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The Role of the Tactical Aviation Enterprise

Major Joel Maley

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Exercise Solo Flight

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The Role of the Tactical Aviation Enterprise

Major Joel Maley

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SOLO FLIGHT – THE ROLE OF THE TACTICAL AVIATION ENTERPRISE THROUGH STRONG SECURE ENGAGED

INTRODUCTION

This paper will examine the Tactical Aviation Enterprise (TAE) through the lens of *Strong Secure Engaged (SSE)*. The question that this paper seeks to answer is how does *SSE* (the new defence policy) potentially shape the future role of the TAE, specifically in the three priority areas as laid out by the Government of Canada (GoC): Canada, North America, and the World. This paper will provide both an introduction to *SSE* and the TAE. It will then highlight two key capability areas - intelligence surveillance and reconnaissance (ISR) and air attack - where the TAE can further contribute. One additional capability area where the TAE should sustain, though potentially alter, its efforts is mobility which will also be addressed. Each of these capabilities will be discussed in terms of the three priority areas. The paper will conclude by showing that the TAE does have a role in *SSE* but, to be fully effective, there are additional resource requirements. In essence, this paper highlights how *SSE* should be seen to shape the future role of Tactical Aviation within the Joint Battlespace.

In 2017, the GoC released *SSE (Canada's Defence Policy)* which provided a new detailed vision for the Defence team for the coming decades.¹ The purpose of the policy was to lay the groundwork for how Canada would focus on being strong at home, secure in North America and engaged in the world. Given the current world threat, Canada cannot be strong at home unless it is an active participant in the world and a contributor

¹Canada, Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, (Ottawa: DND Canada, 2017), <http://dgpaapp.forces.gc.ca/en/canada-defence-policy/docs/canada-defence-policy-report.pdf>.

to the rules-based order. In addition to the *what*, the GoC through *SSE* also provided a mindset of how the policy was to be implemented, that being *anticipate*, *adapt*, and *act*. In other words, *SSE* was to provide an overarching defence framework, but the defence community was, and is, expected to *anticipate* possible threats and requirements, *adapt* to the threat and the new capabilities, and, in so doing, realign itself to most effectively *act*.

In line with that mindset, each service and the respective community needs to understand how they fit within the policy structure and anticipate how they might adapt to more effectively contribute in *acting*. What cannot be lost in the *anticipation* and *adaptation* is the vital importance of maximizing the utilization of resources, so that the *acting* becomes most effective. The elements cannot operate in silos, which has been the historical reality. Rather, each respective element and community within said element needs to understand how they contribute, and how they might adapt to more effectively contribute, to the joint fight.

A community that clearly sees itself operating in a pan-domain environment and daily in a joint battlespace is the Tactical Aviation Enterprise (TAE). Land Aviation, Tactical Aviation, Tactical Helicopters are terms that, generally speaking, are used to represent the same organization. Dave Forbes, a Tactical Aviation practitioner, summarizes its role best when he states, “Land Aviation [is] 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*.”² Thus, Tactical Aviation needs to be built with the mindset of how it might best support the Land Force - the Canadian Army (CA). In the Canadian context, TAE is used to represent not only the Land Aviation component in the RCAF,

²David 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), 5.

which is 1 Wing, but also the additional entities within the CAF that supports the fielding of the capability, such as the Weapon System Management (WSM) offices for the tactical aviation aircraft.³ The TAE term was first coined by then 1 Wg Comd Col Whale to represent the interdependencies of the community and more holistically represent the community, that is the capability.

Tactical Aviation, in most armed forces, fall out under the Army or the applicable Land Force. However, Canada has chosen to be different. “CAF air power is unique from that of many of Canada’s allied and coalition partners in that the evolution of Canada’s military has established the RCAF as the sole element responsible for all air power capabilities within CAF.”⁴ Whether that approach is right or wrong is beyond the scope of this paper. What is important to understand, however, is that the TAE is retained by the RCAF, but commonly seconded to the CA for the conduct of operations. “Integral air assets are established within the RCN, CA, and SOF to fulfill the requirement for continuous and dedicated aerial mobility, reconnaissance, and firepower.”⁵ In the case of the CA, these integral assets are referred to as tactical aviation.⁶ In simplistic terms, the RCAF owns the TAE, but the TAE has a primary mandate of providing direct support to the CA. Thus, the TAE has its roots in the joint battlespace.

What support then is the TAE responsible to provide to the CA? “1 Wing will generate a relevant, responsive, and effective Tactical Aviation capability for the provision of air *mobility, reconnaissance, and firepower* in support of Land and Special

³Ben Zweibelson, Kevin Whale, and Paul Mitchell, "Rounding the Edges of the Maple Leaf: Emergent Design and Systems Thinking in the Canadian Armed Forces," *Canadian Military Journal* 19, no. 4 (2019): 33.

⁴Department of National Defence, B-GA-400-000/FP-001, *Royal Canadian Air Force Doctrine*. (Trenton: Canadian Forces Aerospace Warfare Centre, 2016), 41.

⁵*Ibid.*

⁶*Ibid.*

Forces.”⁷ Thus, the TAE has, as its core mandate, three roles: mobility, reconnaissance and firepower. In reality, the TAE includes the provision of effects to Canadian SOF as stated in the 1 Wg mission statement. However, in the interest of brevity and to reduce the scope of this paper, the SOF nexus has not been considered. With the TAE reporting structure briefly identified and its supported element defined, it’s time to return to *SSE* and see where the TAE fits in.

Unsurprisingly, *SSE* provides no direct reference to the TAE. A biased observer might conclude that its lack of mention is due to the TAE being undervalued in both the RCAF and CA. A more rational observer, however, would have a tendency to conclude that its exclusion is more likely a result of no high-profile procurement processes being in-progress or forecasted for the TAE. One might argue that the CH146 Griffon Limited Life Extension (GLLE) was/is a significant project, though in comparison to the procurement of the F-35, a next generation fighter, or the future surface combatant, it’s relatively insignificant and thus has no direct mention in the *SSE*.⁸ More than likely, however, GLLE is indirectly captured within *SSE* under the following statement: “Recapitalize or life-extend existing capabilities in advance of the arrival of next generation platforms.”⁹ Considering that is the purpose of GLLE, one may very well conclude TAE is addressed indirectly within the *SSE* and not just undervalued or ignored. So where exactly does the TAE fall out in *SSE* then?

⁷Department of National Defence, *Tactical Aviation Force Employment Concept 2017*, (Kingston: 1 Wing Headquarters), 5.

⁸Department of National Defence, “CH-146 Griffon Limited Life Extension,” Last accessed 3 May 2022, <https://www.canada.ca/en/department-national-defence/services/procurement/ch-146-griffon.html>.

⁹Department of National Defence. *Strong, Secure, Engaged...*, 39.

First, the overall TAE capability is likely captured under the statement: “More fundamentally, the core capabilities of the RCN, CA and RCAF will be placed on a fully modern, robust footing, with a procurement renewal plan buttressed by stable, consistent, and transparent funding.”¹⁰ The CH146 Griffon operates under an Optimized Weapon System Support (OWSS) contract with Bell Helicopter, and the CH147F operates under an Integrated Service Support (ISS) contract with Boeing.¹¹ Consequently, what is paramount for these enduring capabilities is the financial security for the contracts. Thus, there is a sense that *SSE* primarily provides assurance that the core capabilities must be maintained. For the RCAF, these core capabilities are control of the air, air attack, air mobility, and ISR.¹² The latter three directly correlate to the TAE capabilities of mobility, reconnaissance (recce), and firepower.¹³

Secondly, what *SSE* provides is a new approach to defence - that being *anticipate*, *adapt*, and then *act*. At the core of this new approach is the prioritization of joint intelligence, surveillance, and reconnaissance (ISR).¹⁴ Thus, the role of ISR is not only seen as an element capability but as a prioritized joint requirement in *SSE*. The consequential nexus for the TAE is to *anticipate* how it might better contribute to and be a user of ISR. It is precisely then these three capabilities - ISR, air attack (firepower), and mobility - that will be covered in the subsequent sections.

AN ISR SENSOR

¹⁰Department of National Defence. *Strong, Secure, Engaged...*, 15-16.

¹¹Government of Canada, “Breakdown of Current Obligations by Contractor,” Last accessed 3 May 2022, <https://www.ic.gc.ca/eic/site/086.nsf/eng/00001.html>.

¹²Department of National Defence, B-GA-400-000/FP-001, *Royal Canadian Air Force Doctrine...*, 32.

¹³Department of National Defence, B-GA-440-000/FP-000, *Tactical Helicopter Operations*, (Ottawa: DND Canada, 1998). This publication is currently on hold and is being replaced by NATO ARP-49G is to be used as the replacement document. The combat function as laid out in the NATO doctrine are Command, Information Activity, Intelligence, Fires, Manoeuvre, Protection, and Sustainment.

¹⁴Department of National Defence. *Strong, Secure, Engaged...*, 64.

The first theme or area in which the TAE should be envisioned to have a greater role is active participation in the collection of data. Evidently, this would fall out under the TAE's current capability or role of reconnaissance. Reconnaissance has long been seen as a role of tactical aviation.¹⁵ In its most basic form, it provides an ability to ascertain information about the enemy, potential enemy activities or resources, or garner an understanding of the meteorological, hydrographic, or geographic characteristics of an area.¹⁶ Historically, reconnaissance was carried out by the crew but, thanks to today's technology, aircraft in a tactical aviation fleet are commonly fitted with additional sensor(s) to better perform this type of reconnaissance.

As previously mentioned, *SSE* highlights the importance of prioritizing joint intelligence, surveillance, and reconnaissance in Canada's new approach to defence. The joint ISR endeavour is seen as interconnected collection platforms with the inherent purpose of capturing data in near real time on points of intelligence interest and exchanging this data in near real time.¹⁷ In a complex environment, it is essential that information be provided to decision makers as quickly as possible. Hence, the importance of near real time data exchanging. This type of approach is commonly referred to as a system-of systems that "Integrate existing and future assets into a networked, joint system-of-systems that will enable the flow of information among multiple, interconnected platforms and operational headquarters."¹⁸ There is little doubt that the TAE can currently assist in the completion of the Intelligence Surveillance Target

¹⁵Department of National Defence, B-GA-441-001/FF-001, *Tactical Level Aviation Doctrine*, (Ottawa: DND Canada, 2000). This publication, like the B-GA-440 is being replaced by NATO ARP-49G, however that document is undergoing a major rewrite.

¹⁶NATO, ATP-49, *Use of Helicopters in Land Operations*, (NATO Standardization Office, 2016), 1-10.

¹⁷Department of National Defence. *Strong, Secure, Engaged...*, 64.

¹⁸*Ibid.*, 65.

Acquisition Reconnaissance (ISTAR) plan in a joint battlespace given that both the CH146 Griffon and the CH147F Chinook can equally be equipped with a Wescam MX-15 Electro-Optical/Infrared camera. Thus, in addition to the human component, the TAE fleet of aircraft already contain a system that could be incorporated into a networked system.

This networked system solution would not only be a viable option but would present a value-added addition to the overall ISR picture. There is documented evidence to suggest/support that lower altitude provides a slant range advantage enabling helicopters or lower flying assets to look under certain objects (e.g. trees) that would have otherwise been precluded from the vision of more traditional fixed-wing ISR assets.¹⁹ Thus, lower level ISR assets, typically rotary wing assets, should be seen as a compliment to fixed-wing assets. As suggested by one academic, “The RCAF should consider adopting the USMC’s approach to ISR of “every platform a sensor”.”²⁰ This is directly in-line with the mandate approach in *SSE*.²¹ Despite the unlikelihood of the CH146 and, even more so, the CH147F being rerolled into a primary ISR asset, their existing capabilities can be better leveraged through a network approach. This will enable the TAE to contribute to the greater ISR picture as prioritized in *SSE*. Having said that, the limit to date has been the absence of a downlink capability.²²

The lack of a tactical data link (TDL) restricts the CH146 and CH147F from effectively contributing to the accurate and real-time flow of information to the supported

¹⁹Department of National Defence, *Tactical Aviation Force Employment Concept...*, 8.

²⁰Richard Evan Goette, *Preparing the RCAF for the Future*. (Trenton: Royal Canadian Air Force Aerospace Warfare Centre, 2020): 93.

²¹Canada. Department of National Defence. *Strong, Secure, Engaged...*, 38.

²²Jeannot Boucher, “Tactical Aviation Mobility.” *The Royal Canadian Air Force Journal* volume 4 issue 4 (Fall 2015), <https://www.canada.ca/en/air-force/corporate/reports-publications/royal-canadian-air-force-journal/2015-vol4-iss4-05-tactical-aviation-mobility.html>.

ground force commander or operations center.²³ Equally, the inability to stream real-time data does not support the CA in implementing network-enabled operations as part of Adaptive Dispersed Operations.

Properly implemented, network-enabled operations will involve a network of troops and supporting elements on the ground supported by joint sensor, fire support, and C2 systems linked by voice and data to create a level of situational awareness, battlefield mobility and fire support that will combine to overwhelm the adversary's understanding of the battlespace and his ability to react.²⁴

In contrast, a TDL would be part of a greater solution for the TAE to act as a joint sensor in the battle space in which it already operates. In essence, the TAE already has the system in place to act as a sensor, the limit to date has been the lack of a TDL to network the sensor. Thus, in order to assist in the prioritization of joint ISR and for the TAE capabilities to better act as sensors, resources need to be allocated to enable the live feeds of data from the TAE aircraft.

Strong at Home

The TAE has commonly been relied upon to provide rapid domestic response following natural disasters (e.g. forest fires, flooding, snow/ice storms) though they can be equally called upon to provide support to civilian organisations on national security and law enforcement matters.²⁵ The provision of a networked sensor would better position the TAE to provide real-time information and imagery to the emergency response ops center. Additionally, the provision of a networked capability would increase

²³Richard Harris, "Analysing the Future Tactical Helicopter Force Requirements Beyond 2025" (Joint Command and Staff Program Service Paper, Canadian Forces College, 2020) 5.

²⁴Department of National Defence, B-GL-310-001/AG-001, *Land Operations 2021-Adaptive Dispersed Operations*, (Ottawa: DND Canada, 2020): 23.

²⁵Department of National Defence. *Strong, Secure, Engaged...*, 60; Department of National Defence. "Operation LENTUS," last accessed 28 April 2022, <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html>.

the support to general provision of data collection on Canadian land mass and sea approaches. Though the TAE will likely never be utilised as primary ISR assets in the domestic context, their inherent capabilities make them a preferred option in some situations, particularly in remote areas.

Secure in North America

Additional networked sensors, with the ability to provide real-time data, would likely also contribute favourably to the defence of North America and serve as an additional avenue of collaboration with Canada's most important ally - the U.S. As opposed to being seen as a net user of intelligence, the inclusion of additional data sources would provide further opportunity for Canada to be a provider. This in itself is unlikely to change the perspective that Canada is a net user of intelligence, but would signal that Canada is making strides to further its contribution.

Engaged in the World

The TAE has a role to play in the provision of ISR however, procurement to date has resulted in a largely isolated system within the TAE. The current assets, despite being fitted with Electro Optics/IR Turrets (Wescam MX-15), were never optimized for data collection and, more importantly, real-time data sharing. If joint ISR is to be a priority as specified in *SSE*, then TAE aircraft fitted with potential data collection assets need to be optimized for data dissemination and enabled with a TDL. ISR is a niche capability that Canada could most certainly provide to coalition expeditionary operations and one that the TAE could certainly be a part of.²⁶ For Canada to effectively participate and collaborate with its allies, it needs to focus on Network-enabled operations (NEOps),

²⁶Goette, *Preparing the RCAF for the Future...*, 91.

which provide a military advantage through the effective integration of information systems by way of exploitation and dissemination of information.²⁷ This information dominance can only be achieved when every RCAF platform acts as a sensor and ensures that information and intelligence are provided to decision makers in a timely manner.²⁸ The current absence of the TDL inhibits the TAE from effectively providing real-time data which command decision can be based on.

To summarize, the TAE most certainly has a future role to play in data collection and should be seen as both a contributor and user of joint ISR. The concern to date has been a lack of overall focus in the procurement of systems that have value-added capabilities. However, a lack of implementation and overall coordination inhibit their usability to operate in a networked environment and fully benefit from the system-of-systems approach. Future systems need to be adapted to enable real-time data streaming, and future procurement needs to be driven with the mindset that each capability is a sensor - a networked sensor.

AIR ATTACK

The second theme or area in which the TAE has a potential role is air attack. The case for a role in air attack is a substantially weaker argument than the preceding ISR capability however, that should not preclude its consideration. The words air attack appear only three times in *SSE*. In the first instance, it is used in describing the joint actions the RCAF can provide to the CAF and, in the other two instances, it is used in the context of the Air Force Fighter replacement - specifically the improvement to air control and air attack capability that the fighter replacement will bring. Clearly, the latter two

²⁷Department of National Defence, B-GL-310-001/AG-001, *Land Operations 2021-ADO...*, 22.

²⁸Canada. Department of National Defence. *Strong, Secure, Engaged...*, 38.

mentions do not apply to the TAE. In the first instance, however, it states: “This strategic reach is also a critical enabler of Canadian Armed Forces global expeditionary operations, enabling joint action through control of the air, force protection, surveillance and reconnaissance, air mobility, and air attack.”²⁹ Thus, given that air attack continues to be a mandated capability requirement for the RCAF, the TAE should, by extension, still have a role to play in the provision of air attack.

The TAE, as one author noted, has been referred to as the “bastard child” of the RCAF.³⁰ Couple this with an army that is somewhat unfamiliar with the supposed role of Tactical Aviation and it is no surprise that the TAE is commonly neglected by the RCAF and poorly understood by the Army. “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.”³¹ Herein lies part of the problem with the TAE in Canada. What operations in Afghanistan brought about was the rushed procurement of the Interoperable Griffon Reconnaissance Escort Surveillance System (INGRESS) project – a combined project to provide an EO/IR and weapon capability on the CH146 - and the re-emergence of a light firepower role.³² However, lessons from Afghanistan highlighted that, at times, commanders were unwilling to accept the risk of sending the CH146 to attack certain targets. “Provision of a precision-guided standoff weapon would have increased Tac Avn capability to perform IA [interdiction attack] missions and provide the supported unit’s

²⁹Department of National Defence. *Strong, Secure, Engaged...*, 38.

³⁰Christopher W. Morrison. “The Need for Precision-Guided Standoff Weapons for Canada’s Tactical Aviation Community” (Master of Defence Studies Course Paper, Canadian Forces College, 2013), 15, 21.

³¹Forbes, “Soldier, Aviator, or Both...”, 96.

³²Department of National Defence, *Tactical Aviation FEC...*, 3. Defines INGRESS as Interoperable Griffon Reconnaissance Escort Surveillance System is a combination of weapon and EO/IR sensor suites enabling armed reconnaissance and tactical security missions.

troops in contact with greater flexibility and reduced response time.”³³ Thus, an increased air attack capability would have provided greater flexibility and further supported the CA.

OP *Athena*, a combat and by in large a later Counter-Insurgency (COIN) operation, identified a need for a greater air attack capability, notably a precision guided standoff capability. “While the CH146 proved to be a capable gunship in over two and a half years of combat operations, the potency of its kinetic effects remained insufficient to defeat many of the threats typically encountered in the Afghanistan battlespace.”³⁴ As the world appears to return to great power competition, one can only *anticipate* the forthcoming requirement. If the current TAE air attack capability was identified as insufficient in the combat and COIN environment in Afghanistan, it will surely be insufficient in a near-peer fight.

The previous great power competition saw the birth of the attack helicopter, a capability that had not only a stand-off capability but an ability to destroy armour. “It [RCAF] will need to sustain existing capacity and continue to acquire modern aerospace capabilities that have an operational advantage in relation to present and future potential adversaries.”³⁵ If the RCAF truly values the joint fight, which it says it does, then it needs to be *anticipating* the future requirements of the CA and, specifically, how best it can provide integral aerial firepower assets to the CA.

This leads to the consideration of the actual air attack capability requirement. In 2005, Gonra and Wesolkowski completed a study which examined what a balanced

³³*Ibid.*, 10.

³⁴Morrison, “The Need for Precision-Guided Standoff Weapons...”, 2.

³⁵Department of National Defence. *Strong, Secure, Engaged...*, 39.

tactical helicopter force looks like.³⁶ Despite the study being completed in 2005 and published in 2008, they had a data set projected out to 2015. It is precisely this data set that is most relevant to this paper. In it they compared ten national armed forces (the USMC and U.S. Army were considered separately) and sought to understand or characterize the core elements of a balanced helicopter force which were designed to support land operations. Conclusively, a balanced helicopter force today is composed of four types of aircraft: attack helicopter, heavy transport helicopter, medium transport helicopter, and a utility helicopter. What was most revealing in the study was that all the forces, with the exception of Canada, had some type of attack helicopter. One particular take away for Canada was: “all those that have utility or transport helicopters with sensors and armaments, also have dedicated attack helicopters, a possible indication that the former cannot be a substitute for a dedicated capability.”³⁷ If Canada’s allies have all come to similar conclusions, then perhaps it is time for Canada to reconsider the requirement for an attack helicopter.

Strong at Home

In the context of air attack, being strong at home is about deterrence and the prevention of military threats from reaching Canadian shores.³⁸ In that light, the TAE needs to provide integral aerial firepower to, and exercise with, the CA which includes

³⁶Thierry Gongora and Slawomire Wesolkowski, “What Does a Balanced Helicopter Force Look Like?” *The Canadian Air Force Journal* volume 1 issue 2 (Summer 2008), https://publications.gc.ca/collections/collection_2008/forces/D12-13-1-2E.pdf.

³⁷*Ibid.*, 18.

³⁸Department of National Defence. *Strong, Secure, Engaged...*, 60.

artic training and response. Being strong at home is mostly about gaining efficiencies with the CA and ensuring that the capabilities that it requires are optimized in the joint fight. Serious consideration needs to be given to what air attack effects the CA requires to be most effective. Australia and the U.K. both appear to be realigning their Armies in favour of Armoured Cavalry Regiments.³⁹ However, Armoured Cavalry Regiments are predicated on the requirement for aerial firepower as a critical component. If the CA elects to realign its Armoured Regiments as Armoured Cavalry Regiments (a true combined armed organization structure) then perhaps the RCAF needs to reconsider the inherent capabilities of the TAE. If the *raison d'être* of the TAE is integral support to the CA, then reconsideration for attack helicopters might be the most appropriate course of action (COA).

Secure in North America

Being strong in North America in the air attack role for the TAE is about close coordination with not only the CA, but equally leveraging opportunities with the U.S. Army and United States Marine Core (USMC). Deterrence is arguably the main objective so part of being secure in North America is about contributing to strong defence relationships with the U.S., and a better understanding of their doctrine is paramount. For the TAE, air attack at present is largely limited to direction and control of fires from airborne Forward Air Controllers (FAC) or the utilization of the CH146 in a Close Combat Attack (CCA) role.⁴⁰ So, when thrust in a training exercise role that is outside the

³⁹Gordon Arthur, "Australian Army Exercises Armoured Cavalry Regiment Structure," October 10, 2018, Last accessed 27 April 2022, <https://www.shephardmedia.com/news/landwarfareintl/australian-army-exercises-armoured-cavalry-regimen/>; Sebastien Robin, "The British Army is about to be Radically Transformed," *19FortyFive*, July 21, 2021, <https://www.19fortyfive.com/2021/07/the-british-army-is-about-to-be-radically-transformed/>.

⁴⁰Harris, "Analysing the Future Tactical Helicopter Force Requirements...", 7.

TAE capability (for example Armoured Reconnaissance (AR), being able to transition from reconnaissance to the attack) it is paramount to understand the role and then be able to act.⁴¹ Unfortunately, the lack of a truly dedicated air attack capability inhibits the TAE from being fully interoperable with its most important ally.

Engaged in the World

Fundamentally, what is absent from the TAE repertoire is an ability to reach out and ‘touch’ the enemies’ armoured assets. This fundamentally alters the ability of how the TAE can be employed or engaged in the world. As others have noted, the absence of an attack helicopter prevents the TAE from completing certain tasks for the Army. (e.g. GUARD).⁴² Equally, the absence of a stand-off weapon system or true attack helicopter capability within the TAE likely prevents the CA from the consideration of realigning the force akin to Armoured Calvary Regiments. As Morrison identified in his research paper when discussing the current security environment, this “necessitates that the tactical aviation community acquire an organic precision-guided stand-off fire support capability to remain relevant for conducting operations in the contemporary security environment.”⁴³ If Canada is not prepared to invest in a true helicopter attack capability, then the forgone conclusion is its limited employability throughout the world.

In all probability, the acquisition of an attack helicopter is unlikely. However, as Morrison has pointed out, retrofitting the CH146 with a combination of Precision Guided Munitions (PGMs) is possibly an acceptable solution in the interim. Yet, as noted by Fountain when discussing future Army force development scenarios, the effect that an

⁴¹Greg Zweng, “Tactical Aviation Within the Future Fight,” *The Royal Canadian Air Force Journal* volume 10 issue 1(Winter 2021), 33.

⁴²Department of National Defence, *Tactical Aviation FEC...*, 10.

⁴³Morrison, “The Need for Precision-Guided Standoff Weapons...”, 5.

armed helicopter can provide is limited in effectiveness when compared to a true dedicated attack helicopter.⁴⁴

To summarize, it's worth noting that bolstering air attack is beneficial. However, it needs to be done in conjunction with the provision on networked ISR. As noted by Harris:

Future iterations of an armed reconnaissance helicopter will need to have the ability to actively stream 4k quality FMC [full motion video] securely to a Tactical Operations Centre (TOC) or an operative on the ground, whilst concurrently receiving target information from other sources (for example Unmanned Aerial Systems (UAS)).⁴⁵

The unfortunate reality is, given that attack helicopters were not specifically identified in *SSE*, their procurement in the near term will likely be improbable. That being said, PGMs are likely a valid interim solution that could be integrated into the existing CH146 platform, though they come with drawbacks.

Having discussed two capability areas in which the TAE could further contribute its efforts of ISR and air attack, it is time to consider the status quo, which has largely been mobility. As noted by a former 1 Wg Comd,

The provision of aerial firepower in support of land force operations is one of the three core doctrinal roles for tactical aviation, but unfortunately, it has historically been marginalized in the Canadian Forces (CF) tactical aviation community in favour of mobility operations, and to a lesser extent, reconnaissance support.⁴⁶

Thus, the status quo largely revolves around mobility operations, a capability which the addition of the CH147F has greatly enhanced.

THE STATUS QUO

⁴⁴Jeremy Fountain, "CH-146 Griffon Capability Replacement: Informed by the Past, Prepared for the Future?" (Joint Command and Staff Program Exercise Solo Flight, Canadian Forces College, 2016), 14.

⁴⁵Harris, "Analysing the Future Tactical Helicopter Force Requirements...", 4.

⁴⁶Morrison, "The Need for Precision-Guided Standoff Weapons...", 1.

The RCAF prides itself in having a force capable of a myriad of missions, and this is precisely what is called for in *SSE*:

[RCAF] capabilities must be multipurpose – equally relevant to domestic and international operations, capable of incorporating and adapting to the latest technology, integrated with all of the capabilities in the Canadian Armed Forces, and interoperable with core allies.⁴⁷

This has certainly been evidenced by the manner in which the TAE has been utilized by the GoC in the past two decades: combat operations in Afghanistan, stability operations in Iraq, disaster response operations in Haiti and the Philippines, domestic response operations throughout Canada, and peacekeeping operations in Mali. Clearly, what the TAE has done in the preceding two decades is precisely what the *SSE* calls for- full spectrum operations. However, at its core, the TAE must be capable of conventional warfighting, particularly in light of the resurgence of great power competition. As then Colonel Boucher (a former 1 Wg Comd) identified, the TAE needs to return to mastering conventional war fighting after a decade of the CAF participating in, what is best termed, COIN operations.⁴⁸ Though this article was written some seven years previous, the message remains relevant today.

In the context of the conventional fight, the TAE is responsible to provide the CA with, not only reconnaissance and firepower, but equally mobility, which is particularly important in Advanced Dispersed Operations (ADO) where the CA could be operating in a 200km x 200km grid square.⁴⁹ “Tactical aviation provides airborne mobility by airlifting forces and materiel through the AOR.”⁵⁰ Tactical Aviation can also perform

⁴⁷Department of National Defence. *Strong, Secure, Engaged...*, 39.

⁴⁸Boucher, “Tactical Aviation Mobility.”

⁴⁹*Ibid.*

⁵⁰Department of National Defence, *Tactical Aviation FEC...*, 8.

administrative and logistic airlift support and, most recently, the TAE has fulfilled the Forward Aeromedical Evacuation (Fwd AE) role at OP PRESENCE in Mali. If the raison d'être of the TAE is in fact 1st line support to the CA, then it must likewise adapt its mobility support to most closely align with the needs of the CA, which includes the ability to bound with the CA.

Strong at Home

It is realistic to say that the TAE will continue to be a prime candidate to support domestic response as strong at home as is the defence priority. However, this ongoing requirement will need to be balanced with the requirement to ensure the TAE is seamlessly integrated with its partner, the CA. Canada needs to anticipate the seemingly growing quantity of domestic response requirements and adapt, either by ensuring the TAE is bolstered to respond or, perhaps more fittingly, aligning the TAE response as part of the integral support to the CA and identifying an alternate source as the go to for domestic response. The TAE will likely continue to be tasked with domestic response, but the role should be seen as the exception to the norm, and not the defacto norm.

Secure in North America

The integration of assets and the collective training of both theca and its closet ally, the US, needs to remain the cornerstone of the TAE. As documented during EX WARFIGHTER, a near-peer simulated conflict, "The greatest key to the success of 408 Tac Hel Sqn during EX [exercise] WARFIGHTER was the crew and their level of

training.”⁵¹ Though this exercise utilised only CH146 Griffons from the TAE, it highlighted the importance of experience - experience that can only be gained by collective training events. How is it rational to expect the CA to understand the potential employment of Tactical Aviation unless the CA routinely has it at its disposal? However, collective training like Exercise *Warfighter* highlights the unfortunate disconnect that it is sometimes easier to train with the U.S. and other coalition allies than it is with the CA.

Engaged in the World

Finally, the joint battlespace requires that the TAE be fully able to bound and communicate with the Army. Thus, the TAE should continue to anticipate the requirement for an integral capability to move with the CA. The TAE should equally see itself in a role of providing an integral sustain capability to the CA, particularly where ground-based lines of communications can not be easily established.⁵² In a similar vein to secure in North America, the TAE needs to be seen acting in concert with the CA in a complementary and supporting role to the CA. Only through collective operations will the CA and the RCAF fully comprehend the extent of capability that the TAE can provide to the CA and RCAF in the joint fight.

CONCLUSION

By reviewing the role of TAE through the lens of *SSE*, this paper has shown that the TAE will continue to have a role in the defence and security of Canada. First, the TAE needs to broaden its reconnaissance role to align it with joint ISR. It needs to

⁵¹Zweng, “Tactical Aviation Within the Future Fight...”, 40.

⁵²Department of National Defence, *Tactical Aviation FEC...*, 11.

overcome its limitation directly linked to the current lack of a TDL, which inhibits real-time data streaming. A system approach requires each asset to be networked to enable command decision making. Second, the limited air attack or firepower role that the TAE has seen in the preceding two decades needs to be expanded or realigned with doctrine to include a true aerial attack capability via an attack helicopter. Realistically though, it will likely be limited to PGMs integrated onto the existing CH146 Griffon platform. Third, the TAE needs to continue in its role of providing air mobility. However, this needs to be done in close collaboration with the CA to maximize the joint effects. The argument can be made from *SSE* that investment or reinvestment in those capabilities is implied, and that it is time the RCAF enabled the TAE to focus on its core tenets and *anticipate*, *adapt*, and *act* in-line with the direction provided in *SSE*. In the words of a former 1 Wing Commander, “The best a military can do is train to a standard that will allow it to adapt to the next challenge it will have to face.”⁵³ In the absence of the additional enablers, the TAE should continue to focus on its people so that they are fully prepared to confront the next challenge.

⁵³Boucher, “Tactical Aviation Mobility.”

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