

ROYAL CANADIAN AIR FORCE DOCTRINE



EXPEDITIONARY AIR OPERATIONS



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TABLE OF CONTENTS

LIST OF FIGURES

iii

LIST OF TABLES

iii

PREFACE

iv

KEYNOTES

v

CHAPTER 1 • EXPEDITIONARY AIR OPERATIONS

Introduction

1

2 Wing

1

Air Task Force

4

CHAPTER 2 • COMMAND AND CONTROL

Introduction

9

ATF Comd

9

Modifications to the C2 Structure

12

CHAPTER 3 • PREPARING FOR EXPEDITIONARY AIR OPERATIONS

Preparation

15

Aerodrome Activation / Deployment

15

CHAPTER 4 • CONDUCTING EXPEDITIONARY AIR OPERATIONS

Initial/Full Operational Capability

19

CAOC

19

RCAF Missions

22

CHAPTER 5 • FORCE PROTECTION

Introduction

25

ATF FP Programme

25

Summary

28

CHAPTER 6 • SUPPORT

Introduction

31

The Sustainment System

31

Sustainment Planning

33

Health Services

34

Support of MH and Tac Avn

34

CHAPTER 7 • TERMINATING EXPEDITIONARY AIR OPERATIONS

Introduction

37

Termination

37

Reconstitution

38

Personnel Reintegration

39

GLOSSARY

40

LIST OF ABBREVIATIONS

46

LIST OF REFERENCES

50

LIST OF FIGURES

Figure 1-1. Representative ATF organization chart 4

Figure 5-1. Ground defence area 26

Figure 6-1. Relationship between levels of sustainment and
 lines of support in expeditionary operations 32

LIST OF TABLES

Table 2-1. CAF air forces C2 structure in joint force employment 10

PREFACE

This manual provides the operational-level doctrine for Royal Canadian Air Force (RCAF) expeditionary air operations and has been designed for use by the following:

- a. RCAF personnel, units and headquarters (HQ); and
- b. other Canadian Armed Forces (CAF) elements that command or support RCAF units in expeditionary operations, including those preparing to do so.

This manual is presented in seven chapters:

- a. Chapter 1 – Expeditionary Air Operations;
- b. Chapter 2 – Command and Control;
- c. Chapter 3 – Preparing for Expeditionary Air Operations;
- d. Chapter 4 – Conducting Expeditionary Air Operations;
- e. Chapter 5 – Force Protection;
- f. Chapter 6 – Support; and
- g. Chapter 7 – Terminating Expeditionary Air Operations.

The manual is to be used in conjunction with:

- a. B-GA-400-000/FP-001, *Royal Canadian Air Force Doctrine*;
- b. B-GA-401-001/FP-001, *Royal Canadian Air Force Doctrine: Control of the Air* (under development);
- c. B-GA-401-002/FP-001, *Royal Canadian Air Force Doctrine: Intelligence, Surveillance and Reconnaissance*;
- d. B-GA-401-004/FP-001, *Royal Canadian Air Force Doctrine: Air Mobility* (under development);
- e. B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control*;
- f. B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*;
- g. B-GA-402-006/FP-001, *Royal Canadian Air Force Doctrine: Force Generation* (under development);
- h. B-GA-402-007/FP-001, *Royal Canadian Air Force Doctrine: Force Development* (under development);

- i. B-GA-403-002/FP-001, *Aerospace Electronic Warfare Doctrine*;
- j. B-GA-405-000/FP-001, *Canadian Forces Aerospace Shield Doctrine*;
- k. B-GA-405-001/FP-001, *Aerospace Force Protection Doctrine*;
- l. B-GL-005-300/FP-001, Canadian Forces Joint Publication (CFJP) 3-0, *Operations*;
- m. B-GL-005-400/FP-001, *CFJP 4-0, Support*;
- n. *Royal Canadian Air Force Campaign Plan*, Version 2.0; and
- o. *Strong, Secure, Engaged: Canada's Defence Policy*.

Recommendations for amendments to this publication are welcome and should be forwarded to the Royal Canadian Air Force Aerospace Warfare Centre, attention Doctrine Development Branch.

Commander 1 Canadian Air Division is the approval authority for this doctrine.

KEYNOTES

These keynotes are the fundamental beliefs upon which this doctrine publication is built.

- Expeditionary air operations doctrine is a capacity enabler for RCAF commanders during domestic and international operations.
- The RCAF has to be an agile, expeditionary force to conduct operations and to project integrated air power globally.
- The RCAF projects a force package in the form of an air task force (ATF) to deliver air power for expeditionary operations.
- The RCAF is committed to strengthening the use of Gender-Based Analysis Plus (GBA+) as a key tool for informing the planning and decision-making processes. When applying the contents of this manual, there is an expectation that commanders and their staff will include GBA+ considerations when planning and executing both domestic and expeditionary operations.¹

1. Resources, including the GBA+ course and the CDS Directive for Integrating UNSCR 1325 and Related Resolutions into CAF Planning and Operations, are available at "Director Integration of Gender Perspectives (Dir IGP)," Canada, Department of National Defence (DND), accessed April 17, 2018, <http://intranet.mil.ca/en/organizations/sjs/genad.page>.



CHAPTER 1

EXPEDITIONARY AIR OPERATIONS

In the context of air operations, an expeditionary operation is any operation conducted away from the main operating base. Expeditionary operations may be conducted in domestic, continental or international theatres.¹

INTRODUCTION

To be capable of conducting operations at home and abroad, the RCAF must be an agile, expeditionary force. This necessitates having the personnel, doctrine, infrastructure, equipment, training and mindset to be able to conduct air operations at a location other than a main operating base (MOB). To rapidly project air power, the RCAF must force generate and maintain forces capable of responding to all types of operations.² This high readiness (HR) ATF is identified at the strategic level through the RCAF Force Posture and Readiness Directive.³

2 WING

2 Wing is the RCAF's principal expeditionary wing; it constitutes the core of a permanent deployable force on rotating HR. 2 Wing's mandate is to command, control and enable expeditionary air operations, which inherently includes establishing, activating and supporting an air base and air capability. When required, 2 Wing is capable of supplementing 1 Canadian Air Division (1 Cdn Air Div) or other higher headquarters in the planning of expeditionary operations. 2 Wing fulfils three major roles: it is the centre of excellence for air deployments based on 2 Air Expeditionary Squadron (2 AES); it assists other ATFs with training through 2 Expeditionary Readiness Centre (2 ERC), and it is the RCAF rapid-response ATF.

When air power is required, it is not necessarily 2 Wing or the managed readiness plan (MRP)⁴—designated ATF that deploys. With enough lead time, another ATF may be force generated and deployed. The mission is the key factor in determining whether the MRP-designated ATF, 2 Wing ATF or a specifically created ATF is activated.

1. *Defence Terminology Bank (DTB)* record 34907.

2. In accordance with B-GJ-005-000/FP-001, CFJP 01, *Canadian Military Doctrine*, the three broad categories of operations are routine, contingency and rapid response.

3. The current version is 3350-1 (D Air Rdns & Plans), 26 March 2015, RCAF Force Posture and Readiness Directive – 2015 (SECRET).

4. The current version is 3000-1 (A5), 19 July 2017, 1 Canadian Air Division Managed Readiness Plan 2017.

2 AES force generates trained, equipped and ready-to-deploy task-tailored forces to provide the necessary support to conduct expeditionary operations. The RCAF will normally commit elements of 2 AES to form a deployed air expeditionary support detachment (AESD) under the command and control (C2) of an ATF commander (Comd). An ATF is comprised of an operations-support element (OSE), a mission-support element (MSE) and a force-protection element (FPE):

- a. The **OSE** normally provides the ATF with aerodrome-coordination and operations support, including aircraft maintenance coordination, air intelligence, communication and information systems (CIS), flight safety, meteorological services as well as limited advisory capability for explosive ordnance disposal / improvised explosive device disposal.
- b. The **MSE** provides construction engineering (CE) and logistic requirements such as supply, transportation, electrical and mechanical engineering (EME), food services, materiel traffic, human resources / finance services, ammunition specialists and postal support.
- c. The **FPE** consists primarily of the aerodrome security force ([ASF] for security operations) but can expand its role, as required, to include the following additional force protection (FP)–related capabilities: aerodrome intelligence, surveillance and countersurveillance; chemical, biological, radiological and nuclear (CBRN) defence; military engineering (including fire protection); force health protection; and logistics, which may be grouped within the FPE for the purposes of efficiency and span of control. These capabilities may be delivered through resources integral to the FPE or via external means (i.e., MSE, OSE, technical assistance visit, reachback, partner nation, etc.). The provost marshal is the commander's security and military police (MP) advisor, who coordinates and provides advice on law enforcement, custody operations and traffic control. C2 of the FPE must rest with an appointed person properly trained in FP operations and planning.

2 ERC is established as a unit of 2 Wing at Bagotville. It is a standing non-deployable unit; its purpose is to be the RCAF centre for excellence for expeditionary operations. This is accomplished through standardized training of the deployable elements of the RCAF MRP lines of operation (LoOs).⁵ 2 ERC is comprised of the following sections: Operations and Training Readiness, OSE Training, MSE Training, FPE Training and Lessons Learned. 2 ERC provides core training services for 2 Wing, similar to an operational training unit (OTU). The unit is not deployable; however, its personnel can be deployed to maintain personnel currency and capability readiness.

5. LoO 1 is deliberate operations while LoO 2 is contingency operations. A deliberate operation is an operation characterized by detailed planning and coordination and is conducted at the time of a commander's choosing, while a contingency operation is characterized by a rapid response and planning cycle with a quick response time from warning to deployment.

2 ERC is 2 Wing's institutional backbone for conducting and coordinating specialty individual training, individual battle-task-standard training and collective training that supports the established 1 Cdn Air Div validation process. 2 ERC performs the following functions:

- a. research, develop and deliver air expeditionary, individual specialty courses specific to 2 Wing to meet its approved mission set;
- b. as part of a managed readiness cycle, provide collective-training standardization to the elements of an ATF during its preparation period to attain HR status for named operations. This is accomplished by executing collective-training confirmation exercises with the end state of subject units having achieved the operational readiness (OPRED) required for deployment;
- c. provide observer controller trainer (OCT) personnel during collective-training exercises and assume, if required, confirmation-team responsibilities;
- d. coordinate and track collective-readiness qualifications required by deploying expeditionary elements;
- e. execute 1 Cdn Air Div collective-training policy, as outlined by the Air Force Expeditionary Task Standards (AFETS)⁶ and associated *Canadian Air Division Orders Volume 5 Training and Standards*;
- f. maximize collective-training excellence by monitoring occupation-specific centres of excellence;
- g. contribute to the lessons-learned database in terms of expeditionary collective training;
- h. maximize joint and multinational force interoperability by standardizing collective deployment readiness training (DRT) programmes;
- i. research and develop new collective-training requirements and delivery methods (i.e., command post exercises, computer-assisted exercises, table-top exercises, white-cell concept, etc.);
- j. validate collective-training programmes by reviewing contingency plans (CONPLANs), post-exercise and post-operations reports and other information sources for implications relevant to collective DRT; and
- k. function as the subject matter expert (SME) for all collective expeditionary-training matters.

6. The custodians for the AFETS are Air Force Expeditionary Readiness Standardization and Evaluation Team (AFERSET) and 2 ERC.

AIR TASK FORCE

The RCAF organizes for deployed operations along the ATF structure. This flexible and scalable organization will normally be comprised of the same baseline components that enable the delivery of air power: ATF Comd/HQ, air task force coordination element (ATFCE) and an air expeditionary wing (AEW)—which consists of the AESD and air detachments (air dets). Figure 1-1 is a template for ATFs and can be adjusted depending on the mission. The size of the ATF can vary across the spectrum from a single aircraft detachment with no support to a large multifleet organization with a matching infrastructure and support footprint. When a helicopter-centric ATF is required, a modified version of the ATF structure may be used, as both tactical aviation (tac avn) and maritime helicopter (MH) units routinely use Canadian Army (CA), Royal Canadian Navy (RCN) or Canadian special operations forces (CANSOF) sustainment systems to operate away from the deployed operating base (DOB).

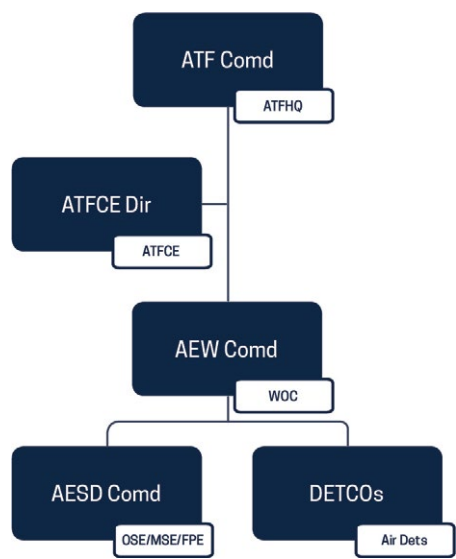


Figure 1-1. Representative ATF organization chart⁷

7. The AEW HQ and AEW Comd position will not always exist within the ATF structure (see AEW paragraph).

The RCAF has established this structured expeditionary capability; it is designed to facilitate the rapid deployment of air power in support of CAF operations. Through the MRP, the RCAF designates on an annual basis an ATF Comd and units (including air dets and support detachments) to maintain an HR posture. In the year preceding the HR liability period, the ATF is trained and exercised to the required standard, as determined by the expected mission, if known.

The **ATFCE** is a scalable coordination team, led by a director, that performs a planning, coordination and liaison function at an allied/coalition combined air operations centre (CAOC)—and other HQs as required—on behalf of the ATF Comd. As a general rule, the ATFCE should be located where mission acceptance (MA) is being conducted. An ATFCE director is responsible for ensuring that RCAF air power is properly employed by the coalition or joint force as well as monitoring and assessing the effectiveness of ATF contributions.

An **AEW**, when the size and complexity of an operation/mission dictate, is formed as a subordinate formation HQ organization within the ATF structure. The AEW is scalable and modular in scope and size. In some cases, when the AEW consists of multiple air dets and a large support organization, the AESD will be formed and an AESD Comd will be designated. In cases where a single air det is deployed, the detachment commander (DETCO) could be given the additional duties of commanding the support subunits. During a medium to large deployment, the AEW will normally consist of:

- a. The **AESD**, which is a deployable, task-tailored, tactical-level detachment that provides support to the air expeditionary operation. The AESD plans, activates and sustains air operations at DOBs and is comprised of the following:
 - (1) an **OSE**, which provides the operational support to allow the ATF Comd to conduct safe and effective air operations in accordance with the air operations directive (AOD) of the higher HQ. Through a trained battle staff within the OSE, the ATF Comd exercises C2 of assigned forces. The OSE is normally comprised of the following elements: current air operations, meteorological services, aircraft maintenance support, aerospace management, CIS and intelligence;
 - (2) an **MSE**, which provides the mission support to the entire ATF, by providing the support directly or coordinating with combined and joint structures. The MSE is normally comprised of the following elements: logistics, EME, administration, finance, contracts and CE. Depending on host nation (HN) or coalition support, the ATF Comd may require additional support staff to facilitate full-spectrum operations. MSE personnel staff the mission-support operation cell within the ATF battle staff; and

(3) an **FPE**, which provides FP capabilities, such as an ASF. It is comprised of both MP and an auxiliary aerodrome security force (AASF), which consists of ATF personnel tasked as a secondary duty to augment the FPE when required. It also includes an aerodrome defence force (ADF), which consists of combat-arms assets and CBRN capabilities.⁸

b. **Air dets**, which vary in size and composition depending upon the aircraft fleet as well as the mission and desired effect. Each air det normally consists of aircrew, aircraft maintenance personnel, support personnel, aircraft and equipment.

While every RCAF operation will be organized as an ATF that is scaled to the needs of the operation, not all operations will have a separate AEW Comd and HQ. In some cases, the ATF Comd and HQ will assume the AEW Comd and HQ responsibilities. Depending on the size of the operation, one of the subunit commanders (OSE/MSE/FPE) could be assigned AESD duties, and in some situations, the AESD may not be formed at all.



8. The CBRN capability normally consists of an advisor and ATF personnel trained, as a secondary duty, to respond to CBRN incidents.



COMMAND AND CONTROL



INTRODUCTION

A well-defined and clearly understood C2 structure is essential for all military operations and exercises. When the RCAF assigns forces to an operation, they are normally organized as an ATF. The scalable ATF structure provides functionality and flexibility as well as the C2 structures necessary when conducting all types of operations.

ATF COMD

Designation. The ATF Comd is an operational- or tactical-level commander who exercises command over an ATF. The Comd 1 Cdn Air Div, who by virtue of the position is also the Joint Force Air Component Commander¹ to the Canadian Joint Operations Command (CJOC), will appoint the ATF Comd. When so appointed, the ATF Comd will be designated to perform this role for a specific operation, exercise or period of time. The Joint Force Air Component Commander monitors and assesses the complexity of the operation and, when necessary, modifies the ATF HQ and units to ensure the appropriate level of leadership is present.

Roles and responsibilities. As a commander at the tactical or operational level, the ATF Comd normally exercises either operational command (OPCOM) or tactical command (TACOM) over all elements of the ATF. The ATF Comd is responsible for ensuring that 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 Joint Force Air Component Commander during expeditionary operations when OPCOM has been delegated to the Joint Force Air Component Commander; or
- b. the CAF joint task force (JTF) Comd during expeditionary operations when OPCOM has been delegated to the CAF JTF Comd.

In addition to commanding the 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 MA and launch authority (LA) processes, which bridge both the RCAF's residual authorities (RAs) and the CJOC Joint Force Air Component Commander / CAF JTF Comd's operational risk management (ORM) authority. Certain select RA will be retained by the Comd RCAF and are, therefore, retained outside the force-employment chain of command. For air operations, these are specified RAs retained by the Comd RCAF that manage risk inherent with air operations. RAs are based on a body of knowledge gained through experience in air operations and are codified into regulations and orders that cannot be waived by any commander other than the Comd RCAF and only after a risk assessment is performed. RAs are not intended to restrict air operations but, rather, to ensure that RCAF personnel at all levels follow sound practices that maximize flexibility,

1. To avoid confusion between the Joint Force Air Component Commander in the Combined Aerospace Operations Centre in Winnipeg and a joint force air component commander in a deployed combined air operations centre (AOC), the abbreviation (JFACC) is only used for the latter.

initiative and effectiveness, while protecting personnel and equipment from unnecessary risk. There are five RAs: air doctrine, aircrew training and standards, flight safety, operational airworthiness and technical airworthiness.²

In some cases when the mission is relatively simple and requires only a small air det, the DETCO becomes the ATF Comd, and support functions may remain internal to the air det or consist of a small attached OSE or MSE. Conversely, when the size of the ATF is much larger and requires the support of a full AEW, the complexities of command will dictate having separate ATF and AEW Comds. Table 2-1 summarizes the C2 structure for CAF air forces in joint force-employment situations and outlines for each listed appointment their C2 authority, supporting personnel, liaison/coordination and their focus for the operation/mission.

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

2. Additional information is available in B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control*, 2nd ed. (July 2018), 9, accessed April 17, 2018, <http://www.rcaf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/aerospace-doctrine.page>.

Appointment	C2 Authority	Supporting Personnel	Liaison/ Coordination	Focus
Unit CO / DETCO	TACOM	Unit personnel	<ul style="list-style-type: none"> • Deploys/receives LO 	<ul style="list-style-type: none"> • Commands unit/detachment • Tactical-level planning and execution of assigned missions and tasks
Unit CO	TACON	Unit personnel	<ul style="list-style-type: none"> • Deploys/receives LO 	<ul style="list-style-type: none"> • Conducts tactical-level warfare • Controls assigned forces • Coordinates the operating environment
AESD Comd	TACOM	Detachment personnel		<ul style="list-style-type: none"> • Commands detachment • Tactical-level planning and execution of assigned missions and tasks
OSE Comd / MSE Comd / FPE Comd	TACOM	Element personnel		<ul style="list-style-type: none"> • Commands element • Tactical-level planning and execution of assigned missions and tasks

Table 2-1. CAF air forces C2 structure in joint force employment³

B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control* contains C2 models, from simple to complex, for both domestic and expeditionary scenarios. Some of the C2 models show the ATF Comd as being an operational commander; however, in most cases, the ATF Comd, much like the AEW Comd, will be considered a tactical commander. Nevertheless, there may be times when the ATF Comd's duties straddle the line between tactical and operational, depending on whether the ATF Comd has been double-hatted as the W/AEW Comd or DETCO. It should also be noted, the C2 models show two JFACCs, one is Canadian (Comd 1 Cdn Air Div) and the other is the coalition's, when Canadian assets have been placed at the disposal of allied/coalition forces. This is the most common form of employment of Canadian air assets when part of a large international operation. B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control* describes three recent examples of ATF Comd constructs that have been used and why they were chosen for that particular situation.⁴ In this case the ATF Comd is responsible to the 1 Cdn Air Div JFACC but responsive to the theatre JFACC.

3. B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control*, 33.

4. B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control*, 43–44.

The **AEW Comd**, when assigned, is responsible to the ATF Comd for executing missions and tasks with assigned forces and is situated at the tactical level. The AEW Comd is subordinate to the JFACC / air component commander (ACC) / Canadian national commander (CNC) / JTF Comd and is also responsible to the CAOC for coordinating and assigning missions and tasks to subordinate units and forces. The AEW Comd is supported by a WOC.

The **AESD Comd** is a tactical-level, subunit commander who is subordinate to the AEW Comd and who commands all support functions to ensure that the wing commander (W Comd) achieves mission success. The AESD Comd has TACOM of the MSE, OSE and FPE, which is exercised through various operations centres and working groups.

A **DETCO** exercises TACOM of assigned forces and is responsible to the AEW Comd. The DETCO has a staff for coordinating with the CAOC/WOC to execute assigned missions.

OSE/MSE/FPE Comds exercise TACOM of assigned forces and are responsible to the AEW Comd. The commanders have staff for coordinating with the WOC through the AESD Comd, if one is designated, to execute assigned missions.

The location of commanders and HQs will be identified during the operations planning process (OPP). The needs of the operation, political considerations, complexity of geographical locations of the various units, difficulty of communications and C2 of units will influence the chosen location of commanders and their HQs.

MODIFICATIONS TO THE C2 STRUCTURE

Maritime-supported operations. In situations where the air effect consists of a helicopter air detachment (HELAIRDET) embarked on a ship, a modified C2 construct will be used. For *single-ship operations*, the DETCO will be designated as the ATF Comd and, if the HELAIRDET remains based on the ship, no further change to the pre-existing HELAIRDET's C2 structure is warranted. This ATF designation gives the DETCO a direct line of command to the JFACC while remaining under the OPCON of the ship's CO / task force commander. In *multiship operations*, when there are multiple embarked HELAIRDETs, one designated DETCO will assume the duties of ATF Comd and would, ideally, be located on the command ship. Each DETCO still exercises TACON of their HELAIRDET, while each ship's CO has OPCON. As with single-ship operations, the designated ATF Comd has direct access to the Joint Force Air Component Commander for issues such as MA, LA and RA. In cases when there is an *ATF Comd ashore with an embarked HELAIRDET in theatre*, the ATF Comd ashore exercises OPCOM of the HELAIRDETs for MA, LA and RA issues. An ATF Comd ashore scenario will occur in two types of situations:

- a. CAF JTF operations, such as Operation HESTIA (Haiti, 2010), where embarked maritime helicopters were employed in shore-based efforts; and
- b. allied/coalition operations, such as Exercise RIMPAC.

Each ship's CO retains OPCON of their HELAIRDET, since it is an organic part of the ship's systems, and each DETCO exercises TACOM of their HELAIRDET. Additionally, the ATF Comd ashore must coordinate ahead of time for the HELAIRDETs to be made available (TACON) to perform additional tasks apart from their normal ship duties. This coordination should be done through the appropriate component commanders to utilize the HELAIRDETs' identified excess capacity or as a priority task identified by the overall JTF Comd.

CA-supported operations. A tac avn detachment will normally be integrated within a Canadian Mechanized Brigade Group or coalition division and operate under the OPCON or TACON of the land-force element. Depending on the assigned C2 relationship, a tac avn detachment could be further detached to directly support a smaller land-force formation such as a battle group or combat team for a specific deliberate operation. If the tac avn detachment is participating in operations when there is no ATF, either the DETCO or another officer would be designated as the ATF Comd. As with MH HELAIRDETs, this gives the designated ATF Comd access to the Joint Force Air Component Commander on issues such as MA, LA and RA, if and when required. The Comd RCAF, or a delegated authority, will still retain OPCOM over the tac avn assets.

Authority. The authority an ATF Comd has to commence operations comes from a formal transfer of command authority (TOCA) from the Comd RCAF to the Comd CJOC. The Comd CJOC employs air power within the limiting parameters that were specified in the TOCA. During the course of operations, if air forces need to be put under the authority of another unit for a specific operation or time period, then a formal transfer of authority (TOA) is completed. A TOA also comes with agreed-upon parameters of use.



CHAPTER 3

PREPARING FOR EXPEDITIONARY AIR OPERATIONS

PREPARATION

The preparation phase of an expeditionary air operation may last only a few days, such as an emergency response, or it may extend over many months. Upon receiving direction from the appropriate authority, the RCAF begins the OPP when the operational plan or pre-existing CONPLAN is finalized for the given operation. It is during this time that the RCAF establishes and leads an air operations planning group (AOPG) and, depending on the operation, participates in the joint operations planning group (JOPG). The AOPG, along with the air intelligence preparation of the operating environment (AIPOE), determines the recommended ATF force structure and composition for the operation. A comprehensive reconnaissance to the intended deployment location with SMEs should be carried out early during the preparation phase. It is good practice to ensure that representatives from the RCAF HR aerodrome activation surge team (AAST) are represented on these reconnaissance activities, as they are considered the RCAF SMEs on aerodrome activation and beddown.

Sustainment requirements should be addressed in a separate support plan / administration order or in annexes to the operation order. Work must begin to address a myriad of sustainment details so that the deployment milestones are met in a timely and orderly manner. Specific issues to be addressed include:

- a. personnel/equipment readiness;
- b. assembly of materiel in preparation for movement; and
- c. initializing contracts and other support arrangements to ensure a steady stream of support services and consumable items.

The preparation phase normally ends with the declaration of OPRED and the deployment of the AAST.

AERODROME ACTIVATION / DEPLOYMENT

In addition to developing the deployment plan, the RCAF's main effort is concentrated on aerodrome activation activities, either in support of a joint or stand-alone operation. For joint operations, CJOC—through the Canadian Forces Joint Operational Support Group (CFJOSG)—generates a joint task force support component (JTFSC) to coordinate and execute many of the theatre-opening tasks, such as establishing theatre-level infrastructure; coordinating multinational or host-nation support (HNS); establishing theatre-level contracting; selecting staging areas; and overseeing the reception, staging, onward movement and integration (RSOI) of the incoming force. For an RCAF operation, the AAST is responsible for coordinating and executing many of these tasks. Given its experience in and knowledge of the air environment, this team normally activates the ATF aerodrome.

While there will likely be overlap between the phases of an operation, in the context of air operations, deployment is normally synonymous with activating an airbase at a deployed location. When executing the deployment plan, close coordination with other stakeholders (e.g., JTF and JTFSC) is the key factor for ensuring successful theatre opening and capability activation while avoiding a duplication of effort. During theatre opening, activities may include some or all of the following:

- a. activating the strategic lines of communication (SLOC) and establishing strategic deployment routes (normally a CJOC/CFJOSG responsibility);
- b. deploying the force and materiel in accordance with previously determined priorities (if a joint operation, this is a CJOC responsibility);
- c. establishing the DOB and associated facilities, infrastructure and other services that will enable the deployed forces to operate;
- d. overseeing RSOI (if a joint operation, coordination with CFJOSG and its deployed JTFSC is necessary);
- e. implementing HNS and other contracting arrangements (if a joint operation, this must be coordinated closely with JTFSC); and
- f. establishing reachback mechanisms for support of expeditionary air operations.¹

In line with the air power characteristics of speed and reach, activating an aerodrome is normally synonymous with deploying air power because the application of air effects generally needs to be achieved quickly. The RCAF must be ready to deploy to all types of environments, including permissive, non-permissive and hostile.² The DOB's level of maturity affects the amount of infrastructure and services that need to be brought in or constructed to make it suitable to support operations. These considerations include establishing theatre-level and RCAF support systems as well as arranging for HNS or bilateral agreements (normally a Strategic Joint Staff responsibility), including support provided by allied forces and civilian contractors. The initial deployment could involve a surge of personnel for force beddown but would be reduced in size as time progressed. The number of CAF/RCAF personnel required for aerodrome support could continue to shrink if the use of local contracts or support received from the HN increased. The size of the deployed force and its size adjustment over time may affect the C2 structure of the ATF. If a constantly changing force size is envisioned, the ATF Comd will need to decide how the force scales back or ramps up.

1. B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*, Chapter 4.

2. A permissive environment is "an environment in which there is no assessed threat." (DTB record 43594). A non-permissive environment is "an environment in which there is an assessed but undemonstrated threat." (DTB record 43595). A hostile environment is "an environment in which there is a demonstrated threat." (DTB record 43605).

CONSIDERATIONS FOR EXPEDITIONARY OPERATIONS IN EXTREME WEATHER

An ever increasing number of operations that the RCAF participates in are occurring in operational theatres where there is extreme weather. When planning for these types of operations, the following must be considered:

- a. health and safety of personnel which include:
 - (1) appropriate work/rest cycles so that productivity is not negatively affected; and
 - (2) the possibility of serious health conditions such as heat stroke, dehydration, hypothermia and frostbite.
- b. protection of equipment from extreme temperatures and intense sun (i.e., requirement for shaded storage areas and heating/cooling stations).

Proper planning for these environmental conditions before arriving in theatre will lead to a greater ability to overcome any obstacles that the location may present.



CONDUCTING EXPEDITIONARY AIR OPERATIONS

ATF operations are best viewed from the perspective that expeditionary air operations are characterized by low asset density and high asset value. What air power gives up in cost and numbers, it makes up with agility, reach and speed. As a resource, aircraft are limited and cannot stay airborne indefinitely; furthermore, received requests usually exceed the output capability. Centralized control gives coherence, guidance and organization to the employment of air power ensuring the most efficient use of limited air assets. Decentralized execution of expeditionary air operations allows commanders at all levels and in all locations to apply their expertise and understanding of local conditions for mission accomplishment, while fostering initiative and situational responsiveness in a dynamic environment.¹

INITIAL/FULL OPERATIONAL CAPABILITY

Once the ATF has been deployed and aerodrome activation has commenced, attention must be turned to achieving initial operational capability (IOC) and full operational capability (FOC). This is important when entering a new theatre of operations or when the operation/mission has changed from the original intent.

IOC and FOC are unique to each capability and are identified in the applicable documentation. IOC is achieved “when the ability to employ a capability is first attained.”² This milestone normally occurs “when adequate infrastructure, personnel, training and support are in place.”³ FOC is attained “when the ability to employ a capability to the mandated level is achieved.”⁴ The ATF can normally declare FOC once “the required infrastructure, personnel, training and support are fully in place.”⁵

CAOC

An ATF might conduct operations through the theatre CAOC.⁶ The CAOC is structured to operate as a fully integrated facility and includes the personnel and equipment necessary to plan, direct, control and coordinate theatre-wide air operations. As the C2 nexus of the air war, the CAOC provides the JTF Comd, through the JFACC, the critically important situational awareness required to execute successful air operations. The CAOC’s most visible outputs are the airspace control order (ACO), airspace control plan (ACP), air tasking order (ATO), AOD and master air operations plan (MAOP). The ACP, AOD and MAOP provide the basis of the air power structure and output, while the ACO and ATO are produced daily to direct the execution of air operations. Tac avn may also be part of the ATO, but it is generally assumed to be operating 24/7 (i.e., one continuous ATO line). Tac avn does not typically receive its tasking through the JFACC but, instead, receives taskings through the appropriate land-force element.

1. B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control*, 14.

2. DTB record 30980.

3. DTB record 30980.

4. DTB record 28934.

5. DTB record 28934.

6. For additional information, see B-GA-402-001/FP-001, *Royal Canadian Air Force Doctrine: Command and Control*, 40–41.

The ATO may not necessarily be used for military operations other than war, but a similar process of mission request and acceptance from a higher HQ will always exist. Missions such as humanitarian assistance or intertheatre transport may be required on short notice. The ATF must maximize its air power generation by adopting a predictable time-oriented cycle. The ATO process is suitable for the CAOC's planning cycle and for operations with large resource commitments. In small-scale operations, such as United Nations deployments, processes other than the ATO may be used, such as the flying programme, standing tasks or flexible operations. The units participating in such operations would have input into the tasking product, but the process would be less dynamic than the ATO process. In this situation, the flying unit would be responsible for a significant portion of the planning and coordination that otherwise would be the responsibility of ATO planners. Regardless, the result would be a flying programme that matches user and resource-provider needs. The ATF must always remain flexible enough to accommodate changing mission requirements.

ORM, MA and LA. ATF personnel must understand that a vital part of air operations is the concept of ORM, MA and LA. The Comd RCAF formally delegates the level of risk that can be accepted for the employment of its personnel and equipment to the Joint Force Air Component Commander (for joint operations, risk is delegated through Comd CJOC). The in-theatre risk management and acceptance shall then be conducted in accordance with Comd 1 Cdn Air Div-approved instruments,



such as MA and LA. As noted briefly in Chapter 2, the ATF Comd must implement and monitor the MA and LA processes, which bridge the RCAF's RAs and the CJOC Joint Force Air Component Commander / CAF JTF Comd's ORM authority. Since the acceptance of risk is a command function, the ATF Comd must be delegated command of their forces. At the operational level, MA is a formal process whereby the RCAF Joint Force Air Component Commander accepts a mission or series of missions for execution by the ATF during an operation; this may occur at any time prior to executing the mission. To determine whether to accept a mission, the ATF Comd must consider several criteria, such as national goals, national priorities (which may include national interests, safety of personnel, collateral damage, etc.) and ATF capabilities. Regardless of who renders the MA decision, MA is an operational-level activity. Completed at the tactical level and conducted by a flight authorization officer of behalf of the formation, LA authorizes the launch of one or more aircraft on a mission that has been previously approved through the MA process. LA is based on specific operational-risk criteria determined at the time of mission execution or during mission planning. LA answers two questions: 1) have the risk parameters changed? and 2) is there a reasonable chance of completing the mission as tasked? If the risk level for a mission exceeds the LA of the designed aircraft commander, LA may still be given by another RCAF commander if it is within their authority to do so. Regardless of who renders the LA decision, LA is a tactical-level activity.



RCAF MISSIONS

Every aircraft fleet in the RCAF has a specific set of missions that it can perform. For a more in-depth understanding of their capabilities, it is necessary to consult the tactical-level doctrine. The remainder of this section provides a brief summary of the capabilities of the RCAF's aircraft fleets.

Air mobility. Air mobility resources are used for airlift, air-to-air refuelling (AAR), search and rescue (SAR) as well as personnel recovery. Additionally, airlift and SAR missions can involve both fixed-wing (FW) and rotary-wing (RW) aircraft, while AAR missions in a Canadian context are strictly FW.⁷

- a. **Airlift**, which operates globally, can be categorized as a strategic or tactical capability, or both, depending on the nature of the mission. The category selected is based on missions assigned and the context in which the missions are conducted.⁸ Airlift encompasses missions such as scheduled and special flights, air logistics support operations, airborne operations, airmobile operations, aeromedical evacuations and special air operations. Airlift is broadly categorized into:
 - (1) **strategic airlift**, also known as intertheatre airlift, is used when moving personnel and materiel between theatres. These types of missions are not controlled/commanded by the ATF Comd, and unless specified in advance, these aircraft cannot be retasked for tactical operations once in theatre. Strategic airlift flights from outside the theatre of operations will most likely be originating from Canada or be using a hub-and-spoke system from a well-found allied base. Using slip crews and transferring aircraft in and out of theatre is complicated, but effective use of the total air-resource management system will maximize efficiencies of available resources; and
 - (2) **tactical airlift**, also known as intratheatre airlift, has the primary aim of carrying and delivering personnel and materiel within a specific theatre or area of operations. These missions include, but are not limited to, airborne, airmobile, air logistics support and special air operations.
- b. **AAR** is the capability to refuel aircraft in flight and can facilitate the rapid movement of aircraft when and where required. AAR allows air power to increase versatility, surprise, flexibility and mobility.
- c. **SAR** consists of the use of aircraft, along with other entities (i.e., surface craft and rescue teams) to search for and rescue personnel in distress on land or at sea, normally in the absence of hostile activity.
- d. **Personnel recovery** (PR) is “the sum of military, civil and diplomatic efforts to recover and reintegrate isolated personnel and/or recover persons in distress.”⁹ PR is a joint mission largely executed by air power.

7. Some nations have the capability of refuelling tac avn assets in the air (helicopter in-flight refuelling).

8. B-GA-400-000/FP-001, *Royal Canadian Air Force Doctrine*, 3rd ed., 35.

9. DTB record 31303.

Fighter aircraft. Fighter aircraft missions are affected by a number of factors that could significantly impact the size of their detachment and support footprint. The primary factors are mission set, sortie generation rates and alert posture. Fighter aircraft could participate in offensive or defensive counter-air missions as well as air-attack missions such as close air support and interdiction. They may have a day and night output or be held on an alert posture, either airborne or on the ground. Each mission and output scenario demands different resources and personnel. For example, a benign operation (with a predictable mission, very limited support requirements and operating from a well-founded airstrip) will likely require fewer personnel than the same fighter detachment in a dynamic, high-intensity, multiple-mission operation.

ISR. ISR missions collect, process and disseminate accurate and timely information to gain the situational awareness required to successfully plan and conduct operations. Almost all RCAF platforms can be used to accomplish ISR missions. However, the CP140 Aurora has a specific ISR mission set and is an excellent ISR platform that can support both the maritime and land operating environments. Fighters and tac avn possess sensors which also provide a good ISR capability.

Maritime aviation. Maritime aviation includes both RW and FW assets. The CH148, like its tac avn counterparts, is uniquely situated to perform its sea/littoral tasks within its normal construct. It has well-defined sea state, weather and crew limits, which are some of its employment factors. If maritime aviation assets are needed to operate over land, their maintenance and support requirements will be similar to an FW air det within the ATF. The CP140 provides both an antisubmarine warfare (ASW) and antisurface warfare (ASUW) capability and has the same support-structure requirements as other FW assets when conducting operations from a DOB.

Tac avn. The primary role of tac avn is to support expeditionary forces (generally land forces) with aerial firepower, reconnaissance and mobility. Examples of these tasks include air assaults, air mobile operations, aerial resupply, movement of equipment/personnel, the use of slung loads and casualty evacuation. Most often, tac avn is supporting the CA and, therefore, effective and robust support can only be achieved with a high level of integration, which often necessitates a mission-specific C2 relationship with the supported commander. In addition, the ability to operate with the land element in an austere environment is essential for maximizing operational flexibility and enabling collaborative planning cycles.



CHAPTER 5

FORCE PROTECTION

INTRODUCTION

All environments require the appropriate degree of FP to ensure that operations are conducted effectively. While it may be more common for an ATF to be deployed to a low- or medium-threat environment, the force still needs to be prepared to operate in higher threat environments, including hostile environments. The ATF must be aptly protected from threats and hazards in the physical, informational and moral domains. This is achieved by:

- a. denying an adversary or a hazard access to ATF assets;
- b. denying an adversary the information required to plan and conduct activities against the ATF; and
- c. limiting the influence of an adversary or potential hazard, thereby deterring and preventing hostile action and minimizing the results of an incident.

In an expeditionary context, adequate FP will protect vital assets from attack and minimize operational losses by identifying, detecting, assessing, deterring and mitigating known threats and hazards.

ATF FP PROGRAMME

FP is a command responsibility, but it is also the responsibility of all ATF members. ATF Comds need to plan for the FP of units deploying as part of the ATF. The commander should appoint an individual with appropriate FP training, experience and knowledge to act as an advisor on all FP related matters.¹ The effective C2 of the FP element and its integration with the air operations C2 construct form the backbone of the ATF's FP capability. The overall ATF FP programme is divided into three main areas of consideration, namely the physical, informational and moral domains.

Physical-domain considerations. The physical domain is the sphere in which people live and work.² FP in the physical domain is the primary focus prior to the ATF's initial arrival and set-up. FP measures in this domain will be generated in response to the known threats and hazards to key operational assets identified by the ATF Comd. The goals are to:

- a. deny access;
- b. prevent or deter a hostile act; or
- c. prevent an incident caused by environmental or occupational hazards by limiting vulnerabilities.

1. When the RCAF deploys its forces as part of a coalition or beds down with local forces, the ATF may not be responsible for the overall FP of the site and would only liaise with responsible authorities for FP issues. The ATF will still be required to provide FP services to the ATF Comd.

2. DTB record 41433.

FP is a ground-oriented capability which sets the conditions for mission success. The designated area for which an ATF Comd is responsible for providing security and oversight is called the tactical area of responsibility (TAOR). This includes the ground defence area (GDA) and all outlying installations or equipment. The ATF Comd will need to have situational awareness across their TAOR and work closely with other CAF forces, allied forces and the HN to ensure security. The GDA, illustrated in Figure 5-1, is the tactical area of operations around an operating location and is the area over which the ATF Comd requires influence to effectively and securely conduct air operations. It encompasses flight lines, resources such as fuel and ammunition, runways, airbase facilities and accommodation areas. The GDA extends beyond the perimeter of the airbase and is further divided into the:

- a. close defence area (CDA);
- b. close approach area (CAA); and
- c. patrol and surveillance area (PSA).³

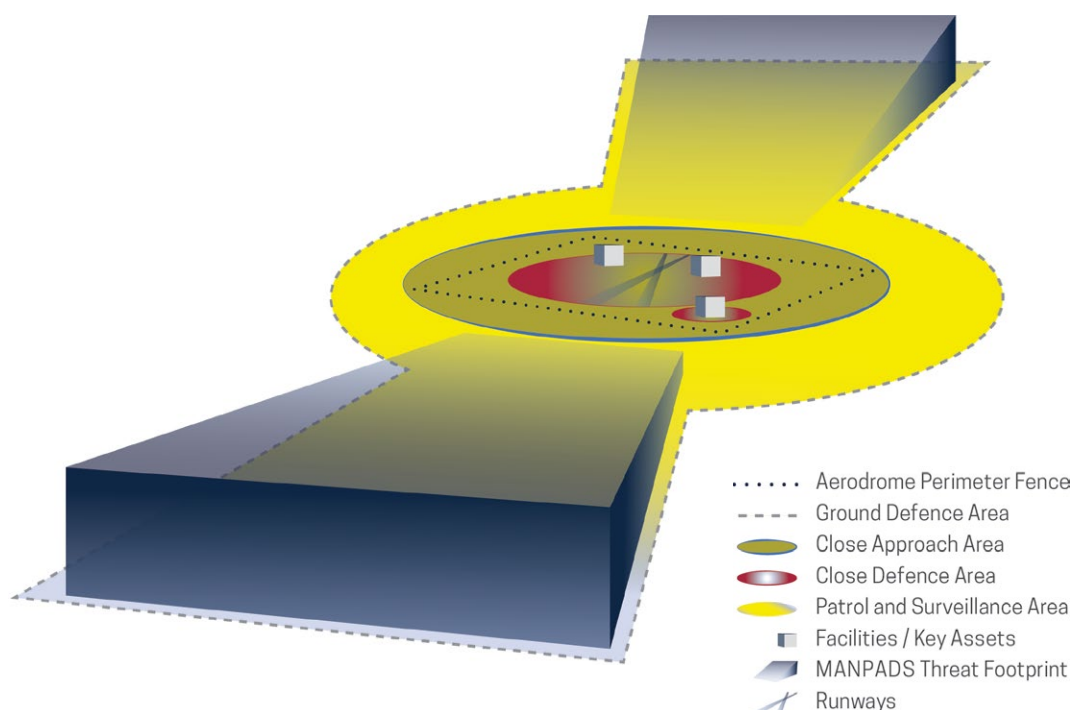


Figure 5-1. Ground defence area⁴

3. For more information, see B-GA-405-001/FP-001, *Aerospace Force Protection Doctrine*, 2-9 to 2-11.

4. B-GA-405-001/FP-001, *Aerospace Force Protection Doctrine*, 2-10.

Some of the key FP components forming the FPE in the physical domain include intelligence, protective security, law enforcement, CBRN defence, FP engineering, firefighting, ground defence, air and missile defence, camouflage and concealment, force health protection as well as safety and loss-prevention programmes. The RCAF is not equipped or manned to provide FP alone, particularly in high-risk areas. The RCAF will normally need augmentation from CAF, coalition and/or HN forces to provide FP in the PSA and the CAA.

The ATF Comd must identify the GDA surrounding the air operating location for which they are responsible and ensure the GDA is within their TAOR. This will allow the ATF Comd or the air-operating-location commander (in operations when the ATF is spread across multiple locations) to provide the required direction and guidance to ensure the FP of all the locations. Forces assigned or attached to an air operating location specifically for FP, regardless of environment, should be TACOM (less law enforcement activities) to the ATF Comd. If an ADF is deployed, it will normally be placed OPCON under the ATF Comd. The ATF Comd may delegate to a subordinate commander the authority to conduct FP activities, but the ATF Comd retains responsibility for its effective implementation. In the case of an ATF subunit deploying forward, such as a tac avn detachment, FP becomes the responsibility of the supported unit. In most cases, it may be accomplished by having the tac avn detachment collocated with units such as a service battalion.

Informational-domain considerations. The informational domain is the sphere in which information and data reside.⁵ Even prior to deployment, FP measures to counter the threats and hazards posed in the informational domain must be identified, planned for and implemented (i.e., operations security [OPSEC]). These measures aim to protect the ATF from adversarial actions within this domain and to ensure the ATF can continue to deliver air effects in accordance with the ATF Comd's mission. Some key considerations within this domain reside within the info ops protective and defensive umbrellas and include counter-intelligence, surveillance and countersurveillance, OPSEC, computer network defence, electronic-warfare protection and military deception. In addition to these purely defensive/protective components, comprehensive public-affairs and civil-military-cooperation plans are critical to protecting the force within the informational domain.

Moral-domain considerations. The moral domain is the sphere in which people interact on a psychological, ethical and/or cognitive level.⁶ Moral-domain considerations are aimed at minimizing the influence an adversary may have on operations, both at home and abroad. Potential adversaries will look for ways to attack our will to fight. This is a very cost-effective weapon that can be exploited by adversaries who do not have the means of using conventional military forces. The methods of attack may include attacks on our homeland, attacks to provoke our forces into action of dubious purpose and/or uncertain chance of success as well as attacks to undermine our legitimacy and effectiveness both in and out of theatre. These types of threats are often difficult to counter, particularly when they are frequently settled in the arena of public opinion or the media.

5. DTB record 41414.

6. DTB record 41423.

SUMMARY

FP is an inherent responsibility of command but is also the responsibility of all members of a military force. Planning and C2 structures must enable commanders to react quickly to threats and hazards. The overarching nature of the FP effort requires that it be coordinated and integrated at all levels of command and across all functional areas. Centralized control of FP policy, planning and specialized resources as well as the decentralized execution thereof are essential to effectively protect air forces against each threat and hazard. Commanders need timely and accurate intelligence about threat and hazard indicators to make effective risk-management decisions.







INTRODUCTION

The RCAF's ability to project its forces globally allows it to deliver and sustain air power over great distances. When there is a tactical need to base assets closer to the area of operations, there is a requirement for assured and continued access to secure air bases that are in the right locations, to adequate base infrastructure and utilities, to the right mix of essential personnel and to the required services. From these bases, air power can be projected to destinations throughout the world. B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment* provides further detail on sustainment during deployed operations.

THE SUSTAINMENT SYSTEM

At the operational and strategic levels, the RCAF uses the integrated CAF support framework¹ to sustain itself. At the tactical level, the RCAF uses the MSE and the OSE to provide support to a deployed ATF. In turn, the MSE engages the centralized CAF national support system, usually through the JTFSC, for operational-level support. This includes the use of the SLOC and operational support hubs to facilitate reachback support from national-level support organizations. The ATF requests aircraft parts through its A3/A4, while the air det requests them directly from RCAF MOBs, 3 Canadian Support Unit or third-party source contractors and then coordinates with JTFSC for delivery into theatre.

The SLOC are a vital part of the CAF support framework and are “all the land, water and air routes that connect a deployed force with the home nation, and along which sustainment activities occur, as well as the activities themselves.”² The SLOC are the lifelines that link a deployed task force to national support in Canada, usually accomplished through the JTFSC. The JTFSC is the task-tailored support organization that serves as the link between the third/fourth-line support capabilities provided by national support organizations and the first/second-line capabilities found within the MSE. It provides certain common operational-support requirements to the theatre of operations. The JTFSC coordinates with the ATF HQ support staff, MSE and the TF/JTF HQ support staff when developing and executing the operational-level support plan. JTF HQ and the ATF HQ must be fully conversant with the capabilities and limitations of the JTFSC, as its support needs are likely to vary from one operation to the next.

Levels of sustainment and lines of support. There are three levels of sustainment and four lines of support that are used in RCAF expeditionary operations. The levels of sustainment coincide with the three levels of operations (strategic, operational and tactical) identified in CAF joint doctrine. However, unlike the levels of operations, there is a significant degree of overlap between each sustainment level.³

1. See B-GL-005-400/FP-001, CFJP 4.0, *Support* or B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*.

2. DTB record 41456. The definition's note reads: “The lines of communications include the transportation nodes. The associated activities include reception, staging, onward movement and integration (RSOI); third-location decompression and medical evacuation.”

3. See B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*, 2–3, for more detailed information on each sustainment level.

There is a close relationship between the levels of sustainment and lines of support. While the levels of sustainment describe the level of effort involved, the lines of support indicate where support assets are grouped. The RCAF categorizes the lines of support as follows:

- a. **first-line support** consists of support capabilities that are organic to an air det / ATF;
- b. **second-line support** consists of support capabilities that are organic/allocated to a formation (e.g., air wing or DOB);
- c. **third-line support** consists of support capabilities provided to a JTF within a theatre of operations or at support installations deployed along the SLOC; and
- d. **fourth-line support** consists of support capabilities provided by national-level resources (e.g., national depots, contractors and industry).

Figure 6-1 depicts the levels of sustainment, lines of support and the organizations responsible for providing or coordinating the support to operations at DOBs.

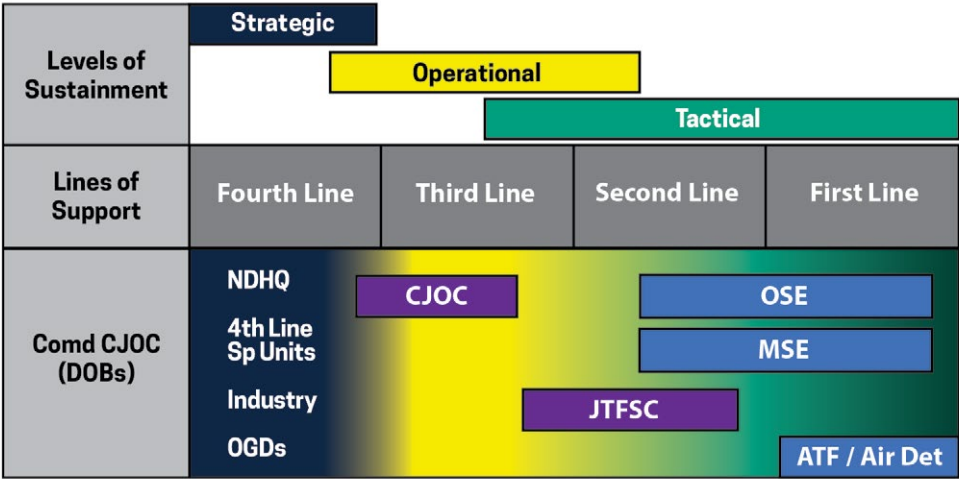


Figure 6-1. Relationship between levels of sustainment and lines of support in expeditionary operations⁴

4. Modified figure from B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*, 3.

Note: In some support manuals, tactical-level sustainment has been divided into three categories: integral support (IS), close support (CS) and general support (GS). However, these categories were replaced in B-GL-005-400/FP-001, CFJP 4.0, *Support* and B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment* with first-, second-, third- and fourth-lines of support.

SUSTAINMENT PLANNING

Expeditionary operations either evolve in a deliberate manner using deliberate planning or as a contingency operation that requires rapid-response planning. This necessitates having the doctrine, personnel, infrastructure, equipment, training and mindset to be able to conduct expeditionary air operations in environments that may present various levels of threat and hazards.

Sustainment planners must be familiar with a variety of methods for estimating⁵ requirements for personnel, materiel, infrastructure and services. They must also be aware of lessons that were learned from previous operations and be well versed in the application of the five main sustainment factors (commonly known as 4DR: destination, demand, distance, duration and risk⁶) to ensure that resources are effectively provided where and when required. These considerations demand not only a comprehensive understanding of the nature of the operation being supported but also an appreciation that some aspects of operations are rarely predictable or repeatable and that the organizations and processes used to support operations must adjust accordingly, often with great haste.

4DR generally applies when planning the sustainment requirements for a military operation. Properly accounted for, these sustainment factors enable planners to determine the number of personnel, quantity of materiel, type of infrastructure and variety of services required to achieve assigned objectives with minimum risk. These factors apply when planning for:

- a. ongoing daily MOB operations;
- b. an expeditionary deployment of the RCAF to a DOB or forward operating location; and
- c. increases in operational tempo and/or severe environmental conditions.

5. The support estimate is amplified in B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*, 67–70.

6. For more detail on 4DR, see B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*, 67–70.

HEALTH SERVICES

The Canadian Forces Health Services Group is responsible for providing or arranging for the provision of health services (HS) on operations.⁷ Role 1 medical support will usually be provided at an aerodrome medical station (AMS) established to support the ATF. Role 1 provides primary health care and includes an aviation medicine capability (i.e., a flight surgeon). In stand-alone missions, the AMS would be placed under OPCOM of the ATF Comd. When the ATF is part of a larger JTF, the AMS would be a subelement of a mission task-tailored HS unit. HS may be provided by CAF personnel, allies, HN, contractors or a combination thereof.

SUPPORT OF MH AND TAC AVN

MH. Helicopters embarked on ships will use RCN sustainment architecture for all of their needs with the exception of acquiring spare aircraft parts. If participating in operations or exercises when there is an existing ATF ashore, the HELAIRDET may use ATF resources for resupply of RCAF-specific equipment that would be more difficult to obtain through the RCN supply chain.

Tac avn requires robust first-line support to operate effectively, no matter where it is located. Each tac avn detachment is structured and provisioned with the required first-line support assets so that it is able to independently move, protect, supply, maintain and administer itself while deployed in support of land forces away from a DOB. Additionally, this support structure enables the integration of tac avn detachments into an echeloned land-force replenishment system.⁸ It is necessary for detachments to integrate into the land-force system because the ATF is not equipped to provide the required support in non-permissive environments. RCAF-specific support issues (such as spare parts, flight safety and airworthiness) must be addressed at both the tactical and operational levels by planners in close coordination with the supported land-force and tac avn chains of command.

When operating as part of an ATF at a static location (i.e., DOB), it is expected that first-and second-line support will be provided by the MSE, similar to FW assets. If the tac avn detachment forward deploys with land forces, it retains its robust first-line support capability and integrates into the land-force replenishment system as required. Aircraft maintenance conducted in austere locations (i.e., brown field locations) requires a secure space and a reliable supply of aircraft parts. While the CH146 can forward deploy for extensive periods of time, the maintenance constraints of the CH147F (length of time, tooling and complexity of inspection cycles) only support short-duration deployments before returning to a DOB.

7. See B-GJ-005-410/FP-000, CFJP 4-10, *Health Services Support to Operations* for more information.

8. For more on the echeloned system, refer to B-GL-300-004/FP-001, *Sustainment of Land Operations* (2010-12-13); and Air Doctrine Note 16/01, *Tactical Aviation Mobility and First-Line Support*.

FUNCTIONAL COORDINATION CENTRES

In October 2014, CAF deployed Joint Task Force – Iraq (JTF-I) to Kuwait as a part of Operation IMPACT. The JTF-I deployed with several force elements such as a JTF HQ; a national intelligence centre; a JTFSC; and an ATF (Air Task Force – Iraq [ATF-I]), complete with an OSE, MSE, FPE, three air dets (long-range patrol, AAR and fighters) and the ATFCE at the CAOC. These force elements each deployed with their own sustainment framework and were geographically dispersed within the theatre of operations, providing a challenge to in-theatre support architecture. To ensure sustainment success, CAF personnel on the ground implemented and formalized a process for coordination at the intratheatre level—the functional coordination centres (CCs).⁹ The functional CCs started as informal meetings with all support organizations within JTF-I, which tried to coordinate all JTF-I’s requirements with limited resources in theatre. The meetings and coordination efforts were then grouped by function—engineering, logistics and signals—and, over time, the support architecture became more effective and responsive to meet the needs of the organizations on the ground. To ensure that this system would be in place for the benefit of the remainder of the rotation and for future rotations, JTF-I, ATF-I and JTFSC Comds formalized the coordination process. The manning of the CCs did not require the addition of personnel to the existing table of organization and equipment (TO&E) because each CC was composed of existing key players within each support organization and were chaired by JTF-I HQ staff to ensure alignment with JTF-I Comd’s intent. These CCs maximized the use of existing support resources (materiel, equipment and personnel) in theatre to ensure mission success and fulfilment of JTF-I Comd’s intent.¹⁰

9. Functional coordination centres were used to success during Operation IMPACT and could also be considered for implementation for other situations when appropriate.

10. Lieutenant-Colonel Luc Girouard, “The Fusion of Doctrines: A Discussion of Sustainment Operations during Operation IMPACT,” *Royal Canadian Air Force Journal* 7, no. 1 (Winter 2018), accessed April 17, 2018, <http://www.rcaf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/elibrary/journal/archives.page>.



CHAPTER 7

TERMINATING EXPEDITIONARY AIR OPERATIONS

INTRODUCTION

Redeployment, the final operational phase, is defined as “the relocation of a deployed force to a new area of operations.”¹ This may mean the return of forces to their MOB or deployment to a new area to carry out a different operation. It involves the process of preparing and executing the relocation of units, equipment and materiel for the next operation or mission. In the context of expeditionary air operations, redeployment can occur either:

- a. at the end of a rotation, when one group is replaced with another; or
- b. when the current operation is terminated. In this case, redeployment and termination activities may take place over a significantly long period of time and can continue well after the force has left the deployment area.

TERMINATION

Termination of an operation includes many different activities and requires deliberate planning by commanders and staff to ensure success. Discussion of mission termination and reconstitution needs to happen during the initial planning stages for the operation, while in-depth planning will happen once in theatre. The main effort during the termination phase is concentrated on aerodrome deactivation and operation-/mission-termination activities. During the aerodrome deactivation phase, the effort will be on:

- a. **Aerodrome closing.** Begun early in the termination stage, it is normally considered complete when the aerodrome support structure has been dismantled and ATF force elements and materiel have been redeployed to Canada. It is during this activity that restoration of sites to their original condition (and often to a state better than their original condition) may be necessary due to legal, environmental and political pressures or agreements.
- b. **Drawdown.** Variable in its scope and scale, this activity consists of the orderly reduction of forces and materiel from the theatre of operations while maintaining operational sustainability.
- c. **Redeployment** involves the process of preparing and executing the relocation of units, equipment and materiel for the next operation. Redeployment activities may take place over a significantly long period of time and continue well after the force has left the deployment area.
- d. **Operation/mission termination** is generally completed in Canada after the ATF is redeployed back to the MOB. Tasks may include finalizing any outstanding legal, financial and disciplinary matters as well as documenting lessons identified.

1. DTB record 36932.

RECONSTITUTION

While not officially one of the phases of an operation, reconstitution is a deliberate and significant activity designed to return redeploying units to a state of operational readiness. It is not the responsibility of the force employer (the ATF) but is the responsibility of the force generator. It encompasses those activities needed to restore the desired level of combat effectiveness to RCAF units, personnel and materiel following a major operation. The main objectives of reconstitution include establishing control over resources returning from a theatre of operations, maintaining the integrity of units and formations to the greatest extent possible, maximizing asset recovery and preparing the returning forces for future operations in minimum time. Consequently, reconstitution operations normally start at the conclusion of a campaign or operation when personnel are reintegrated and materiel is repatriated. Reconstitution will be considered complete once a unit is returned to its normal levels of readiness in preparation for further operations.

For joint and multinational operations, reconstitution activities will be coordinated by CJOC and the CFJOSG. Generally, the initial reconstitution begins in the theatre of operations under direction of a theatre or mission closure team, with the assistance of the MSE, if it is a part of the deployment. More specifically, the prioritization of equipment, movement from the theatre, verification and determination of the condition of the materiel and equipment as well as the return of stocks to units will normally involve the CFJOSG, Canadian Materiel Support Group (CMSG), life cycle managers and MOB staffs.

MOBs play a significant role in reconstitution and must be equipped and ready to provide a multitude of services to units and personnel redeploying from operations. Health and personnel-support services may include physical and mental health care, honours and awards as well as the provision of assistance for reintegration into MOB activities and home routines. MOBs must also be capable of replenishing depleted commodities and repairing or replacing equipment in preparation for future operations. Depending on the condition of the returning aircraft and support equipment, considerable time and effort may be required to reconstitute unit capabilities and train new personnel to return to an operational readiness state.

PERSONNEL REINTEGRATION

A key leadership issue associated with termination and reconstitution is ensuring that personnel are properly reintegrated into their MOB and parent units. Ideally, personnel would deploy and redeploy as part of formed units, but the reality is that many personnel deploy as augmentees. Reintegration of personnel brings additional challenges, and failure to consider their legitimate needs can result in degraded morale and loss of operational effectiveness.

Reconstitution can mean different things to different support organizations. The following are a few examples:

- for aircraft maintainers, it can mean accelerating periodic inspections to restore a healthy stagger;
- for logisticians, it can mean all aspects of materiel administration, including replenishment as well as repair and/or replacement of certain equipment;
- for EME staff, it can mean second- and third-level vehicle maintenance and/or replacement; and
- for administrative staffs, it can mean reintegrating personnel and providing pay, leave and HS.²

2. B-GA-402-003/FP-001, *Royal Canadian Air Force Doctrine: Force Sustainment*, 76.

GLOSSARY

The definitions contained in this glossary are derived from a number of sources. Where this publication is the source of a definition, no source is indicated. Definitions taken from other sources are indicated in parentheses at the end of each term, utilizing the following abbreviations:

- a. *CFJP 4.0* – B-GL-005-400/FP-001, *CFJP 4.0*, *Support*; and
- b. *DTB* – *Defence Terminology Bank*.

air component commander (ACC)

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. (*DTB* record 34079)

air detachment (air det)

A fleet-specific combat force package that generates aerospace power.

Notes: 1. An air det consists of aircrew, aircraft maintenance personnel, other integral support personnel as well as aircraft and equipment.

2. An air det is the core component of an air expeditionary wing. (*DTB* record 34897)

air expeditionary support detachment (AESD)

A deployable, task-tailored, tactical-level detachment that provides support to air expeditionary operations.

air expeditionary wing (AEW)

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. (*DTB* record 34903)

aerodrome activation

The planning and support activities required to prepare an aerodrome for flying operations.

Note: Aerodrome activation includes building beddown camps, work spaces as well as communication and information systems and establishing expeditionary air traffic management.

aerodrome activation surge team (AAST)

A team that activates an aerodrome from which the RCAF conducts expeditionary operations.

auxiliary aerodrome security force (AASF)

An augmentation force formed and trained to assist the aerodrome security force when there is a demand for increased manpower due to a threat or incident outside of normal operations.

Note: An AASF is capable of responding rapidly and is comprised of secondary-duty personnel from any and all deployed occupations. (*DTB* record 34901, modified)

airlift

The transport and delivery by air of personnel and materiel in support of strategic, operational, or tactical objectives. (*DTB* record 34083)

air operation (AO)

An activity, or series of activities, related to the planning and application of air power to achieve assigned objectives. (*DTB* record 30555)

air power

The element of military power that is applied within or from the air operating environment to create effects above, on and below the surface of the Earth. (*DTB* record 43951)

air task force (ATF)

A temporary grouping of Royal Canadian Air Force formations, units or detachments that is formed to conduct a specific operation, mission or task. (*DTB* record 694281)

air task force coordination element (ATFCE)

An operational-level liaison and coordination team that facilitates the integration of air power throughout the planning and execution of allied/coalition operations.

air-to-air refuelling (AAR)

The refuelling of an aircraft in flight by an airborne tanker aircraft.

Note: Air-to-air refuelling is a subset of air refuelling. (*DTB* record 37283)

brown field location

In air operations, a site with no runway and limited to no infrastructure that is temporarily occupied by a tactical aviation unit. (*DTB* record 694493)

Canadian Forces Joint Operational Support Group (CFJOSG)

A high-readiness formation that generates task-tailored operational-support capabilities for employment in domestic, continental and international theatres of operations and across strategic lines of communication. (*CFJP 4-0*)

command and control (C2)

The exercise of authority and direction by a commander over assigned, allocated and attached forces in the accomplishment of a mission. (*DTB* record 5950)

deployed operating base (DOB)

An expeditionary base that supports the employment and sustainment of deployed forces. (*DTB* record 30809)

deployment (depl)

The movement of forces to an area of operations. (*DTB* record 48074)

detachment commander (DETCO)

A tactical-level commander who commands a detachment. (*DTB* record 44223)

expeditionary operation

An operation that requires the projection of military power over extended lines of communications into a distant operational area to accomplish a specific objective.

Notes: 1. In the context of air operations, an expeditionary operation is any operation conducted away from the main operating base.

2. Expeditionary operations may be conducted in domestic, continental or international theatres. (*DTB* record 34907)

first-line support

Support capabilities that are organic or allocated to a unit. (*DTB* record 33785)

force protection (FP)

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)

force-protection element (FPE)

The task-tailored component of an air expeditionary wing that provides the wing's force protection. (*DTB* record 694282)

forward operating location (FOL)

Any location at which material has been prepositioned and services prearranged to support the employment and sustainment of expeditionary air forces. (*DTB* record 37296)

fourth-line support

Support capabilities provided by strategic-level resources.

Note: Strategic-level resources include national depots and industry. (*DTB* record 33799)

full operational capability (FOC)

The milestone reached when the ability to employ a capability to the mandated level is achieved.

Note: FOC is unique to each capability and is identified in applicable documentation. FOC normally occurs when the required infrastructure, personnel, training and support are fully in place. (DTB record 28934)

ground defence area (GDA)

The area encompassing the close defence area, close approach area and the patrol and surveillance area. (DTB record 34941)

host nation (HN)

A nation that, by agreement, allows:

- a. another nation's forces to operate on or from, be located on or transit through its territory; or
 - b. another nation's materiel to be located on or transported through its territory.
- (DTB record 4465)

host-nation support (HNS)

Civil and military assistance rendered by a nation, in time of peace, crisis, or war, to a force that is located on, operating in/from, or is transiting through that nation's territory. (DTB record 4466)

initial operational capability (IOC)

The milestone reached when the ability to employ a capability is first attained.

Note: IOC is unique to each capability and is identified in applicable documentation. IOC normally occurs when adequate infrastructure, personnel, training and support are in place. (DTB record 30980)

joint force air component commander (JFACC)

A designated operational-level commander responsible for making recommendations to a force-employment commander on the proper employment of all assigned, attached and made-available aerospace forces.

joint operation

An operation executed by a temporary grouping of elements from at least two components, in which the application of capabilities is coordinated to achieve a common objective. (DTB record 35629)

joint task force (JTF)

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.

Note: Typical components are maritime, land, air, special operations and support. (DTB record 31012)

liaison officer (LO)

An officer assigned to a unit or headquarters for the purpose of coordinating and advising the assigned unit/headquarters on their parent unit's capabilities.

main operating base (MOB)

A base responsible for supporting the generation, employment and sustainment of assigned forces. (*DTB* record 41464)

mission-support element (MSE)

The task-tailored component of an air expeditionary wing that provides the wing's mission support. (*DTB* record 34912)

multinational operation

An operation conducted by forces of two or more nations acting together. (*DTB* record 3826)

operational support hub (OS hub)

Within a pre-established global hub-and-spoke network, an operational support node situated on or at the terminus of the strategic lines of communication. (*DTB* record 47834)

operations planning process (OPP)

A decision-making process employed by a commander and staff. (*DTB* record 21039)

operations-support element (OSE)

The task-tailored component of an air expeditionary wing that provides the wing's operations support. (*DTB* record 34915)

reachback

The means by which a deployed force receives support from organizations external to the area of responsibility. (*DTB* record 37303)

reception, staging, onward movement and integration (RSOI)

The process that enables a force to attain full operational capability on arrival in a theatre of operations. (*DTB* record 694458)

reconstitution

Measures taken to restore a formation or unit to an acceptable level of readiness. (*DTB* record 35053)

search and rescue (SAR)

The use of aircraft, surface craft, submarines, specialized rescue teams and equipment to search for and rescue personnel in distress on land or at sea. (*DTB* record 1290)

second-line support

Support capabilities that are organic or allocated to a formation. (*DTB* record 33883)

strategic lines of communication (SLOC)

All the land, water and air routes that connect a deployed force with the home nation, and along which sustainment activities occur, as well as the activities themselves.

Note: The lines of communications include the transportation nodes. The associated activities include reception, staging, onward movement and integration (RSOI); third-location decompression; and medical evacuation. (*DTB* record 41456)

tactical area of responsibility (TAOR)

The designated area for which a commander is responsible for providing security and oversight.

third-line support

Support capabilities provided to a military force within a theatre of operations or at installations established along the strategic lines of communication. (*DTB* record 33891)

transfer of authority (TOA)

The formal transfer, between commanders, of a specified degree of authority over forces allocated to an operation. (*DTB* record 5558)

transfer of command authority (TOCA)

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. (*DTB* record 30432)

ABBREVIATIONS

1 Cdn Air Div	1 Canadian Air Division
2 AES	2 Air Expeditionary Squadron
2 ERC	2 Expeditionary Readiness Centre
4DR	destination, demand, distance, duration and risk

AAR	air-to-air refuelling
AASF	aerodrome auxiliary security force
AAST	aerodrome activation surge team
ACC	air component commander
ACCE	air component coordination element
ACO	airspace control order
ACP	airspace control plan
ADF	aerodrome defence force
AESD	air expeditionary support detachment
AEW	air expeditionary wing
air det	air detachment
AMS	aerodrome medical station
AOC	air operations centre
AOD	air operations directive
AOPG	air operations planning group
ASF	aerodrome security force
A staff	air staff
ATF	air task force
ATFCE	air task force coordination element
ATO	air tasking order

C2	command and control
CA	Canadian Army
CAA	close approach area
CAF	Canadian Armed Forces
CAOC	combined air operations centre
CBRN	chemical, biological, radiological and nuclear

CC	coordination centre
CE	construction engineering
CFJOSG	Canadian Forces Joint Operational Support Group
CFJP	Canadian Forces Joint Publication
CIS	communication and information systems
CJOC	Canadian Joint Operations Command
CO	commanding officer
comd	commander
CONPLAN	contingency plan
DETCO	detachment commander
DND	Department of National Defence
DOB	deployed operating base
DRT	deployment readiness training
DTB	<i>Defence Terminology Bank</i>
EME	electrical and mechanical engineering
FOC	full operational capability
FP	force protection
FPE	force-protection element
FW	fixed-wing
GBA+	Gender-Based Analysis Plus
GDA	ground defence area
HELAIRDET	helicopter air detachment
HN	host nation
HNS	host-nation support
HQ	headquarters
HR	high readiness
HS	health services
info ops	information operations

IOC	initial operational capability
ISR	intelligence, surveillance and reconnaissance
JFACC	joint force air component commander
JTF	joint task force
JTF-I	Joint Task Force – Iraq
JTFSC	joint task force support component
LA	launch authority
LO	liaison officer
LoO	line of operation
MA	mission acceptance
MANPADS	man-portable air defence system
MAOP	master air operations plan
MH	maritime helicopter
MOB	main operating base
MP	military police
MRP	managed readiness plan
MSE	mission-support element
OPCOM	operational command
OPCON	operational control
OPP	operations planning process
OPRED	operational readiness
OPSEC	operations security
ORM	operational risk management
OSE	operations-support element
PSA	patrol and surveillance area
RA	residual authority
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy

RSOI	reception, staging, onward movement and integration
SAR	search and rescue
SLOC	strategic lines of communication
SME	subject matter expert
tac avn	tactical aviation
TACOM	tactical command
TACON	tactical control
TAOR	tactical area of responsibility
TOA	transfer of authority
TOCA	transfer of command authority
W Comd	wing commander
WOC	wing operations centre

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