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PEACEFUL YET ARMED: CANADA'S TACTICAL AVIATION AND THE NEED FOR FOCUS

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Solo Flight

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Pacem Armatus Amo – Peaceful yet Armed

– Motto of 1 Wing, Royal Canadian Air Force

INTRODUCTION

Tactical Aviation may be defined as “those air resources that continuously support ground forces.”¹ In Canada, this job is done by the Royal Canadian Air Force (RCAF) exclusively through helicopters; members of this community are thus proud to call themselves “Tac Hel.” This paper will demonstrate that Canadian Tac Hel currently suffers from a lack of coherent focus in its procurement and doctrinal employment as it lacks the appropriate resources and operational direction to create the most efficient and effective force. Through piecemeal equipment purchase and disjointed operational missions, Tac Hel aviators are left wondering where to focus their training and resources. In a time when Tac Hel is unable to meet its operational commitments,² clarity and focus are required.

By military standards, Tac Hel has a relatively short history. Most of its seven RCAF squadrons draw their lineage back no further than the Second World War,³ though Tac Hel's true lineage may be more accurately drawn through units of the Canadian Army as these were the first users of battlefield helicopters.⁴ There is even

¹ Department of National Defence (DND), B-GA-440-000-AF-000, *Tactical Helicopter Operations* (Ottawa: DND Canada, 1998), 1.

² Email, Senior Staff Officer, Tactical Aviation, 1 Canadian Air Division HQ to author, Mar 6, 2020.

³ DND, A-AD-267-000/AF-004, *The Insignia and Lineages of the Canadian Force Volume 4: Operational Flying Squadrons* (Ottawa: DND Canada, 2000).

⁴ Allan English and Colonel John Westrop (Retired), *Canadian Air Force Leadership and Command: The Human Dimension of Expeditionary Air Force Operations* (Trenton, Ontario: Canadian Forces Aerospace Warfare Centre, 2007), 220.

current debate as to which element Tac Hel should belong: the RCAF, a less common Canadian solution; or the Canadian Army, like many allied armies around the world.⁵

Tac Hel has always faced challenges due to its unique position between air forces and land forces. This often leads to multiple commanders with different and competing priorities. For example, while working from their home bases, Tac Hel squadrons are subject to taskings from their respective army brigade but command through various levels of headquarters (HQ) under the RCAF. Multiple chains of command continue into expeditionary operations, such as those experienced by Tac Hel task forces in Afghanistan: operational taskings were directed by a divisional-level joint HQ, but operational command fell under the Canadian Air Wing HQ.⁶ This carries over to procurement, where the RCAF is charged with procuring the equipment even though it is dedicated to supporting the army. Conflict in command priorities is all but assured.

A historical review has pointed to this as the flexible advantage of Tac Hel.⁷ An alternative way this can be interpreted is as a superficial sign of a deeper issue of focus and purpose. Confusion over whose direction to follow – even a question as to which element they should belong – is but the tip of the iceberg in the inconsistencies which dominate the use of Canadian Tac Hel. Though living at the junction of air and land

⁵ David Forbes, “Soldier, Aviator, or Both: Analyzing the Impact of Canada's Unified Air Power Structure on Tactical Aviation,” (Master of Defence Studies Course Paper, Canadian Forces College, 2016).

⁶ DND, *Project Laminar Strike: Canada's Air Force Post Op Athena* (Ottawa: Canada Communications Group), 2011, 26.

⁷ “The flexibility of the tactical aviation community...has led 1 CAD planners to use the tactical aviation service support model as a template for putting together Air Force contingents...” Rachel Lea Heide, “Canadian Air Operations in the New World Order,” in Allan English, ed., *Air Campaigns in the New World Order*, Silver Dart Canadian Aerospace Studies Volume II (Manitoba: Centre for Defence and Security Studies, University of Manitoba, and the Canadian Forces College, 2005), 85.

should hardly lead to an identity crisis on its own (all tactical aviation lives in roughly the same place), in Canada it has been exacerbated by other factors.

Government-directed purchases have led to Tac Hel fleets that are not suited to the land force's purposes – it wants mobility and firepower, but it only gets utility. In fact, Tac Hel fleets are not even suited to one another. Though equipped with one very capable aircraft fleet, the Chinook, this new capability has not been allowed the time to properly grow and is now languishing. The other fleet, the Griffon, suffers from more of an identity crisis as its aviators try to decipher from operations whether they are supposed to be preparing for transport or for attack. Tac Hel focus can only be maintained on essential skills for a particular mission for a short time: it is quickly dragged from one urgent operational deployment to the next with very little coherence between them. With little coherence, Tac Hel aviators cannot properly forecast and train to meet the challenges of future operations.

This paper will examine the growing challenges to Tac Hel focus through two themes: aircraft and operations. The aircraft section will survey the decisions that have led to today's fleets and current challenges. The operations section will look at past and current operations to reveal the lack of focus and task continuity. Throughout, the structures of aviation forces of allies are compared to understand alternatives.

TAC HEL AIRCRAFT

Tac Hel aviators currently fly the CH-146 Griffon and the CH-147 Chinook. This combination has led to some challenges, but to understand why the fleets exist as they do will require a review of past procurement decisions. The transition in the 1990s from multiple aircraft types to a single fleet, along with the limitations of that fleet, may

reveal the possible genesis of the issues. A review of the two current fleets will then add to the analysis, from the stand up of a new Chinook fleet to the aging Griffon.

E Pluribus Unum – Out of Many, One

Due to the niche capabilities of helicopter types, militaries typically operate a mixed fleet. What is good for heavy lift is not good for attack;⁸ what is suitable for transport is not ideal for reconnaissance. “Imagine designing a high-performance sports car that must also haul gravel and take a family across country and you get this idea.”⁹ A standard mixed fleet includes attack, reconnaissance, utility, and transport helicopters.¹⁰ Allied forces tend to maintain this standard mix: a report in the Canadian Air Force Journal found that nine allied forces operated between four and nine total tactical aviation aircraft types to cover the required roles.¹¹

The Tac Hel fleet of the 1970s until the early 1990s was a specialized mixed fleet of three military helicopters: the CH-135 Twin Huey (utility); CH-136 Kiowa (reconnaissance); and CH-147 Chinook (transport). Of the four doctrinal roles, only attack was lacking. This mixed fleet allowed Tac Hel “to make a significant contribution in supporting the land force.”¹² Kiowas, attached to armoured units, were involved in reconnaissance, the direction of fire, and forward air controlling. Chinooks

⁸ See, for example, “Guns-a-Go-Go,” the US Army attempt to convert heavy-lift Chinooks to attack aircraft. Three of the four were lost in Vietnam and the program was discontinued. David Nye, “This monster aircraft was the helicopter version of the AC-130 gunship,” *Business Insider*, September 9, 2015, last accessed Mar 23, 2020. <https://www.businessinsider.com/this-monster-aircraft-was-the-helicopter-version-of-the-ac-130-gunship-2015-9>

⁹ Robert Coram, “Boyd: The Fighter Pilot Who Changed the Art of War,” (New York: Little, Brown 2002), 194.

¹⁰ DND, B-GA-440, *Tactical Helicopter Operations*, 1.

¹¹ Thierry Gongora and Slawomir Wesolkowski, “What Does a Balanced Tactical Helicopter Force Look Like?” *The Canadian Air Force Journal* 1, no. 2 (Summer 2008), 15.

¹² Allan English and Colonel John Westrop (Retired), *Canadian Air Force Leadership and Command: The Human Dimension of Expeditionary Air Force Operations* (Trenton, Ontario: Canadian Forces Aerospace Warfare Centre, 2007), 222.

were conducting transport and mobility operations. Hueys were conducting light troop movement, command and control tasks, and casualty evacuation operations.

With the end of the Cold War, the Canadian government wanted to cut Tac Hel spending as part of its defence reductions.¹³ Its three fleets were all replaced by the directed (i.e. non-competitive)¹⁴ purchase of the CH-146 Griffon, a “militarized” civilian utility helicopter.¹⁵ This resulted in “a reduction in the capability to provide mobility...a greatly reduced capability to carry out reconnaissance and the complete loss of the capability to provide firepower (through the provision of direction of fire and forward air controlling).”¹⁶

It was with this single fleet of utility helicopters that Tac Hel (and its customer the Canadian Army) muddled through from 1995 until late 2008. Though it is possible to support major land operations with a utility helicopter in large numbers, Tac Hel structure did not support this approach,¹⁷ and it is certainly not possible in hot temperatures or high altitudes.¹⁸ It was the transition to a single fleet that started Tac Hel on the path to the identity crisis that it maintains today. With an inability to conduct the

¹³ Jeremy Fountain, “CH-146 Griffon Capability Replacement: Informed by the Past, Prepared for the Future?” (Exercise Solo Flight, Canadian Forces College, 2016), 2-3.

¹⁴ House of Commons, *House of Commons Debates*, 35th Parliament, 1st Session, Vol 14, Nov 21, 1995, 16583. Last accessed Mar 23, 2020.
http://parl.canadiana.ca/view/oop.debates_HOC3501_14/956?r=0&s=1

¹⁵ “Generally as commercial Bell 412EP except for avionics and mission equipment.” Jane’s Information Group, “Bell 412; Royal Canadian Air Force designation CH-146 Griffon,” *All the World’s Aircraft*, (Surrey, UK: IHS Global Ltd, 2018).

¹⁶ English and Westrop, *Canadian Air Force Leadership...*, 223.

¹⁷ “The early tactics that emerged from Vietnam...comprised 11 troop-carrying Hueys escorted by five armed fire-support Hueys and a single UH-1B dedicated MEDEVAC aircraft.” Chris McKenna, “No Hell like Tac Hel: A Role for Tactical Aviation in Counterinsurgency Operations,” (Master of Defence Studies Course Paper, Canadian Forces College, 2013). Note that an RCAF Tac Hel Squadron only has 15 helicopters, with 12 expected to be available (i.e. not in planned maintenance) and less than ten serviceable (recent author experience would indicate between one and five serviceable).

¹⁸ This is due to reduced payloads at high temperatures or altitudes. Author experience as Griffon pilot, as borne out by Griffon performance in Afghanistan.

tasks the army needed, what would it do and who would direct it? The army wanted all the functions that tactical aviation could bring, and had been bringing for years, but it was left with only a utility helicopter. The capability reduction led to a cascade of second-order effects, from army procurement (purchasing smaller artillery pieces so that they might still be air-portable by Griffon)¹⁹ to Canadian Armed Forces (CAF) operational deployment decisions (the life-or-death decision to not deploy helicopters to Afghanistan).²⁰ Meanwhile, the cost savings – the reason for the reduction in types – did not materialize.²¹

Chinooks Again, Twice

The biggest change to Tac Hel structure in the past twenty years has been the re-adoption of a mixed fleet. The project for Medium-to-Heavy Lift Helicopter (MHLH) was initiated in 2005, though it would not see deliveries until 2013.²² This delay would not keep up with events in Afghanistan: following the investigation and conclusions of the Independent Panel on Canada's Future Role in Afghanistan (commonly known as The Manley Report) in 2008, the government resolved to "secure medium helicopter lift

¹⁹ Stephen Martin, "The Economics of Offsets: Defence Procurement and Countertrade," (New York: Routledge, 1996), 5.4.

²⁰ "Heavy helicopters, for example – we don't have any at the moment. They will be furnished either by the Dutch, the British, or the Americans, or by other allies." Defence Minister Bill Graham, as quoted in Defence Industry Daily, *Canada Purchases \$200M in Equipment for Operations ARCHER in Afghanistan*, Dec 2, 2005, last accessed Mar 23, 2020. <https://www.defenseindustrydaily.com/canada-purchases-200m-in-equipment-for-operation-archer-in-afghanistan-01564/>

²¹ Office of the Auditor General, 1998 Report of the Auditor General of Canada (Ottawa: Minister of Public Works and Government Services Canada), April 1998, p 4-20, as quoted in J.W. MacAleese, "The CH-146 Griffon: Underrated and Over Criticized?" (Exercise New Horizons Paper, Canadian Forces College, 2001), 5.

²² DND, "CH-147F Chinook procurement project," last accessed Mar 23, 2020. <https://www.canada.ca/en/department-national-defence/services/procurement/ch-147f-chinook.html>

capacity...before February 2009” for the Canadian Forces in Afghanistan.²³ Tac Hel was back on its way to a mixed fleet, and back on its way to understanding its purpose.

The helicopters that were procured were used United States (US) Army CH-47D Chinooks, very similar to the type that Canada had sold in 1991.²⁴ Crewed by pilots and flight engineers who had been flying Griffons just months earlier, these venerable old helicopters moved Canadian soldiers and their equipment about the battlefield, keeping them off roads that were laden with dangerous Improvised Explosive Devices (IEDs). While the procurement was not considered a success from a process and oversight point of view,²⁵ it was a success in putting appropriate helicopters into the hands of Canadians in Afghanistan by the end of 2008. No longer would Canadians be “hitchhiking rides with allies.”²⁶ Six Chinooks were combined with eight Griffons under the Joint Task Force-Afghanistan (JTF-A) Air Wing, where they served until mission close-out in 2011.²⁷

The Chinooks procured for Afghanistan were disposed of at the end of the mission.²⁸ The MHLH project eventually turned into the CH-147F Project, delivering 15

²³ House of Commons, *Journals* no 53, Feb 25, 2008. Last accessed Mar 23, 2020. <https://www.ourcommons.ca/DocumentViewer/en/39-2/house/sitting-53/journals>

²⁴ “Defence Industry Daily, *Let’s Stay Engaged: CH-47D Chinooks for Canada’s Afghan Mission*, Feb 8, 2011, last accessed Mar 23, 2020. <https://www.defenseindustrydaily.com/Lets-Stay-Engaged-CH-47D-Chinooks-for-Canadas-Afghan-Mission-04861/>

²⁵ Office of the Auditor General of Canada, *2010 Fall Report of the Auditor General of Canada*, Chapter 6 – Acquisition of Military Helicopters, 2010. https://www.oag-bvg.gc.ca/internet/English/parl_oag_201010_06_e_34289.html

²⁶ Defence Minister Peter Mackay, quoted in CTV News, “Opposition wants to know more about leased choppers,” last updated May 18, 2012, <https://www.ctvnews.ca/opposition-wants-to-know-more-about-leased-choppers-1.314283>

²⁷ DND, *Project Laminar Strike...*, Chapter 4.

²⁸ David Pugliese, “Canadian Forces Chinook D Models to be Disposed of,” *Ottawa Citizen*, last updated Aug 12, 2009. <https://ottawacitizen.com/news/national/defence-watch/canadian-forces-chinook-d-models-to-be-disposed-of>

new Chinooks through another government-directed sole source contract.²⁹ The Chinooks were delivered to the reformed 450 Tactical Helicopter Squadron in Petawawa.³⁰

The new Chinooks are outstanding helicopters, truly a marquee capability for the RCAF. They can lift heavy loads of passengers and equipment at high speeds over long distances in nearly any environmental condition and against many types of threat.³¹ To do this, however, requires trained crews and serviceable aircraft. This has unfortunately not often been the case for 450 Squadron.

The Chinook fleet had an average of only 238 hours flown per aircraft in 2018-2019, nearly the lowest in the RCAF,³² despite being an age where it should be at its most efficient.³³ Difficulty in accurately forecasting maintenance periods, in particular, has led to low aircraft availability – there are typically three to five serviceable at a time when the expected doctrinal figure would be nine.³⁴ This lack of available aircraft causes delays in training, and 450 Squadron has never been able to work up to its full Trained Effective Establishment. The Squadron is at just above 50% trained strength in terms of aircrew, and a new pilot arriving at the Squadron for training can expect to wait

²⁹ “Sole source through an advance contract notice.” DND, “Medium-to-Heavy-Lift Helicopter Project,” last accessed Mar 27, 2020. <https://www.canada.ca/content/dam/dnd-mdn/documents/quad-charts/mhlh-quad-chart-en.pdf>

³⁰ Royal Canadian Air Force, “450 Tactical Helicopter Squadron,” last accessed Mar 23, 2020. <http://www.rcaf-arc.forces.gc.ca/en/squadron/450-squadron.page>

³¹ Author experience as Chinook pilot, 2014-2017.

³² DND, “Cost Factors Manual 2018/2019,” Air Chapter, Table 1-1, available on DWAN at <http://cfo.mil.ca/en/systems-tools/cost-factors-manual.page>. Lower flying hours are noted on the Hornet, Buffalo, and Tutor, all of which are 40 years old or more. The Cyclone is also lower but it is not yet operational.

³³ Congressional Budget Office. “Operating Costs of Aging Air Force Aircraft.” Washington, DC (2018). Aircraft are typically most efficient a few years after introduction to service before increased maintenance starts to increase overall costs and reduce availability.

³⁴ Email, 450 Tac Hel Squadron ex-Deputy Commanding Officer (DCO) to author, Mar 30, 2020.

30-40 months before becoming an operational Chinook pilot.³⁵ It is past time that Canada's Chinook force is given the time and space it needs to concentrate on training in order to assure its best capabilities for the future; instead, as revealed in the Operations section, it continues to be pulled from operation to operation.

But the One Who Endures - The Griffon

While 450 Squadron struggles with solidifying its new and capable machine, the other Tac Hel squadrons continue to operate the CH-146 Griffon. Though this aircraft has its limitations, it is not particularly different from the CH-135 Twin Huey which it replaced. It should thus know where it fits along the spectrum of military helicopter roles, comfortable in the role of "utility," defined by NATO as "A multi-purpose helicopter capable of lifting troops, but which may be used for command and control activities, logistic transports [sic] and casualty or aeromedical evacuation."³⁶ The problem is that it is not in this role that the Griffon is often employed.

Since the time that Chinooks made their return to the RCAF, Griffons have been tasked to escort them. The purpose of an escort is to "protect the escorted formation by locating the adversary before they can affect the flight or by deterring adversary fire."³⁷ There were questions about operating Chinooks without proper attack helicopters as escort even before the Chinooks were procured,³⁸ and debate remains as to whether an escort of Griffons is useful.

The Griffon was never designed for escort, a fact which becomes clear when looking at its limitations: its maximum achievable cruise speed is 35 knots (65km/h, or

³⁵ Email, 450 Tac Hel Squadron ex-DCO to author, Mar 30, 2020.

³⁶ NATO, ATP-49G, *Use of Helicopters in Land Operations...*, Lex-15.

³⁷ *Ibid.*, 3-13.

³⁸ Gongora and Wesolkowski, "What Does a Balanced Tactical Helicopter Force Look Like?" ..., 13.

25%) slower and its combat radius is less than half that of a Chinook.³⁹ With guns installed, as they are in the escort role, airspeed is further limited according to density altitude so that it is up to 50 knots slower at its maximum speed.⁴⁰ The Griffon also lacks stand-off Precision-Guided Munitions (PGMs), missiles or rockets that can be fired with accuracy outside the weapons engagement range of an adversary, despite the long-standing request from the army.⁴¹ In fact, the Griffon lacks even forward-firing weapons that come under the control of the aircraft commander. While much may be made of the skill and practice required in the aircraft commander's direction to a gunner to find and engage a target known as the "talk on,"⁴² the fact that it is required at all is only because aircraft commanders have no aircraft weapons of their own. Further complicating the issue is the lack of integration between Griffon sensors and weapons: though it has the MX-15 electro-optical and infrared sensor, it only feeds video into the cockpit (no weapons are sighted with the sensor), and it has no capability to designate targets for other aircraft.

There are some advantages to the Griffon being used in the escort role: it has four sets of eyes looking out for threats, as opposed to two in a typical attack helicopter. Due to its short-range-only weapons, it is forced to operate in close proximity to its

³⁹ Author experience as Griffon and Chinook pilot, 2008-2019. Chinook can attain 145 knots (kts) in most conditions, and carries approximately five hours of fuel. Griffon can attain 110 kts with guns installed and carries approximately two and a half hours of fuel.

⁴⁰ Maximum speed reduces at 3,000' and 6,000' – above 6,000 it is just 95 kts. For reference, density altitude at ground level in Kandahar and in Gao, Mali, is typically above 6,000' throughout the summer.

⁴¹ Chris Morrison, "The Need for Precision-Guided Standoff Weapons for Canada's Tactical Aviation Community," (Master of Defence Studies Course Paper, Canadian Forces College, 2013), 5.

⁴² DND, *Project Laminar Strike...*, 25.

escorted helicopters, a fact which may be comforting to the escorted force.⁴³ Equipped with door-mounted guns, it is able to cover nearly 360 degrees of view and fire.

These same advantages and disadvantages have been noted by other nations operating the Chinook, and none of them have taken the route of an armed utility helicopter escort. The US Army, the British Army, the Hellenic Army, and the Royal Netherlands Air Force all use the AH-64 Apache. The Australian Army and the Spanish Army use the Eurocopter Tiger Armed Reconnaissance Helicopter. The most similar base aircraft type may fall under US Special Operations, who use the MH-60M Direct Action Penetrator, based on the UH-60 Black Hawk. These aircraft are heavily modified, however, being fitted with integrated sensors, PGMs, and 30mm forward-firing guns while still maintaining four crew members and 360-degree coverage.⁴⁴ Lacking these options, Canada has employed the Griffon as an escort first in Afghanistan and more recently in Mali. Being forced to employ an inappropriate helicopter in this role has been a prime contributor to the lack of focus for the several Tac Hel squadrons flying the Griffon.

Meanwhile, the Griffon is getting old. This is clear in its operating cost: the costs per flying hour have nearly doubled between the end of their operations in Afghanistan and today.⁴⁵ Given its age (it is now older than the Twin Huey when it was replaced), increasing cost, and unsuitability to role, a replacement might be expected.

⁴³ Author discussions with RAF Chinook pilots regarding RCAF Griffon escort as opposed to Apache escort, 2017.

⁴⁴ Jane's Information Group, "US special operations Black Hawk revealed," *Jane's Defence Weekly*, Jul 27, 2001.

⁴⁵ DND, "Cost Factors Manuals," CH146 Griffon, 2011/2012 vs. 2018/2019, available on DWAN at <http://cfo.mil.ca/en/systems-tools/cost-factors-manual.page>. Total hourly costs were \$11,919 vs. \$20,855 – not including an unspecified accounting adjustment made in between that would see the 2011/2012 figure lower.

Instead, it is evident that Tac Hel will be operating the Griffon for many years to come: the Griffon Limited Life Extension (GLLE), offering no improvement in performance, sensors, or weapons, has been approved at a cost of nearly \$1B to keep them flying until “at least 2031.”⁴⁶ Given that the proposed replacement program (the Tactical and Reconnaissance Utility Helicopter (TRUH)) is not even in its first phase, it may be decades before Tac Hel aviators have the tools they need to do the job they have been doing for more than 10 years already.

In fact, Tactical Aviation does not even appear in Canada’s latest defence policy so a replacement for the Griffon by 2031 or even later is far from assured.⁴⁷ Perhaps this will give capability developers and decision-makers the time to determine what a rationalized and balanced aviation force looks like, rather than continuing the piecemeal nature of Tac Hel renewal by simply determining the best helicopter to escort the Chinook.

TAC HEL OPERATIONS

As Canada has an expeditionary army, Tac Hel has traditionally operated overseas in support. From the time Kiowas were skimming over the West German treetops in the 1980s, Tac Hel has been busy on operations. As an example of their tempo, elements of three Griffon squadrons and the Chinook squadron were all deployed simultaneously on overseas operations in 2019. The missions that Tac Hel has been deployed on, both domestic and expeditionary, have contributed to the ongoing

⁴⁶ DND, “CH-146 Griffon Limited Life Extension,” last accessed Mar 25, 2020.
<https://www.canada.ca/en/department-national-defence/services/procurement/ch-146-griffon.html>

⁴⁷ DND, “Strong, Secure, Engaged: Canada’s Defence Policy.” 2017. Last accessed Jan 21, 2020.
<https://www.canada.ca/content/dam/dnd-mdn/documents/reports/2018/strong-secure-engaged/canada-defence-policy-report.pdf>

identity crisis. Commitments are made for which helicopters are suited but for which Canada's Tac Hel is not, whether due to constraints of time and training (such as Chinooks in Operation *Lentus*) or simple capability limitations (such as Griffons in Operation *Presence*). Its aviators are forced to adapt not only to each environment, but to each specialized task, working each time to become proficient in new tactics, techniques, procedures, and equipment. To analyze how Tac Hel has been employed, this section will first analyze operations from the Griffon-only era. It will then look to the focus found in Afghanistan, and the focus since lost in Mali, Iraq, and on smaller operations.

The Griffon Alone

The historian Rachel Lea Heide has noted how busy Tac Hel remained with deployments throughout the Griffon-only era. In fact, in her study period of 1990-2004, Tac Hel deployed on more domestic contingency operations than any other community in the Air Force.⁴⁸ She also notes that Tac Hel worked more often for United Nations (UN) or NATO HQs than for Canadian land forces while on expeditionary operations.⁴⁹ It thus seems likely that the Griffon-era Tac Hel found itself operationally separated from the army in spite of its primary task ("continuously support ground forces")⁵⁰ and its physical location on army bases. As the new Tac Hel was unable to meet the army demands that it had met with its previous mixed fleet, was busy with domestic operations, and was reporting to other HQs in expeditionary operations, the army could

⁴⁸ Rachel Lea Heide, "Canadian Air Operations in the New World Order," in Allan English, ed., *Air Campaigns in the New World Order*, Silver Dart Canadian Aerospace Studies Volume II (Manitoba: Centre for Defence and Security Studies, University of Manitoba, and the Canadian Forces College, 2005), 92.

⁴⁹ *Ibid.*, 85.

⁵⁰ DND, B-GA-440, *Tactical Helicopter Operations...*, 1.

be excused for thinking it had been left without aviation support at all. Support was further reduced in 2006 with the transfer of 427 Tactical Helicopter Squadron, one of Tac Hel's three main operational squadrons, to the newly formed Canadian Special Operations Forces Command.⁵¹ Remarking on the strained relationship between land forces and Tac Hel at the time, it was noted that "not all Force commanders have experienced the responsiveness and reliable support that should characterize Tactical Aviation."⁵² This left Tac Hel languishing without its closest partner – its *raison d'être* – and may have led to a lack in trust through the early years of Afghanistan.

Operation *Athena*, Afghanistan

Much has been written about Tac Hel operations in Afghanistan.⁵³ As described above under Aircraft, this is where Canadian Tac Hel regained a mixed fleet. Lessons were learned quickly in combat, and adaptations were made to cover shortfalls: Griffons were prohibited from carrying passengers; aircrews learned, developed, and trained in counterinsurgency attack and transport tactics; and crews learned to maximize the collaboration between Griffon and Chinook.⁵⁴ For more than two years, everything Tac Hel did was centered on *Athena*.

The Chinook was an outstanding performer in this area of operations (AO) – its power let it operate with heavy loads throughout the hot summer when other aircraft suffered from reduced performance.⁵⁵ Though clearly not designed for its new role, the Griffon also managed to perform well as a reconnaissance and gun platform. There

⁵¹ English and Westrop, *Canadian Air Force Leadership...*, 222.

⁵² English and Westrop, *Canadian Air Force Leadership...*, 223.

⁵³ See McKenna, "No Hell Like Tac Hel..." for bibliography.

⁵⁴ DND, B-GA-442-001-FP-001 *Tactical Aviation Tactics, Techniques and Procedures* (Ottawa: DND Canada, Oct 2016), for example, was completely re-written due to the war in Afghanistan. 2-72 is a new section on Aerial Escort planning.

⁵⁵ DND, *Project Laminar Strike...*, 28.

were two main factors that allowed success for the Griffon: the AO was very small (less than 60km between the main operating base (MOB) at Kandahar and the farthest Canadian forward operating base (FOB)), reducing the importance of the vast performance discrepancy between the Griffon and the Chinook; and the low-tech nature of the threat, allowing an aircraft with only short range direct-fire small arms, very limited crew protection, and unintegrated sensors to present a credible overmatch to the adversary.

Chinooks were used both for routine logistical transport (moving passengers and cargo between the MOB and FOBs to reduce reliance on dangerous ground moves) and for air assault in support of ground operations. Griffons provided escort during both of these types of missions in addition to escorting ground convoys and providing fire support to troops in contact.

Operation *Athena* may be seen as the apex of Tac Hel focus and performance over the past 20 years. It had two helicopter types capable of their respective tasks collaborating with each other in supporting the Canadian Army on combat operations. With the closeout of the JTF-A Air Wing in 2011, Tac Hel felt like it had a purpose.

Operation *Presence*, Mali

In line with changing government priorities, the type of mission was to change for Tac Hel as well. The government announced in March 2018 that Canada would be sending helicopters to Mali to support the UN peacekeeping mission, providing an Aeromedical Evacuation (AE) capability.⁵⁶ The role of the Chinook would be as a mobile quick-response hospital with specialized medical equipment installed and

⁵⁶ Jeremy Binnie, "Canada to send helicopter group to Mali," *Jane's Defence Weekly*, Mar 20, 2018.

medical personnel on board. This capability was required for UN troops to operate throughout the dangerous eastern part of Mali, secure in the knowledge that medical assistance and evacuation would be on the way when required. The Chinook would once again be escorted by the Griffon.

This was another change in focus for the Chinook operators within Tac Hel. The heavy transport helicopter was to be converted to a medical transport at short notice by members of 450 Squadron and medical experts of the CAF. Though there was a precedent – the Royal Air Force (RAF) used Chinooks for AE in Afghanistan,⁵⁷ and several former RAF members were part of 450 Squadron – it seems to be more of a case of being the only aircraft Canada has that could do the job. The US Army, which also operates the Chinook, uses the UH-60 Black Hawk for AE.⁵⁸ The US Air Force uses a version of the Black Hawk for the similar task of Combat Search and Rescue. The German and Romanian militaries also chose smaller helicopters for the same job in Mali.⁵⁹ This is not to say that the Chinook was not capable of the task – it was overkill if anything – but it is another example of not having the right tool for the job. Or conversely, signing up for the wrong job given the tools available, forcing the Chinook operators of Tac Hel to transform themselves into a new specialty in very little time. If this is to be the Canadian Chinook's role, then Mali would be a good first test. If it was

⁵⁷ See, for example, Lucy Wilkins, "RAF Medics Who Fly to the Rescue," *BBC News*, last updated Jun 9, 2011, <https://www.bbc.com/news/uk-13640912>

⁵⁸ Office of the Undersecretary of Defense, "Fiscal Year (FY) 2020 Department of Defense (DoD) Fixed Wing and Helicopter Reimbursement Rates," Oct 28, 2019, 7. In addition to its other attributes, the Black Hawk's operating cost is less than half that of a Chinook, which may contribute to its selection.

⁵⁹ Nicholas Fiorenze, "German NH90s begin medevac mission in Mali," *Jane's Defence Weekly*, Mar 6, 2017; and Igor Bozinovski, "Romanian helicopters begin MINUSMA operations," *Jane's Defence Weekly*, Oct 18, 2019.

instead a one-time operation, it was a dangerous and costly distraction from its primary role.

The Chinook was again limited by its Griffon escort. As in Afghanistan, the threat was low-tech, allowing the guns of the Griffon to meet the task even if it could not compare to the speed, range, sensors, or firepower of the Dutch Apaches or German Tigers that had previously served in the same role in Mali.⁶⁰ But whereas the Griffon managed to get by in Afghanistan, it was outmatched by the distances in Mali. No longer were operating areas within 60km – the AO stretched over a thousand kilometers across, and operating ranges were at the max radius of the Griffon.⁶¹ The distances meant that the extra capabilities of the Chinook were wasted as all declared ranges had to be based on the Griffon escort. Griffon crews were forced to lay everything on the line to keep up, ferrying the Griffon to its maximum range for refuels and extending crew flying time to the limit in their attempt to support the Chinook in the most dangerous areas of Mali.

Operation *Impact*, Iraq

The CAF began operations against Daesh in Iraq in 2014, with operations ongoing at the time of writing. A Tactical Aviation Detachment (TAD) of Griffons was first sent to support Special Operations Forces (SOF) in the country in May 2016.⁶²

⁶⁰ Robert Smol, “In Mali, Canada’s flying pick-ups are no replacement for European helicopters,” *iPolitics*, last modified Jun 28, 2018, <https://ipolitics.ca/2018/06/28/in-mali-canadas-flying-pick-up-trucks-are-no-replacement-for-european-attack-helicopters/>

⁶¹ Author discussion with Task Force-Mali A3, Mar 27, 2020. While declared operating ranges were based on the NATO 10-1-2 principle (see NATO, AJP-4.10 *Allied Joint Doctrine for Medical Support* (Brussels: NATO Standardization Office, 2019), 3-8), Griffon range was at its absolute maximum at the declared operating range. A Griffon could not actually escort a Chinook to near the edge of the declared operating range and meet the 10-1-2 timeline.

⁶² DND, “Operation IMPACT,” last accessed Mar 26, 2020, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-impact.html>

Though these Griffons were supporting SOF and were initially from 427 Special Operations Aviation Squadron, they were not conducting Special Operations and were replaced by other Tac Hel detachments within months.⁶³

With an increased threat (Daesh was known to possess tanks, armoured vehicles, and anti-aircraft systems),⁶⁴ Griffons were held well back from the front lines. Operating in the relative safety of the rear area of a small AO, Griffons reverted to their utility role. Griffons on Operation *Impact* have been employed rather like an aerial taxi service, transporting small teams of soldiers and mail between FOBs on flexible daily schedules. The heavier guns used in Afghanistan and Mali have been left behind so that the Griffon has adequate payload to transport passengers. Similarly, the MX-15 sensor may not always be fitted due to weight. When Canada sent a second TAD of Griffons under Operation *Impact*, this time to support the Canadian-commanded NATO Mission in Iraq, it used the same equipment and conducted similar utility tasks transporting soldiers between FOBs.⁶⁵ These two independent TADs continue to operate today.

This Operation seems like a better fit for the Griffon than escort and attack missions. Though it is hardly efficient to transport a maximum of four passengers in an aircraft with four crew members, it is safer and faster than driving and it is more efficient than transporting four passengers with a Chinook. The Griffon does not need modifications and it does not need to try to keep up with the Chinook.

⁶³ Joseph Trevithick, “Who Was Flying These Mysterious Blue Choppers in Iraq?” *Medium.com*, last modified Nov 30, 2016, <https://medium.com/war-is-boring/who-was-flying-these-mysterious-blue-choppers-in-iraq-c9077575f843>

⁶⁴ Tim Ripley, “US releases Islamic State target data,” *Jane’s Defence Weekly*, Jan 9, 2015.

⁶⁵ Author experience, Operation *Impact*, 2018-2019. These are two separate TADs operating from different locations for different customers.

The cost of inconsistent operations is revealed when comparing these utility missions to the escort or attack missions in Afghanistan or escort in Mali, however. Different planning, equipment, tactics, techniques, and procedures are required. Conducting simple utility missions such as these has been noted to have a cost (known as skill fade) in the proficiency for conducting more complex operations.⁶⁶ It is the same crews conducting these wildly different missions, and time spent conducting utility transport is not helpful in preparing for escort or attack. It is noteworthy that these utility transport tasks were being conducted at the same time as the escort task in Operation *Presence*. By the end of a six-month deployment to Operation *Impact*, more specialized skills have faded dramatically and must be relearned prior to working up for the next mission.

Minor Operations

Several other operations have been noteworthy for their effect on Tac Hel. Operation *Renaissance 13-1* in the Philippines included the deployment of three Griffons from 408 Tactical Helicopter Squadron in 2013. These Griffons provided mobility, coordination, and medical evacuation over approximately 30 days.⁶⁷ The three Griffons were flown to the Philippines on a C-17 transport aircraft and were effective in improving the mobility of the Disaster Assistance Response Team that was deployed. With no need to carry guns or a fourth crew member, useful payload for passengers and

⁶⁶ Melissa Snook, "Special Operations Forces vs Conventional Forces as Primary CAF Land-Based Response," (Service Paper, Canadian Forces College, 2018), 7.

⁶⁷ DND, "Operation RENAISSANCE 13-1," last modified Dec 13, 2018, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/recently-completed/operation-renaissance-13-1.html>

cargo was increased.⁶⁸ And with only 30 days on operations, the skill fade noted from long deployments would not be a factor. While the Griffon may not be the best Chinook escort, it showed its strength in the Philippines.

The Chinook's regular deployments on Operation *Lentus* (the CAF response to forest fires, floods, and natural disasters in Canada) seem less an example of using its strength and more an opportunity to deploy the CAF's latest equipment in the headlines. Chinooks have deployed to Operation *Lentus* in 2016 to Fort McMurray, in 2017 for flooding in Quebec and the forest fires in British Columbia, and in 2018 to the Manitoba fires.⁶⁹ While the Chinooks exist to serve the government, their consistent yet unplanned use in a manner with very low returns – even the military could not say what they did in Fort McMurray,⁷⁰ for example – bear out the need for refined focus in Tac Hel operations. The heavy cost of this commitment in relation to the single Squadron's ongoing training woes clearly brings to light the lack of coherence in Tac Hel deployments: one or more of the Squadron's few serviceable Chinooks with their few fully trained crews fly across the country to stand by for operations, leaving the remainder unable to train the people that will be required for the next operation. This has been a reinforcing cycle: only the trained crews are deployed, so only the trained crews (aircrew and maintenance crews) maintain their skills, causing new members to fall further and further behind. The deployment to Fort McMurray cost the Squadron

⁶⁸ The fourth crewmember in a combat theatre is a Door Gunner, not required on humanitarian missions.

⁶⁹ DND, "Operation LENTUS," last accessed Mar 30, 2020. <https://www.canada.ca/en/departement-national-defence/services/operations/military-operations/current-operations/operation-lentus.html>

⁷⁰ *Ibid.*, see list of measures of performance under "The Op LENTUS Air Task Force."

enough in training that it led to a reduced declaration of operational capability following the operation as the Squadron worked to catch up.⁷¹

CONCLUSION

This paper has demonstrated that Canada's Tac Hel enterprise is suffering from a lack of focus. While its aviators are keen to be on the leading edge of tactical engagements, they are left with equipment that doesn't allow them to do so. They are quick to adapt tactics and techniques to new missions, as they proved in Afghanistan, but are forced to do so on a constant basis, letting important skills atrophy in order to pick up what is required for the latest deployment.

The Chinook has given Tac Hel a great new aircraft that should have massively increased service to the Canadian Army. While the old Chinooks leased in Afghanistan did yeoman's service, the new Chinook has not served the Canadian Army. It has served too often to stand by for forest fire evacuations, VIP transport, and Aeromedical Evacuation, never achieving a fully trained Squadron and thus continually borrowing from its capabilities for the future. Meanwhile, it has been restrained by Griffon escort in combat theatres, obviating its speed and range advantages.

Meanwhile, the remainder of Tac Hal has been attempting for 25 years to shoehorn the Griffon into whatever role is forced upon it by its most recent operation. Should they concentrate on their big guns, procuring PGMs, attack tactics, and interoperability with the Chinook? Or on rear-area utility tasks, as two deployed detachments are doing presently? If the replacement is to eventually be the TRUH, would that be capable of utility tasks? There may have been nothing appropriate in the

⁷¹ Email, 450 Tac Hel Squadron ex-DCO to author, Mar 30, 2020.

Tac Hel inventory to send to either of the TADs in Iraq if it were composed of Chinook and a helicopter that is suited for Chinook escort.

The ultimate response would be to take the time for a full reset: to take a holistic view of what is required, building Tac Hel organizational structure, equipment, and training from first principles. There will be no chance for this. All Squadrons, both Griffon and Chinook, are likely to continue to be tasked and conduct operations at their maximum level, and the Griffon replacement is likely to be something that was needed for the last war. But there is opportunity to make decisions now that will shape Tac Hel over the upcoming decades. Is Tac Hel to do a little bit of everything, or be really good at something? Is AE to be a focus, or is it a distraction from the heavy tactical transport that the Chinook was procured for? Are Griffons (and their eventual replacements) aerial escorts for Chinooks, or are they to conduct utility or transport tasks? Could different squadrons be specialized to conduct one task or another to avoid skill fade? Is Tac Hel to be integrated with the Canadian Army, or to be farmed out to the UN, NATO, SOF, or domestic operations whenever is convenient? These are questions that the commanders within Tac Hel, the RCAF, the Canadian Army, and the CAF must answer in order to determine Tac Hel's future direction. A failure to answer these questions clearly, along with the courage to stand by the answers in the face of challenges, will result in a Tac Hel establishment that will continue to be pulled from emergency to emergency. This will be at the cost of efficiency, effectiveness, future capabilities, and some of the finest aviators in the world.

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