards and procedures specific to that operation. (DTB record 35678)
<b>combat operation</b>	A military operation where the use or threatened use of force, including lethal force, is essential to impose will on an armed opponent or to accomplish a mission. The actual level of force used will be in accordance with specified rules of engagement. (DTB record 21754)
<b>Command</b>	The operational function that integrates all the operational functions into a single comprehensive strategic, operational or tactical level concept. (DTB record 26166)
<b>command</b>	The authority vested in an individual of the armed forces for the direction, coordination, and control of military forces. (DTB record 27866)
<b>command and control (C2)</b>	The exercise of authority and direction by a commander over assigned, allocated and attached forces in the accomplishment of a mission. (DTB record 5950)

Term and abbreviation	Definition
<b>commander (comd)</b>	An officer appointed to command a military organization such as a command, formation or a base. Note: this term could also apply to an officer or non-commissioned member appointed to command a sub-unit, a section or a detachment. <i>(DTB record 350)</i>
<b>commander's intent</b>	The expressed rationale, method and desired end state of an operation or campaign that assures unity of purpose. <i>(DTB record 32716)</i>
<b>control (con)</b>	The authority exercised by commanders over part of the activities of subordinate organizations, or other organizations not normally under their command, which encompasses the responsibility for implementing orders or directives. Note: All or part of this authority may be transferred or delegated. <i>(DTB record 375)</i>
<b>detachment (det)</b>	A part of a unit separated from its main organization for duty elsewhere. <i>(DTB record 3065)</i>
<b>detachment commander (DETCO)</b>	A tactical-level commander who commands a detachment. <i>(DTB record 44223)</i>
<b>doctrine (doc)</b>	Fundamental principles by which the military forces guide their actions in support of objectives. It is authoritative but requires judgment in application. <i>(DTB record 1761)</i>
<b>electronic warfare (EW)</b>	Military action to exploit the electromagnetic spectrum encompassing: the search for, interception and identification of electromagnetic emissions, the employment of electromagnetic energy, including directed energy, to reduce or prevent hostile use of the electromagnetic spectrum, and actions to ensure its effective use by friendly forces. <i>(DTB record 4164)</i>
<b>force employment (FE)</b>	1. At the strategic level, the application of military means in support of strategic objectives. 2. At the operational level, the command, control and sustainment of allocated forces. <i>(DTB record 32173)</i>

Term and abbreviation	Definition
<b>force generation (FG)</b>	The process of organizing, training and equipping forces for force employment. (DTB record 32171)
<b>force protection</b>	All measures and means to minimize the vulnerability of personnel, facilities, equipment and operations to any threat and in all situations, to preserve freedom of action and the operational effectiveness of the force. (DTB record 23554)
<b>forward air controller (FAC)</b>	A qualified individual who, from a forward position on the ground or in the air, directs the action of combat aircraft engaged in close air support of land forces. (DTB record 552)
<b>full command (FULLCOM)</b>	The military authority and responsibility of a commander to issue orders to subordinates. It covers every aspect of military operations and administration and exists only within national services. Note: The term “command,” as used internationally, implies a lesser degree of authority than when it is used in a purely national sense. No NATO or coalition commander has full command over the forces assigned to [them] since in assigning forces to NATO, nations will delegate only operational command or operational control. (DTB record 4340)
<b>integrated</b>	Said of activities, operations and organizations in which military and non-military elements combine to achieve a common goal through coordinated and complementary efforts. (DTB record 41415)
<b>intelligence, surveillance and reconnaissance (ISR)</b>	An activity that synchronizes and integrates the planning and operation of all collection capabilities with exploitation and processing to disseminate the resulting information to the right person, at the right time, in the right format, in direct support of current and future operations. (DTB record 30996)

Term and abbreviation	Definition
<b>joint</b>	Said of activities, operations and organizations in which elements of at least two components participate. Note: The components are maritime, land, air and special operations. (DTB record 35248)
<b>line officer</b>	An officer with command authority. (DTB record 41466)
<b>mission</b>	An activity assigned to an individual, unit or force by an authority who has full command, operational command or operational control. (DTB record 43728)
<b>mission support (msn sp)</b>	In air operations, the provision of logistic, technical and administrative support to operations. Note: Mission support includes construction engineering, communication and information systems, supply, transport, electrical and mechanical engineering, food services, human resources and finance services. (DTB record 34911)
<b>multinational</b>	Adjective used to describe activities, operations and organizations, in which elements of more than one nation participate. (DTB record 18750)
<b>operational command (OPCOM)</b>	The authority granted to a commander to assign missions or tasks to subordinate commanders, to deploy units, to reallocate forces, and to retain or delegate operational and/or tactical control as the commander deems necessary. Notes: 1. Operational command does not include responsibility for administration. 2. In the NATO definition, the expression “to reassign forces” is used rather than “to reallocate forces.” (DTB record 19477)



Term and abbreviation	Definition
<b>operational control (OPCON)</b>	<p>The authority delegated to a commander to direct allocated forces to accomplish specific missions or tasks that are usually limited by function, time or location, to deploy units concerned, and to retain or delegate tactical control of those units.</p> <p>Notes: 1. Operational control does not include authority to assign separate employment of components of the units concerned, neither does it, of itself, include administrative or logistic control.</p> <p>2. In the NATO definition, the expression “forces assigned” is used rather than “allocated forces.” (<i>DTB</i> record 1)</p>
<b>operations support (ops sp)</b>	<p>Within an air force, the provision of assistance that directly supports air operations.</p> <p>Note: Operations support may include force protection capabilities (including an airfield security force, limited recuperation functions, explosive ordnance disposal capability, improvised explosive device disposal capability as well as chemical, biological, radiological, and nuclear defence assets) and operations assistance (including planning and coordination, intelligence, meteorology, host nation liaison as well as airspace management and control). (<i>DTB</i> record 34914)</p>
<b>reachback</b>	<p>The means by which a deployed force receives support from organizations external to the area of responsibility. (<i>DTB</i> record 37303)</p>
<b>rules of engagement (ROE)</b>	<p>Directives issued by competent military authority which specify the circumstances and limitations under which forces will initiate and/or continue combat engagement with other forces encountered. (<i>DTB</i> record 5285)</p>
<b>spectrum of conflict</b>	<p>The full range of relationships between states or groups, reflecting the frequency and intensity of violence. (<i>DTB</i> record 35238)</p>

Term and abbreviation	Definition
<b>staff</b>	In a military organization, the military and civilian personnel assisting a commander in all functions. ( <i>DTB</i> record 23386)
<b>support (sp)</b>	The action of a force, or portion thereof, which aids, protects, complements, or sustains any other force. ( <i>DTB</i> record 1362)
<b>supported command</b>	A command that receives forces or other support from another command and has primary responsibility for all aspects of an assigned task. ( <i>DTB</i> record 32319)
<b>supported commander</b>	A commander who has the primary responsibility for all aspects of an assigned military task and has the authority to give general direction for supporting efforts. Note: The relationship between supported and supporting commanders does not constitute a formal command relationship. ( <i>DTB</i> record 37280)
<b>supporting command</b>	A command that provides forces or other support to another command. ( <i>DTB</i> record 32320)
<b>supporting commander</b>	A commander who provides a supported commander with forces, capabilities or other support and/or who develops a supporting plan. Note: The relationship between supported and supporting commanders does not constitute a formal command relationship. ( <i>DTB</i> record 37281)
<b>tactical command (TACOM)</b>	The authority delegated to a commander to assign tasks to forces under his command for the accomplishment of the mission assigned by higher authority. ( <i>DTB</i> record 5491)
<b>tactical control (TACON)</b>	The detailed and, usually, local direction and control of movements or manoeuvres necessary to accomplish missions or tasks assigned. ( <i>DTB</i> record 5493)

Term and abbreviation	Definition
<b>target (tgt)</b>	The object of a particular action, for example a geographic area, a complex, an installation, a force, equipment, an individual, a group or a system, planned for capture, exploitation, neutralization or destruction by military forces. <i>(DTB record 1031)</i>
<b>targeting</b>	The process of selecting and prioritizing targets and matching the appropriate response to them, taking into account operational requirements and capabilities. <i>(DTB record 5514)</i>
<b>task</b>	An activity that contributes to the achievement of a mission. <i>(DTB record 20312)</i>
<b>task force (TF)</b>	A temporary grouping of units, under one commander, formed for the purpose of carrying out a specific operation or mission. <i>(DTB record 1457)</i>

This Page Intentionally Blank

## ABBREVIATIONS

<b>Abbreviation</b>	<b>Term</b>
1 Cdn Air Div	1 Canadian Air Division
A staff	air staff
AA	administrative assistant
ACA	airspace control authority
ACC	air component commander
ACCE	air component coordination element
ACO	airspace control order
ADCON	administrative control
Admin	administration
AESD	air expeditionary support detachment
AEW	air expeditionary wing
AF	alert force
Air Div	air division
AMD	Air Mobility Division
AOC	aerospace operations centre
ASOC	air support operations centre
ATF	air task force
ATFCE	air task force coordination element
ATFHQ	air task force headquarters
ATO	air tasking order
C2	command and control
CADS	Canadian Air Defence Sector
CAF	Canadian Armed Forces
CANR	Canadian NORAD Region
CANSOFCOM	Canadian Special Operations Forces Command
CAOC	Combined Aerospace Operations Centre
CAOC	combined air operations centre
CDRNORAD	Commander NORAD
CDS	Chief of the Defence Staff

CE	construction engineering
CF	coalition forces
CFACC	combined force air component commander
CFJP	Canadian Forces Joint Publication
CIMIC	civil-military cooperation
CJOC	Canadian Joint Operations Command
CNC	Canadian national commander
CO	commanding officer
COC	combat operations centre
COD	Combat Operations Division
comd	commander
comms	communications
COS	Chief of Staff
CPD	Combat Plans Division
CRC	control and reporting centre
CRE	control and reporting element
CWO	chief warrant officer
DComd	deputy commander
D/Director	deputy director
DETCO	detachment commander
DND	Department of National Defence
<i>DTB</i>	<i>Defence Terminology Bank</i>
EA	executive assistant
FE	force employment
FG	force generation
flt	flight
FP	force protection
FS	flight safety
FSP	Flight Safety Program
FULLCOM	full command
GENAD	gender advisor
HQ	headquarters

HHQ	higher headquarters
HS	health services
int	intelligence
ISR	intelligence, surveillance and reconnaissance
ISRD	Intelligence, Surveillance and Reconnaissance Division
IT	information technology
JFACC	joint force air component commander
JFC	joint force commander
JFLCC	joint forces land component commander
JFMCC	joint forces maritime component commander
JFSOCC	joint forces special operations component commander
JTF	joint task force
JTFSC	joint task force support component
LCC	land component commander
LEGAD	legal advisor
LO	liaison officer
Log	logistics
maint	maintenance
MCC	maritime component commander
MOB	main operating base
MSE	mission-support element
NATO	North Atlantic Treaty Organization
NCE	national command element
NCM	non-commissioned member
NORAD	North American Aerospace Defence Command
op	operation
OPCOM	operational command
OPCON	operational control
OPRED	operational readiness
OPTASK LINK	operational tasking data link
PA	public affairs
PM	provost marshal

POLAD	policy advisor
RAP	recognized air picture
RCAF	Royal Canadian Air Force
RJTF	regional joint task force
SME	subject matter expert
SO	special operations
SOCC	special operations component command
SPINS	special instructions
sqn	squadron
SRD	Strategy Division
TACOM	tactical command
TACON	tactical control
TACP	tactical air control party
TACS	theatre air control system
TEA	target engagement authority
TOA	transfer of authority
TOCA	transfer of command authority
trg	training
US	United States
USAF	United States Air Force
W Comd	wing commander
wg	wing
WOC	wing operations centre



## REFERENCES

- A. Canada. Department of National Defence (DND). A-PA-005-000/AP-003, *Leadership in the Canadian Forces: Doctrine*. Ottawa, 2005.
- B. ———. B-GA-400-000/FP-000, *Canadian Forces Aerospace Doctrine*. 2<sup>nd</sup> Edition. Ottawa, 2010. Accessed July 7, 2016, <http://www.rcaf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/doctrine/b-ga-400-000-fp-000.page>.
- C. ———. B-GJ-005-000/FP-001, Canadian Forces Joint Publication (CFJP) 01, *Canadian Military Doctrine*. Ottawa, 2009.
- D. ———. B-GJ-005-300/FP-001, CFJP 3.0, *Operations*. 2010.
- E. ———. Chief of the Defence Staff. “Interim Directive on CF Command and Control and Delegation of Authority for Force Employment.” 9 July 2009. Accessed July 7, 2016, <http://vcds.mil.ca/cas/dmcs2005/FilesO/DMCS-22197.pdf>.
- F. North Atlantic Treaty Organization (NATO). AJP-3(A), *Allied Doctrine for Joint Operations*. July 2007.
- G. ———. AJP-3.3, *Joint Air and Space Operations Doctrine*. May 2002.
- H. Pigeau, Ross and Carol McCann, eds. *The Human in Command*. New York: Plenum Press, 2000.
- I. United States Air Force, Air Force Instruction 13-1AOC, *Air Operations Center*, Vol. 3, Change 1, 18 May 2012.
- J. ———, Doctrine Document 2-8, *Command and Control*. 1 June 2007.
- K. ———, Joint Publication (JP) 3-30, *Command and Control for Joint Air Operations*. 12 January 2010.

This Page Intentionally Blank

## NOTES

### KEYNOTES

1. *Defence Terminology Bank (DTB)* record 27866.
2. *DTB* record 375.
3. *DTB* record 5950.

### CHAPTER 1

1. General Giulio Douhet, *The Command of the Air*, eds. Joseph Patrick Harahan and Richard H. Kohn (Tuscaloosa, Alabama: University of Alabama, 2009).

2. *DTB* record 27866.
3. *DTB* record 375.
4. *DTB* record 5950.
5. *DTB* record 4340.
6. *DTB* record 19477, modified.
7. *DTB* record 5491.
8. *DTB* record 1056.
9. *DTB* record 5493.
10. *DTB* record 3289.
11. *DTB* record 30432.
12. *DTB* record 5558.
13. *DTB* record 18679.
14. *DTB* record 34907.
15. *DTB* record 35629. In joint operations, a component is an organization, subordinate to the joint task force, responsible for the planning, integration and conduct of operations for a specific environment or function. See *DTB* record 44197.
16. *DTB* record 3826.
17. *DTB* record 1457.
18. *DTB* record 694281, modified.
19. *DTB* record 31012.
20. B-GJ-005-300/FP-001, Canadian Forces Joint Publication (CFJP) 3.0, *Operations* (2010), accessed July 7, 2016, <http://publications.gc.ca/site/eng/364825/publication.html>, 4-1.
21. CJFP 3.0, *Operations*, 4-3.

22. The term “air component commander” can be adapted for different command situations. In a joint environment, the duties and responsibilities of an ACC are normally assumed by a joint force air component commander (JFACC). In a multinational operation, a combined force air component commander (CFACC) is normally designated. Ultimately, a CFACC can be designated for operations involving both joint and combined forces. In all cases, these commanders have, at a minimum, the same responsibilities as an ACC. The various ACC responsibilities are further detailed in Chapter 2.

23. DTB record 1362.
24. DTB record 33785.
25. DTB record 33883.
26. DTB record 33891.
27. DTB record 33799.
28. DTB record 32319.
29. DTB record 37280.
30. DTB record 32320.
31. DTB record 37281.
32. DTB record 37303.
33. DTB record 43728, modified.
34. DTB record 20312.
35. DTB record 41466.
36. DTB record 23386.

## CHAPTER 2

1. Sun Tzu, *The Art of War*, trans. Thomas Cleary (Boston: Shambala Publications, 1988).

2. Canada, Department of National Defence, *Royal Canadian Air Force Campaign Plan*, Version 2.0, Change 1, 16 November 2015, accessed July 7, 2016, <http://airforce.mil.ca/caf/dairsp/campaign-plan/index-eng.asp>.

3. *Defence Terminology Bank (DTB)* record 34903.

4. DTB record 3065.

5. The air expeditionary support detachment (AESD), a deployable, task-tailored, tactical-level detachment that provides support to the expeditionary operations, is an example of a non-flying detachment. The AESD can be utilized to plan, activate, support and, ultimately, sustain operations at deployed operating bases should the operating conditions necessitate its use. An AESD will normally be comprised of an operational support element, mission support element and force protection element. For further information on the AESD, refer to B-GA-402-005/FP-001, *Royal Canadian Air Force Doctrine: Expeditionary Air Operations* (to be promulgated).

6. DTB record 30555.

7. B-GA-403-000/FP-001, *Canadian Forces Aerospace Shape Doctrine* (March 2014), accessed July 7, 2016, <http://www.rcaf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/aerospace-doctrine.page>.

8. DTB record 34914.

9. DTB record 23554.

10. DTB record 34911.

11. The RCAF Combined Aerospace Operations Centre employs “Aerospace” to reflect its ongoing role as the Canadian NORAD Region Headquarters (CANR HQ). The term “air operations centre (AOC)” can be adapted for different command situations to include joint air operations centre (JAOC) or CAOC.

12. DTB record 552.

13. DTB record 44223.

### CHAPTER 3

1. Steven T. Ross, “Napoleon and Maneuver Warfare,” *The Harmon Lectures in Military History, 1959–1987* (Washington, DC: United States Government Printing Office, 1988).

2. CDS [Chief of the Defence Staff] Directive on Canadian Armed Forces Command and Control and the Delegation of Authority for Force Employment, 28 April 2013, accessed July 7, 2017, <http://collaboration-admpa.forces.mil.ca/sites/DI/Organizations/sjs/cds-dir-2013-03-command-control.pdf>.

3. The United States Air Force produces a master air attack plan (MAAP) in lieu of the Royal Canadian Air Force master air operations plan (MAOP).

4. “Red card holder” is a slang term for the national mission/target acceptance authority and is the individual who, in accordance with national direction and rules of engagement, accepts the responsibility to undertake a mission or engage a target. The term is indicative of holding up a red (stop) card to indicate that a mission/target will **not** be accepted.

5. Global Affairs Canada, Treaty List, “Agreement Between the Government of Canada and the Government of the United States of America on the North American Aerospace Defense Command,” accessed July 7, 2016, <http://www.treaty-accord.gc.ca/text-texte.aspx?id=105060>.

This Page Intentionally Blank