



IN THE FIGHT: ASSURING RELEVANT TACTICAL AVIATION EMPLOYMENT IN CONTEMPORARY ENVIRONMENTS

Major Alexander Mitchell

JCSP 50

Service Paper

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© His Majesty the King in Right of Canada, as represented by the Minister of National Defence, 2024.

PCEMI n° 50

Étude militaire

Avertissement

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© Sa Majesté le Roi du chef du Canada, représenté par le ministre de la Défense nationale, 2024.

CANADIAN FORCES COLLEGE - COLLÈGE DES FORCES CANADIENNES

JCSP 50 - PCEMI n° 50
2023 - 2024

Service Paper – Étude militaire

**IN THE FIGHT: ASSURING RELEVANT TACTICAL AVIATION EMPLOYMENT
IN CONTEMPORARY ENVIRONMENTS**

Major Alexander Mitchell

“This paper was written by a candidate attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”

« La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale. »

IN THE FIGHT: ASSURING RELEVANT TACTICAL AVIATION EMPLOYMENT IN CONTEMPORARY ENVIRONMENTS

AIM

1. The aim of this paper is to provide Commander 1 Canadian Air Division (in their capacity as the Joint Force Air Component Commander) with considerations for assuring relevant force employment of Canada's tactical aviation (tac avn) in a contemporary battlespace. The Russia-Ukraine crises has adversely influenced perceptions and generated assumptions that the contemporary risk environment is untenable for the survival of existing rotary-wing platforms. For the Royal Canadian Air Force (RCAF), this perception has manifest as a fixation on technological capabilities, which are viewed as the only means for overcoming the challenges imposed by the modern threat environment. This paper attests that the extant RCAF tac avn capabilities and platforms generate by 1 Wing can, and should, operate in elevated threat environments in order to deliver force multiplying effects across the land-domain. By offering an alternative perception for operational and strategic RCAF planners, tac avn relevance can be assured today, instead of waiting for tomorrow.

INTRODUCTION

2. The threat risks associated with the modern battlespace, and the implications for aviation are undoubtedly high - leading to conclusions that the role of aviation must be relegated to threat-free or low risk.¹ Partially influencing this mindset are the historical environments in which Canada's tac avn community (1 Wing) has operated over the past three decades. The community has demonstrated commendable talent for operating within elevated threat risk environments which periodically presented themselves in Bosnia, Afghanistan, Iraq, and Mali. However, tasks executed in an elevated threat environment were infrequent overall, and these theatres all typically benefited from air supremacy, lower proliferation of older Man-portable air-defense systems (MANPADs), and an absence of integrated air defence systems. Additionally, in the event that any of these permissive environments degraded (such as the proliferation of advanced generation MANPADs in Iraq) RCAF tac avn platforms would be employed so as to avoid any likelihood of encountering them. This form of avoidance mitigation was considered acceptable as it did not typically impede on employment relevance; rotary avn effects were also in high demand in relatively permissive parts of the respective theatres. Ultimately, tac avn's ability to deliver effects has become adversely tied to permissive operating environments, and has normalised a risk intolerance that is incompatible with the contemporary battlespace.

¹ Trevithick, Joseph. "Army Cancels High-Speed Armed Reconnaissance Helicopter Program." The War Zone, 2024. <https://www.twz.com/air/army-cancels-high-speed-armed-reconnaissance-helicopter-program>.

3. There are two adverse influences driving a limited risk tolerance that prevent consideration for feasible tac avn employment in the contemporary battlespace. First, an RCAF fixation on future relevance, and second, misconceptions on avn operations in the Russia-Ukraine conflict.

DISCUSSION

Fixation on the Future

4. The RCAF is faced with a challenging pace of technological change, which is problematic when considering the 10-15 year timeline required between conception and delivery of next generation capabilities. 1 Wing tac avn is not exempt from this problem, operating the utility CH146 Griffon acquired in 1995, and the more modern heavy CH147F acquired in 2013. It is easy to comprehend why the RCAF is heavily vested in future capabilities as a critical requirement to overcome the current state of the RCAF. This problem has shaped the most recent direction and guidance from the Commander of the RCAF (Comd RCAF), who intends to prioritise the force in order to “deliver the RCAF of tomorrow and ensure its relevance...”². To this end, Comd RCAF has emphasised that re-achieving an advantage necessary to contend with near-peer threats, will not be available until 2035.³ A prioritisation of RCAF capabilities is for assuring tomorrow, reflects an RCAF that sees itself irrelevant today.

5. Tac avn employment cannot be premised on the arrival of future platforms as the sole means for overcoming the threat environment. 1 Wing is force generating for deployment to Op REASSURANCE this year and the next Tactical Aviation Capability Set (nTACS), is predominantly still conceptual.⁴ Relevant tac avn employment for today must be predicated on existing legacy capabilities. This is not meant to downplay the challenges and critical need for re-achieving a technological edge, but that RCAF fixation on this premise negates considerations for current fleet employment– at a time when they might be required for force employment. Ukraine has most emphatically demonstrated that you go to war with what you already have.⁵

6. Our closest allies have overcome this fixation, electing to reinforce their existing legacy tac avn fleets – even at cost to future projects. As part of a US army “Aviation Investment Rebalance” the US Army cancelled their Future Attack and Reconnaissance Aircraft (FARA) program in Feb 24 which came as a significant surprise to the primary

² RCAF Air Staff. “Royal Canadian Air Force Commander Brief to JCSP 50,” January 17, 2024.

³ RCAF Air Staff. “Royal Canadian Air Force Commander Brief to JCSP 50,” January 17, 2024.

⁴ Thatcher, Christopher. “RCAF to Look at ‘revolutionary’ Vertical Lift Options to Replace CH-146 Griffon.” Skies Mag. Accessed February 17, 2024. <https://skiesmag.com/news/rcaf-look-revolutionary-vertical-lift-options-replace-ch-146-griffon/>.

⁵ Jensen, Rebecca. E-mail correspondence with Alexander Mitchell. “Relevant Tac Avn Employment in Latvia,” February 13, 2024.

platform developer.⁶ This implicates that existing capabilities are delivering valuable effects now, and will for some time. Further it emphasises a US Army perception that effects can be delivered without a technological edge.⁷

7. The fact that the implicated industries were surprised by FARAs cancelation is indicative of a normalised perception that tends toward technological solutions. To counter this perception, the US Army has assessed that a “...mix of enduring, unmanned and space systems could achieve the increased capabilities offered by FARA more affordably and effectively.” However, this could also be perceived as a US army future divestment away from helicopters all together premised that threats will continue to outpace helicopter survivability, and that aviation cannot exist in the future battlespace. This is countered by the aforementioned reinvestment in legacy capabilities – and the reinforcement of existing production lines for the UH-60M and CH-47F. Additionally, the US Army is still proceeding with its Future Long-Range Assault Aircraft program (FLRAA) indicates a belief within the US Army that helicopters avn still has a role to play.

8. Controversy arises when the FLRAA is compared to the cancelled FARA. Another rationale behind the cancelation is that conceptual reconnaissance and attack helicopter platforms to be delivered by FARA may not be able to survive operating areas of the contemporary or future battlespace.⁸ In direct contradiction, the FLRAA project will deliver a long-range assault aircraft that would be susceptible to the same environment or worse– indicating that the US Army is aware of the threat risk, but still believe its worth pursuit of this project. This signals that the emphasis behind project cancelation is not the threat environment, but rather that capabilities can be more effectively derived from elsewhere – amongst the legacy platforms. The critical need for future capabilities is rational, but the factors that influence this requirement must stand apart from legacy fleet employment, less they become broadly painted as irrelevant in comparison. This US Army’s shift toward reinforcing legacy capabilities, while concurrently prioritising specific future projects reflects this principle.

9. Much like the US army evaluated how its platform delivered the roles typical of army avn, the RCAF’s tac avn must do the same when evaluating how it provisions ‘mobility, reconnaissance and ‘firepower’⁹ to the CA. But as the US Army has

⁶ Johnson, Oliver. “U.S. Army Announces Shock FARA Program Cancellation.” Vertical Mag, February 9, 2024. <https://verticalmag.com/news/u-s-army-announces-shock-fara-program-cancellation/>.

⁷ Trevithick, Joseph. “Army Cancels High-Speed Armed Reconnaissance Helicopter Program.” The War Zone, 2024. <https://www.twz.com/air/army-cancels-high-speed-armed-reconnaissance-helicopter-program>.

⁸ Trevithick, Joseph. “Army Cancels High-Speed Armed Reconnaissance Helicopter Program.” The War Zone, 2024. <https://www.twz.com/air/army-cancels-high-speed-armed-reconnaissance-helicopter-program>.

⁹ A7 Plans and Doctrine, 1 Wing. B-GA-400: Tactical Helicopter Operations. Her Majesty the Queen in Right of Canada, 1999.

demonstrated, it should be less about the measured the threat environment (albeit still important), and more toward emphasising effective and affordable solutions that leverage collaboration with legacy fleet.¹⁰ This implicates generating options such as the CH-146 in reconnaissance and firepower roles, integrated with off-the-shelf unmanned aerial vehicles, drones, and smart munition systems. These systems could deploy and/or be controlled by a mobile CH-146 platform that affords necessary standoff, and mobility and dispersion for critical system operators. More research is required to ascertain additional benefits.

10. Invalidating existing capability on hasty conclusions and orienting toward technological saviourism is of no benefit. A fixation on premium technological capabilities is not a complete solution to operating in the modern battlespace.¹¹ “come as you are” legacy capabilities will still be used to great effect (especially when complementing exquisite capabilities). Our allies our investing in this premise, but more importantly, the Ukrainians and Russians are proving it.

Lessons from the Russia-Ukraine Crisis

11. Prior to the Russian invasion of the Ukraine, concerns surrounding viable employment of helicopters, particularly in deep operations, were already percolating.¹² By the outbreak, these existential concerns were now manifesting as a reality. Tac avn related losses, both technical and human, were high. By spring of 2022 (approximately 1.5 years following the outbreak) it is estimated that over 194 Russian aircraft were shot down.¹³ While accurate numbers of losses for both sides are unobtainable, these estimates, drive an intimidating narrative of tac avn survivability. When overlaying the Russia-Ukraine reality with 1 Wing tac avn’s limited fleet size and composition, conclusions of employment irrelevance are to eb expected.

12. However, a number of factors surrounding these losses indicate some glaring failures, in both tactics and organisation of Russia and the Ukraine. First, avn operations for both sides have been executed without a blanket air superiority, even localised. For the Russians, the failure to gain localised superiority which could have minimised avn losses avn, is attributed to an organisational deficiency. Russian Electronic Warfare (EW) assets were not appropriately organised for suppression of enemy air defence missions,

¹⁰ Trevithick, Joseph. “Army Cancels High-Speed Armed Reconnaissance Helicopter Program.” *The War Zone*, 2024. <https://www.twz.com/air/army-cancels-hight-speed-armed-reconnaissance-helicopter-program>.

¹¹ Jensen, Rebecca. E-mail correspondence with Alexander Mitchell. “Relevant Tac Avn Employment in Latvia,” February 13, 2024.

¹² Lubiejewski, Sylwester. “Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War,” *Security and Defence Quarterly* 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

¹³ Mishce, Loan. “Causes of the Failure of Russian Aviation in Achieving Air Supremacy in the Ukraine Conflict and Subsequent Influences on Its Evolution,” *Romanian Military Thinking*, January 2, 2023. <https://doi.org/10.55535/RMT.2023.1.2>.

and there is a distinct lack of coordination at a joint level necessary to enable this requirement.¹⁴ Although an environment devoid of air superiority may be the normal operating environment of contemporary battlespace, mitigation should always be sought and employed.

13. Even more prevalent is the absence of fundamental tactics - particularly for Russian tac avn operations early in the conflict. A number of air assaults conducted at airports in the vicinity of Kiev were conducted in day time, in the known presence of integrated enemy air defences, numerous surface to surface missile types, rocket types, and anti-tank guided missiles. Russian execution on these missions revealed a lack of discipline for maintaining low level maneuvering and other techniques necessary for countering, avoiding, or masking from these threats. Russians were also reported as flying in large formations, during the day, and often loitered at several hundred feet during attack profiles for minutes at a time, and repeated routes flown – all actions that egregiously disregarded fundamental tac avn tactics. In some cases, the Ukrainian’s fared no better by reinforcing failure, having lost two aircraft in sequence for one rescue-type mission. This is not to suggest that the environment can be completely mitigated simply by correcting the application of tactics – the need to expand risk tolerance is still key to relevance. However, initial observations indicate “non-compliance with the rules of tactics by helicopter crews increases their vulnerability to anti-aircraft systems and significantly reduces their survivability on the battlefield.”¹⁵

14. Following the devastating early phase of the conflict, Russian and Ukrainian aviation operations retracted. This was influenced by the scale of loss, as well as other issues not attributed to combat helicopter tactics. These non-tactic factors included fratricide from both ‘ground to air’ and ‘air to ground’ as a consequence of false identification, due to poor communication practices, and inaccurate helicopter unguided rocket attacks, conducted from excessively low (untrained) levels.¹⁶ Training and communication deficiencies had certainly compounded in complex operating environments, and the presence and employment of aviation is no exception. However, deficiencies in tactics, training, and organisation should not influence aviation’s relevance in the contemporary battlespace – the environment demands the ability for all military elements to operate in complexity and with uncertainty.

15. The consequences of an aviation hiatus quickly became apparent to both Ukrainian and Russian land forces. Sustainment and mobility operations that had been

¹⁴ Mishce, Loan. “Causes of the Failure of Russian Aviation in Achieving Air Supremacy in the Ukraine Conflict and Subsequent Influences on Its Evolution,” ROMANIAN MILITARY THINKING, January 2, 2023. <https://doi.org/10.55535/RMT.2023.1.2>.

¹⁵ Lubiejewski, Sylwester. “Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War,” Security and Defence Quarterly 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

¹⁶ Lubiejewski, Sylwester. “Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War,” Security and Defence Quarterly 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

previously conducted by tac avn, were now conducted by road, leaving forces susceptible to artillery and other indirect capabilities.¹⁷ Mobility and dispersion for land forces was fast becoming critical for survivability; the absence of aviation imposed an additional limit on this critical requirement. Despite the challenges and losses inflicted upon tac avn during the early war, avn operations would resume (and continue today).¹⁸ Avn was eventually realised as a cost benefit to the land force; overriding risk concerns. This is best exemplified by the Ukrainian operation in support of the Mariupol defensive in 2022. 16x Mi-8 helicopters conducted resupply, relief forces, and evacuated casualties over several sorties.^{19 20} Despite a loss of three aircraft, the overall value of the effects provided reinforced the belief “that helicopters are still irreplaceable on the battlefield”²¹. The loss of three Mi-8s is unfortunate, but inherently a small loss when considering the weight of the operational gain - given that 20,000 Russian troops were fixed at Mariupol. Equally, the RCAF’s tac avn community is capable of operating in high threat environments, provided that the avn threat risk concern is measured against the risk to CA operations.

CONCLUSION

16. Pursuing future capabilities is a critical must, and will enhance avn survivability and effects delivery in the current and future battlespace. However, tac avn needs to be relevant today, and considerations for force employment using existing platforms should be analysed independent of where and how the RCAF needs to be in 2035.

17. The threat risks imposed by the cotemporary battlespace are unprecedented for RCAF tac avn operations. An adherence to essential tactics, and periodic analysis of the means and ways in which core doctrinal avn effects are delivered, will bolster 1 Wing’s existing force generation practices, increase survivable when force employed, and provide critical effects for the CA. Finally, the need to adopt a new threshold of acceptable risk should be pursued, and is the critical element underscoring all considerations for relevant force employment.

¹⁷ Lubiejewski, Sylwester. “Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War,” *Security and Defence Quarterly* 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

¹⁸ Jensen, Rebecca. E-mail correspondence with Alexander Mitchell. “Relevant Tac Avn Employment in Latvia,” February 13, 2024.

¹⁹ Spencer, John. “Urban Warfare Project Podcast: Helicopter Missions in Mariupol.” *Modern War Institute*, 2024. <https://mwi.westpoint.edu/urban-warfare-project-podcast-helicopter-missions-in-mariupol/>.

²⁰ Lubiejewski, Sylwester. “Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War,” *Security and Defence Quarterly* 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

²¹ Lubiejewski, Sylwester. “Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War,” *Security and Defence Quarterly* 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

BIBLIOGRAPHY

A7 Plans and Doctrine, 1 Wing. B-GA-400: Tactical Helicopter Operations. Her Majesty the Queen in Right of Canada, 1999.

Anonymous. "The Ukraine/Russia Conflict: An Analysis on Air Warfare," *Vayu Aerospace and Defence Review*, no. 5 (2022): 85–90.
<https://www.proquest.com/scholarly-journals/ukraine-russia-conflict-analysis-on-air-warfare/docview/2729114941/se-2?accountid=9867>

Canadian Army Land Warfare Center. *Close Engagement – Land Power in an Age of Uncertainty – Evolving Adaptive Dispersed Operations*. Kingston, ON: Her Majesty the Queen in Right of Canada, 2019.

National Defence. "Operation REASSURANCE."
<https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-reassurance.html>, May 1, 2014. <https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-reassurance.html>.

Jensen, Rebecca. E-mail correspondence with Alexander Mitchell. "Relevant Tac Avn Employment in Latvia," February 13, 2024.

Johnson, Oliver. "U.S. Army Announces Shock FARA Program Cancellation." *Vertical Mag*, February 9, 2024. <https://verticalmag.com/news/u-s-army-announces-shock-fara-program-cancellation/>.

Lubiejewski, Sylwester. "Conclusions from the Use of Aviation in the First Half of the First Year of the Ukrainian-Russian War," *Security and Defence Quarterly* 42, 42, no. 2 (2023): 68–104. <https://doi.org/10.35467/sdq/161959>.

Mishce, Loan. "Causes of the Failure of Russian Aviation in Achieving Air Supremacy in the Ukraine Conflict and Subsequent Influences on Its Evolution," *Romanian Military Thinking*, January 2, 2023. <https://doi.org/10.55535/RMT.2023.1.2>.

RCAF Air Staff. "Royal Canadian Air Force Commander Brief to JCSP 50," January 17, 2024.

Ritchie, Sarah. "Canada Will Send Helicopters to Latvia for NATO Deterrence Mission: Blair - National | Globalnews.Ca." *Global News*, December 15, 2023. <https://globalnews.ca/news/10172540/canada-helicopters-latvia-nato/>.

“Russia to Boost Military Transport Aviation for Ukraine War: UKRAINE WAR.” EFE News Service. 2023. <https://www.proquest.com/wire-feeds/russia-boost-military-transport-aviation-ukraine/docview/2875385762/se-2?accountid=9867>

Spencer, John. “Urban Warfare Project Podcast: Helicopter Missions in Mariupol.” Modern War Institute, 2024. <https://mwi.westpoint.edu/urban-warfare-project-podcast-helicopter-missions-in-mariupol/>.

Thatcher, Christopher. “RCAF to Look at ‘revolutionary’ Vertical Lift Options to Replace CH-146 Griffon.” Skies Mag. Accessed February 17, 2024. <https://skiesmag.com/news/rcaf-look-revolutionary-vertical-lift-options-replace-ch-146-griffon/>.

Trevithick, Joseph. “Army Cancels High-Speed Armed Reconnaissance Helicopter Program.” The War Zone, 2024. <https://www.twz.com/air/army-cancels-high-speed-armed-reconnaissance-helicopter-program>.