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SOLDIER, AVIATOR, OR BOTH: ANALYZING THE IMPACT OF CANADA'S UNIFIED AIR POWER STRUCTURE ON TACTICAL AVIATION

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LCol D.W. Forbes

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List of Abbreviations

1 CAD	1 Canadian Air Division
1/2 CFFTS	1/2 Canadian Forces Flying Training School
10 TAG	10 Tactical Air Group
1THP	1 Tactical Helicopter Platoon
2 TAF	2 Tactical Air Force
AAC	Army Air Corps
ACDR	Aviation Capability Deficiency Record
ADM Mat	Assistant Deputy Minister - Materiel
AFEC	Air Force Expeditionary Capability
AH	Attack Helicopter
ALAT	Aviation Leger de L'Armée de Terre
AMC	Aviation Mission Commander
AOC	Army Operations Course
AOP	Air Observation Post
APC	Armoured Personnel Carrier
ATAC	Advanced Tactical Aviator's Course
ATO	Air Tasking Order
ATOC	Advanced Tactical Operations Course
BTAC	Basic Tactical Aviator's Course
CA	Canadian Army
CAB	Combat Aviation Brigade
CAB	Canadian Aviation Brigade
CAF	Canadian Armed Forces
CANSOFCOM	Canadian Special Operations Forces Command
CAOC	Combined Air Operations Centre
CAS	Close Air Support
CCAA	Canadian Corps of Army Aviation
CFTO	Canadian Forces Technical Orders
CH	Cargo Helicopter
CHF(A)	Canadian Helicopter Force (Afghanistan)
CMBG	Canadian Mechanized Brigade Group
COMALAT	Command de L'Aviation Leger de L'Armée de Terre
CSOR	Canadian Special Operations Regiment
CSS	Combat Support Squadron
DAD	Directorate Army Doctrine
DAEPM TH	Directorate Aerospace Equipment Program Management - Transport and Helicopter
DAT	Directorate Army Training
DFS	Directorate Flight Safety
DOTMP	Doctrine - Organization - Training - Materiel -

	Personnel
FARP	Forward Arming and Refueling Point
FEC	Force Employment Concept
FELP	Force Employment Lead Planner
FMC	Force Mobile Command
FOB	Forward Operating Base
GPS	Global Positioning System
HISWG	Helicopter Inter-Service Working Group
IA	Interdiction Attack
IFF	Identity Friend or Foe
IMLC	Interim Medium Lift Capability
INGRESS	Interoperable Griffon Reconnaissance, Escort and Surveillance System
JATC	Joint Air Training Centre
JEHU	Joint Experimental Helicopter Unit
JHC	Joint Helicopter Command
JTAC	Joint Terminal Attack Controller
JTF	Joint Task Force
JTF2	Joint Task Force 2
LCSS	Land Command Support System
LOFT	Land Officer Familiarization Training
MCCRT	Management, Command and Control Re-engineering Team
MCLAB	Military Committee Air Standardization Board
MCLSB	Military Committee Land Standardization Board
MFO	Multinational Force Observers
MHLH	Medium-Heavy Lift Helicopter
MND	Minister of National Defence
MRP	Maintenance Repair Party
MRP	Managed Readiness Plane
NATO	North Atlantic Treaty Organization
NFTC	NATO Flying Training in Canada
OH	Observation Helicopter
PLQ	Primary Leadership Qualification
PPCLI	Princess Patricia's Canadian Light Infantry
PSOW	Precision Stand-Off Weapon
RAF	Royal Air Force
RCA	Royal Canadian Artillery
RCAC	Royal Canadian Armoured Corps
RCAF	Royal Canadian Air Force
RCASC	Royal Canadian Army Service Corps
RCD	Royal Canadian Dragoons

RCN	Royal Canadian Navy
REME	Royal Electrical Mechanical Engineers
RNLAF	Royal Netherlands Air Force
SAR	Search and Rescue
SLA	Service Level Agreement
SOAD	Special Operations Aviation Detachment
SOCD	Statement of Capability Deficiency
SOF	Special Operations Forces
SOTF	Special Operations Task Force
SPINS	Special Instructions
SSO	Senior Staff Officer
STANAG	Standing NATO Agreement
TAAG	Tactical Aviation Advisory Group
TAE	Tactical Aviation Enterprise
TAFO	Tactical First Officer's Course
THS	Tactical Helicopter Squadron
TOCA	Transfer of Command Authority
UH	Utility Helicopter
UNPROFOR	United Nations Protection Force
USAF	United States Air Force
UTTAS	Utility Tactical Transport Aircraft System
UTTH	Utility Tactical Transport Helicopter
VCDS	Vice Chief of Defence Staff
YFR	Yearly Flying Rate

Abstract

In examining the developmental history of Land Aviation forces and its challenges in a specifically Canadian context, this paper identifies advantages and disadvantages of the current construct and offers possible modifications. The current Tactical Aviation Enterprise is a sub-optimal expression of an important integrated-joint capability within the CAF and this study will show how Land Aviation in Canada is institutionally disadvantaged as a result of being incorrectly grouped in its entirety under the RCAF. Global development of Land Aviation has demonstrated that, with few exceptions, the most optimized and effective Land Aviation forces have been grouped separately from their Air Force to some extent at least. It is structure, not the RCAF itself that is the common denominator to problems facing the TAE. Despite some challenges in practice, giving operational control or tactical control of Canadian Land Aviation elements to ground forces is already an option in RCAF doctrine for the purposes of force employment in training or operations. The issue presented here, therefore, is not only of C2 on operations directly but one of institutional stewardship.

By considering greater responsibility for the prime beneficiary of an optimized TAE, the Canadian Army, a more effective and relevant land aviation capability would emerge in that it would relieve the RCAF of what has been characterized as non-core activity by empowering the more appropriate user to take on its responsibilities; and it will achieve a more effective Land Aviation force by reducing doctrinal, cultural, and organizational frictions. In describing this argument one inevitably encounters the complexities that have created the current construct as the unique history, doctrine, organization and culture of the TAE is intertwined with both that of the RCAF and the CA. Any changes would inevitably have implications for politics, finance, the

environmental services including their internal corps and communities, and will remain an emotionally charged idea.

Chapter 1 – Introduction

Air is everywhere. This simple statement belies the complexity of understanding warfare in the third dimension. Unlike land and sea power, the genesis of air power is so recent that it can be studied from a first principles perspective in relative near-real time. Moreover, we are able to examine the relative successes and failures of the parallel advancements in technology, doctrine, organization, logistics, and culture of several allies throughout the short history of aerial warfare and identify best practices as well as forecast future trends. Legacy issues of command and control, force structure, logistics, doctrine and training, and the ever present competition between tactical and strategic air power balance continue to confound all but the simplest air power institutions throughout the world.

In the context of the Royal Canadian Air Force (RCAF), and the Canadian Armed Forces (CAF) more generally, many of these issues were officially put to rest some time ago. This was first accomplished through the process of Unification in 1968, and then through the formation of Air Command in 1975 giving the nascent Canadian Air Force full command of all military things that fly. Despite the formal and very clear delineation these decisions provided, to this day frictions, inefficiencies, and service and community based cultural discord endures as a result of a continued non-homogenous force structure, as we shall see.

A fascinating observation is made when studying the rise of Land Aviation amongst modern militaries in that one can see with a fair degree of clarity a common logic that has guided the technology, operational structures, and cultural philosophies.¹ Several of these militaries even shared identical though completely independent miss-steps and fumbles through their developmental periods. Moreover, certain self-evident truths are also revealed and the degree to

¹ The term Land Aviation will be used to distinguish those airpower elements most often integrated with or organic to ground forces from Air Forces operating at in more distinctly air domains. These terms will be described more fully in the vocabulary section of this chapter.

which these truths are adhered to seems to have also defined the degree of maturity, success, and institutional strength built up in the Land Aviation environments of these nations. At present date, Canada is almost unique in its almost dogmatic organizational grouping of Land Aviation within its Air Force.

In examining the developmental history of Land Aviation forces and the challenges to relevance and effectiveness in a specifically Canadian context, this paper endeavours to identify advantages and disadvantages of the current Tactical Aviation Enterprise (TAE) and offers possible alternatives and modifications. The current construct is a sub-optimal expression of a critical integrated-joint capability within the CAF, and so this study will show how Land Aviation in Canada is institutionally disadvantaged as a result of being incorrectly grouped in its entirety under the RCAF resulting in greatly added friction to the TAE.² By considering greater responsibility for the prime beneficiary of an optimized TAE, the Canadian Army (CA), a more effective and relevant land aviation capability would emerge. Moreover, the effectiveness gained by grouping best fitting elements together will have at least two positive outcomes. First, it would relieve the RCAF of what is being characterized as non-core activity; thus enhancing its own focus. Secondly, it will achieve a more harmonious TAE by reducing doctrinal, cultural, and organizational frictions making it better able to support Government of Canada policy. In describing this argument one inevitably encounters the complexities that have created the current construct as the unique history, doctrine, and culture of the TAE is intertwined with both that of the RCAF and the CA. Any changes would inevitably have implications for politics, finance, the

² The term TAE was coined by Col Kevin Whale while serving at Comd 1 Wing and the Chair of the Tactical Aviation Advisory Group (TAAG) from 2011-2013 in an effort to better describe the breadth of the organizations and functions involved in generating the Tactical aviation capability in Canada. It is a deliberate acknowledgement that Tac Hel is larger than 1 Wing.

environmental services including their internal corps and communities, and will remain an emotionally charged idea.

Vocabulary

A necessary foundation to the examination of Canadian Tactical Aviation element issues is establishing a specific vocabulary. For most nations, Air Forces and army aviation forces are easily distinguished using certain terms. Colloquially in Canada, Land Aviation is called “Tactical Aviation” or “Tactical Helicopters” which further muddles the specificity of the overall enterprise with the long running Strategic versus Tactical Air power debates.

Most generally, this paper considers Land Aviation to be the fixed- and rotary-wing element of tactical air power which provides intimate, first order support to land forces as its *raison d’être*.³ For the more historical portions of this paper, Land Aviation will include light observation and other airplanes though, with very minor exceptions, Land Aviation is now predominantly composed of rotary-winged aircraft. In a Canadian specific context, the functions of Land Aviation are carried out by a particular formation, 1 Wing RCAF. The collective Canadian Land Aviation establishment will be discussed in terms of the Tactical Aviation Enterprise (TAE), however, in order to encompass all other areas of the CAF involved in its generation and employment.

Specific Land Aviation elements of other nations will be discussed using their official names and abbreviations for clarity. These include US Army Aviation, the British Army Air Corps (AAC) and Joint Helicopter Command (JHC), as well as the French Aviation Léger de l’Armée de Terre (ALAT – French Army Light Aviation).

³ Department of National Defense, G-GA-440-000/AF-000, *Tactical Helicopter Operations* (Ottawa: DND Canada, 1998), 1.

Finally, as the fundamental comparison within this paper is the differentiation of Land Aviation from other air power activities, the term Air Force (capitol ‘A’ and ‘F’) will be used to describe air power functions not distinctly in the realm of Land Aviation. This distinct and deliberate exclusion of Land Aviation from the term “Air Forces” will include the context of both Strategic and Tactical air power theories and practices.

Literature Review

Writings on the history of Land Aviation outside of Canada are highly developed. Books and articles abound regarding the foundation and challenges with creating Land Aviation specialties in the UK, US, France, Australia, and others.⁴ Ironically, the US and UK sources offer some of the better available insights of early Canadian Land Aviation development.⁵

The history of the RCAF and its challenges during the unification period and the formation of Air Command have been well studied. Much of this history has been captured in the writings surrounding Hellyer’s unification. In a much more focused way, Major Steve James’ Masters’ thesis “The Formation of Air Command: A Struggle for Survival” and LCol (Ret) Dean Black’s book chapter on 10 Tactical Air Group explain in great detail how the Canadian Army’s aviation branch became an Air Command responsibility and the heated, controversial, and somewhat opportunistic manner in which it came about.⁶ Col (Ret) Randy

⁴ Australian Army, "Army Aviation in Australia 1970-2015," Accessed 30 April 2016, http://www.army.gov.au/~media/Files/Our%20work/Community%20engagement/2015_02_AHQ_ArmyAviation_Factsheet.pdf; Peter Mead, *Soldiers in the Air* (London: Ian Allan Ltd, 1967).; Frederick A. Bergerson, *The Army Gets an Air Force: Tactics of Insurgent Bureaucratic Politics* (Baltimore: The Johns Hopkins University Press, 1980).; Charles R. Shrader, *The First Helicopter War: Logistics and Mobility in Algeria, 1954-1962* (Westport: Praeger, 1999).

⁵ Sadly this includes the death of an RCASC test pilot during CH47A trials prior to its deployment to Vietnam. His name is surely in official archives but he remains unknown in TAE or RCAF literature.

⁶ Dean C. Black, “Canada’s Army Loses its Air Force,” *Sic Itur Ad Astra: Canadian Aerospace Power Studies* Vol 2, (2009): 97-106.; Stephen L. James, “The Formation Air Command: A Struggle for Survival,” (master’s thesis, Royal Military College, 1989).

Wakelam similarly describes some of the negative outcomes of these decisions on the TAE.⁷ Wakelam's paper serves to elaborate on Gongora and Wesolkowski's work on Land Aviation fleet composition which demonstrates Canada's low level of institutional investment in Land Aviation in comparison to its most similar allies.⁸

Robert M. Farley's book, *Grounded: The Case for Abolishing the United States Air Force*, is based around the idea that the creation of specific services based of environment instead of activity and mission was in error and that Air Forces should be rolled into the army and navy.⁹ He discounts the dogmatic approach that air power is universally indivisible and that strategic air power could ever carry victory. Somewhat paradoxically, however, Farley cites Canada's version of joint-ness as prescribed by Hellyer as a model for others to follow; apparently with a belief that the RCAF is more subordinate to the wishes of the CA and the Royal Canadian Navy (RCN) than is actually the case.¹⁰

Some writing does exist surrounding the CA experience in Land Aviation. LCol (Ret) Jim Grant's blog describes the early days of Land Aviation at Rivers Manitoba.¹¹ There is also a section dealing with Rivers and early institutional air-land integration and a few brief passages covering AOP in the CA in Milberry's *Canada's Air Force at War and Peace*. Additionally, the official history of the Royal Canadian Dragoons (RCD) makes favourable reference to its days in the reconnaissance helicopter role including photographs.¹² Overall, however, capturing the

⁷ Wakelam, Col Randal Wakelam, "A Fine Mess: How our Tactical Helicopter Force Came to be what it is," *The Canadian Air Force Journal*, (Fall, 2008): 50-51.

⁸ Thierry Gongora, Slawomire Wesolkowski, "What Does a Balanced Helicopter Force Look Like?" *The Canadian Air Force Journal* (Summer 2008):13-18.

⁹ Farley, Robert M. Farley, *Grounded: The Case for Abolishing the United States Air Force*, (Lexington: The University Press of Kentucky, 2015), 188.

¹⁰ Farley, *Grounded...*, 174.

¹¹ Hillman Web, "From Pharmacy to Helicopters by Lt. Col Jim Grant," Accessed 29 September 2015, <http://www.hillmanweb.com/grant01.html>.

¹² Brereton Greenhous, *Dragoon: The Centennial History of The Royal Canadian Dragoons, 1883-1983* (Ottawa, Campbell Corporation, 1983). 471.

early CA advancements in modern Land Aviation does not seem to have occurred much past unification.

Finally, writings on the TAE as papers and theses at the Canadian Forces College are very common and span almost the entire timeline of archived material. More recent topics have also included identifying the follow-on needs to complement Canada's new Chinook squadron arguing, as this paper does, that Land Aviation requires a spectrum of mutually supporting platforms, sufficient fleet size and personnel establishment to maintain deployment ratios while ensuring a domestic capability as well.¹³ In his clear and very well founded Master of Defence Studies thesis, LCol Chris Morrison outlined Canada's need for a Precision Stand-Off Weapon (PSOW) system for the TAE. Morrison asserts that at least part of the basis for this capability gap is the TAE's status as the "Bastard Child" of the CA and the RCAF.¹⁴

This paper does not seek to address symptoms such as the lack of a PSOW, justification of fleet size or composition, or the emotional and aesthetic desire of some for a return to the CA as an Army Air Corps per se. The intent of this paper is to identify the hidden structural causes which continue to generate these challenges for only in addressing those, can real progress be achieved.

Chapter Description

Chapter two will first introduce Land Aviation emphasizing the commonality of approach and challenges between pioneering nations and survey their current status. Chapter three will address the specific Canadian context, highlighting where and why Canada diverged from the now proven and more successful models of its allies. Chapters four and five will then delineate

¹³G.L. McCauley, "Beyond the Medium Transport Helicopter - The Tactical Aviation Gap" (Joint Command and Staff College Course New Horizons Paper, Canadian Forces, 2006), 26.

¹⁴C. W. Morrison, "The Need for Precision-Guided Standoff Weapons for Canada's Tactical Aviation Community." (master's thesis, Canadian Forces College, 2013), 24.

Canadian particular issues that are a direct result of those structural divergences. Chapter six will present three possible ways to improve the TAE through structural realignment as well as organizational behavior, cultural, political, and social reasons why such fundamental but necessary change is unlikely.

Having described the problem, outlined the arguments to be presented, and established the technical lexicon to be used; this paper shall transition briefly to the historical roots of Land Aviation internationally. Under the framework and specific vocabulary presented here, the reader should identify common themes in the chronology of generic Land Aviation development unbounded by borders.

Chapter 2 – A Survey of Contemporary Land Aviation

The birth of air power and that of Land Aviation are synonymous. As air power developed, however, its purpose diverged from winning wars above the battlefield to winning wars above the capitals. As such, the theoretical thinking that advantaged proponents of strategic air power over those of tactical air power only served to magnify that effect against the development of Land Aviation as an even more fragile subset of tactical air power.

Following the First World War, air power enthusiasts such as Giulio Douhet and Billy Mitchell advocated for a singular body to generate and control all Air Forces as a logical third dimension to war both in the service of its own Air missions and in support to the Land and Maritime domains.¹⁵ Douhet further advocated that the most effective method to “conquer command of the air” would be to conduct strategic bombing campaigns to wipe out on the ground the enemy’s ability to generate air power.¹⁶ In making this argument, Douhet theorized that the role of the tactical fighter was limited to ensuring that the strategic bomber could arrive at the target and that investment in tactical fighter capabilities should be limited to only that minimally required to achieve this goal.¹⁷ The pre-eminence of bomber forces over fighter forces remained a hotly debated topic due to fiscal restraints but remained weighted in favour of the bomber force advocates for the entire inter-war period. This debate also planted the seeds for the Air Forces versus Land Aviation forces debate which was to come following the Second World War and remains the fundamental root of the discord being addressed here.

Despite this theoretical disadvantage, the British, American, French, and Australian Land Aviation capabilities all developed along slightly different paths and timelines but ultimately,

¹⁵ Clayton K.S. Chun, *Aerospace Power in the Twenty First Century: A Basic Primer* (Montgomery: United States Air Force Academy in cooperation with Air University Press, 2001), 50.

¹⁶ Giulio Douhet, Translated by Dino Ferrari, *The Command of the Air* (Washington: New Imprint - Airforce History and Museums Program, 1998), 34.

¹⁷ *Ibid.*, 35.

their end results offer very similar capabilities, if on different scales. France's ALAT, UK AAC, Australian Army Aviation Corps, and US Army Aviation are all independent corps within their respective armies and each either operate the full suite of Attack, Observation-Reconnaissance, Utility, and Cargo helicopters (AH-OH-UH-CH) or have a rational organizational alternative.¹⁸ In the case of the French and the British, a further degree of integration exists through COMALAT and JHC. While the Netherlands have produced a viable, full spectrum Land Aviation capability under the auspices of their Air Force, they also have a post-Srebrenica political climate that is predisposed to ensure its military has integral to it the tools necessary to accomplish its missions.

The longstanding dispute regarding the ownership of Land Aviation was a hotly contested one. While largely resolved in most countries, this dispute continues to simmer in many circles, even amongst the air power forces of nations who have firmly delineated responsibilities between Air and Land Aviation. Though the US Army was pivotal in shaping Land Aviation generally, due to sheer scale a detailed look at the American model holds little value to this analysis. In addition to the US, however, French, Australian, German, Greek, and Italian Land Aviation forces are all part of their armies. A few other nations, including Canada, the Netherlands, and Belgium, have placed Land Aviation under their Air Force. Meanwhile, several others maintain Land Aviation-like forces embedded within more than one service. Recently controversy has arisen in that the Indian Army was approved to acquire attack helicopters despite this being a current role of the Indian Air Force.¹⁹ The British meanwhile,

¹⁸ The UK is an exception to this but this is addressed with Joint Helicopter Command, covered in the Contemporary Land Aviation chapter.

¹⁹ NDTV Website, "Indian Army to get its own attack helicopters," Accessed 27 April 2016, <http://www.ndtv.com/india-news/indian-army-to-get-its-own-attack-helicopters-501624> .

have re-grouped their Land Aviation forces under a novel joint command specific to this purpose. Clearly, there is no one-size solution but nevertheless, the debate continues.

The British

Despite internal controversy, the British Army ruled that the “RAF should be invited to man the utility helicopters” despite the fact that by the Army’s own observations, the “American, French, and West German armies all regarded these as essentially Army vehicles, and our Army had certainly played the dominant part in the JEHU [sic] experiment.”²⁰ This has carried forward to present day in the form of the RAF Puma force. The inefficiencies of this split Army-Air Force hold over Land Aviation, which was later to include the Chinook and nearly the Apache as well, led directly to the formation of Joint Helicopter Command (JHC) in its present form today. The UK’s JHC is a hybrid that, perhaps even more than grouping Land Aviation only under their army, highlights the British understanding that Land Aviation is its own species.

JHC has absorbed all 354 of the “Battlefield Helicopters” of the Army, RAF, and Royal Marines for the purposes of standardization and streamlined force employment.²¹ The personnel and aircraft themselves continue to be force generated by their respective services but are employed by JHC.²² JHC also has command over 16 Air Assault Brigade, its own service support elements, and its own flight and technical standards organizations.²³

The Dutch

The Netherlands are a very interesting case in themselves. In fact, the current state of Dutch land aviation actually intersects with the Canadian Armed Forces on a number of levels.

²⁰ Peter Mead, *Soldiers in the Air* (London: Ian Allan Ltd, 1967), 93.: Joint Experimental Helicopter Unit.

²¹ British Army Website, "Army Aviation - Joint Helicopter Command - JHC," Accessed 3 May 2016, <http://www.armedforces.co.uk/army/listings/10052.html>.

²² British Army Website, "Army Structure - Joint Helicopter Command," Accessed 3 May 2016, <http://www.army.mod.uk/structure/32411.aspx>

²³ British Army Website, "Army Aviation - Joint Helicopter Command - JHC," Accessed 3 May 2016, <http://www.armedforces.co.uk/army/listings/10052.html>.

First, it was the Dutch who purchased Canada's Chinook C's in 1991/92 and had Boeing immediately rebuild them as Chinook D's.²⁴ Famously, it was these same Chinooks which, when available, carried Canadian Army elements in Kandahar prior to the *Manley Report* and the establishment of CHF(A). Shortly after the sale of these Chinooks in 1995, the Dutch battalion assumed control of the UN Safe Zone of Srebrenica as part of the United Nations Protection Force (UNPROFOR). The Dutch were denied the air support they had requested as the crisis intensified. It had been assumed that air support would be available, however "avoidance of risk for peacekeepers on the ground and for politicians in their capitals trumped military necessity and strategic impact...this sensitivity was not lost on the warring factions" and the unsupported Dutch battalion would have been hard pressed to stop the Serbs as they massacred 8000 men and boys.²⁵ The fact that the lightly equipped Dutch peacekeepers lacked organic Land Aviation and air support figured prominently in their lack of flexibility in planning.

The national shame of this event led to the fall of the Dutch government and significant soul-searching in the Netherlands military.²⁶ So serious were the Dutch in correcting the conditions that led to this international tragedy and national embarrassment that the institutionalization of this lesson learned came in Afghanistan where they deployed five Apache and four F-16 fighters under Dutch command so that "the security chain will remain in Dutch hands."²⁷ These same Apaches provided direct support to the CA during Operation Medusa, the

²⁴ Rick Hillier, *A Soldier First: Bullets, Bureaucrats and the Politics of War* (Toronto: Harper Collins Publishers Ltd., 2010), 109.; John A Griffin, Robert H Smith, and Kenneth D Castle, *Canadian Military Aircraft: Aircraft of the Canadian Armed Forces, Serials and Photographs 1968-1998* (St Catherines: Vanwell Publishing Limited, 2005), 193.

²⁵ F.P.B. Osinga, F.P.B. M.P. Roorda, "From Douhet to Drones, Air Warfare, and the Evolution of Targeting," in *Targeting: The Challenges of Modern Warfare*, ed. Paul A. L. Ducheine, Michael N. Schmitt, and Frans P. B. Osinga (Newport: T.M.C Asser Press, 2016), 51.; David P. Auerswald, and Stephen M. Saidemand, *Nato in Afghanistan: Fighting Together, Fighting Alone*, (Princeton: Princeton University Press, 2014), 158.

²⁶ Auerswald and Saidemand, *Nato in Afghanistan...*, 158.

²⁷ *Ibid.*, 157.

most intense and significant combat engagement for Canada since the Korean War.²⁸ In the same vein, the Dutch contingent serving under the UN mandate in Mali are currently under the watchful protection of Dutch Apache attack helicopters.²⁹

The French

ALAT was the first modern Land Aviation grouping. It boasts 161 reconnaissance and attack helicopters (81 Gazelle and 67 Tigers); 126 utility helicopters of four types, some of which are being replaced and rationalized with 74 new NH-90s; and 67 specialized fixed and rotary winged aircraft of several types.³⁰ Currently, ALAT is in the process of creating a structure not unlike a marriage of US Army Aviation and the UK's JHC called COMALAT which, although an all French Army formation, will feature the 4th Airmobile Brigade encompassing a light infantry regiment with 45 light anti-tank vehicles, and a robust integral support element, and three separate helicopter regiments totaling 162 helicopters of which fully one-third are anti-armour helicopters.³¹ 4 Brigade does not encompass France's SOF Aviation, however, nor does it command ALAT's attack helicopters which form separate regiments.³² This initiative is part of the Army in Contact project.³³ This move underscores the wider French military's appreciation of healthy jointness in the field of aviation, as described by General de la Motte, commander of ALAT:

...many things already happen jointly. Procurement, for example, is handled by the DGA (French procurement agency) and the joint headquarters; maintenance

²⁸ *Ibid.*, 129.

²⁹ Dutch Ministry of Defense Website, "Dutch Contribution in Mali," Accessed 7 May 2016, <https://www.defensie.nl/english/topics/mali/contents/dutch-contributions-in-mali>.: Although Dutch Land Aviation resides in their Air Force, it has played a special role in Dutch politics since Srebrenica.

³⁰ Wolff, LTC. Presentation on French Army Aviation to RCAF ATAC course, February 2016.

³¹ Athena Defense Website, "Creation D'une Brigade ALAT: Retour ver le futur...," Accessed 20 April 2016, <http://www.athena-vostok.com/creation-dune-brigade-alat-retour-vers-le-futur>.

³² HIS Janes 360 Website, "French Army Aviation set to return to brigade structure," Accessed 30 April 2016, <http://www.janes.com/article/58117/french-army-aviation-set-to-return-to-brigade-structure>.

³³ Defence News Website, "French Army AirCorps creating 4th Helo Brigade," Accessed 30 April 2016, <http://www.defensenews.com/story/defense/land/army-aviation/2016/02/12/france/80290354/>

and repairs are done through the defence ministry's integrated structure to maintain aeronautical equipment in operational condition, the SIMMAD (Structure integree de maintien en condition operationnelle des materiels aeronautiques du ministere de la defense); the military accident bureau is also joint; helicopter pilots of the three armies are trained by the Army whilst the mechanics are trained by the Air Force. So almost all the pillars that determine capacity are already joint.³⁴

This is a model that, whether directly or through natural evolution, has been developed in other nations as well. Meanwhile, the French government continues to invest in and grow its Land Aviation capability with a recently expanded order of 6 additional NH-90s.³⁵

The Australians

The Australian Defence Force is rather unique in this analysis in that on 20 November 1986, it deliberately reversed a late-Second World War policy of placing the Royal Australian Air Force (RAAF) in command of helicopters, and re-grouped all Land Aviation under the Royal Australian Army.³⁶ Largely from its own lessons from Vietnam and its relationship with US Army Aviation, the Australian Army Aviation Corps has remained firmly within the Australian Army ever since. Moreover, since that time, Army Aviation has grown impressively. Today, 16 Aviation Brigade oversees three aviation regiments operating a combination of Chinook, Blackhawk, Kiowa, Tiger, and NH-90 variants.³⁷ Indeed, Australian Army Aviation even retained the large de Havilland Caribou tactical transport airplane until 2009, that even the US

³⁴ Force Operations Blog, "Interview with General de la Motte, commander French Army Helicopters," Accessed 15 April 2016, <http://forcesoperations.com/en/interview-with-general-de-la-motte-commander-french-army-helicopters/>.

³⁵ Space Daily Website, "French military orders more tactical transport helicopters," Accessed 25 April 2016, http://www.spacedaily.com/reports/French_military_orders_more_tactical_transport_helicopters_999.html.

³⁶ Australian Army, "Army Aviation in Australia 1970-2015," Accessed 30 April 2016, http://www.army.gov.au/~//media/Files/Our%20work/Community%20engagement/2015_02_AHQ_ArmyAviation_Factsheet.pdf.

³⁷ Australian Army, "Australian Army Aviation Corps," Accessed 30 April 2016, <http://www.army.gov.au/Our-people/Corps/Aviation>.

Army was forced to cede to the USAF as part of the Key West agreement.³⁸ Like the French, flight safety and airworthiness function in the ADF are a joint venture. The Australian model is very closely aligned with that of US Army Aviation proving that a medium-weight military can indeed manage element-specific aviation forces.

Conclusion

The history of generic Land Aviation and the fact that the nations who have proven most successful in its development have ended up in nearly the same place should make one question the validity of the force structures of those other nations, like Canada, who have built their forces differently and offer arguably qualitatively and quantitatively lesser Land Aviation services. Accordingly, an examination of Canadian Land Aviation is appropriate.

³⁸ Hamilton, Eamon, "Fixed Wings Freed," *Army*, (10 December 2009): 6.
<http://www.defence.gov.au/news/armynews/editions/1227/1227.pdf>: Bergerson, *The Army Gets and Air Force...*, 55.

Chapter 3 – Canada’s TAE in Detail

By placing the history of the TAE in the context of the RCAF-CA interactions and their individual pursuits of priorities, this chapter seeks to lay the foundation for an analysis of the frictions and barricades presently facing the TAE. In particular, this it will take pains to highlight where and why Canada diverged from contemporary thinking and models in the periods described in Chapter 2. Canada’s Infancy period consists of all Land Aviation efforts leading to the establishment of organic army helicopters in the Royal Canadian Army Service Corps (RCASC), and the Royal Canadian Armoured Corps (RCAC). Unification and the arrival of 10 Tactical Air Group (10 TAG) may be considered the start of the Adolescent period which culminated with its near-obsolescence and rust-out at end of the Cold War. Finally, the Adult period begins with the formation of 1 Canadian Air Division (1 CAD) and 1 Wing and ends with the TAE’s employment in Afghanistan and the resulting changes brought about in its aftermath.

Infancy

Aeronautics was such a new field of study that its utility in war for Canada was questioned. Only months after the first heavier than air flight in Canada, the Silver Dart aircraft was demonstrated to CA officials at Camp Petawawa on a field that to this day still bears that same name.³⁹ The CA’s response to this was lackluster as the Deputy Minister of the day decided that aviation was “Too expensive a luxury for Canada to indulge in.”⁴⁰ This resistance did not last. Following the global trend, Canadian Air Forces developed from initially doing what are now considered Land Aviation tasks and led to the creation of the Royal Canadian Air

³⁹ D. J. Goodspeed, ed, *The Armed Forces of Canada 1867-1967*, (Ottawa: Directorate of History, 1967), 27.

⁴⁰ *Ibid.*

Force in 1924.⁴¹ Although the RCAF's development between the wars was slow, it was also not focused on any deep integration with the CA. This would not come until the Second World War.

It was during the closing days of the Second World War that the CA first embarked on a Land Aviation initiative separate from the RCAF with the creation of AOP flights within the Artillery, copying directly the British model.⁴² Interestingly, during the Second World War even when the RCAF engaged in direct support to allied armies, it was clouded by an affinity for a strong and unique service identity more important than a unified military identity. Such was the case that "in 1944, when Canadian airmen had the opportunity to support 1st CA, they chose to support 2nd British Army because of the prestige of supporting a D-Day land unit."⁴³ This service-first ideology actually shaped later inter-service force structures as well when, in 1951-52, the RCAF opted for a separate area of responsibility in Germany than that of the CA, and therefore would not fight together. This was done to avoid being subordinate to the British which was deemed "counter to service goals."⁴⁴ These types of differing inter-service priorities were what led to armies, including Canada's, to acquire AOP aircraft.

It was in the post war period that the TAE took off with the formation of the CA Air Component in Ottawa in March 1947. This commenced a long period of small scale but very strong joint cooperation between the RCAF and the CA centred on the Joint Air School (subsequently called The Canadian Joint Air Training Centre and encompassed the Army Aviation Tactical Training School) at Rivers, Manitoba.⁴⁵ This school taught airborne, Air Observation Post (AOP), Close Air Support (CAS), and light aircraft pilot training. Rivers was

⁴¹ Canadian Wings Website, "History of Canada's Air Force," Accessed on 20 April 2016, <http://www.canadianwings.com/history/establishment.php>.

⁴² Larry Milberry, *AIRCOM: Canada's Air Force* (Toronto: CANAV Books, 1991), 90.

⁴³ Ray Stouffer, *Swords, Clunks and Widowmakers...*, 77.

⁴⁴ *Ibid.*, 77.

⁴⁵ Larry Milberry, *Canada's Air Force at War and Peace* (Toronto: CANAV Books, 2001), 468.

the centre of Air Land Integration (ALI) and based all types of aircraft including heavy transport, jet fighters, light observation airplanes, and helicopters. This period may well have been the high point of ALI in Canada, as described by Jim Grant, a former member of the TAE:

We were pre-integration/unification and there was a camaraderie and mutual admiration for people of different backgrounds. Happy hour at Rivers was a mixture of graduating jump school, army pilots, T33 fighter flight, Land Air warfare courses, Air Supply school courses, 1 Airborne Platoon, Box Car (C119) crews and some of the greatest “mess characters” of my life... We never bad mouthed any group, but enjoyed the variety and circle of great friends.⁴⁶

However, this venture, while important to the CA as demonstrated by their creation of a Directorate of Air within the Army HQ General Staff Branch, the RCAF apparently allowed it to continue as a minor distraction. One study of Canada’s post-war RCAF development states that:

The RCAF had evolved in the seven years following the end of the Second World War into a fighter force and by the spring of 1952, the force’s twenty-three fighter squadrons represented nearly three-quarters of all squadrons in the Air Force... During the late 1940s and early 1950s, however, the RCAF paid relatively little attention to the development of other facets of air power. Virtually no other significant aircraft development programs had been pursued, save the delivery of a few squadrons of transport aircraft and trainers. Helicopters were few as were long-range reconnaissance and general-purpose aircraft... so by 1952, the RCAF’s evolution into a fighter based force was well-established, and would continue as the Cold War intensified.⁴⁷

The CA during this period applied great focus to the issue of ALI, and in particular, Land Aviation. It went through several iterations of AOP organization, typically centred on a specialized troop of AOP aircraft and associated support organic to an artillery regiment. The light aircraft capability became so well established that its fleet of Auster AOP aircraft were entirely replaced with more modern and capable Cessna L19 airplanes.⁴⁸

⁴⁶ Hillman Web, “From Pharmacy to Helicopters by Lt. Col Jim Grant”, Accessed 29 September 2015, <http://www.hillmanweb.com/grant01.html>

⁴⁷ Barnes, *Fighters First...*, 148.

⁴⁸ Millberry, *Canada’s Air Force...*, 170.: Col (Ret) Lorne Rodenbush discussion with LCol Dave Forbes 11 Feb 2016, email 16 February 2016.

It was during this phase that the CA embarked on rotary winged aviation and did so quite enthusiastically. As with the US and UK, the CA attempted to grow the TAE within its existing corps stovepipes. Adjusting indirect fire was to be the purview of the artillery; reconnaissance and liaison would logically go to the cavalry; and transport was a logistics function. Based on this logic, 27 Hiller CH-112 Raven helicopters were purchased by the CA for the Armoured Corps, at least nine of which were deployed to Germany as organic reconnaissance platforms within the RCD.⁴⁹ At least some other RCAC regiments, specifically the Fort Garry Horse, also had organic reconnaissance helicopters.⁵⁰ The RCD official history recounts this period with great flair:

The effect of the Armoured Corps interest and development of helicopter operations will be felt in the future in all helicopter squadrons. ... In the ten years' of its existence the RCAC Helicopter Troop provided direct aviation support at a lower command level with closer cooperation with ground forces than most other armies. The unit developed a type of low (nap of the earth) flying in Europe coupled with the utilization of NCO observers which resulted in a team concept that... (demonstrates) ... a respectable record, and it was always accomplished with the required degree of cavalry style.⁵¹

Indeed, the impact of the RCAC remains did survive as the armoured observer positions that were retained through the 10 TAG period have morphed into the Griffon door gunners of today.⁵²

1 Tactical Helicopter Platoon (1THP) under the RCASC was also formed at Rivers flying the CH-113A Voyageur medium lift helicopter.⁵³ So interested was the CA in the development of helicopters for the land battle that “in 1960 the CA had initiated a tripartite study of the arming of helicopters. In 1963, Australia was added to this group forming the Quadripartite

⁴⁹ Greenhous, *Dragoon...*, 470.

⁵⁰ Goodspeed, *The Armed Forces...*, 217.

⁵¹ Greenhous, *Dragoon...*, 471.

⁵² Following the replacement of the Kiowa, the Light Observation Helicopter Observers “LOH Men” became mission specialists on the Griffon. These positions are now called “Master Door Gunners.”

⁵³ Millberry, *Canada's Air Force...*, 473.

Army Aviation Conference at Rivers.⁵⁴ This is possibly the first iteration of the America-Britain-Canada-Australia Armies Program, a keystone to this day in the CA's integration with its international partners.⁵⁵ One founding member of the UK's AAC who visited Rivers as part of these talks, noted of the Canadians in his book that:

...they had the pull on us, however, in several ways. In the Hiller 12E, for example, they had a first-class reconnaissance helicopter with plenty of power; they were in process of forming a Royal Canadian Armoured Corps flight to integrate this exciting new tactical vehicle into their armoured brigade, and its dedicated flight commander, Capt Glendinning, gave me a practical demonstration that they fully understood the tactical factors which would govern the combined operations of tanks, armoured cars and light helicopters. The Canadians were, certainly, at this stage, somewhat in advance of us.⁵⁶

Canada was clearly on the right track.

Development of airmobile forces was still experimental but the 1964 White Paper nonetheless applied emphasis on increased tactical air support and mobility to ground forces. While a seemingly good news story for the CA, this is the first time since before the First World War where the cost of Land Aviation began to challenge traditional corps roles and funding within the Army. Nevertheless:

Although the army had not embraced air-mobile tactics, it did see a need for helicopter transport on the battlefield. In November 1966, the Defence Council approved a helicopter battalion of 85 light, 110 utility, and 18 heavy helicopters. An analysis of the requirements of a Canadian task force deployed to a non-NATO theatre concluded that 112 aircraft would be required, 84 of them helicopters...Funding could be found for only half the helicopter requirement – spread out over a ten-year timeframe ...Accordingly, beginning in 1968 a fleet of 70 utility helicopters (UTTH) and 15 large cargo helicopters was acquired.⁵⁷

⁵⁴ *Ibid.*, 194.

⁵⁵ Government of Canada, "Canada-Australia Defence Relations," Accessed 7 May 2016, <http://www.forces.gc.ca/en/news/article.page?doc=canada-australia-defence-relations/hgq87xs8>.

⁵⁶ Mead, *Soldiers in the Air...*, 178.

⁵⁷ Peter Charles Kasurak, *A National Force: The Evolution of Canada's Army: 1950-2000* (Vancouver: UBC Press, 2013), 100.

This enthusiasm for Land Aviation by the Army and relative benevolent indifference to it by the RCAF was about to end, however. The CA, while increasingly limited in resources, invested institutional capital in the TAE and was beginning to see results. The helicopter troop in the RCDs operated for a decade and developed highly effective reconnaissance tactics which later made it the envy of the US and UK armies during the experimentation that led to the anti-tank helicopter, specifically being singled out by the Americans as a superior quality aviators to their own.⁵⁸ This success was about to be stunted.

Adolescence

Hellyer's unification project awkwardly transformed already experienced Land Aviation units with their own growing histories into RCAF squadrons by re-badging them with 400-series RCAF fighter and bomber squadron crests and Colours. For example, 1 THP became 450 Squadron and the RCD Helicopter Troop became 444 Tactical Helicopter Squadron. Even today, no history preceding this period is maintained by the RCAF. Indeed, even the 1 Wing public website presents only the official history of 1 Wing as part of Canada's fighter force in Europe.⁵⁹ This is a history of which the CAF should be proud but while it was being made, the Land Aviation role was being carried out as well. The TAE became a branch within the newly formed 10 TAG, a grouping of fighter bombers and army aviation under operational command of Force Mobile Command (FMC), the Army's new field force.⁶⁰

Although unification had forced the abandonment of the pure, first principles approach to defining a tactical aviation capability, it delivered on a reasonably balanced fleet structure with the acquisition of the CH135 Twin Huey, CH136 Kiowa, and eventually the CH147 Chinook as

⁵⁸ James W. Bradin, *From Hot Air to HELLFIRE: The History of Army Attack Aviation* (Novato: Presidio Press, 1994), 129.

⁵⁹ 1 Wing Website, "1 Wing Kingston," Accessed 5 April 2016, <http://www.rcaf-arc.forces.gc.ca/en/1-wing/index.page>.

⁶⁰ James, "The Formation of Air Command...", 85.

designed by the CA, albeit within the fiscal restraints extant at the time. Additionally, LGen Turcotte, FMC's first commander and de-facto Commander of the CA, won the battle to ensure TAE units would be collocated with the CA to ensure they maintained a field-operations focus and not become physically or culturally tied to hard Air Force infrastructure.⁶¹ The Land Aviation elements of 10 TAG functioned well as a result of the momentum gained from the early days of Land Aviation under the CA and the carry-over of personnel which ensued as well as from the continual influx of CA observers from the artillery and armoured reconnaissance branches who were embedded in the new 10 TAG squadrons. Col (Ret) Lorne Rodenbush recalls initially being upbeat about the change, though later found that they "lost something when we went to the Air Force."⁶²

This period began the plateau for the TAE – if not a very slow descent in terms of quality. The official history of the RCD reports that as a result of the change "some capability was lost by the departure of the Helicopter Troop to 'Triple Four' Squadron. Although the operational relationship remained much the same, the flexibility and intimate cooperation that existed between air and ground crews was necessarily weakened."⁶³ This observation goes against what was intended by the 10 TAG leadership of the day as BGen Edwards, the first Commander 10 TAG stated in *The Gazette*, 6 September 1968:

This will be an integrated land-air combat team,'... 'and emphasis will be put on field operations, the same as with the land element.'... "Air elements allocated will be located 'with land units so operational training will be intimate, inter-related and realistic.'... The new tactical air group gathers together 'the loose ends' of the air component of the Canadian Armed Forces... 'The White Paper on Defence, issued in 1964, calls for an increasing role by Canada's air element in

⁶¹ Hillman Web, "From Pharmacy to Helicopters by Lt. Col Jim Grant," Accessed 29 September 2015, <http://www.hillmanweb.com/grant01.html>

⁶² Col (Ret) Lorne Rodenbush discussion with LCol Dave Forbes 11 Feb 2016, email 16 February 2016.

⁶³ Greenhaus, *Dragoon...*, 472.

ground support, and it is to coordinate this growing function that the air group was created.’⁶⁴

With this vision in mind and under the auspices of 10 TAG, the TAE continued to learn and develop its form of air power unique in the RCAF leveraging the momentum inherited from elements like the JATC Rivers, RCA AOP Troop, 1THP, and the RCD Helicopter Troop. Perhaps most important to this momentum, however, was the inheritance of a then modern fleet of heavy lift, utility, and reconnaissance helicopters. In 1972, 10 TAG’s fleet of Voyageurs would be transferred to Air Transport Group to reinforce its Boeing-Vertol cousin, the Labrador, conducting Search and Rescue (SAR) duties. Nine CH147C Chinook helicopters were purchased for 450 Squadron between 1974 and 1978 to carry on with the role of heavy lift.⁶⁵ Emerging from the American experience in Vietnam, however, was validation of the previous French idea for an offensively armed helicopter and Canada was to part of the discussion.

In 1973, the army was grappling with force structure including options to divest of Centurion heavy tanks as they considered too expensive a system to maintain or replace. Leveraging the newly emerging anti-armour helicopter was another option. This was the backdrop to Canada’s participation in the “Ansbach Trials” in 1972 and 1973 alongside the US and Germany. In these trials, Huey Cobra and Kiowa light observation helicopters were teamed in a free play scenario against armoured units supported by tracked air defence artillery. These trials were the first proof of the viability of using dedicated attack helicopters against mass Soviet armoured forces.⁶⁶ Due to the effects of weather and the limited technology at the time, tanks would be a necessary element on the modern battlefield for the foreseeable future, this despite unarguable proof from the Ansbach trials that “if NATO was prepared to conduct a

⁶⁴ Larry McInnis, “Unification step taken as new air group formed,” *The Gazette*, 6 Sept 1968.

⁶⁵ Griffin, Smith, Castle, *Canadian Military Aircraft...*, 193.

⁶⁶ Bradin, *From Hot Air...*, 128.

retreating defence, the attack helicopter would be the preferred platform.”⁶⁷ Nevertheless, as resources for defence were limited, something else would have to be sacrificed for an attack helicopter to be pursued. With the artillery, infantry, and armoured corps competing for their own high priced “traditional war fighting methods,” there was no one who combined both power and vision to pursue this nascent and untested capability.⁶⁸ Therefore, for Canada, “the limitations of the existing aircraft and the fact that there was no army branch to argue for the helicopter tipped the balance back to the tank.”⁶⁹ This loss in initiative for the TAE illuminated the position to which it had been assigned under the new unified CAF force structure, an orphan of both services. As Kasurak notes,

The discussion of attack helicopters had turned into a debate over a helicopter versus a tank, not a discussion of how to incorporate a powerful new technology into the force. Since the army had an armoured branch prepared to defend the tank, the outcome was perhaps inevitable. The formation of Air Command and the transfer of aviation to it meant that helicopters would not have a voice or funding within the Army.⁷⁰

Had it not been for Unification, attack helicopters, if pursued, would have formed part of the RCAC and its regiments. It was not until later that the US and UK that Land Aviation platforms would become too complicated to be integrated much below the brigade level and thus formed their Army Air Corps, something Australia mimicked in 1986.⁷¹ It is reasonable to assume that this would have been the likely Canadian path as well. The formation of 10 TAG and its complement of tactical fixed and rotary winged aircraft under the command of FMC was still a workable arrangement for the TAE, despite the dilution of its former Army identity and the faltering of its supporters within the CA itself. This was to change still further.

⁶⁷ Kasurak, *A National Force...*, 136.

⁶⁸ Black, "Canada's Army Loses...", 102.

⁶⁹ Kasurak, *A National Force...*, 136.

⁷⁰ *Ibid.*, 148.

⁷¹ Australian Army, "Army Aviation in Australia 1970-2015," Accessed 30 April 2016, http://www.army.gov.au/~/_/media/Files/Our%20work/Community%20engagement/2015_02_AHQ_ArmyAviation_Factsheet.pdf. : Farrar-Hockley, *The Army in the Air...*, 208.

It was the formation of Air Command in 1975 that had the most dramatic effect on the CA's positive influence on Land Aviation. Following several years of joint resistance to the idea, LGen Bill Carr, seizing on an opportunity presented by a downturn in the national economy, managed to gain command of everything that flew in Canada and create Air Command.⁷² LGen Waters, Chief of the Land Staff and a qualified helicopter pilot, made both reasoned and impassioned arguments to the CDS, General Dextraze, but ultimately lost the argument and retired shortly thereafter.⁷³ This was possibly the last example of truly informed CA intervention on behalf of the TAE as LGen Waters' replacement, MGen J.J. Paradis, "supported the change as it 'relieved' Mobile Command of purely air matters."⁷⁴ As one will note in a later chapter, this same view carries forward to this day.

Throughout this period, the TAE generated 444 THS as part of Canadian Forces Europe, which, interestingly, remained under the command of that organization, not Air Command.⁷⁵ The remainder of the TAE, while actively training, had yet to be tested abroad. The start of its expeditionary legacy was the 1986 deployment to the Sinai as part of the Multinational Force Observers (MFO). Commander 10 TAG, MGen LeFrance, expressed concern that this deployment represented 20% of the available Twin Huey force and that there would be a noticeable impact to training with the CA.⁷⁶ While this was ongoing, a smaller deployment under the United Nations was sent to Nicaragua to assist with the demobilization of the Contras. Although interesting work and setting the stage for the deployment surges to come, these were not major endeavours for Air Command. By the mid-1980s, GPS, night vision, helicopter

⁷² James, "Formation of Air Command..." 67.

⁷³ *Ibid.*, 99.

⁷⁴ Kasurak, *A National Force...*, 143.

⁷⁵ James, "Formation of Air Command..." 100.

⁷⁶ Senate, *Report of the Special Committee of the Senate on National Defence: Military Air Transport* (Ottawa: Minister of Supply and Services Canada, 1986), 54.

launched anti-tank missiles, missile approach warning systems and countermeasures were compounding to complicate the realm of Land Aviation in general.⁷⁷ Land Aviation was growing more expensive but also much more capable. More than ever and across all militaries, Land Aviation was becoming a challenger for Air Force roles and funding.

By the end of the 1980s, much of the momentum of pre-unification TAE had been lost. Attack helicopters had been long since abandoned, and replacements for the now rather tired fleets of reconnaissance, utility, and heavy lift helicopters were nowhere to be seen. The CH147C was by now an orphan fleet, mounting obsolete engines nearing the end of their lives requiring costly refits, fleet replacement, or divestment.⁷⁸ Yet, the most recent version of the RCAF's capstone doctrine manual cites the 1980s as a period of "reinvigoration" of the Air Force through the acquisition of the CF-18, CP-140, and modernization of the North Warning System.⁷⁹ If gazed upon in focus, the TAE was in a decline at the same time as the indispensability of the helicopter was also no longer in question globally. The limited fleet deemed barely sufficient ten years earlier was now woefully inadequate as demonstrated by Gen LaFrance's 1986 remarks to the Senate Special Committee on National Defence:

Finally, I would particularly invite your attention to the tactical helicopter air lift capability in support of the army. We believe it is sadly deficient in numbers. Modern armies must be very mobile. This means air transport and, near the battlefield, it means helicopter lift. These operational capabilities can only be achieved by teams of airmen and soldiers fully equipped and trained for these activities. In our view, there are not enough army support tactical helicopters to meet the training needs, let alone the operational requirements.⁸⁰

⁷⁷ Congress of the United States Congressional Budget Office, *An Analysis of US Army Helicopter Programs* (Washington DC: US Government Printing Office, 1996), xii.

⁷⁸ Senate, *Report of the Special...*, 54.

⁷⁹ Department of National Defence, B-GA-400-000/FP-000, *Canadian Armed Forces Air Doctrine - DRAFT* (Ottawa: DND Canada, 2015), 2-3.

⁸⁰ Senate, *Report of the Special...*, 53.

This alignment of aging equipment of increasingly relative scarcity with the coming peace dividend and such an impure structure did not bode well for the TAE, as described by Wakelam: “Compounding the challenge was the fact that while the aircraft were now operated by the Air Force the money for these projects would come in large part from the Army since the capability was similarly in large part a land force one.”⁸¹ The consequences of this state of affairs was about to reveal itself.

In a scenario telling of the state of the TAE by the end of the Cold War, in 1991, the CAF were frantically planning the deployment of 4 CMBG from Germany to engage in Operation Desert Shield/Desert Storm. Canada’s military found that they could only deploy a single type of helicopter, the CH135 Twin Huey, and it would be relegated to casualty movement only. If deployed to the first high-intensity war since Korea, the CAF expected to have to rely on allies for all other Land Aviation support. The Commander of FMC, LGen Foster stated that he

... ‘remained very concerned about the lack of aviation in particular for medical evacuation and I am recommending the use of (the UTTH) squadron for medical evacuation at the third line level,’ even though there would be serious difficulties in sustaining the helicopters for more than fifteen days.⁸²

Exacerbating the situation further, was the beginning of a quarter century of near constant deployment.

As MGen (Ret) Daniel Gosselin and Craig Stone have asserted, over the course of the 1980s unification slowly weakened and “the three service environments assumed more and more of the old service prerogatives, centered upon the need for them to retain strong influence in all areas of defence.” Moreover, the services “corrected” environmental specific issues caused by

⁸¹ Wakelam, "A Fine Mess...", 50.

⁸² Kasurak, A National Force..., 225.

unification.⁸³ This correction did not occur for the TAE, however, possibly relating to its nascent establishment when the upheaval of unification occurred. Land Aviation had not been allowed to grow into its own at a critical point as it had done with many of Canada's allies who now enjoy more well-rounded Land Aviation capabilities; the TAE lacked the institutional momentum to carry itself from 1975 to the early-1990s when it saw its next bout of upheaval.

Adulthood

This period in TAE history is a more difficult one to categorize. Whereas the progression from Adolescence to Adulthood in most analyses would infer that some milestone of advancement has occurred in the adoption of technology, platforms, or organization, this was only partially true for the TAE. This period saw the dissolution of 10 TAG as 1 CAD stood up and, concurrently, the consolidation of an aged but nearly complete suite of tactical helicopters into a single fleet, the CH146 Griffon. Perhaps most significantly, 1 Wing was established to provide Land Aviation services in much the same way as 10 TAG had done but under a purely Air Force command structure as the last vestige of institutional CA influence over aviation, the operational control of 10 TAG to the CA, evaporated. This was to be the last major reorganization of the TAE until the return of the Chinook capability post Afghanistan.

The defence environment in which the TAE entered its adult phase was one of increasing institutional uncertainty such that the resurging services and the communities and corps within them now saw themselves in direct competition. Robertson notes:

By the end of the Cold War, or, perhaps more appropriately, by the early-to-mid 1990s, it could be argued that the combination of the Icarus syndrome, historical drag, budget constraints, and limited strategic thinking and vision confronted Canada's Air Forces with a situation not unlike that which they faced throughout

⁸³ Daniel Gosselin, and Craig Stone, "From Hellyer to Hillier: Understanding the Fundamental Differences between the Unification of the Canadian Forces and its Present Transformation," *Canadian Military Journal* Vol 6 No 4 (Autumn, 2003): uk.

the inter-war period. The immediate problem in the 1990s was seen to be one of defending the core capability, however that can be defined.⁸⁴

General Hillier laments the dis-jointing effect of this environment in his memoir:

10 Tactical Air Group was part of the army headquarters complex which was the command element for the Air Force's tactical helicopter squadrons that worked with us army types. But that air group headquarters worked for the Air Force, and at a time when budgets were being slashed by the federal Conservatives, there was great disagreement as to what value those helicopters could provide, what types we should have, who should command them and, most importantly, who should pay for them. The Air Force felt that since they carried or supported troops on the ground, they were army assets and the army should pay. The army felt that since they flew, they were air assets – lowest in their list of priorities – and the Air Force should pay for them. That argument led, just a few years later, to one of the more idiotic decisions ever made in the Canadian Forces. With funding cuts reaching critical levels, the Air Force and the army couldn't agree on what to do with our helicopters. So we sold our big, heavy lift helicopters, the Chinooks, to the Netherlands, leaving us with only small civilian Griffon helos tarted up as utility helicopters.⁸⁵

When asked recently to discuss the defence climate around the time of the CH147C divestment, the Commander of Air Command at the time, LGen Sutherland, commented that he faced the need to drastically reduce costs and get ahead of the coming defence cuts that everyone knew would be coming. He wanted to be proactive, lest the Air Force be subjected to what he referred to as 'outside receivership', in other words lest that someone else others (Finance/Treasury Board) decide where the cuts would be made. These cuts were anticipatory given the changing geo-strategic environment at the end of the Cold War and the 1989 Conservative Budget which focused on reducing the debt and deficit.⁸⁶ A key element to this cost cutting would be a reduction of aircraft types in order to reduce the fixed overhead costs associated with individual fleets.⁸⁷ Finally, he further commented that the Army was not actually using the Chinook

⁸⁴ Robertson, "What Direction..." 12.

⁸⁵ Hillier, *A Soldier First...*, 109.

⁸⁶ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016.

⁸⁷ *Ibid.*

aircraft much, partly due to their having been based on Air Command bases, not with CA formations.⁸⁸

When LGen Foster, the then Commander of the Army was consulted to see if he wanted to keep the Chinook, he was supportive of the divestment decision.⁸⁹ This support was undoubtedly, at least partly, due to the Army being asked to pay for some of the \$500M refurbishment cost.⁹⁰ At the same time replacement of Twin Hueys and Kiowas was being considered. Instead, Sutherland recalls, “we went ahead with our eyes open and focused on what we thought we could get and not on what we actually wanted” when Air Command targeted the Griffon as a single replacement for all three fleets. As soon as the then MND, Marcel Masse, a strong Quebec nationalist, learned the Bell 412 was built in Mirabel QC, he responded with an offer of strong support for the acquisition. As was the case for the Chinook divestment decision and, while acknowledging its “off the shelf limitations,” LGen Foster also supported acquisition of the Griffon.⁹¹ In the end, this acquiescence on the part of the RCAF to provide new helicopters to the CA and of the CA to accept the Griffon is indicative of the subject of this paper: neither group fought for a better answer. Hillier’s memoir goes on to say that: “in 1990 the squabbling over helicopters was almost the entire extent of the army-Air Force relationship.”⁹²

Concurrent to the issue of platform renewal and fleet rationalization, was an attempt to reduce defence expenditures by eliminating headquarters. These efforts were guided along their path by changes to the situation which included the 1995 federal budget outlining the closure of a

⁸⁸ Wakelam, "A Fine Mess...", 51.

⁸⁹ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016..

⁹⁰ Wakelam, "A Fine Mess...", 51.

⁹¹ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016..

⁹² Hillier, *A Soldier First...*, 109.

layer of HQ within the CF: specifically, the closure of FMC, Air Command, and Maritime Command; at least as they were then known. The closure of FMC specifically caused a change in the manner of functioning of the TAE. Whereas Air Command had held the real power over 10 TAG since at least 1975, the day to day operation of Land Aviation remained under the purview of FMC and with it at least some degree of shielding if for no other purpose than tribal protectionism. 1 CAD was established and under it, the various Air Groups and Bases were reorganized as Wings.⁹³ 1 Wing, however, was a unique arrangement as its units were not centred on infrastructure but were dispersed with the CA to support their training and to ensure regional domestic response capacity.⁹⁴

The keystone to this transition was the replacement of the existing three fleets of tactical helicopters with the CH146 Griffon. Essentially a modified commercial derivative of the Vietnam-era Huey, the Griffon was in some ways a qualitative improvement over the CH136 Twin Huey it replaced. The cockpit was night vision goggle compatible, it was equipped with three secure-frequency hopping radios, GPS and Doppler navigation systems and was intended to modularly mount several mission kits to enable it to fulfill more of the spectrum of tasks than a simple utility helicopter might normally attempt.⁹⁵ The Griffon was from the outset somewhat adequate utility helicopter and has, despite naysayers, proven its worth.⁹⁶ However, for the first fifteen years of its existence, the Griffon never regained the reconnaissance abilities of the Kiowa whilst soldiers grew ever heavier with weapons and body armour, further reducing its envelope for utility work.⁹⁷ What this acquisition did for the Land Aviation capability more

⁹³ Department of National Defence, *The Aviation Master Development Plan (AMDP) 4th Draft* (Ottawa, DND Canada, 1995), 24.

⁹⁴ McCauley, *Beyond the Medium...*, 14.

⁹⁵ LGen Lessard discussion with LCol Dave Forbes, 11 March 2016; email 2 May 2016. Griffon MIP.

⁹⁶ Sharon Hobson, "Canada's Griffon helicopter purchase brings mixed results." *Janes Defense Weekly* Vol 30, 26 August 1998, 30.

⁹⁷ Dale Grant, "The Griffon is Really a Camel," *Defence Policy Review* Vol VI no 16 (20 November 2000), 3.

generally, however, was to remove it further still from the proven multi-platform land-centric models of Canada's more successful allies.⁹⁸

The rocky beginnings for 1 Wing were further complicated by a tsunami of overseas commitments. While the mission to the MFO was a major one on the part of 10 TAG, the coming deployments to Somalia, Honduras, Bosnia, Haiti, and Kosovo while concurrently transitioning both air and ground crews from the Chinook, Twin Huey, and Kiowa to the Griffon and standing up a new headquarters in Kingston must have been an incredible feat of leadership and perseverance. Indeed, in the fifteen years from 1986 to the start of the War on Terror in 2001, 1 Wing elements were only ever not deployed for two of them.⁹⁹ An often forgotten but critical event during this period of upheaval was the necessary de-linking of the CA's rotations of its brigades as they generated the battle groups for these operations. As a result, the already tenuous linkages between the co-located 1 Wing squadrons and their affiliated formations became virtually severed with helicopters from Edmonton supporting troops from Valcartier becoming commonplace.¹⁰⁰ The September 2011 attacks caused a shift in focus for the CF in general and the decision to divest the Chinook and purchase the less than ideal Griffon would be cause for some serious soul-searching.

Of the resulting lack of robust Land Aviation at the start of the Afghanistan war, General Hillier writes:

When we began serious operations in the Balkans, Africa and, particularly, Afghanistan in the following years, we all came to regret that decision...Nothing irked me more than to arrive in Kandahar and have to wait for another nation's helicopter to take me and my team out to visit one of our forward operating bases. Most often, it ended up being the Dutch forces, and we could almost see the Canadian flag under the Royal Dutch Air Force roundel on the Chinooks. Other than hurting our pride, more importantly, those workhorse choppers with their

⁹⁸ Gongora, Wesolkowski, "What does a balanced...", 14.

⁹⁹ 1 Wing HQ, "Wing Comds FEC Overview" Slide 2, 12 November 2012.

¹⁰⁰ Col Scott Clancy, telephone discussion with LCol Dave Forbes, 5 April 2016; email 4 May 2016.

huge carrying capacity are lifesavers, enabling operational flexibility and allowing us to jump our troops over Taliban ambushes and roadside bombs.¹⁰¹

As the CA embarked on ten years of combat, the TAE found itself merely a training tool in their preparations to use borrowed American, British, Dutch, and even Polish Land Aviation.¹⁰² This prompted a very public spat between the Minister of National Defence, Peter MacKay, and Senator Colin Kenny with respect to deploying the TAE to Afghanistan.¹⁰³ On 26 November 2008 the decision to deploy helicopters to Afghanistan was announced and the situation began changing, but not without great difficulty and risk.¹⁰⁴

One area in which the CA felt that it could address an airborne shortfall within its own means was its lack of airborne ISR in the form of Unmanned Aerial Vehicles (UAVs) and embarked on the controversial Sperwer program. The complications of selecting a vehicle, developing the necessary operator training, and managing its use and maintenance proved beyond the capabilities of the CA at that time. As a result, the Air Force was given the mandate to make it function and because the task involved extremely close interaction with the CA at the lowest possible tactical level, the task was given to the only Air Force element capable of integrating with them on short notice: 1 Wing.¹⁰⁵ The TAE absorbed the Sperwer capability and operated it in Afghanistan until relieved by the Heron program. Augmenting this, however, was the Scaneagle Small UAV, operated by the Air Defence Artillery regiment of the CA who, doctrinally, coordinates the use of air space over the area of operations of its higher commander.

¹⁰¹ Hillier, *A Soldier First...*, 109.

¹⁰² Globe and Mail website, "Poland joins Canada in push for help in Afghanistan," Accessed on 5 March 2016, <http://www.theglobeandmail.com/news/national/poland-joins-canada-in-push-for-help-in-afghanistan/article18443405/>.

¹⁰³ Colin Kenny, "When it Comes to Protecting Soldiers' Lives, Makeshift Measures Beats No Measures (And Honesty Beats Political Bullshit)," *Ottawa Citizen*, 27 Sept 2007.

¹⁰⁴ Defense Industry Daily Website, "Canada Sending Armed Bell 412s to Afghanistan," Accessed on 5 March 2016, <http://www.defenseindustrydaily.com/Canada-Sending-Armed-Bell-412s-to-Afghanistan-05183/>.

¹⁰⁵ LCol Clay Rook discussion with LCol Dave Forbes, 19 Apr 2016.

Both Heron and Scaneagle proved to be extremely successful and the Scaneagle capability was repatriated following the conflict.¹⁰⁶

A further influential change was the formation of 427 Special Operations Aviation Squadron. 427 Tactical Helicopter Squadron (427 THS), the TAE unit affiliated with 2 CMBG in Petawawa was given to the newly formed Canadian Special Operations Forces Command (CANSOFCOM) under operational command.¹⁰⁷ This left one third of the CA's field army without even the normal pseudo-dedicated Land Aviation support it held onto only by virtue of co-location. This occurred without a major restructuring of the overall Wing and proved problematic for the conduct of the war in Afghanistan as 1 Wing was left without the necessary force ratio to sustain healthy rotations alongside the CA.¹⁰⁸ CANSOFCOM, however, has done much with the unit it absorbed. In addition to its other mandates, 427 SOAS embarked on a program to integrate the squadron into CANSOF operations and training.

Sadly, while the TAE was doing what it could with the Sperwer and helping to prepare the CA to leverage Dutch Apaches and American Blackhawks, Canadian soldiers were still patrolling without overhead support for lack of dedicated Land Aviation. The 2008 *Manley Report* recommended the immediate procurement of medium or heavy lift helicopters for use in Afghanistan. Their specific recommendation stated:

...to improve safety and operational effectiveness of the Canadian Forces in Kandahar, the Government should secure for them, no later than February 2009, new medium-lift helicopters and high-performance unmanned aerial vehicles. Canadian Soldiers currently must rely too much on allied forces for both of these necessary assets.¹⁰⁹

¹⁰⁶ Department of National Defence, *Project Laminar Strike - Canada's Air Force: Post Op Athena* (Trenton: DND Canada, 2011), 52.

¹⁰⁷ 3010-1 (D Air SP), Transfer of Command Authority - 427 Sqn, 27 January 2006.

¹⁰⁸ 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept, 6 March 2012, 24.

¹⁰⁹ Independent Panel on Canada's Future Role in Afghanistan. *Final Report*. (Ottawa: 2008), 35.

This group of bipartisan civilians combined with the legitimate needs dictated by circumstance and forced the system to address the critical shortfall created fifteen years earlier by the peace dividend. Under the Interim Medium Lift Capability (IMLC) program, the TAE took on eight used CH47Ds from the US Army and, with only 60 flying hours of training, they went into operations. General Hillier describes the importance of the CA's relationship with the US Army in creating this program:

When we were trying to get helicopters that we so badly needed in Afghanistan in the last year of my term as CDS, I reached out to Dick Cody. I asked him, "Can we get six Chinooks flying in Afghanistan?" Dick made it happen. Within two days, they had laid out a purchase plan and a transfer agreement, how they could help train our pilots to fly them, how they'd flow our guys in to an operational unit to give them some front-line flying experience – and all that came about because of the credibility and the relationships that we had built with them. Without that, we would not have gotten those helicopters, the true workhorse for operations that enables success and reduces risk, flying in Afghanistan.¹¹⁰

Land Aviation is a spectrum of capabilities that work together. The reintroduction of the Chinook was only part of the necessary solution the land-bound CA in Afghanistan.

The reintroduction of Chinook to the TAE brought with it the complexities of modern Land Aviation. It is a system of systems and it was well understood that to protect the Chinook and the thirty soldiers on board, not only would the Griffon be needed as an escort, it would need teeth:

The Interoperable Griffon Reconnaissance, Escort and Surveillance System (INGRESS) project is essential to provide the MHLH escort capability. Although the MHLH shall have limited capacity to provide mutual support, either CF or Allied escort is essential to maximize the operational contribution of MHLH, particularly in an adverse threat environment.¹¹¹

INGRESS was delivered with twin M-134D Dillon Gatling guns, MX-15 electro-optical cameras, and the Griffon underwent significant modifications to reduce weight and increase

¹¹⁰ Hillier, *A Soldier First...*, 221.

¹¹¹ Department of National Defence, *Statement of Operating Intent: Medium to Heavy Lift Helicopter (MHLH) V 3.0*. (Winnipeg, 1 CAD HQ, 2008), 1.

relative performance.¹¹² This ad-hoc generation of a light-attack platform opened a new degree of complexity to the TAE and it was not alone.

During Operation Athena, the remaining two conventional TAE squadrons, 408 and 430, generated composite expeditionary squadrons known as Aviation Battalions which deployed to Kandahar Airfield on roughly nine-ten month rotations conducting operations in support of Canadian and coalition forces against the Taliban. As Land Aviation resources were imperative to operations, they were pooled under Regional Command (South), a multi-national army divisional headquarters for the purposes of coalition-wide tasking efficiency but were under the Canadian command of the JTF Afghanistan Air Wing.¹¹³ This experience was a pivotal one for 1 Wing and the TAE. As the *Laminar Strike* study on the Air Wing notes, “Our experience in Afghanistan has improved our integration with the Army. We have fielded new capabilities that have increased our relevance to the land battle, and we have gained immeasurable experience.”¹¹⁴ This deployment was the first in which Canadian Land Aviation units engaged in combat killing enemy combatants and the first time it had helicopters damaged or destroyed by enemy action. Most importantly, it was the first time that Canadian Land Aviation aircrew were overhead Canadian soldiers in combat. Great strides were taken in this war towards bridging the gaps in relevance and trust with the TAE’s primary user; trust that had been degraded following the consolidation of fleets into the Griffon, the de-linking of managed readiness between squadrons and their brigades, and the loss of army operational control of Land Aviation with the demise of 10 TAG.¹¹⁵

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¹¹³ DND, *Project Laminar Strike*..., 28.

¹¹⁴ *Ibid.*, 21.

¹¹⁵ C. S. Coakwell, "Air/Land Integration: A Matter of Trust," (Joint Command and Staff College Course Solo Flight Paper, Canadian Forces, 2014), 4.

At the same time, 427 SOAS, CANSOFCOM HQ, and the RCAF together generated a new Land Aviation force and deployed it to Afghanistan. Flying Russian made Mi-17-V5 HIP helicopters, re-designated the CH178 Husky, 427 SOAS crews were trained in both Ukraine and with the United States Army to conduct airmobile and air assault missions by day and night.¹¹⁶ Called Operation Legion Lion, the Special Operations Aviation Detachment (SOAD), joined Canada's Special Operations Task Force from May 2010 until September 2012 and with only 60 flying hours of Mi-17/CH178 experience, a significant portion taught through an interpreter, engaged in operations against the Taliban and other anti-Afghan forces in Kandahar province.¹¹⁷ At home, CANSOFCOM increased the operational output of 427 SOAS by investing in its infrastructure, augmenting its maintenance capacity with civilian contractors, tasking of training support from CSOR and JTF2, and by funding sub-unit training exercises.¹¹⁸

By the withdrawal of CHF(A) and the SOAD from Afghanistan in 2012, the TAE had grown in terms of experience, legitimacy, and ability. It had bloodied itself by destroying Taliban IED teams and in the loss and injury of its own people. The TAE suffered the loss of two Chinooks, one of which was shot down, and one Griffon, tragically with three fatalities.¹¹⁹ As the TAE redeployed, work was well underway to shape its future.

The permanent purchase of new CH147F was initiated under the Medium Heavy Lift Helicopter (MHLH) program which would result in the reactivation of 450 THS, this time in Petawawa Ontario. Other capabilities forced into being by Operation Athena also became institutionalized. For the first time ever, integrated load carrying body armour was procured for

¹¹⁶ Canadian American Strategic Review Website, "CF Medium-Heavy Lift Helicopter – Mil CH-178," Accessed on 7 March 2016, <http://www.casr.ca/101-af-ch178-mil.htm>.

¹¹⁷ Telephone discussion with LCol Jeff Orr, 427 SOAS Commanding Officer 30 March 2016.

¹¹⁸ *Ibid.*

¹¹⁹ Wikipedia, "List of aviation accidents and incidents in the war in Afghanistan," Accessed on 6 May 2016, https://en.wikipedia.org/wiki/List_of_aviation_accidents_and_incidents_in_the_war_in_Afghanistan.

1 Wing aircrew and their full length C7 rifles were replaced with shorter and more agile C8 carbines. Tactics were formalized and the B-GA-442 updated and expanded to include Interdiction Attack and Escort tactics.¹²⁰ The integration of the TAE into the CA's digital command and control network became better understood and the requirements for this were articulated to 1 CAD HQ. Most importantly, it was during this period that the concept of the Aviation Battalion became entrenched as part of the Tactical Aviation Force Employment Concept (FEC).¹²¹ LGen Deschamps, then the RCAF Commander, even acknowledged the use of this term for TAE composite squadrons when deployed with the CA.¹²² With the addition of 450 THS, 1 Wing regained its third mounting unit and now had an aviation HQ element co-located with 2 CMBG. 1 Wing reestablished its managed readiness plan and put its squadrons on the same readiness rotation as the CA brigades and would assemble a combined Griffon-Chinook Aviation Battalion built around the high readiness brigade's affiliated squadron.¹²³ This process was not without difficulty, however, as some within the RCAF attempted to further and drastically reduce the Griffon establishment as they viewed the acquisition of Chinook as an exchange of capability, not as capability growth.

The TAE Today

The TAE today is made up of seven squadrons and a headquarters encompassing 82 aircraft and 2430 regular, reserve, and civilian personnel. Within the RCAF, this represents approximately 20% of the aircraft fleet and 12% of the personnel resources. In terms of funding, however, the TAE takes up only 4.5% of the operating budget and 15% of the maintenance

¹²⁰ DND, B-GA-442-001/FP-001, *Tactical Aviation Tactics...*, 15-1.: Authors time as A5 Plans at 1 Wing HQ.

¹²¹ 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept, 6 March 2012, 12.

¹²² The term Avn Bn was acknowledged when the author, Maj Derek Lay, Col Christian Drouin (now MGen), and MGen Parent (now LGen) briefed CAS on Tac Avn FEC 2017 on in April 2012 and proposed way ahead on MHLH integration. While not agreeing with all items of the proposal, LGen Deschamps stated "I like the boat you've built – It floats."

¹²³ 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept..., 24.

budget, making it a real value for money enterprise.¹²⁴ 1 Wing is the only RCAF formation with a dedicated headquarters, however most other wings embody a Wing Operations element which essentially functions in a similar manner. 1 Wing squadrons operate as lodger units on CA bases and as such, have less influence on their infrastructure than do other RCAF units.¹²⁵ Aircrew and technical ground personnel are entirely generated by RCAF schools identical to their non-Land Aviation contemporaries. The TAE maintains representation in the CA Doctrine and Training Centre and the TAE is represented in ADM Materiel by the Weapon System Manager and DAPM (TH) for the purposes of technical airworthiness authority and at 1 CAD by the SSO Tac Avn cell for operational airworthiness authority purposes. As with all RCAF functional groups, the RCAF Directorate of Flight Safety staff is responsible for the reporting and investigation of flight safety matters for the TAE. Representatives of these areas of Canada's Land Aviation capability meet two to three times per year as part of the Tactical Aviation Advisory Group to coordinate all of these matters as well as discuss officer career management.

Conclusion

That Canada's TAE origins are rooted in the CA is simple, historical fact. The manner in which the CA insisted on basing tactical helicopter squadrons with the army brigades they support, has done much to shape the culture of Tactical Aviation. The absorption of the TAE by the Air Force through unification and then even more firmly by the formation of Air Command were done to neither enhance nor damage Land Aviation, but to ensure the quality and survival of the Air Force. Despite this structural disadvantage in comparison to more universal Army Aviation models of the US, UK, France and others, the TAE has been kept very busy. In addition to maintaining a reconnaissance helicopter force in Germany as part of Canada's NATO

¹²⁴ C.W. Morrison, RCAF response to LCol Richard Maundrell for the "Defence Operational Capability Audit: Joint Helicopter Command."

¹²⁵ Col Scott Clancy, telephone discussion with LCol Dave Forbes, 5 April 2016; email 4 May 2016.

commitment from the late 1950s to 1993, since the 1986 deployment to the Sinai, the TAE has participated in thirteen named operations. From humanitarian operations in Central American and the Caribbean to the Philippines, peacekeeping in the Balkans and Africa, as well as counter-insurgency in Afghanistan where the TAE integrated with the CA in actual combat for the first time since artillery spotting from USAF aircraft in Korea, the TAE has been busy. At time of writing, it is preparing to deploy a detachment to Iraq in support of Canada's anti-ISIS efforts there.

As successive 1 Wing Commanders have stated, the success of the TAE has been because of its people and its "warrior culture."¹²⁶ That said, Land Aviation is also dependent on platforms. The Griffon is now over twenty-five years old and is overdue for life extension or replacement, neither of which is currently funded. Moreover, the TAE has come to terms with the fact that Land Aviation is a spectrum of complimentary or supporting capacities that require specialized fleets. The pre-IMLC/MHLH paper by Gongora puts the spotlight on Canada as the only force amongst similar nations to attempt to meet modern Land Aviation requirements with fewer than three helicopter types and indeed, was trying to do it with only one, the Griffon.¹²⁷ Wakelam carries the torch further in describing the situation saying: "one might conclude that while we have recognized from the earliest days of aviation the need for a balanced and complete suite of aircraft categories and capabilities we have indeed gotten ourselves in a fine mess."¹²⁸ The reintroduction of the Chinook and the temporary fix of employing the Mi-17 coupled with INGRESS did much to clean this mess for Operation Athena but with the Griffon nearing the end of its life and no funding to address this and still no vision to acquire a PSOW, the TAE is

¹²⁶ 1950-1 (COS), 1 Wing Commander's Tactical Planning Directive FY16/17, April 2016. 8.

¹²⁷ Gongora, Wesolkowski, "What does a balanced...", 14.

¹²⁸ Wakelam, "A Fine Mess...", 51.

entering a precarious state once again. The following chapters discuss the resulting issues that have emerged from this situation.

Chapter 4 – Resulting Issues: Culture, Doctrine and Organization

LOW FLIGHT

Oh, I've slipped the surly bonds of earth
 And hovered out of ground effect on semi-rigid blades;
 Earthward I've auto'ed and met the rising brush of non-paved terrain
 And done a thousand things you would never care to
 Skidded and dropped and flared
 Low in the heat soaked roar.
 Confined there, I've chased the earthbound traffic
 And lost the race to insignificant headwinds;
 Forward and up a little in ground effect
 I've topped the General's hedge with drooping turns
 Where never Skyhawk or even Phantom flew.
 Shaking and pulling collective,
 I've lumbered the low untrespassed halls of victor airways,
 Put out my hand and touched a tree.¹²⁹

Introduction

Canadian Land aviation followed a similar path as its allied counterparts from infancy into adolescence. As a result of the challenges imposed by the interrupted history of Land Aviation development in a pure form in Canada, however, a number of critical challenges emerged. In order to observe the health of the TAE in an institutional sense, this analysis will use a modified Doctrine, Organization, Training, Materiel, Personnel (DOTMP) framework to which will be added a comparative examination of TAE, RCAF, and CA cultures.¹³⁰ By deconstructing the TAE along these lines, this chapter will define the foundational obstacles facing the TAE and demonstrate that they result primarily from the current force structure.

¹²⁹ Commonly known Tactical Helicopter poem. This version found at: https://en.wikipedia.org/wiki/Low_Flight It is traditionally read in slightly modified form at 427 SOAS mess dinners by Major David “Cutter” Malejchuk.

¹³⁰ DOTMP is a common analysis tool in the CAF and exists in several modified forms. It's acronym can be found at [http://www.acronymfinder.com/Doctrine%2c-Organization%2c-Training%2c-Materiel%2c-Leadership-and-Education%2c-Personnel-and-Facilities-\(US-DoD\)-\(DOTMLPF\).html](http://www.acronymfinder.com/Doctrine%2c-Organization%2c-Training%2c-Materiel%2c-Leadership-and-Education%2c-Personnel-and-Facilities-(US-DoD)-(DOTMLPF).html)

These obstacles are a cultural discord created by the grouping of a land battle-centric force under the full command and control of the RCAF. This cultural schism also manifests itself in the creation, integration, and validation of both generic Air Forces doctrine and doctrine specific to Land Aviation in the land battle alike. Additionally, this grouping affects all aspects of force development including the organization of forces and the procurement of all things materiel from boots to helicopters. The need to train personnel to operate in the land environment, which is a complex domain in and of itself, while still meeting the professional development needs of the air domain has created a TAE not as well trained for either environment as could otherwise be achieved. Moreover, in some other areas, members of the TAE may be grossly over trained for what their actual role entails as a result of RCAF policies that make sense for Air Forces but may offer little to the fulfillment of the TAE's missions.

Finally, experience and training unique to Land Aviation is squandered as a result of career management of personnel who are shuffled between Air Force and Land Aviation specialties. All of these elements combine to contest victory in the wider CAF's efforts to deliver effective, efficient Land Aviation capability. The single factor that permeates all aspects of this analysis, however, is culture.

Culture

The TAE enjoys, or perhaps suffers from, a very strong culture. The proud expression "There's no Hell like Tac Hel!" is ubiquitous.¹³¹ This fact should not imply, however, that RCAF culture does not proudly exist in the TAE, nor that members of the TAE do not benefit greatly from it. Additionally, that the TAE enjoys a strong identity is not unique in the RCAF. Certainly, the Fighter Force culture is also very strong; indeed it may well be stronger than that of the TAE. The fact that Land Aviation culture in the TAE tends to overshadow the cultural

¹³¹ This is a common expression amongst 1 Wing Tactical Aviators.

identity it shares with the RCAF is clear in many areas; not the least of which is the re-writing of the venerated John Gillespie McGee Jr's epic poem "High Flight," which effectively serves a common airman's prayer. Whereas the culture of the Fighter Force is strong within the wider RCAF culture, it is also not at odds with it. This is where TAE culture diverges, somewhat. It has been suggested that in the absence of a strong CF Culture, that unit or occupational cultures will take over.¹³² This chapter asserts that a cultural void may be true not only of non-existent culture, but in the case of an incongruent culture as well. The RCAF has a strong culture but to many in the TAE its Land Aviation culture is very distinct from it. English acknowledges the difference between services and between units of the same service as it can "help explain both the different approaches the services take to vital issues such as war fighting, leadership, and technology, and why various units may perform differently in roughly the same circumstances."¹³³ Certain aspects of Air Force culture and the forced synthesis with Land Aviation culture by 1 Wing operators creates a dissonance that, for many, permeates everything it does.

The culture of the RCAF, like that of the CA, is based on the positive aspects of the established Canadian military values of duty, loyalty, integrity, and courage.¹³⁴ In this regard, the TAE, the wider RCAF, and the CA enjoy a strong shared foundational culture. It is in the other cultural aspects of these sister and subordinate institutions that cultural discord exists. For example, there is a nuanced difference between the concept of bravery and warrior spirit. Whereas RCAF explosives ordinance disposal personnel, fire fighters, and SAR crews, whose motto is "That Others May Live," are undoubtedly selfless and brave, there is little parallel to the

¹³² Alan Okros DS 555 Lecture and email, 12 April 2016.

¹³³ Allan English, *Understanding Military Culture: A Canadian Perspective* (Montreal and Kingston: McGill-Queen's University Press, 2004), 6.

¹³⁴ Department of National Defence, *Duty with Honour - The Profession of Arms in Canada*. (Ottawa, DND Canada, 2003), 16.

warrior spirit invoked by doctrinal expressions of roles and official mottos such as “To close with and destroy the enemy” or “Through the mud and the blood to the green fields beyond,” which offer insight into the cultural mentality of the CA.¹³⁵

TAE culture has developed as an annex of RCAF culture based on its roots within the Canadian Army, its permanent basing on Army garrisons in Canada, and that its role has been almost exclusively that of air and ground crew providing direct, intimate, and integrated support to the Army soldiers of their supported brigade with whom they are friends and colleagues. Col John Errington, Director Infantry, noted the cultural differences between “Tac Hel” and the wider RCAF and how TAE culture resulted in a very close relationship between 1 CMBG and 408 THS while he was the Commanding Officer of 3rd Bn, PPCLI. He described it as a “near OPCOM relationship.”¹³⁶ While true, the Commanding Officer of 408 THS at the time, LCol Roderick MacDonnell, was very careful to ensure that cultural closeness to 1 CMBG did not degrade into insubordination to his actual chain of command further highlighting the cultural challenges imposed by structure. Still, with respect to TAE success in integration with CA in garrison and in Afghanistan, Col Errington believed that it was more to do with tactical aviation culture and the focused efforts of individuals, not a result of formal institutional relationships.¹³⁷

Another aspect shaping Land Aviation culture is the nature of its roles and tasks themselves. The spectrum of tasks, capabilities, and the complex manner in which these areas overlap in the operation of battlefield helicopters makes the detailed understanding of Land Aviation difficult to assimilate by outsiders. It is its own specialty. This is not to suggest that the operation of heavy transport or fighter fleets is simple. To the contrary, the air tasking cycle,

¹³⁵ SAR TECH Moto <http://www.rcaf-arc.forces.gc.ca/en/search-rescue.page> Infantry Role <http://cdnarmy.ca/inf/>

and Armoured Corps moto <http://cdnarmy.ca/armd/>.

¹³⁶ Col John Errington discussion with LCol Dave Forbes, 23 March 2016; email 28 March 2016.

¹³⁷ *Ibid.*

weaponneering, detailed planning and assembly of a force package to deliver highly complex munitions to precise targets requiring the penetration of a multi-layered and integrated air defence network alone is incredibly difficult; never mind the actual skill, intellect, and courage necessary to execute this type of mission. Quite differently but equally impressive; the organization of a trans-world strategic air bridge is just as challenging, requiring planners adept at all manner of resource management, a keen understanding of time and space, and strong support from logistics and finance professionals to ensure all stops along the bridge will be efficient support hubs for the duration of the operation.¹³⁸ The difference between the understanding of fighter and transport operations and those of Land Aviation is that each of these capabilities operate predominantly in the same fashion at all times, from static bases with runways, all coordinated on a firm schedule via the Air Tasking Order (ATO), and with a strong grasp of the air battlespace. To most Air Force operators, the detailed lay down and intents of friendly and enemy ground forces are largely irrelevant. Land Aviation differs greatly in this respect and the cultural product that results is a primary identification not with the large, expensive platform-centric views of the RCAF, but with the dirty pragmatism of the CA.¹³⁹

Land aviators must have an intimate understanding of the land battlespace while only an appreciation of the air-battlespace is truly necessary, normally with respect to discrete Identify Friend or Foe (IFF) and downed aircrew codes found in the theatre Special Instructions (SPINS). Land aviators must be experts in the identification and definition of role of all types of friendly and enemy land equipment, different types of troops and what their disposition indicates with respect to their intentions, as well as an understanding of ground movement and manoeuvre. In

¹³⁸ Department of National Defence, B-GA-404-000/FP-001, Canadian Aerospace Move Doctrine (Ottawa: DND Canada, 2011), 15.; Department of National Defence, B-GA-406-000/FP-001, Canadian Aerospace Sustain Doctrine (Ottawa: DND Canada, 2011), 10.

¹³⁹ Col Shayne Elders email correspondence with LCol David Forbes, 7 April 2016.

short, land aviators must speak soldier and soldier is a career in and of itself, the complexity of which should not be discounted. The impact of this necessity is another cause for divergent culture derived from the differences between Air Force and Land Aviation. This difference in environments means that the Land Aviator has more commonality in the battlespace with the Army than the Air Force.¹⁴⁰ The impact of these differences will be addressed further in the Organization and Training sections of this paper.

The living arrangements of Land Aviation forces in comparison to those of Air Force air and ground crew is an exacerbation of the issue of dissimilar operating environments and its effect on culture. A popular member's only internet forum for RCAF pilots recently discussed the issue of maritime patrol and transport community aircrew having to share hotel rooms while deployed on exercise. The concerns being raised were that this new policy, based on fiscal constraints, should be abolished in the interests of flight safety and that at no time should aircrew be expected to share a hotel room.¹⁴¹ RCAF members, particularly those not in the TAE or in rotary wing maritime aviation, are quite open about their opinions of minimum hotel standards. In and of itself, there is nothing wrong with this concept. Certainly, professional airlines do not have their crews share hotel rooms, nor would anyone in the wider Canadian federal public service be expected to do this. As a point of comparison, TAE aircrew routinely billet as many as twenty persons to a tent, in the winter, only yards from the active helicopter landing site, and will happily sleep in a sleeping bag on a cot (cot optional) through the day in order to then fly all night. Moreover, the current statistics from the RCAF Directorate of Flight Safety (DFS)

¹⁴⁰ Col Stephen Kelsey telephone discussion with LCol David Forbes 1 April 2016, email 1 April 2016.: Col Shayne Elders email correspondence with LCol David Forbes, 7 April 2016.

¹⁴¹ CF Pilots members only forum discussion. <http://rcafpilots.com/phpbb/viewforum.php?f=5>

indicate that not a single flight safety incident or occurrence has been found to be caused by fatigue despite these practices.¹⁴²

Similarly, operating environment has had other effects on TAE culture and on the wider RCAF's view on it. For instance, RCAF Air Force aircrew wonder why so many TAE aircrew wear combat fatigues instead of flight suits when not conducting flying duties; the reason for this is simply that in the field, fatigues are more comfortable as they were purposefully designed for that environment. They are warm or cool as needed, have large pockets, and dry quickly. They also help with TAE-CA relations as personnel from different elements seem more team-like. As a corollary to this, when TAE aircrew are posted to non-flying units, a great many continue to wear fatigues.¹⁴³ When TAE aircrew do fly, many wear the two-piece tactical aviators flight suit for similarly practical reasons which include that it makes using the latrine simpler; something multi-engine aircrew have come to realize since operations in Afghanistan.¹⁴⁴ Distinct operational environments have created seemingly innocuous differences that represent a cultural divide that has been noted by non-TAE personnel.

Transferring of personnel between Land Aviation units and other units within the RCAF is also an issue. New RCAF members are recruited as RCAF technicians and in most cases have made a deliberate choice to not join the Army, yet are posted to what are effectively Army units in terms of their living standards, tasks, and missions. LCol McKenna, Commanding Officer of 450 THS, describes having to “break those barriers and throw them all into a Tactical Aviation

¹⁴² Capt Jason Goodenough Email correspondence LCol David Forbes, 14 April 2016. Capt Goodenough is a Flight Safety Officer and reported these results following a Flight Safety Database search. While CC130 and CP140 crews have been quartered in tents and gone on to professionally carry out their duties before and no doubt will again, this discussion is in regard to culture and the TAE and wider RCAF cultures surrounding mission, comfort, and risk are very different.

¹⁴³ Author's experience and conversation with several TAE aircrew.

¹⁴⁴ Author's discussion with Maj Scott Denis (Aurora Pilot) and Maj Andy Bowser (Hercules Pilot).

culture which can be very ‘army like’ in...mission focus, it can be challenging.”¹⁴⁵ While most new enrollees tend to adapt well and quickly, transfers of more senior personnel from other communities who are well indoctrinated in Air Force cultures and practices, not to mention work and living arrangements, sometimes have trouble adapting.¹⁴⁶ This culture shock can be problematic as the experienced members in question are, by that state, expected to be leaders in an unfamiliar environment, not to mention the practical knowledge gaps. In terms of culture, however, this practice serves to dilute the Land Aviation culture and at the same time forces immediate cultural discord at a minimum in the mind of the otherwise very capable RCAF members entering the TAE, and worse, possibly poisoning the morale of those around them.¹⁴⁷ Occupational community identity is apparent in the TAE as it has trouble identifying with the RCAF as a whole and has instead built up its own distinct culture. This frames the question: is the service identity of the RCAF too far removed from the reality of the TAE to make sense? And, if not, is classifying the TAE under the service identity of the Canadian Army any better? The answer to this question may well be no. Major reasons for this will be examined in Chapter 7 but suffice it to say that much of the TAE is lacking in the tactical knowledge and “Fight to Win” culture of the Canadian Army as well. This paper asserts that TAE culture is more closely aligned to that of the Army than the RCAF and that regardless of how TAE culture may change in the future, the airmanship, tactics, leadership and dedication of the “Redheaded-Bastard

¹⁴⁵ Richard Goette, "By Air to Battle: 450 Squadron's Tactical Aviation Contribution to Canadian Air Power," *Airforce Magazine* 39, no. 4 (March, 2016), 56.: LCol McKenna also highlights that in the case of standing up the 450 THS that the added perspectives of non-TAE personnel has also had positive effects..

¹⁴⁶ Col Erick Simoneau discussion with LCol Dave Forbes, 30 April 2016. Richard Goette, "By Air to Battle: 450 Squadron's Tactical Aviation Contribution to Canadian Air Power," *Airforce Magazine* 39, no. 4 (March, 2016), 56.

¹⁴⁷ Discussion with LCol Roderick MacDonnell a former Commanding Officer of 408 THS and authors experience as Operations Officer at 408 THS; email 7 May 2016.

Children” of 1 Wing will still be required. Where discord will originate is in the fact that the current grouping makes the TAE unable to commit appropriately to either culture.

The cultural divide that separates the RCAF from the CA should not be construed as a negative impediment. It is a natural and unavoidable outcome of a great many real differences in how and why each service operates the way it does; not to mention the proud histories and heritages embodied in both. There are many areas of culture within the RCAF in which the TAE is rightly and entirely immersed. The excellent open reporting culture of the RCAF Flight Safety system and the highly institutionalized culture surrounding aircraft maintenance with its precise accounting for parts, tools, aviation fluids, etc. are but some examples.¹⁴⁸ Why these cultures and practices, which are critical to Land Aviation operations, are not applicable to this argument is that they are not unique to the RCAF or Air Forces more generally. In fact, these cultures should be considered to be requisite for all joint air power including Land and even civilian aviation and hence, are in fact common-cultures and not the sole purview of Air Forces.¹⁴⁹ Indeed, whenever the need has arisen, both services have shown themselves to have more similarities than differences. RCAF culture must be consistent with the realities of Land Aviation otherwise it “will either be considered irrelevant and ignored, or else will be a recurring source of dissonance and friction.”¹⁵⁰ Although elements of both the Army and the Air Force culture must be present in the TAE, this paper asserts that, regardless of uniform colour, the culture with the most-correct fit for the TAE is that of the Army. The question that remains then is whether the RCAF is embodied with the Joint-CAF-Corporate self-awareness and internal

¹⁴⁸ Major Wilf Relinger, Wing Flight Safety Officer, discussion 14 April 2016, email 14 April 2016 including copy of 1 Wing Comd’s Flight Safety Statement of Intent.

¹⁴⁹ This is evidenced by international inter-service standards on aviation fluids and aircraft hardware, etc. International Civil Aviation Organization (ICAO) Website, Accessed 6 May 2016, <http://www.icao.int/safety/Pages/default.aspx>.

¹⁵⁰ Department of National Defence, CFP A-PA-005-000 AP-004 2005, *Leadership in the Canadian Forces: Conceptual Foundations* (Ottawa: DND Canada, 2005), 155.

confidence necessary for that to emerge and strengthen. A strong army-like culture is necessary for an effective TAE.

Doctrine

Doctrine is hierarchical in nature as demonstrated by the stratification of CAF Joint Doctrine above service doctrines which themselves form umbrellas over the doctrines of their component capability groupings. This necessitates a degree of stove-piping whereby the stovepipes themselves are coordinated and de-conflicted at each successive umbrella level document. This is done in order to ensure the appropriate expertise is applied to the foundational doctrine and that it is coordinated with the flanking capabilities with which it is most closely employed.¹⁵¹ By grouping Land Aviation doctrine under the overall air power doctrine of the RCAF, the institutional thought underpinning the TAE has been formally diluted.

The development of air power and Land Aviation doctrine requires greater fidelity in the degree to which Land Aviation should be considered part of the air battle and the degree to which it should be considered a ground manoeuvre element operating self-elevating land vehicles. This question has led most nations, including Canada, to define a doctrinal tear-line based on role, speed, maximum take-off weight, as well as operating altitudes amongst others. Although in Canada the TAE is firmly under the RCAF, there nevertheless exists a conscious tear line between Land Aviation battle space and the Air battle space delineated vertically by the “Coordination Level.”¹⁵² This simple and often overlooked fact demonstrates that even in Canada, it is recognized that there is a difference between the two domains.

¹⁵¹ Department of National Defence, *Out of the Sun: Aerospace Doctrine for the Canadian Forces* (Winnipeg: Craig Kelman and Associates Ltd, 1997), 1. Out of the Sun. This document has been rescinded but is a good representation of using capstone doctrine publications to link subordinate capabilities.

¹⁵² DND, B-GA-442-001/FP-001, *Tactical Aviation Tactics...*, 15A-4.

Thinking about doctrine, as with culture, is a conceptual enterprise that has embodied high degrees of nuance. As is the case with the discussion of RCAF and CA culture, the examination of RCAF and CA doctrine with respect to Land Aviation is also one whereby differing environments, methods, and non-negotiable technical necessities have driven separate views of the “operational art” and as a consequence, differing resulting doctrinal concepts.¹⁵³

Land Aviation conducts many of the same full spectrum of air tasks as Air Forces; however they are typically conducted at much lower levels, within much smaller areas, and normally with immediate and direct coordination with tactical army units and sub-units. These tasks include reconnaissance, aerial firepower, transport, command and liaison, and support to communications. It is true that strategic and tactical air transport may be in support of land operations as they deploy, redeploy, and assist in sustaining land forces. This observation is equally true when discussing tactical fighter and bomber operations when striking targets in preparation for land combat and especially when in response to immediate calls for support from troops in enemy contact. When supporting the land battle, however, Air Forces typically do so as part of a complex and specialized orchestra of logistics, planning, and operations which culminate in specific effects at precise times in narrowly defined places before moving on to support someone else doing something else, somewhere else. This efficient and very effective use of scarce and expensive assets is a reflection of the key tenet: “Centralized Control and Decentralized Execution,” firmly rooted in virtually all air power thinking.¹⁵⁴ Land Aviation adheres to this concept as well, but does so from a much lower jumping-off point in that “tactical aviation resources are assigned at the highest practical level and subsequently grouped at that

¹⁵³ Allan English, *Command and Control of Canadian Aerospace Force: Conceptual Foundations* (Trenton: Canadian Forces Aerospace Warfare Centre, 2008), 30.

¹⁵⁴ DND, B-GA-400-000/FP-000, *Canadian Armed Forces Air Doctrine...*, 31.

level which requires continuous tactical aviation support,” and remain in the direct support of that level.¹⁵⁵

A recently published article by LCol Pux Barnes asserts that mission command exists inherently within Air Force operations directly because of the Centralized Control and Decentralized Execution concept. Essentially, he submits that they have the potential of being one and the same.¹⁵⁶ In a challenge of RCAF doctrine, Allan English proposes that “Centralized Control and Decentralized Execution” in the Canadian context is actually exercised as “Centralized Command and Decentralized Control” in that execution is always decentralized since the commander cannot be in the cockpit of every aircraft. Implicit in this assertion is the idea that low level commanders’ abilities to exercise command, defined as “the exercise of creative will to accomplish the mission,” has been greatly reduced.¹⁵⁷ In comparison, the army’s foundational command philosophy is one of mission command whereby command functions, guided by clear commander’s intent, are devolved to the lowest possible level specifically to address the friction involved in ground combat.¹⁵⁸ This paper asserts that when compared against army or Land Aviation applications and their inextricable linkage to terrain and enemy factors, mission command is applied differently in the Air Force; if extant at all.¹⁵⁹ Indeed, Barnes predicates the RCAF’s future embrace of mission command on its pursuit of the

¹⁵⁵ DND, B-GA-440-000/AF-000, *Tactical Helicopter Operations...*, 27.

¹⁵⁶ Canadian Forces Aerospace Warfare Centre - RCAF Doctrine, "Mission Command and the RCAF: Considerations for the Employment of Air Power in Joint Operations, Article #4," Last accessed 3 May 2016, <http://www.rcf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-4-mission-command-and-the-rcf.page>. 5

¹⁵⁷ Alan English, “Rethinking ‘Centralized Command and Decentralized Execution’,” in Air Force Command and Control, ed, D.L. Erlandson, D.L and Alan English, (Winnipeg: Canadian Forces Training Material Production Centre, 2002), 73.

¹⁵⁸ *Ibid.*, 71.

¹⁵⁹ Canadian Forces Aerospace Warfare Centre - RCAF Doctrine, "Mission Command and the RCAF: Considerations for the Employment of Air Power in Joint Operations, Article #4," Last accessed 3 May 2016, <http://www.rcf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-4-mission-command-and-the-rcf.page>. 5.

“integration of air effects into joint operations.”¹⁶⁰ As the TAE’s primary focus is the support to the army and, due to range and payload limitations associated with aviation, tend to be collocated with the army, it stands to reason that army command doctrine would tend to serve as a better starting point for the conceptual consideration of Land Aviation.¹⁶¹

In his 2011 *Canadian Air Force Journal* article “What Air Forces Do,” LCol Brian Murray asserts that RCAF doctrine is in fact flawed expressly because it tries to adapt army doctrinal operational functions of Command-Sense-Act-Shield-Sustain and modifies them only by adding a sixth operational function, Generate, and dividing the Act function into Move and Shape.¹⁶² He goes on to write:

... CF aerospace doctrine uses military CBP-friendly terms – spawned from CA operational function terms – to describe the functions of the RCAF... It does not, however, clearly or adequately describe the fundamental aerospace power functions in a way that promotes knowledge and understanding of aerospace power, how it should be used, or what military instruments of national power are provided by the RCAF.¹⁶³

Somewhat paradoxically, this observation should be considered entirely accurate from the perspective of the TAE as the use of CA operational functions to delineate doctrinal concepts works very well for describing Land Aviation. Furthermore, Murray is not alone in his belief that army terms are not suitable for use alone air power doctrine. Allan English agrees by stating “while some in the CF believe that it is possible to devise one method of C2 for all three services...this is not possible.”¹⁶⁴ English goes on to write: “joint C2 arrangements must be devised to co-ordinate the effects of the various services, not to become involved in how these

¹⁶⁰ *Ibid.*

¹⁶¹ Wakelam, "A Fine Mess...", 50.

¹⁶² Brian L. Murray, "What Air Forces Do," *Royal Canadian Air Force Journal* 4, no. 4 (Fall, 2011), 32.

¹⁶³ *Ibid.*, 44.

¹⁶⁴ English, *Rethinking...*, 77.

effects are actually executed.”¹⁶⁵ The obvious extension of this assertion is that since Land Aviation operates predominantly in the land battlespace that its doctrine should rest there as well.

Certain aspects of Land Aviation operations are identical to those of air operations. For instance, specific standards with respect to common fuel, oil, and lubricants and so these items are standardized through Standing NATO Agreements (STANAGS) and are negotiated through the Military Committee Air Standardization Board (MCASB). The standardization of tactical and operational employment, aircrew standards, and the integration of Land Aviation with army units in combined operations is beyond the scope of the MCASB and so is the purview of the Helicopter Interservice Working Group (HISWG) under the Military Committee Land Standardization Board (MCLSB). In this regard the pre-eminent organization for the standardization of allied Land Aviation forces deposits responsibility for it not with its air doctrine organization but the organization that develops land doctrine. Consequently, the control over force generation (including procurement), doctrine, training, and ultimate tactical force employment of Land Aviation rests most often with land forces. This fact is due to predominantly practical, tactical requirements of the activities being carried out.

Internationally, Land Aviation is most often considered separately from Air Force doctrine and systems in that its defining characteristic is its organic grouping within the element it supports. For instance, within NATO, standardization of Land Aviation is regulated under the Military Committee Land Standardization Board (MCLSB), not the MCL(Air)B.¹⁶⁶ The Canadian representative at the Helicopter Inter-service Working Group (HISWG), part of the MCLSB, is actually a the TAE major posted to the Directorate of Army Doctrine in Kingston,

¹⁶⁵ *Ibid.*, 78.

¹⁶⁶ NATO, "NATO Standardization Office Public Website," Accessed on 15 April 2016, <http://nso.nato.int/nso/boards.html>.

not a representative from the RCAF's Aerospace Warfare Centre.¹⁶⁷ This fact is due not only to the needs of the TAE to be represented in the HISWG, but that the CA has a requirement for it as well as they are common users of allied Land Aviation.

The TAE has longstanding relationships with the HISWG and with US Army Aviation through its liaison officer at Fort Rucker Alabama. As a consequence, TAE doctrine is very highly aligned with allied Land Aviation doctrine with the TAE's BGA-440 and BGA-441 effectively being a Canadianized NATO ATP-49 Volumes I and II.¹⁶⁸ The TAE capability specific doctrine, however, was generated and held by the TAE since at least the formation of Air Command in 1975, even if the umbrella air power doctrine remained with Air Command.¹⁶⁹ Air Force doctrine in Canada, until recently, was badly organized and in 1981 could be found in upwards of 58 separate documents.¹⁷⁰ Subsequent efforts to better codify Air Force doctrine were not at odds with the realities of the TAE as the emerging doctrine was largely a tactical level description of the disparate air power communities of Air Command and remained so until the 2004 rescinding of the B-GA-400 *Out of the Sun* capstone doctrine manual.¹⁷¹

Shortfalls in this doctrinal expression had become evident and a higher order of thinking was required to properly and enduringly describe the operational level of Canadian air power. Unfortunately for the TAE, what emerged poorly reflects the exigencies of Land Aviation. For example, deliberate airmobile and air assault operations are amongst the most complex, resource intensive, and risky operations conducted by armies and are firmly rooted in the Act operational function as they encompass highly coordinated fire and manoeuvre. These operations involve

¹⁶⁷ Author was the Canadian HSWIG rep from Jul 2012 to Jun 2013 as ACT-Aviation Desk Officer for Directorate Army Doctrine.

¹⁶⁸ NATO, ATP 49, *Use of Helicopters in Land Operations*. NATO Publication, xx. DND, B-GA-440-000/AF-000, *Tactical Helicopter Operations...*, xx. Department of National Defense, B-GA-441-001/FF-001, *Tactical Level Aviation Doctrine* (Ottawa: DND Canada, 2000), xx.

¹⁶⁹ James, *Formation of Air Command...*, 11.

¹⁷⁰ DND, B-GA-400-000/FP-000, *Canadian Armed Forces Air Doctrine...*, 12.

¹⁷¹ Aaron Jackson. "Emergence of a doctrinal"...pg 38.

intimate face to face planning and negotiated terms between the Aviation Mission Commander (AMC) and the ground force. This planning begins with the ground force commanders Tactical Plan, followed by the Landing Plan, Air Movement Plan, Load Plan, and finally the Staging Plan.¹⁷² This type of mission will often involve integrated joint fires from artillery, attack helicopters, and close air support all potentially under the control of the AMC until the ground force commander and his Forward Air Controller or JTAC are inserted on the landing zone. Interestingly, the most current Canadian manual for these operations is B-GL-324 *Airborne Operations - Airmobile*, a CA document, not one of the RCAF though 1 Wing had significant input.¹⁷³

Current RCAF doctrine, having divided the Act function into Shape and Move, understands this highly involved mission set as an “Act-Move” task.¹⁷⁴ Obviously this task involves the movement by air of a ground force however categorizing airmobile and air assault tasks under Act-Move is analogous to placing deep-strike missions under Act-Move because fighter-bombers transport bombs. While the misplacement of such a fundamental Land Aviation task in an operational level doctrine manual is not likely to affect the ability of the TAE to conduct these missions, it nevertheless highlights the incongruence between RCAF doctrinal thinking and the realities of Land Aviation. The CA, meanwhile, has a highly developed grasp of the doctrinal uses of Land Aviation despite limited opportunity to practice tactically with the full suite of Land Aviation capability.¹⁷⁵

¹⁷² Department of National Defence, B-GL-324_002/FP-001, *Airborne Operations - Airmobile* (Ottawa: DND Canada, 2012), 7-2.

¹⁷³ LCol Todd Braithwaite serving as DAD Act-Avn and the OPI for B-GL-324 c. 2009-10 was primarily responsible for its drafting.

¹⁷⁴ DND, B-GA-404-000/FP-001, *Canadian Aerospace Move Doctrine...*, 4.

¹⁷⁵ Goette, "Report on CFAWC Air-Land...", 5.: Gongora, Wesolkowski, "What does a balanced...", 13.: DND, B-GL-324_002/FP-001, *Airborne Operations - Airmobile...*, iv.: The CA's doctrine and training practices, as well as experience in Afghanistan goes beyond the limitations imposed by only having a single fleet of helicopters. This generalist approach to Land Aviation allows the CA to leverage coalition helicopters when available.

From a practical perspective, this seemingly subtle nuance has driven a lengthy debate over whether and how a Tactical Helicopter detachment should integrate with an Air Task Force (ATF).¹⁷⁶ This in turn has driven further debate as to the support requirements of the TAE given the rise of 2 Air Expeditionary Wing and the Air Force Expeditionary Concept (AFEC). The practical realities of where an ATF may deploy could preclude it from supporting tactical helicopters simply due to the difference in speed and range between Air Force fixed wing airplanes and Land Aviation helicopters. In fact, this is accounted for in doctrine by allowing for TACON of aviation detachments to other elements of the JTF.¹⁷⁷ One other solution that has been floated, though not published in amended doctrine, is the concept of making a TAE detachment or squadron its own ATF and forward deploying it with the CA Brigade it is supporting.¹⁷⁸

One role of the ATF is to provide mission and operational support to its detachments. In this regard, both RCAF Command and Sustain doctrines may still prove impractical for informing TAE operations. First is the question of operational and command support. The CA is becoming increasingly networked. While TACNET functioned within the Air Wing in Afghanistan, it was essentially a Combined-Joint Kandahar Air Field – stand-alone system. The C3 systems of a TAE Tactical Operations Centre must be the same as those of the CA in order to play any role in their battle. No mention of this exists in RCAF command doctrine as this low-

¹⁷⁶ Canadian Forces Aerospace Warfare Centre - RCAF Doctrine, "The RCAF Air Task Forces: Considerations for the Employment of Air Power in Joint Operations," Last accessed 3 May 2016, <http://www.rcf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-5-the-rcf-arc-air-task-force.page>. 5: Jeannot Boucher, "Tactical-Aviation Mobility," *The Royal Canadian Air Force Journal* 4, no. 4 (Fall, 2015), 25.

¹⁷⁷ Canadian Forces Aerospace Warfare Centre - RCAF Doctrine, "Command or Control? Considerations for the Employment of Air Power in Joint Operations, Article #1," Last accessed 3 May 2016, <http://www.rcf-arc.forces.gc.ca/en/cf-aerospace-warfare-centre/c2-article-1-command-or-control.page> Pux Barnes, Command or Control. 33.

¹⁷⁸ Discussion with Comd 1 CAD MGen St-Amand in Wainwright, Ex MR 2014.: 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept, 6 March 2012.

level of integration is meant to be accomplished via the TACP which are not equipped to deal with Land Aviation matters beyond airspace and fires.¹⁷⁹

The second area of necessary practical support not offered by an ATF is that of mobility and tactical arming or refueling. Presciently, *Project Laminar Strike - Canada's Air Force: Post Op Athena*, the first publication to take stock of the lessons of that war, acknowledges that “there will always be a need to project tac avn forward away from MOBs” in its description of Land Aviation in future conflicts.¹⁸⁰ The 1 Wing Force Employment Concept, endorsed in 2012, calls for maintenance of its capacity for integral mobility, first for its FARP and MRP, and second, for moving the THS as a whole.¹⁸¹ Deployed elements of the TAE have required this capability repeatedly on both deployed and domestic operations including in Somalia, Kosovo, and at home for the 1998 Ice Storm.¹⁸² The former Commanding Officer of 430 ETAH, LCol Jeannot Boucher, describes the current and future challenges in meeting this requirement in his *RCAF Journal* article, “Tactical Aviation Mobility,” where he ultimately reinforces the need to maintain this capability based on 2015 experience in the CA’s largest annual exercise.¹⁸³ These are tasks for which the RCAF ATF concept of operations itself acknowledges would require the TAE’s combat service support element to remain intact and not form an integral part of the ATF’s support build.¹⁸⁴

¹⁷⁹ 3515-1 (A5 Plans) "Tactical Aviation Land Command Support System Requirement." Kingston: Commander 1 Wing, 27 March 2012.: Discussion between LCol Jared Penney and LCol David Forbes. LCol Penney is the former Officer Commanding of the Air/Land Integration Cell, Kingston Ontario. LCol Penney acknowledges that the ALIC is primarily focused on the application of fighter-bomber Close Air Support and deals only peripherally with helicopters.

¹⁸⁰ DND, *Project Laminar Strike...*, 25.

¹⁸¹ 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept, 6 March 2012, 20.

¹⁸² 1 Wing HQ, “Wing Comds FEC Overview” Slide 2, 12 November 2012.

¹⁸³ Boucher, "Tactical-Aviation Mobility...", 30.

¹⁸⁴ 3030-1 (AFEC Rdns), Air Force Expeditionary Capability Concept of Operations, 2 February 2012. 10.

By attempting to incorporate Land Aviation capability in RCAF aerospace doctrine, two things have occurred; first, Land Aviation doctrine is being misunderstood at the operational level; and second, Air Force doctrine is being distracted. Essentially, too many ideas are trying to be assimilated under the guise of the indivisibility of air power. By delegating the responsibility for Air Force and Land Aviation doctrines to the services whose forces best understand and employ their capabilities, the RCAF might enhance the purity of thought applied to both of these areas of air power.

Organization

The organization of an enterprise is a critical factor in the quality and type of output it can muster. As stated in *Project Laminar Strike – Canada’s Air Force: Post Op Athena*, “Tactical aviation must be 100 per cent interoperable and integrated with the land force.”¹⁸⁵ This fact is central to the role of the TAE in “support[ing] the land force (Canadian Army) through the provision of aerial firepower, reconnaissance, and mobility.”¹⁸⁶ The general problem with this is that from a generic Air Force perspective, as a form of tactical air power, Land Aviation is often seen as merely battle-enabling, not war-winning as a subset of the omnipresent tactical versus strategic air power debate.¹⁸⁷ The result of the TAE’s organizational grouping under the RCAF is that it lacks the importance of the RCAF’s core capabilities, as laid out in *Air Force Vectors*, to be allowed to meet the capability requirements of the CA as described in the *Aviation Capability Deficiency Record* (ACDR). Meanwhile, the CA tends to accept its level of Land Aviation support and, believing that it is the RCAF’s role to provide it, has not always been engaged in increasing the size, scope, or effectiveness of the TAE. This is somewhat surprising as the future force employment concept of the CA, *Land Ops 2021: Adaptive Dispersed*

¹⁸⁵ DND, *Project Laminar Strike...*, 26.

¹⁸⁶ DND, B-GA-440-000/AF-000, *Tactical Helicopter Operations...*, 1.

¹⁸⁷ Meilinger, *The Paths of Heaven...*, 401.

Operations, describes in capability based terms a likely dramatic increase in the need for Land Aviation support.¹⁸⁸ Interestingly, there are both historical and very recent indicators which suggest that the CA would increase focus and investment on the TAE as long as it also enjoys a degree of guaranteed increased service, access, or control.

Then Commander of the Canadian Army, LGen Mike Jefferies described the TAE as a “key element of land force capability.”¹⁸⁹ The RCAF’s strategic vision document, *Air Force Vectors*, quotes *The Army: Advancing with a Purpose*, where it reads: “...unlike most other [W]estern military forces, the Canadian Army does not possess integral aviation assets. However, these capabilities are fundamental to the successful conduct of land operations as they are an essential manoeuvre element of the combined arms team.”¹⁹⁰ *Air Force Vectors* goes on to acknowledge the need to fully integrate its own capabilities as well as with those of the CA, SOF, and the RCN in order to realize “the RCAF’s optimum contribution to national strategic effects.”¹⁹¹

However, in short order, *Air Force Vectors* attempts to “determine core capabilities,” acknowledging that the RCAF will at best continue as a “global Air Force, with a robust if limited spectrum of conventional capabilities sufficient to meet national and continental requirements...”¹⁹² In this manner and, *Air Force Vectors* begins to separate “Not Needed or Unaffordable Roles” and “Alliance Provided Roles” from the “Unique Canadian Requirements (Attributes)” which equate to prioritization of funding. In its prioritization, *Air Force Vectors* assigns specific airpower missions “that the RCAF will conduct to achieve core capabilities and

¹⁸⁸ DND, *Land Operations 2021 - Adaptive Dispersed Operations...*, 16.: This concept emphasizes the rapid movement of flexible, agile, and lethal forces across all terrain and in the entire spectrum of conflict. The epitome of the manoeuvrist approach to war.

¹⁸⁹ Independent Panel on Canada's Future Role in Afghanistan. *Final Report*. (Ottawa: 2008), 35.

¹⁹⁰ Department of National Defence, A-GA-007-000/AF-008, *Air Force Vectors* (Ottawa: DND Canada, 2013), 19.

¹⁹¹ *Ibid.*, 23.

¹⁹² *Ibid.*, 26.

roles needed by CAF airpower [sic].”¹⁹³ In this analysis Control of the Air, Attack, Surveillance and Reconnaissance, and Air Mobility Core each constitute their own individual RCAF Core Airpower Capabilities. In contrast, all Maritime Aviation, SAR, Land Aviation, and Aeromedical Evacuation are grouped under a single “RCAF Core Airpower Capability” labelled: “Support to Joint Operations and the Civil Power.”¹⁹⁴ In the Core Roles and Airpower Missions subordinate to this Core Capability, there exists “Battlefield Mobility” and “Special Operations” with no specific mention of the application of aerial firepower or reconnaissance. The distinction between the umbrella-capability under which falls Land Aviation and the rest are that the purely Air Force categories represent RCAF capabilities that are never considered organic to the Army or Navy in any way. The descriptor panel of Table 1 acknowledges this difference by stating: “This core capability and the subordinate roles and missions will be executed by RCAF assets and personnel, typically under operational command (OPCOM) or operational control (OPCON) of another commander.”¹⁹⁵ Although this addresses the functional use of TAE elements when fielded under a CA formation, when taken in context with the appetite suppressive statements of the preceding pages it raises the question of what size, type, and effectiveness those TAE elements will be able to provide given their categorization and priority.

The CA, meanwhile, has shown itself ready, practically if not intentionally, to invest in Land Aviation. There have been multiple examples in recent years where Brigade Commanders have willingly provided ammunition, rations, diesel fuel, and money in order to pay for their affiliated squadron to participate in unit and brigade level training exercises. Indeed, from 2013

¹⁹³ *Ibid.*, 27.

¹⁹⁴ *Ibid.*

¹⁹⁵ *Ibid.*

to 2015, 408 THS capitalized on this arrangement multiple times.¹⁹⁶ At a much higher level, when the RCAF announced that its yet to be formed Chinook squadron would be based at CFB Bagotville, then Chief of the Land Staff, LGen Leslie offered, albeit reluctantly, support to the allocation of Army PY by the VCDS to the MHLH project in exchange for basing the Chinooks in Petawawa with 2 CMBG.¹⁹⁷ Like LGen Turcot, an early Commander of FMC, the CLS saw the need to maintain enduring access to the Chinook and was willing to pay for it.¹⁹⁸ A third example of the Army being willing to directly invest in Land Aviation support, as long as it comes with some form of organizational ownership or guarantee of service came with the operational command assignment of 427 SOAS to CANSOFCOM.¹⁹⁹ Shortly following this transfer, CANSOFCOM began investing over \$1M/yr towards a line of contracted maintenance within 427 SOAS lines in order to increase serviceability. Additionally, CANSOFCOM has since invested regular and reserve force establishment positions and funding to increase the operational output of 427 SOAS and better meet the needs of the command.²⁰⁰

This has been a trend throughout the history of Land Aviation worldwide. Indeed, RCAF Col Shayne Elders, formerly commander of Australian Army Aviation stated that the 1986 decision to re-group Land Aviation to the Australian Army was:

...a watershed decision for the Australian Army Aviation capability. I think a very good decision for the operational output for the aviation combat capability as a key partner in the combined arms team – a fact that Air Forces rarely understand. Within a decade, Oz Army Aviation had grown over 400%.²⁰¹

¹⁹⁶ Discussion with LCol Roderick MacDonnell a former Commanding Officer of 408 THS and authors experience as Operations Officer at 408 THS; email 7 May 2016.

¹⁹⁷ Discussion with Col Stephen Kelsey, Director Armour 1 April 2016; email 1 April 2016.

¹⁹⁸ Hillman Web, "From Pharmacy to Helicopters by Lt. Col Jim Grant", Accessed 29 September 2015, <http://www.hillmanweb.com/grant01.html>

¹⁹⁹ Telephone discussion with LCol Jeff Orr, 427 SOAS Commanding Officer 30 March 2016. CANSOFCOM is being considered analogous to the Army for the purposes of this argument. As with the CA, The RCAF remains responsible for providing air power resources to CANSOFCOM.

²⁰⁰ Telephone discussion with LCol Jeff Orr, 427 SOAS Commanding Officer 30 March 2016.

²⁰¹ Col Shayne Elders email correspondence, 7 April 2016.

These examples should not suggest that the army is eager to trade rifleman for avionics technicians; merely that they have recently proven themselves willing to provide real investment in Land Aviation capabilities and mainly in cases where it can claim increased access or ownership.

The CA's adoption of Adaptive Dispersed Operations as its framework for developing future forces highlights the need for the exact type of employment in which helicopters are most used. It describes a battlespace that is most likely non-contiguous and involves adaptable adversaries with both symmetric and asymmetric capabilities.²⁰² The CA proposes creating adaptive, multipurpose, lethal and agile multipurpose forces which will develop situations to their advantage and "conduct close engagement at the time of one's own choosing."²⁰³ The document titles the approach to accomplish this "Adaptive Dispersed Operations" and describes a number of techniques to be used to generate that effect. Figuring prominently are reconnaissance, rapid mobility to aggregate and de-aggregate forces, and the precise application of lethal firepower beyond the range of the adversary's weapon effects. Moreover, the concept stresses the rapid transition between levels of conflict and geography.²⁰⁴ These techniques are addressed across the full spectrum of Land Aviation capabilities and it is this very style of operational approach that has made the helicopter "indispensable" in the words of General De La Motte, Commander of France's ALAT whose organization is in the process of enhancing their 4th Aviation Brigade.²⁰⁵ The CA's identified new way of war describes a nearly perfect fit for a robust Land Aviation but for its current organization under the RCAF. The plan states:

²⁰² DND, *Land Operations 2021 - Adaptive Dispersed Operations...*, 16.

²⁰³ *Ibid.*, 18.

²⁰⁴ *Ibid.*, 21.

²⁰⁵ Guillaume Bellan, "La Grande Interview: General Olivier Gourlez de la Motte, Commandant De L'ALAT. <<L'Helicoptere est Devenu Indispensable>>," *Air & Cosmos* (12 February 2016), 13.

The Land Ops 2021 Force Employment Concept conceptualizes Land Force capabilities that ensure effectiveness in the future security environment...these capabilities need to be resident in and commanded by land formations that operate at the operational and tactical levels, within a JIMP campaign framework, ie full spectrum brigade and battle group.²⁰⁶

The authors of *Land Operations 2021*, did not intend for their vision to be justification for the regrouping of Land Aviation under the army. Indeed, as we shall see later, the CA has little desire for this to happen. However, document *Land Operations 2021* outlines a vision that would not only be greatly enhanced by a balanced and optimized TAE, but it could be argued that it is an impossible vision to achieve without one.

Directly related to the issue of joint understanding of Land Aviation is the concept of air-mindedness. MGen Christopher Coates' article, *Airmindedness: An Essential Element of Air power*, expresses that air-mindedness in the Canadian context should be defined as: "a comprehensive understanding of air power and its optimal application throughout the operational environment."²⁰⁷ MGen Coates explains that air-mindedness should not be an elitist or exclusionary one; moreover, that air awareness leading to air-mindedness should be increasingly fostered in the RCAF's joint partners citing the USMC as a successful example of this.²⁰⁸ He states that air-mindedness should apply to all aspects of air power across the full spectrum of operations, confidently inferring that air-mindedness as a concept is entirely applicable to all aspects of the delivery of Land Aviation effects. This paper agrees entirely with this assertion. MGen Coates asserts that air-mindedness should remain a distinct idea beyond general joint-ness but leaves the concept of 'land-mindedness' on the part of the RCAF under-represented. While perhaps beyond the scope of his paper, this subtlety is at the core of the issue presented here. The

²⁰⁶ DND, *Land Operations 2021 - Adaptive Dispersed Operations...*, 14.

²⁰⁷ Christopher J. Coates, "Airmindedness: An Essential Element of Air Power," *The Royal Canadian Air Force Journal* 4, no.3 (Summer 2015), 83.

²⁰⁸ *Ibid.*, 81.

CA must become airminded; the RCAF need not be overly landminded and so fails to see why it is so necessary for the TAE to be so.

LGen (Ret) Marc Lessard, former Commander Canadian Expeditionary Forces Command (CEFCOM), sees two avenues to improving the TAE in this regard. Firstly, this can be done by achieving more unity of thought in terms of how Land Aviation can better align itself with the needs of the CA through doctrine; secondly, determining how to “ensure Land Aviation capabilities that have a high level of priority to the CA will have a high priority within the priority of capabilities of the RCAF.”²⁰⁹ LGen Peter Develin, former Commander CA, signed the ACDR which, in 57 pages of capability based terms, describes what Land Aviation effects the CA requires. This includes a tactical common data link for the Griffon’s MX15 sensor; the full suite of capacities and weapons required to provide escorted aerial mobility; being able to destroy a main battle tank at a range of 5000 meters; and the integration of the TAE into the CA’s Land Command Support System (LCSS) digital battlespace management architecture, amongst others.²¹⁰ LGen Yvan Blondin’s endorsement of the ACDR thirteen months later promised to keep working on most of these items but mainly within an RCAF interoperability perspective, but that others will be limited due to available resources.²¹¹ Most recently, LGen Marquis Hainse submitted a letter to LGen Hood offering the CA’s support to the Griffon Limited Life Extension and Tactical Reconnaissance Utility Helicopter projects, highlighting the desire to avoid any gaps in capability as the Griffon approaches its end of life expectancy.²¹²

The RCAF Campaign Plan v2.0 asserts that:

²⁰⁹ LGen Lessard discussion with LCol Dave Forbes, 11 March 2016; email 2 May 2016.

²¹⁰ 3185-1 (DLFD 3), "Army Requirement for Tactical Aviation Support." Ottawa: Commander Canadian Army, 13 April 2012.

²¹¹ 3000-9 (D Air SP), "Endorsement of CDR on Tactical Aviation." Ottawa: Commander Royal Canadian Air Force, 7 May 2013.

²¹² 3185-1 (DLFD), "Canadian Army Support - Griffon Limited Life Extension Project." Ottawa: Commander Canadian Army, 17 August 2015.

RCAF FD is not conducted in isolation; it is pursued in the greater context of the CAF's FD and is coherent with the Capability Based Planning (CBP) process as led by Chief of Force Development (CFD). In addition, the Air Staff work in close partnership with the CA, the RCN and CANSOFCOM in order to deliver RCAF capabilities in support of Joint Operations.²¹³

Beyond letter writing and personal communications between senior leaders, however, the CA has no formal mechanism of initiating or ensuring the stewardship of a Land Aviation capability that meets its needs, nor will it necessarily divorce itself from parochial interests in maintaining its own force structure to engage at all.

Conclusion

The lack of truly organizational coherence between any aspect of establishment size, the prioritization of roles and resulting funding, allied structural best-practices, or interpreted needs of the CA's stated future way of war builds on the disconnect left from an equally foreign doctrinal framework. Land Aviation benefits greatly from its cultural attributes with the RCAF, but without those key elements of culture which are distinctly army, the TAE could not operate. Whereas Air Forces may or may not follow a mission command philosophy, armies absolutely do. Air Force assets are centrally managed and apportioned for limited times in limited spaces for specific tasks. Land Aviation forces must, as a baseline, be immediately responsive and integrated into the organization of the land force they support. Moreover, Land Aviation forces integrated into this space must embody the same enduring philosophies and doctrines as the army they work with in order to be effective. These cultural, doctrinal, and organizational concerns, which are somewhat intellectual in nature, also form the underpinning of the first concrete area of concern: the training of TAE personnel in the generation and operation of aircraft in the land battle.

²¹³ Department of National Defence, *Royal Canadian Air Force Campaign Plan version 2.0* (Ottawa, DND Canada, 2015), 24.

Chapter 5 – Resulting Issues: Training/Professional Development and Materiel

Training is one of the most important activities in which a professional military engages. Without training, leadership cannot develop; equipment, tactics techniques and procedures cannot be validated; and the teams necessary to carry out tasks cannot be forged. The product of training is readiness and success on operations at any point along the spectrum of conflict will not be achieved without the necessary measure of readiness. The current structure of the TAE has forced a disconnect between training received and training necessary for the TAE to excel on operations. That is not to say that the TAE has not been nor cannot continue to be successful in the future; merely that it will continue to do so at excessive costs to efficiency, morale, and in a less effective manner than could otherwise be achieved.

Pilot Training

RCAF ab-initio pilots selected for the TAE are over-prepared in terms of flying-specific training for entry into Land Aviation. Unlike armed forces whose Land Aviation capabilities are separate from their Air Forces, the RCAF maintains a common-wings standard for its pilots. This entails that all pilots go through identical phases of training until they are selected to either fly multi-engine fixed wing, jets, or helicopters. This means undergoing Basic Flying Training at the NATO Flying Training Centre (NFTC) in Moose Jaw Saskatchewan. NFTC conducts world class basic flight training and the skills gained there no doubt add to the quality of the TAE aviator. The question, however, is whether this is worth the time and effort. Following a survey of Canada's major allies, no training system could be found that incorporates 100 hrs of jet training for its helicopter pilots except for the RAF portions of the UK's JHC, and the RNLAf.²¹⁴ Indeed, even the USAF sends its future helicopter pilots straight to the Army for

²¹⁴ A cursory search of the nations used by Gongoria and Wesolkowski revealed that only the Dutch and RAF helicopter crews conduct high performance fixed wing training before commencing rotary-wing training.

training on helicopters with no initial period of fixed wing flying at all.²¹⁵ The speeds, altitudes, and factors of employment surrounding high-performance fixed wing aircraft have almost no correlation to rotary winged flight. It is unknown how many candidates might have made excellent helicopter pilots but could not handle aerobatics in the Harvard II. Equally, it is impossible to know how many candidates have washed out of the Basic Helicopter Course after several years of training at incredible sunk costs, because they could not hover quickly enough.

Of the contracted 128 training starts per year at NFTC, where there is an attrition of approximately 10-15%, a total of 57 are then selected for rotary winged flying and go on to 3 CFFTS at Portage la Prairie Manitoba for Basic Helicopter training. This means that 45% of pilots undergoing common pre-wings training in the RCAF will become helicopter pilots and the majority of that number will go to the TAE.²¹⁶ The main historical justification for this inefficiency is the ability to have pilots move between flying specialties more freely.²¹⁷ Yet, according to the helicopter pilot career manager at time of writing, only approximately 3-5 of the currently serving 654 RCAF helicopter pilots of all ranks will change streams to fly fixed wing aircraft in an average year for medical or other reasons.²¹⁸ This does not count those pilots who return to Moose Jaw as instructors on the Harvard II of which there are currently 19.²¹⁹ This student instructor ratio equates to roughly three students destined for helicopters for every one helicopter qualified instructor and roughly matches that of the other communities. Of these students, a mere 0.5% may someday transfer to fixed wing flying permanently, down from a still

²¹⁵ McIntyre, "A Separate Helicopter Pilot...", 7.

²¹⁶ Email discussions with Maj Blair Springate, RW Pilot Career Manager, and Maj Phil Shilling 2 CFFTS Pilot Instructor, emails 11 April 2016, 12 April 2016, 26 April 2016.: Telephone discussion with Maj Craig Isenor, D Sim Trg, email 3 May 2016.

²¹⁷ McIntyre, "A Separate Helicopter Pilot...", 7.

²¹⁸ Email discussions with Maj Blair Springate, RW Pilot Career Manager, and Maj Phil Shilling 2 CFFTS Pilot Instructor, emails 11 April 2016, 12 April 2016, 26 April 2016.: Telephone discussion with Maj Craig Isenor, D Sim Trg, email 3 May 2016.

²¹⁹ *Ibid.*

paltry 14.3% in 1984.²²⁰ The remainder of the pilots who transfer to fixed wing are posted to NFTC in order to contribute the helicopter community's share of instructors to account for the helicopter output of the school. This effectively means that the helicopter force is sustaining itself in NFTC in order to maintain human resource flexibility that is apparently not needed.²²¹ Moreover, in 2014 when the Future Pilot Training analysis team examined options for a separate helicopter training stream it was revealed that savings up between 17% and 35.7% might be achieved, depending on the sub-option selected.²²² Preliminary conclusions of this study indicated that:

... when considering the RW [Rotary Wing] stream (half of the production numbers) [sic], everything migrates to COA 4 [a separate training stream for helicopter pilots]. This is an early indication that the current RW program is extremely inefficient and costly compared to having a separate RW stream. We knew this, however the difficulty associated with recruiting and selection is evening things out.²²³

This may indicate that the training output of NFTC is upwards of 45% larger than the RCAF actually requires. Nevertheless, a modified version of the current training system was selected by the RCAF Commander.²²⁴

According to a 2014 RCAF analysis on the future of pilot training, further justification for maintaining a single pilot training stream is that splitting it would reduce the future pool of instructors for 2 CFFTS; it would reduce the breadth of joint-air power knowledge amongst instructors at 2 CFFTS; there is no current means of selecting and recruiting helicopter pilots directly into the CF; and that the concept of a separate stream was generally against RCAF

²²⁰ McIntyre, "A Separate Helicopter Pilot...", 8.

²²¹ Email correspondence from Capt Lennard Johnston 12 April 2016.

²²² Telephone discussion with Maj Craig Isenor, D Sim Trg, email 3 May 2016. Attached emails and spreadsheet including Email from Maj Marc Juneau to project team members soliciting input on advanced COA selection for the Future Pilot Training Project, 17 June 2014.

²²³ *Ibid.*

²²⁴ *Ibid.*

philosophical ideas of what common background pilots should have.²²⁵ Yet, removing rotary instructors and future helicopter students from NFTC would leave the same ratio of instructors and students as is currently the case; the only need for breadth of air power backgrounds at NFTC is to inform students of their future roles which would no longer include helicopters anyways; and creating a mechanism for recruiting helicopter pilots separately would help ensure that new recruits end up on the career paths that most interest them and is something not an issue in militaries with aviation organic in their services. Counter arguments for philosophical aversions, however, are more difficult to find as it involves resistance to change and emotional attachments to the status quo.

Meanwhile, the current ab-initio training of TAE pilots lacks an effective base level land environmental training that would enhance helicopter crew situational awareness, operational learning curve, and combat effectiveness by providing the tactical acumen necessary to integrate into the combined arms team earlier.

Land Environment Training

Personnel of the TAE do not receive adequate formal training in the land battlespace. Instead, training is conducted at the unit level to attempt to bring individual training up to an acceptable level for collective training and operations.²²⁶ It is somewhat surprising then that despite predominantly operating in the land environment that no formal land environmental training is provided to members of the TAE prior to arrival at their operational unit beyond basic training.

An exception to this is the Land Officers' Familiarization Training Course (LOFT) provided to new tactical aviation pilots; however its efficacy in its current form is questionable.

²²⁵ *Ibid.*

²²⁶ Coakwell, "Air/Land Integration...", 10.

In the 1970s, LOFT included significant time in the field including directing live artillery and spending time embedded with armoured forces to learn their techniques of fire and manoeuvre.²²⁷ By the 2000s, this course was still being conducted by the Infantry School at the Combat Training Centre in Gagetown New Brunswick on behalf of the TAE. Now with only a few days in the field, the course still involved significant contact training with CA equipment, doctrine, and lessons in battle procedure by qualified instructors from the Combat Training Centre. Since approximately 2007, it has been conducted entirely by distance learning and consists of only the Army Junior Officers Staff course with an added Land Aviation annex.²²⁸ In time this will likely be shown to be inadequate as Col Elder seeks to describe Land Aviation in the following terms: “This is not just about being (able to) fly in an Army battlefield environment, you need to be able to fight, and I was expected to be able to command any and all elements of the combined arms team when required.”²²⁹ Col Errington, Director Infantry, discussed some anecdotal experience mentoring some TAE officers who were having difficulty with tactical decision making and prioritization in combat situations and suggests that greater indoctrination in the hands on practice of land combat would help.²³⁰ It is not uncommon to have 1 Wing co-pilots deploy on exercise without being able to identify and name CA vehicles, reducing the absorption of the higher order training opportunities of the exercise.²³¹

The largest single group within a fielded tactical aviation squadron is its aircraft technicians. Unquestionably, the most exposed elements of the squadron aside of the aircrew and aircraft themselves, are the Forward Arming and Refueling Point (FARP) personnel and the

²²⁷ 427 Squadron, "The Jackaman File," Accessed 03 May 2016, <http://www.427squadron.com/jack.html>

²²⁸ 4500-1 (A7), 1 Wing Pilot Progression Model - Concept Directive, 20 December 2013.

²²⁹ Col Shayne Elders email correspondence, 7 April 2016.

²³⁰ Col John Errington discussion with LCol Dave Forbes, 23 March 2016; email 28 March 2016.

²³¹ Author's experiences as HR Ops O and Flight Commander at 408 THS 2013-2015. For example, otherwise capable co-pilots could only refer to the four main types of logistics vehicles operated by the unit as "Army Trucks."

Maintenance Repair Party (MRP) personnel, all of whom are drawn from Maintenance Flight with the exception of the specialist driver of the fuel truck. Except for the few technicians who may have undergone an occupational transfer from an army trade, none of the technicians will ever receive any formal field training course other than their basic training where they learn basic field-craft but nothing in terms of combat skills. These technicians are the personnel who drive the majority of the squadron's vehicles and must navigate, drive in convoy in both day and night black-out conditions, and fight through an ambush if necessary.²³²

According to the Tactical Aviation Battle Task Standards, the squadron is expected to occupy harbours and hides and contribute to its own static defence yet its members receive no formal training in the conduct of any of these tasks prior to arrival at an operational 1 Wing squadron.²³³ Instead, driver training, all field living training, and any degree of training for combat at all, are entirely left to the units to provide under the direction and validation authority of the Commanding Officer, who, though by now highly experienced, likely has not formally received this training either. When this training is delivered, it is predominantly organized by the unit Master Door Gunner (an army Warrant Officer) and whatever ex-army personnel happen to be posted to the unit by chance. Knowledge of formally mandated safe training practices for field operations amongst RCAF NCOs is typically also extremely low, making leaning on these few army NCOs in Squadrons even more critical. Although not necessarily unenthusiastic, the level of efficacy is questionable.²³⁴ By matter of comparison, virtually every member of the

²³² Department of National Defence, B-GL-383_002/FP-001, *Individual Battle Task Standards for Land Operations* (Ottawa: DND Canada, 2012), Annex B.

²³³ *Ibid.*

²³⁴ Author's observations as Operations Officer, 408 THS during two High Readiness training cycles.

army, including all General Service Officers, undergoes a “Battle School” phase as part of their initial occupational training.²³⁵

Professional Military Education

At the time of writing, the RCAF is undertaking the development of a new training regime to better enable its Captains and Majors professionalize their understanding of air power and its role in operations. This course will be called the Air power Operations Course.²³⁶ The keystone in the development of CA officers, meanwhile, is the longstanding and well proven Army Operations Course (AOC).²³⁷ Likewise, it has been the essential gateway for advancement in the TAE and will remain so in the future, as described by this paragraph from the most recent planning directive from 1 Wing HQ:

AOC represents the end of the Development Period (DP) 2 for our young officers and is an essential course required by tactical aviators in key staff and command positions. It is critical that 1 Wing units carefully examine the progression of their Captains to ensure that only suitable candidates are selected for AOC. The CA was directed to reduce the number of AOC serials from 3 to 2 per year thus forcing the CA to be very diligent in selecting candidates for AOC. 1 Wing must be equally selective with candidates... While the RCAF Air power Operations Course (APOC) will be an additional pathway to DP2 qualification for 1 Wing officers, AOC will remain the preferred prerequisite for 1 Wing pilots programmed for most flight commander positions with a priority on ensuring Flight Comds at 408 THS, 430 ETAH, 450 THS and ATF are AOC qualified.²³⁸

AOC continues to be identified as the TAE’s gateway to advancement and is a key integration point and element of credibility for future CA and TAE leaders alike.

²³⁵ Department of National Defence, *Basic Military Officer Qualification – Land Training Plan* (Kingston, ON : Land Force Doctrine and Training System, 2006),

²³⁶ LCol Clay Rook discussion with LCol Dave Forbes, 19 Apr 2016.: Rook, Clay LCol, "Briefing Note for DComd RCAF: Assessment on RCAF DP2 and Operational Training Requirements." 10 January 2015.

²³⁷ The Army Operations Course is the culmination of Development Period 2 for CA officers. It entails two months of intensive, full time distance learning in army doctrine and corps roles followed by three months of residential instruction at the Canadian Army Command and Staff College in Kingston Ontario. The course involves Battle Group, Brigade, and limited Division level computer assisted exercises across the full spectrum of conflict.

²³⁸ 1950-1 (COS), “1 Wing Commander’s Tactical Planning Directive FY16/17,” April 2016. 16.

When asked to describe the degree of inter-air group tribalism within Air Command, LGen (Ret) Sutherland commented on the strength and professionalism of the TAE community who “made for more professional Airmen, and I attribute this to your relationship with the Army and their greater emphasis on the professional development of their officers.”²³⁹ He expanded on this by explaining that the majority of non-TAE “Airmen” just wanted to fly and were, thus, often weaker in competencies in other areas of the military profession when compared to the TAE officers.²⁴⁰ Unfortunately, AOC is the only formal army-specific training available to 1 Wing officers. Since there are currently only three positions on AOC per year allocated to the TAE, it must be prioritized to just a few pilots.²⁴¹

It is not only in the professional education of TAE officers that is of concern here. The CA has expressed some reticence in loading army non-commissioned members (NCMs) on RCAF and RCN run Primary Leadership Qualification (PLQ) Modules 1-2-3 due to a lack of confidence in Army candidates’ ability to succeed on the Infantry specific Modules 4-5.²⁴² Although the PLQ Modules 1-2-3 are theoretically service neutral, the CA sees a difference in quality. Meanwhile, TAE NCMs are expected to operate in similar environments as their army cousins but receive different training.

The concerns raised here with respect to the level, type, and deliveries of training given to the field force of the TAE are all, unquestionably, the result of structure. Fortunately, these issues while significant are perhaps some of the easiest to rectify from a technical perspective, as will be examined in the following sections.

²³⁹ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016. Sutherland also highlighted LGen Charlie Bouchard as a prime example of this phenomenon during his career.

²⁴⁰ *Ibid.*

²⁴¹ 1950-1 (COS), "1 Wing Commander's Tactical Planning Directive FY16/17", April 2016. 16.

²⁴² Col John Errington discussion with LCol Dave Forbes, 23 March 2016; email 28 March 2016.

Aircraft

The TAE lacks much of the correct materiel to generate, provide, and sustain the level of Land Aviation to meet the CA's stated requirements in its ACDR. LGen Lessard states that when the RCAF and the TAE have the time and the resources, they can achieve their mission. Where they have difficulty, however is in two areas: the first is a lack of capacity to meet the desires of the brigade commanders due to lack of size; and the second and more significant is the issue of "how much does aviation support land warfare? In the Canadian context, it only provides a very restricted capability. This is a more complex effects-capability problem."²⁴³ This is perhaps most true of its lack of a precision stand-off weapon, if not a true attack helicopter system.²⁴⁴ This is also true of field equipment scale of issue and of mounted, mobile firepower for self-protection when moving a unit, FARP, or MRP. Due to the increasing cost, complexity, and integration and training needs of modern military equipment, last minute capability generation has proven risky at best, as demonstrated by CHF(A) and Op Legion Lion.

According to Stephen Saideman, "one reason Canadian leaders chose Kandahar was that it was a major hub, with plenty of helicopters."²⁴⁵ This was in fact true and British, American, and Dutch helicopters were used to support Canadian efforts in Kandahar. They were grossly insufficient to meet the combined needs of their forces and those of the coalition, however, leaving movement on the dangerous IED infested roads as the only option much of the time.²⁴⁶ In this, Canada was certainly not alone as Saideman goes on to assert that most nations deployed too few helicopters.²⁴⁷ This, despite the fact that a December 2005 reconnaissance trip to

²⁴³ LGen Lessard discussion with LCol Dave Forbes, 11 March 2016; email 2 May 2016.

²⁴⁴ Morrison, "The Need for Precision-Guided...", 22.

²⁴⁵ Stephen M. Saideman, *Adapting in the Dust: Lessons Learned from Canada's War in Afghanistan* (Toronto: University of Toronto Press, 2016), 18.

²⁴⁶ *Ibid.*

²⁴⁷ *Ibid.*

Holland confirmed that allied AH assets would likely not be available.²⁴⁸ Yet, a significant outcome of the 2008 *Manley Report* was the recommendation to quickly purchase medium-lift helicopters for the CAF's use in Afghanistan as Canadian Soldiers currently must rely too much on allied forces for...these necessary assets."²⁴⁹ Similarly, once 427 SOAS Mi-17/CH178 helicopters arrived in 2010 it was discovered that although the Canadian SOTF was now enabled with adequate lift, it still lacked the dedicated on-call fire support of a gunship and thus continued to lack the full flexibility that the program was to provide.²⁵⁰ This was the hard learned lesson the Dutch took from Srebrenica and why they no longer deploy ground forces without integrated Dutch aerial firepower.²⁵¹ In order accomplish this; however, two conditions must be met: First, the critical mass of aircraft and personnel necessary to meet the missions envisioned; and second, a multi-platform fleet able to address at least some of all of the doctrinal roles of Land Aviation.

Like Air Forces, the success of Land Aviation is largely dependent on the coordinated use of several different types of platforms. Put differently speaking, helicopters Find things; Move things; and Shoot things. In 2008, prior to the release of the *Manley Report*, Gongora and Wesolkowski noted that, amongst the nine countries surveyed, Canada was alone in not having a battlefield helicopter fleet balanced across the OH-UH-CH-AH menu. Gongora concludes expands on this finding by stating:

All foreign aviation forces studied include a mix of aircraft categories. This mix includes at least four different categories and as many as seven. These fleets are maintained by nations and services despite significant differences in fleet size, country size, and defence budgets. It would be an error to assume that a balanced

²⁴⁸ McCauley paper pg 20

²⁴⁹ Independent Panel on Canada's Future Role in Afghanistan. *Final Report*. (Ottawa: 2008), 35.

²⁵⁰ Telephone discussion with LCol Jeff Orr, 427 SOAS Commanding Officer 30 March 2016. "On Call Precision Fires just became the next limiting factor in risk mitigation for mission launch authority."

²⁵¹ Auerswald and Saidemand, *Nato in Afghanistan...*, 158.

and diversified aviation force can only be sustained with very large fleets and budgets as those associated with the US Army or Marine Corps.²⁵²

Furthermore, Canada was also the only nation studied to not field a dedicated attack helicopter. It is perhaps instructive to note that other than the Netherlands, who have been shown to place a high value on Land Aviation as a result of their own experiences, Canada is the only nation in that study who groups Land Aviation entirely under its Air Force.²⁵³

Conclusion

The issues resulting from the TAE's grouping under the RCAF is that it is forced to reside between two cultures, is doctrinally misunderstood, and organizationally ill fitting. It over-emphasizes pilot training and under-emphasizes army training and the stakeholders to make it better are at odds over who is responsible for it. This paper asserts that the TAE's institutional health would be improved by more closely aligning its culture with that of the CA, as the TAE's structure makes it difficult to do otherwise. Similarly, the functional doctrine in the B-GA-440 series is relevant but does not nest well within the higher order B-GA-400 series RCAF doctrine. With a shaky cultural and doctrinal foundation, the organization constructed on top lacks coherence.

The RCAF describes the "what" the TAE actually does as a secondary function while the CA declares is a critical capability for modern land battle. Finally, TAE personnel lack formal training in land operations while are likely being over-trained for their type of flying operations. The heart of this quandary is determining how much of Land Aviation should be considered air power and how much should it be considered a ground-manoeuvre element. Options on how to address these problems are addressed in the next chapter.

²⁵² Gongora, Wesolkowski, "What does a balanced...", 15.

²⁵³ Gongora, Wesolkowski, "What does a balanced...", 17.

Chapter 6 - Proposal of New Structures

The TAE has achieved many great successes in its history. With this in mind, it is entirely possible to maintain the status quo of the TAE and its relationship with the CA as an agent subordinate to the RCAF. These successes have been the result of more work, greater individual sacrifice, at greater risk than should have been necessary, and were possibly less successful than could have been possible as a result of the current structure. The TAE's operating environment must be considered to be its defining characteristic, not the fact that it involves flying. Assuming for the moment that this is fact, there exists a spectrum of potential courses of action to achieve this paradigm shift.

The first and most obvious option would be the formation of a Canadian Corps of Army Aviation (CCAA) centred on 1 Canadian Aviation Brigade (1 CAB). The second option follows the now firmly entrenched SOF Aviation model by detaching 1 Wing from the RCAF and granting operational command to the Canadian Army as an independent brigade. Thirdly, the CAF could reinforce a mature and pragmatic system of joint governance with a firm Service Level Agreement (SLA) enforced by the VCDS. In addition to these unique propositions for change, this paper submits a number of universal adjustments to the TAE which would improve its delivery of Land Aviation services by either increasing its expertise or optimizing its output.

Universal Adjustments

This paper presents seven specific improvements for the TAE. Firstly, TAE aircrew and ground crew must undertake a baseline of land operations training beyond Basic Training and that is field oriented and not based on distance learning. Once these skills have been centrally and formally instructed, the RCAF responsibly rely on upkeep training as part of cyclical

Managed Readiness Plan. This formal training exists already as part of baseline training for most CA occupations and trades.

Secondly, TAE pilots are already effectively considered a managed specialty in that their careers are managed within the Tactical Aviation community. This practice should be extended to NCM ground crew and flight engineers to ensure leaders have the requisite qualification and experience to operate in the land environment.

Thirdly, environmental clothing and field living equipment for TAE units should be common with that of the CA. Boots and cold weather clothing designed for use on RCAF wings with well-developed infrastructure have no guarantees of being suitable for use by seven of the RCAF's thirty-three squadrons accounting for over 20% of the RCAF.²⁵⁴

Fourthly, the prioritization of funding for TAE capability development should be compared against the CA role it which it supports, not against other aspects of air power that are unrelated. For instance, PSOW fills a middle-range direct fire anti-armour capability gap whose incremental costs beyond that of the multi-mission platform being used should be valued against a tank or ground based guided anti-tank missile capability, not against an enhanced SAR capability or Aurora modernization. This would require the CA's agreement as currently this prioritization of force development is not their burden to carry and so may be in a position to place blame elsewhere when lacking a particular capability.

Fifthly, the training of helicopter pilots should be streamlined and rationalized. The 2014 Future Pilot Training Model actually disagrees with this statement, presenting a plan that

²⁵⁴ C.W. Morrison, RCAF response to LCol Richard Maundrell for the "Defence Operational Capability Audit: Joint Helicopter Command." The Cold Wet Weather boot was tested for use on the Griffon but with a non-field CSS unit. Moreover, it failed to pass the tests for use on the Griffon but was adopted regardless. Department of National Defence, Land Aviation Test and Evaluation Flight Final Report - Clothing and Equipment Millennium Standard (CEMS) Extreme Cold Weather Boot Operational Test and Evaluation. (Gagetown: LATEF, 2006), 4.

modifies the current system but maintains a jet aircraft phase for helicopter pilots.²⁵⁵ Pilot career progression would then stay within the seven Tactical Helicopter Squadrons and the Wing HQ with Combined Arms Common, TAFO, BTAC, ATAC/ATOC, and AOC being the junior officer progression stream.²⁵⁶

Sixthly, TAAG Chair should be double-hatted as “Director Aviation” within the Army governance model. While the TAAG Chair currently sits at Army Council as 1 Wing Commander under the auspices of the RCAF, his role as TAAG Chair means little to the Army.²⁵⁷ This position would hold its allegiance to the Commander CA as the formal and honest champion of Land Aviation capability development and integration. Director Aviation would, theoretically, sit at Army Council as an equal to the Directors Armour and Infantry.

Finally, something that should not change in any option considered is the degree of scrutiny placed on Flight Safety or the measures of ensuring operational and technical airworthiness. These fundamental processes must remain unchanged in process, if not in practice. Indeed, precedence for this existed even before unification as “regardless of their location, all army Air Force units were under command of the nearest RCAF Station or unit commander for the purposes of flight safety.”²⁵⁸ TAE representation in both of these critical areas of joint air power must be maintained regardless of whatever force generation or force employment structure might be adopted in the future. Other, more fundamental options also present themselves for the TAE.

²⁵⁵Email discussions with Maj Blair Springate, RW Pilot Career Manager, and Maj Phil Shilling 2 CFFTS Pilot Instructor, emails 11 April 2016, 12 April 2016, 26 April 2016.; Telephone discussion with Maj Craig Isenor, D Sim Trg, email 3 May 2016.

²⁵⁶4500-1 (A7), 1 Wing Pilot Progression Model - Concept Directive, 20 December 2013.

²⁵⁷Col Scott Clancy, telephone discussion with LCol Dave Forbes, 5 April 2016; email 4 May 2016.

²⁵⁸Black, "Canada's Army Loses...", 102.

Option 1: The Canadian Corps of Army Aviation

One option for the TAE is the creation of a Canadian Corps of Army Aviation (CCAA). This would see a full re-badging of the TAE as a manoeuvre corps of the CA, equal to the infantry and armoured corps, as was done in the US, UK, and Australia amongst others. Tactical Aviation Squadrons would become 1, 2, and 5 Aviation Battalions (Avn Bn) under operational control of their respective brigades but under the command of 1 CAB HQ. In this manner, the concept of centralized command would be maintained and the current role of 1 Wing HQ as the Force Employment Lead Planner (FELP) for tactical aviation would remain relatively unchanged. For the purposes of domestic tasking, Avn Bns would be tasked through the army chain of command identically to each CA division's Immediate Response Unit's high-readiness company groups already being maintained for these same standing contingency plans.²⁵⁹ In every respect, this would serve to clarify and streamline the tasking process and subsequent support arrangements between the supported unit and the aviation detachment during typically short-notice domestic emergencies.²⁶⁰

The identity and culture of the CCAA would finally be decided and reinforced with a uniform change to that of the CA but with the distinctive Air Corps blue beret as is the case in Australia and the UK. As the common wings standard will have been set aside, the original Aviators Badge, blue feathered wings with a lion and crown at the centre, formerly issued to CA aircrew would be reestablished. Justification for future investment in personnel, platforms, mission kits, and training would become problems for the CA alone to justify. Flight safety and

²⁵⁹ CJOC OP LENTUS Contingency Plan.

²⁶⁰ Historically this has proven challenging. In 2015 the Author deployed as Det Comd with two CH146 Griffons in support of the Op LENTUS and the Saskatchewan wild fire response efforts in August 2015. No RCAF support arrangements were made and no direction was forthcoming. All support to the helicopter detachment was provided by the IRU and 1 CMBG based on collegial relationships built through co-location in Edmonton and routine support arrangements. No formal support arrangement was ever established.

technical airworthiness, meanwhile, would become joint affairs with the CCAA being responsible for filling air and ground crew billets at both DFS and ADM Mat. Operational airworthiness matters currently handled at 1 CAD would fall to 1 CAB HQ. Likewise, there would be no reason to make the CA solely responsible for helicopter procurement. As was the case for the UK's AAC in their early days, as a founding member noted:

I was amazed to see the levels of individual expertise in so many comparatively narrow fields, and I realised that, although the Army might fly and repair aircraft with skills to match the RAF, it could never match their skill and knowledge of the business of obtaining an aircraft and bringing it into service.²⁶¹

Joint manning of procurement and in-service support aspects of the TAE fleets would not change in terms of establishment, only in culture and focus as blue-suited personnel are slowly replaced by green-suited personnel.

This idea, although rarely discussed with any seriousness, is not as far-fetched as it might seem. Although the CA clearly stumbled with the Sperwer project, it was the TAE which saved it, underlining the CA's commonality with the TAE. Since then, the CA has generated the Scaneagle program on land and even from RCN warships and has negotiated its place at the UAV table below thresholds established in the Canadian Forces UAV Campaign Plan.²⁶² This document alone is proof that the CAF agrees on a role for organic Land Aviation support as part of the CA. All this proposition represents then is a discussion of degree.

Option 2: Operational Command to the Canadian Army

A less dramatic change than the recreation of a separate corps within the CA, and in fact a more faithful approach to the original unification model envisioned by Hellyer and endorsed by

²⁶¹ Mead, *Soldiers in the Air...*, 110.

²⁶² Department of National Defence, *Canadian Forces UAV Campaign Plan edition 1* (Ottawa, DND Canada, 2007), 24.

Farley, would be the transfer of Operational Command of 1 Wing to the CA.²⁶³ This would effectively undo the absorption of 10 TAG by Air Command in 1975 but retains the post-1968 unification model allowing for the retention of full command of the TAE by the RCAF. Current unit histories, Colours, and uniforms would see no change.

This model has proven very effective in the case of 427 SOAS and its 2006 Transfer Of Command Authority (TOCA) to CANSOFCOM.²⁶⁴ 427 SOAS, in concert with CANSOFCOM and the RCAF, successfully introduced and operated the Russian CH178 in combat.²⁶⁵ Moreover, this arrangement has seen increased investment on the part of CANSOFCOM directly into their aviation unit in terms of personnel, money, equipment, and contracted civilian maintenance augmentation. Since their TOCA, internal retention, individual training, field equipment and personal scales of issue, aircraft platforms, and manning and infrastructure have all since been addressed to some degree.

Essentially, placing the TAE under OPCOM of the CA would encourage investment through ownership by the CA as they have demonstrated, though not deliberately, at several points throughout both distant and recent TAE history. The RCAF would retain responsibility for four of the five residuals common to the 427 SOAS TOCA with the fifth, personnel management, perhaps existing but in a modified form.

Option 3: Status Quo but Better

The TAE in its current context works. Canadian Forces Europe, Sinai, Somalia, Honduras, Haiti, Bosnia, Kosovo, Afghanistan, Philippines, and countless domestic operations and joint exercises all prove this. It will continue, however, to lack a formal champion, full buy-

²⁶³ Farley, *Grounded...*, 177.

²⁶⁴ 3010-1 (D Air SP), "Transfer of Command Authority - 427 Sqn," 27 January 2006.

²⁶⁵ Telephone discussion with LCol Jeff Orr, 427 SOAS Commanding Officer 30 March 2016. / Canadian American Strategic Review Website, "CF Medium-Heavy Lift Helicopter – Mil CH-178," Accessed on 7 March 2016, <http://www.casr.ca/101-af-ch178-mil.htm>.

in from the key stake holders, and an established culture coherent with its role and location due to the dissonance of being a land capability that hovers. The issues identified are most cleanly dealt with by honest self-reflection of the CAF, CA, and RCAF which might logically create a CCAA or establish a formal lower command relationship with the CA. For reasons to be dealt with shortly neither of these options are likely.

The final proposition of this paper is to formalize what is expected from and by both the RCAF and CA with respect to Land Aviation support through a comprehensive SLA; achieving an understanding not unlike that which was achieved by the US military with the Howze Board in 1962. Even this, however, brings with it many challenges. Col Scott Clancy, the sitting Commander of 1 Wing and TAAG Chairman, disagrees with this approach, preferring instead a more mature and “transformational” approach to the RCAF/CA interaction.²⁶⁶ LGen Lessard, meanwhile, feels that “force of personality and deal making between Comd CA and Comd RCAF can be hoped to work sometimes, but that relying on this as a method would be imprudent.”²⁶⁷ The signing of an SLA need not be at odds with mature consensus building, however, and should serve to establish a procedural baseline against which a polite inter-service discourse could lean. Without this, continuous adaptation by the TAE to the needs and whims of its two masters will be chaotic. Lewin’s famous three-step model of organizational change requires the status-quo to unfreeze, move, and then refreeze.²⁶⁸ Without a firm arrangement, positive changes will have difficulty entrenching.

Items of interest would include the issue of infrastructure, tactical risk ownership, prioritization of funding and sponsorship of capital spending. Less significant clauses might

²⁶⁶ Col Scott Clancy, telephone discussion with LCol Dave Forbes, 5 April 2016; email 4 May 2016.

²⁶⁷ LGen Lessard discussion with LCol Dave Forbes, 11 March 2016; email 2 May 2016.

²⁶⁸ Esther Cameron and Mike Green, *Making Sense of Change Management: A complete guide to the models, tools and techniques of organizational change, 3rd edition* (London: Kogan Page Limited, 2012), 122.

include formalizing the provision of CA combat arms door gunners, the provision of vehicle and weapon maintenance support, and the provision of base services such as access to aircrew clothing.²⁶⁹ Most importantly, the provision of training services on the part of both the TAE and the CA must be ensured as they each need one another. Indeed, the TAE must be ensured to continue training under field conditions as the CA cannot guarantee that its future operations will be within helicopter range of and RCAF deployed operating base.²⁷⁰ This SLA must also include robust access to the CH147 in accordance with the 2010 DCB record of decision that support to the Arctic would be secondary to its primary mission in support of the CA should be entrenched.²⁷¹ Similarly, a PSOW be considered mandatory as part of the Griffon life extension and/or replacement as described in the ACDR.²⁷²

Resistance to Change

An unavoidable issue embedded in this establishment beyond the cultural and practical factors discussed above is the institutional inertias of not only the two services involved but also of their sub-components and communities as well. There are protectionist forces at play that cannot even be attributed to individuals, but are woven into the fabric of the institutions themselves. When discussing this phenomenon with LGen Sutherland, he stated off-handedly “Wither the Army” as a descriptor for a potential condition of the Army not having sufficient Tac Hel for its needs, because of its potential unwillingness to pay for it at the expense of its own combat systems. On the other side of the same coin, he shortly thereafter framed “Wither Tac

²⁶⁹ Discussion with LCol Roderick MacDonnell a former Commanding Officer of 408 THS and authors experience as Operations Officer at 408 THS; email 7 May 2016.: Currently door gunners are provided to High Readiness squadrons by their affiliated brigades for up to eighteen months on an ad-hoc attach-posting basis with less than ideal controls.

²⁷⁰ 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept, 6 March 2012, 24.

²⁷¹ 1180-1 (CFD), "Defence Capabilities Board – Held on 25 November 2010 – Record of Decisions," 29 November 2010.

²⁷² 3185-1 (DLFD 3), "Army Requirement for Tactical Aviation Support." Ottawa: Comander Canadian Army, 13 April 2012.

Hel” as a descriptor for a potential condition of a reduced or non-existent TAE in Canada as a result of the Army deciding to go without it, in favour of investing its efforts in its traditional combat vehicle fleets and capabilities. In other words, how much does the Army really need Tac Hel?²⁷³ To this interesting if accidental analysis, one should logically add “Wither the RCAF,” to examine what would the future hold for the RCAF after giving up at least some degree of command and control of its largest single element its sister service, if not personnel, funding, and aircraft as well. By examining the impetuses to change the TAE through the paradigms of the two services’ as well as the TAE itself in a “Wither Tac Hel” perspective, one gains a clearer picture of the organizational challenges which might be associated with addressing the structural causes for the cultural and practical shortfalls noted earlier.

Each of these perspectives demonstrate an institutional expression of the “competing commitments” style of individual change resistance described as “immunity to change” by Kegan and Lahey.²⁷⁴

Wither Air Force: Why the RCAF should want to keep the TAE

The loss of 1 Wing and the implementation of some of the modifications proposed would force a fundamental shift in how the RCAF operates institutionally. The NFTC program’s output would shrink by 40%. A CCAA would shrink the RCAF by 13% in personnel and 21% in numbers of aircraft as well as a loss of control over 10% of its operations and maintenance budget. In short, the RCAF stands to lose some of the prestige that comes with being a medium sized Air Force. Another idea that circulates commonly is that the RCAF needs TAE officers as a result of their professionalism. As quoted earlier, LGen Sutherland places very high regard on

²⁷³ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016.

²⁷⁴ Robert Kegan and Lisa Laskaw Lahey, “The Real Reason People Won’t Change,” in *On Change Management*, (Boston: Harvard Business Review Press, 2011), 119.

the TAE's officer corps crediting its leveraging of the CA's professional development opportunities.²⁷⁵ The TAE's understanding of training, the mounting of forces, and of land operations has also served the RCAF well in its takeover of the Sperwer UAV capability, the force generation of the first Afghanistan Air Wing, and in the establishment of 2 Expeditionary Air Wing, all of which saw high degrees of TAE operator involvement.²⁷⁶

Most significantly, is the institutional RCAF's dogmatic belief in the indivisibility of air power despite the fact that it remains an ongoing and heated debate in many armed forces globally. Central to RCAF thinking not as a result of Hellyer's unification project of 1967, but due to LGen Carr's need to justify a distinct environmental service in 1975 is the idea of the indivisibility of air power.²⁷⁷ Indeed, until unification, the RCAF, RCN, and CA jointly contributed air power via their own flying elements who understood each other in relative harmony as evidenced by CJATS Rivers.²⁷⁸ Furthermore, changes to the foundations of the TAE would also be likely to have reverberations within the RCAF maritime helicopter community. In today's RCAF, the indivisibility of air power is treated like a self-evident natural law despite its continued debate in militaries around the world. This argument is sometimes described as air power's "Gordian Knot."²⁷⁹

Notwithstanding these arguments, there remains a case for this split. As demonstrated earlier, the RCAF need not train helicopter pilots at NFTC. The ongoing defence review, coupled with the NFTC contract expiring in 2024, may present an opportunity to rationalize how

²⁷⁵ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016.

²⁷⁶ LCol Clay Rook discussion with LCol Dave Forbes, 19 Apr 2016.: Col Erick Simoneau discussion with LCol Dave Forbes, 30 April 2016. The RCAF's air operations course may make this moot – but that is still to be determined.

²⁷⁷ James, "Formation of Air Command...", 17.

²⁷⁸ Hillman Web, "From Pharmacy to Helicopters by Lt. Col Jim Grant", Accessed 29 September 2015, <http://www.hillmanweb.com/grant01.html>.; Mess Book, Rodenbush.

²⁷⁹ Stephen J. McNamara, *Air Power's Gordian Knot: Centralized Versus Organic Control* (Maxwell: Air University Press, 1994), Cover.

40% of the RCAF's pilots are trained at a significant savings of both cost and time. The degree to which the TAE force generates the Griffon component of CSS need not change appreciably with the exception that, as a better equipped and battle-capable TAE eventually emerges, CSS functions may use a different platform requiring a new model. This eventuality is something that may happen through normal fleet recapitalization, regardless of structural changes, however. Finally, the inflexible Canadian view of air power as an indivisible monolith is a rare model in the world. As surveyed in Chapter Two, even the RAF, the world's oldest separate Air Force, has ceded control of its helicopters to JHC, a Land Aviation "Battlefield Helicopter" force employment structure.²⁸⁰ Although the standardization of things like airspace, maintenance techniques, and aviation fluids is not in question; the debate over this rigid application of a doctrine derived before helicopters even existed remains hotly debated all over the world.

By granting greater responsibilities to generate Land Aviation to its user, the CA, the RCAF would be able to narrow its own focus and efforts on aspects of air power that are purely Air Force related. The Commander of the French Air Force, LGen Denis Mercier, states that:

Air-Land operations will remain tied to the land environment, as will air-sea actions to the maritime environment. The full spectrum of strategic missions and air command and control missions lies at the core of the air and space airman's identity, unbounded and encompassing all environments.²⁸¹

This statement affirms the omnipresence of Air Force effects in all battlespaces; it also acknowledges a separate flavour of air power centred on terrain and the sea.

Wither Tac Hel: Why the TAE should want to stay with the RCAF

This paper should not be construed to say that the TAE universally or even by majority wishes to leave the RCAF. In fact, there may only be a minority who would wish to see this.

²⁸⁰ British Army Website, "Army Structure - Joint Helicopter Command," Accessed 3 May 2016, <http://www.army.mod.uk/structure/32411.aspx>

²⁸¹ Denis Mercier, "Thinking about Air and Space Power in 2025: Five Guiding Principles," *Air and Space Power Journal* (May-June, 2012), 29.

Some knowledgeable officers have noted that in the RCAF, a helicopter pilot can rise to high command but would be unlikely to do so in the CA.²⁸² This is in contrast to the current system under which multiple former 1 Wing Commanders have been Deputy Commanders of NORAD, Chief of the Air Staff, and Chief of Defence Staff.²⁸³ LGen Charlie Bouchard even commanded coalition all forces in Operation Unify Protector in Libya.²⁸⁴ Also, the high cost of Land Aviation relative to land vehicles could also make the TAE a ripe target for cuts within the CA. The idea that emerges, therefore, is that it is better for the TAE to be 40% of the RCAF and cheap than 5% of the Army and expensive.

The concerns within the TAE are not without merit. Indeed, some of these concerns would almost certainly materialize. While using the Canadian Army's anti-tank helicopter project as a case study, Black suggests that competition for resources just to meet traditional tasks and support tradition platforms (tanks, APCs, guns, etc.) as the reason for which the study to acquire anti-armour helicopters failed to produce anything.²⁸⁵ To what degree this may or may not have been true in the 1960s and 1970s, it would most certainly have also been the result of the inherent limitations on the technology that have since been dramatically ameliorated in the form of night and thermal optics, more powerful powertrains, and very precise and lethal weapon systems. Moreover, the current Canadian Army Director Armour, Col Kelsey is also of the opinion that the more flexible direct-fire platform is a helicopter, not a tank.²⁸⁶ In short, given the unquestioning and universally (outside of Canada) held view on the value of Land Aviation

²⁸² LCol Clay Rook discussion with LCol Dave Forbes, 19 Apr 2016.: Col Erick Simoneau discussion with LCol Dave Forbes, 30 April 2016.

²⁸³ The TAE has produced multiple senior General Officers including Gen Ray Henault, LGen Marcel Duval, LGen Alain Parent, LGen Ken Pennie, LGen Charlie Bouchard, and the Comd 1 CAD designate at time of writing, MGen Christian Drouin.

²⁸⁴ Richard O. Mayne, "The Canadian Experience: Operation Mobile" in *Precision and Purpose: Airpower in the Libyan Civil War*, edited by Karl P. Mueller (Santa Monica: RAND Corporation, 2015), 239-266.

²⁸⁵ Black, "Canada's Army Loses...", 104.

²⁸⁶ Col Stephen Kelsey telephone discussion with LCol David Forbes 1 April 2016, email 1 April 2016.

to army operations, it seems likely that the institutional CA might be relied upon to rise above the lobbying of individual corps in favour of a best-practices answer to resourcing aviation.

Notwithstanding this, it remains possible that his response may well be, in all honesty and fairness, that a robust, full suite Land Aviation capability for Canada is unaffordable and that the TAE represents too little effect for the costs invested. In short, “Wither Tac Hel,” and the army will muddle on without full spectrum aviation support by, cutting from its expensive Aviation capability first, as Black suggests occurred between unification and the formation of Air Command.²⁸⁷ In this case, the CA would have to rely on Canada’s allies for Tac Hell support.

However, the CA would not be allowed to let the TAE wither for the same reasons the RCAF ultimately could not pay for its institutional share of MHLH by reducing the Griffon capability.²⁸⁸ Canada requires a regionally dispersed establishment of helicopters to meet the domestic response mandate of the CAF. The result of this fact may be that the CA would pay the incremental increase in cost, large though it might be, for the type of tactical helicopter service it wants and needs as opposed to the RCAF that balances expenditures on the TAE against non-army functions. In this regard, the CA would get the amount of Land Aviation it decides is right and because it would work for them, the self-evident truths of the need for a balanced fleet argued by Gongora, and for a PSOW argued by Morrison are more readily accepted. The final, and perhaps most significant concern is that of risk. The premise of centralized control can be maintained here, but at the appropriate level. By only granting operational or tactical control to the forces employing aviation and retaining risk authority beyond a negotiated and operation specific threshold, 1 Wing/1 CAB HQ could remain the check and balance against an unknowledgeable CA formation commander issuing unsound orders. As the CA became better

²⁸⁷ Black, "Canada's Army Loses...", 104.

²⁸⁸ 3500-1 (A3 Tac Avn), 1 Canadian Air Division Endorsement of 1 Wing Force Employment Concept, 6 March 2012, v.

at using its newly integrated and more responsive Land Aviation force, the need for this would likely diminish.

Wither Army: Why the Army does not want to take Tac Hel

It would be a mistake to believe that the CA would even want to absorb the Land Aviation capability. Col Errington suggests that the current arrangement is such that the CA has the use of helicopter support at effectively no cost to itself in terms of institutional effort so “why rock that boat?”²⁸⁹ This is the logical thought pattern stemming from General Paradis’ 1975 belief that handing over of 10 TAG to Air Command would mean access without effort.²⁹⁰

There are no doubt multiple counterpoints to any CA assertion that it should not be given its own Land Aviation force, but one should resonate supreme. In the Afghanistan theatre of operations, the CA had the accountability for the lack of Land Aviation support in the form of dead and injured soldiers. Meanwhile, the RCAF had the responsibility for providing Land Aviation and was unable for the first two-thirds of the war. The blame for this failure should be divided between the two and extends as far back as unification. The CA, after all, gave up on the robust full-spectrum Land Aviation force it had embarked upon after unification. The CA also chose to protect core army capabilities at the expense of Chinooks in 1992.²⁹¹ The RCAF meanwhile does not qualify Land Aviation functions as core business and classifies a complex air assault/mobile operation as the simple movement of personnel and cargo. Ultimately, it was

²⁸⁹ Col John Errington discussion with LCol Dave Forbes, 23 March 2016; email 28 March 2016.

²⁹⁰ Kasurak, *A National Force...*, 143.

²⁹¹ Sutherland discussion with LCol Dave Forbes, Dr. Richard Goette, and LCol Colin Coakwell, 9 March 2016; email 29 March 2016.

battle casualties and the *Manley Report* which finally pushed the issue of appropriate helicopter support for the CA, not the institutional teamwork of either the RCAF or the CA.²⁹²

Conclusion

As with any change-management problem, organizational culture and inertia will tend to create road blocks to change. Resistance to any of the structural changes to the RCAF proposed here will come from individual Aviators, senior leaders in at least two services, as well as resistance from other departments. Albeit on a smaller scale, the unity of purpose required to accomplish the work necessary for structural and philosophical changes of this significance would almost certainly prove beyond the internal capabilities of the TAE itself.

Returning to the question at the beginning of this chapter: if the TAE is so successful and no one has an incentive to change, why change anything? This depends on the issues embodied in the status quo. The bottom line is that getting to where the TAE would have been if left alone in 1967, or even 1975, may no longer be possible.

²⁹² Independent Panel on Canada's Future Role in Afghanistan. Final Report. (Ottawa: 2008), 35.: Other than the re-introduction of the Chinook, the TAE has seen little in the way of serious investment since the detrimental consolidation of fleets in the early 1990s.

Chapter 7 – Conclusion

In an age of bigness and speed, not everything has to be big; and if you make all the machines go as fast as technology will permit, you may be outdistancing the man who still has to carry the main burden on ground combat; the guy with the rifle in his hands. This idea was the real beginning of Army Aviation.

- 1964 US Army Public Affairs Documentary; *Army Aviation, Army Helicopters: 'Wings at the Tree Tops,'* “The Big Picture”

It is structure, not the RCAF itself that is the common denominator to problems facing the TAE. Despite some challenges in practice, giving operational control or tactical control of Canadian Land Aviation elements to ground forces is already an option in RCAF doctrine for the purposes of force employment in training or operations. The issue presented here, therefore, is not only of C2 on operations directly but one of institutional stewardship. Specifically, whether the correct amount of Canadian Land Aviation can be generated if the TAE remains solely under the RCAF or whether a more effective end-state might be achieved by the CA enjoying greater ownership of its aviation resources.

The problems facing Tac Hel are not that they lack a PSOW, sufficient aircraft, do not receive proper Army training, or that they are mandated to wear boots that do not suit their environment. The problem facing the TAE is that its organizational placement causes dissonance; its structure causes it to clash with both the RCAF and, in some ways, the CA, in culture, doctrine, organizational thinking, training, and materiel. This clash, in turn, results in the symptoms so often stressed by 1 Wing operators in service papers and officers' mess beer calls; bad boots and no Hellfires. The 1 Wing Operators who advocate change are not anti-air power and are certainly not anti-RCAF. However, professional and thoughtful examination through the paradigm of their nearly unique joint placement in the CAF's inventory of

capabilities, most come to some variation on a universal truth: the TAE is as much or more of an Army capability than an Air Force capability.

Meanwhile, the CA chooses to not engage on the issue of Land Aviation except when either forced or when there is little risk to itself. Moreover, when the CA does recognize the shortfalls of the TAE, it has been loath to engage for fear of reducing some other capability in its arsenal to the zero-sum game that is defence spending Canada. It does this because of the form the TAE has taken since the formation of Air Command. Prior to Operation Athena, the CA did not seem to know what it was missing and it trundled on without what its allies consider to be core-capabilities. As a result of this apathy, the RCAF provided only the minimum required Land Aviation capability which remained unquantified for lack of any permanent SLA.

Ultimately, this paper should be read with a somewhat pessimistic tone. Despite the low cost, potentially long-term high-payoff of the changes presented here, it is doubtful that a comprehensive addressing of the structural issues embodied in the TAE can or will be undertaken for some time, if ever. Doubtful, even in the context of the current government's desire to create a leaner and more flexible military, something at which helicopters excel.

The formation of a Canadian Corps of Army Aviation would create the most pure form of Land Aviation. As noted by the British in the 1960s, and today in both France and Australia where service-agnostic air power functions like flight safety and engineering support are conducted jointly, there is no need to attempt a duplication of services already being conducted to a world class standard by the RCAF. This model benefits from a potential reduction in training costs by acknowledging the over training of pilots that occurs now by removing the 'One Wings Standard' in aircrew training. Moreover, a small portion of these savings in training costs may be reinvested in far less expensive land environment specific training which will

address the very real and worrying shortfalls in tactical acumen suffered by junior and mid-level aviators. By specializing the Land Aviation ground crew and conducting a single, entry-level combat arms phase during their initial training, 1 Wing units will be better poised to improve their services instead of always having to re-train the most basic skills at the unit level. Most importantly, cultures and organizations would finally align with the realities of capability rolls and employment.

In a diluted form, transferring command of 1 Wing to the CA with the air specialty residual responsibilities remaining with the RCAF might be a more palatable option worth pursuing. No uniforms or service histories need be altered but the cultural differences between the TAE and the RCAF would be acknowledged and formalized. Meanwhile, the stewardship of Land Aviation would be more appropriately influenced by the service that needs it. This model has proven very effective in the case of 427 SOAS and CANSOFCOM and could still involve many of the improved training regimes of a dedicated CCAA.

Of the three new models presented, the third option is the least drastic but also the most problematic. Being that neither a change in uniform nor a change in structure is very likely or completely necessary, the formalization of service-specific responsibilities for access and stewardship should be agreed upon in an enduring SLA. Any improvement to the size or scope of Land Aviation support to the CA will likely come at a cost. If not decided upon independently and in advance of any steps towards Land Aviation capability development, it is unlikely that either the RCAF or the CA will fully sponsor the required resources; not because growth of the TAE is not necessarily warranted, but because neither will want to be the first to cut from somewhere else. By being honest about the deficiencies extent in the TAE and committing formally to applying the resources necessary to address them, the collaborative

efforts of the RCAF, CA, and TAE would be able to better use existing mechanisms to move the capability forward. With this in place, the functioning of the current arrangement of goodwill and personality management would be improved and reinforced. Only with a known set of expectations can a mature and transformational relationship be maintained.

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