



PROPELLING RCAF'S AGILITY: ENHANCING EXPEDITIONARY AIR OPERATIONS WITH A HOLISTIC DATA STRATEGY

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INTRODUCTION

Recent publications of digitalization policies reflect the Canadian Armed Forces (CAF) proactive approach in seizing future opportunities. Whether it is the CAF Data Strategy¹, the CAF Digital Campaign Plan² or the Royal Canadian Air Force (RCAF) Strategy³, these policies collectively emphasize the importance of effectively harnessing and managing data as a vital organizational resource. This development is particularly significant given the challenges outlined in the CAF's 2017 Data Strategy, which identified issues such as lack of awareness on data, inability to make decisions about data, ineffective data management practices, inflexible legacy systems and low data literacy.⁴ As a result, CAF personnel are performing tasks that could be automated, preventing the effective use of human resources⁵ in a period of personal shortage.⁶ An example of this reality is how the RCAF manages data during its Expeditionary Air Operations (EAO), which requires coordinating with various stakeholders for the Force Generation and Force Employment of resources while assessing the suitability of airfields for different air platforms.⁷ However, no holistic data strategy encapsulates the full range of activities necessary to promote effective and fast delivery of air power.⁸ Consequently, aviators are left to populate some data across disjointed CAF-wide systems of record⁹, including Monitor MASS, while the remaining information is mandated to be stored in a central repository, the Canadian Joint Operation Command (CJOC) SharePoint, which is built primarily as a document storage solution, providing no data integration services.¹⁰ As a result, this current EAO data strategy – or lack thereof – leads to Subject Matter

¹ National Defence, 'The Department of National Defence and Canadian Armed Forces Data Strategy'.

² Department of National Defence, 'Canadian Armed Forces Digital Campaign Plan'.

³ National Defence, 'RCAF Strategy'.

⁴ National Defence, 'The Department of National Defence and Canadian Armed Forces Data Strategy', 4.

⁵ Department of National Defence, 'Canadian Armed Forces Digital Campaign Plan', 13.

⁶ Department of National Defence, 'CDS/DM Directive for CAF Reconstitution'.

⁷ National Defence, Royal Canadian Air Force Doctrine: Expeditionary Air Operations.

⁸ National Defence, 'Air Task Force Lentus 1901_Post Operation Report', 5/7.

⁹ National Defence, 'Air Task Force Lentus 2106_Post Operation Report', 8/12.

¹⁰ National Defence, 'CDIO 3000 Series – Section Sixteen – Information Knowledge Management', 16/82.

Experts resorting to standalone products such as spreadsheets and emails, resulting in duplication of effort, versioning issues and overall confusion.

The 2023 RCAF Strategy mentions the necessity for institutional agility and states the need to “optimiz[e] C2, training, personnel employment and support systems within the RCAF . . . [and] exert greater influence on procurement, personnel administration, logistic support, decision-making processes . . . and information technology.”¹¹ As such, this policy supports the development of a better data strategy for EAO, but the same can be argued for a variety of other digital products, as this recent strategic document is very generic. Consequently, given limited resources, prioritizing data systems to be developed or acquired will be essential for the newly formed teams with the mandate to improve data utilization.

Therefore, what priority should developing a data strategy for EAO be given? This paper will argue that such a system should be a high priority for the RCAF to develop due to the strategic agility it would deliver and the realistic feasibility of implementation. In part one, it will be demonstrated that the rapid speed of air assets, the evolving nature of warfare and the emerging trends in human dimensions warrant the necessity of a data strategy for EAO, ultimately bolstering RCAF strategic agility. Part two will delve into the feasibility of developing such a system by highlighting a successful data strategy already implemented within the department that could be leveraged for EAO and by explaining the unique RCAF’s Command and Control (C2) structure that allows for its implementation.

STRATEGIC AGILITY

First and foremost, this data strategy for EAO is not related to the employment of air platforms in their capacities but to the support provided to them. More precisely, it centers on the holistic integration of data from three distinct, but interconnected, facets of EAO: the Force Employment of resources, their Force Generation and the conditions of airfields. Indeed, whereas an EAO is defined in the Expeditionary Air Operations Doctrine as “any operation away from the Main Operating Base (MOB),”¹² which relates

¹¹ National Defence, ‘RCAF Strategy’, 9.

¹² National Defence, Royal Canadian Air Force Doctrine: Expeditionary Air Operations, 1.

to the Force Employment, the projection of force (Force Generation) to a foreign location (Airfield conditions) is also part of EAO as described in Chapter 3 of that same document.¹³ During Force Employment, the first facet of EAO, the RCAF organizes its forces via a C2 construct called an Air Task Force (ATF).¹⁴ Aside from the Air Detachments, this ATF structure is composed of the Command element(Comd) and three support elements: Operational Support Element(OSE), Mission Support Element(MSE) and Force Protection Element(FPE). These elements plan, activate and sustain air operations¹⁵, but no official system exists to manage even basic information, such as personnel lists.¹⁶ In order to develop a plan for the Force Employment of air platforms, obtaining relevant information about airfields becomes imperative. This encompasses a range of data, from strategic details like legal NATO agreements to tactical specifics such as Aviation Fuel capacity.¹⁷ This constitutes the second facet of EAO. However, although there is some database on airfield conditions, such as GIANT report,¹⁸ no single RCAF system exists to manage all relevant information, monitor changing situations, identify deficiencies and track actions taken to resolve them when necessary. With a Force Employment plan based on airfield conditions, the required force can be generated, which is the third facet of EAO. This Force Generation comprises a wide array of activities to ensure that personnel is fit and that equipment is ready to deploy on time at the right location. While some software programs exist to help this endeavour, they are specialist systems and do not track the evolving situation.¹⁹ These three interconnected facets serve as the foundational elements of a comprehensive data strategy for EAO. By addressing the distinct needs within each facet and linking them together, an effective data strategy can be devised to enhance the efficiency and effectiveness of Expeditionary Air Operations.

¹³ Ibid., 15.

¹⁴ Barnes, 'The RCAF Air Task Force: Considerations for the Employment of Air Power in Joint Operations', 1.

¹⁵ National Defence, Royal Canadian Air Force Doctrine: Expeditionary Air Operations, 5.

¹⁶ National Defence, 'Air Task Force Lentus 1901_Post Operation Report', 5/7.

¹⁷ National Defence, 'Air Field Activation and Surge Team (AFAST)_Recce_Checklist'.

¹⁸ Air Mobility Command, 'Review of Civil Airport Use and Aircrew Lodging', 4.

¹⁹ National Defence, 'Air Task Force - Iraq_Post RiP Report', 5/7.

One of the key principles of the RCAF Vision is agility, which “ speaks to a focus on air and space forces that are rapidly deployable, scalable, versatile and relevant to unique mission requirements as well as GC priorities.”²⁰ While the speed at which air platforms travel is undeniably faster than Land and Sea forces, to harness their full agility, the support that follows them also needs to be faster than Land and Sea forces. In its Capstone Doctrine, the RCAF recognizes the speed²¹ of air vehicles as a characteristic of air power, as well as their support dependency, by stating, "Air power requires a high level of technical and logistical support that must be provided from a support base of operations.”²² However, as mentioned in the introduction, the RCAF relies on CAF-wide software programs and CJOC Information Management policies. As a result, the RCAF has fast-moving air platforms but no air force-specific system to manage the delivery of support; it relies on the joint environment. A data strategy on EAO would help rectify this imbalance that is preventing the RCAF from reaching its maximum agility. While the RCAF has permanent missions at home, such as LIMPID and SAR,²³ it needs the ability to operate away from MOBs (e.g. Most RCAF Wings) to foreign locations as alluded to in its mission: “Generate relevant, responsive and effective air and space power at home and abroad.”²⁴ While evaluating the consequences of this current imbalance would be complex given the plethora of factors to consider, various operations’ lessons learned reports mention the need to improve items related to the three facets of EAO. Indeed, past missions have seen RCAF members deploying without their readiness confirmed²⁵ (DAG-Red), operating without financial Delegation of Authority (DOA),²⁶ needing to perform ad-hoc recce to airfields given the lack of data²⁷ or being uninformed of existing essential documents.²⁸ By establishing a comprehensive data strategy for EAO, the RCAF can create a common operating picture on all support-related activities, enabling effective collaboration and resolving these operational challenges.

²⁰ National Defence, ‘RCAF Strategy’, 8.

²¹ National Defence, Royal Canadian Air Force Doctrine CAPSTONE, 14.

²² Ibid. 15.

²³ National Defence, ‘Current Operations and Joint Military Exercises List’.

²⁴ National Defence, ‘RCAF Strategy’, 14.

²⁵ National Defence, ‘Air Task Force Op RENAISSANCE 17-01 _Post Operation Report’, 3/9.

²⁶ National Defence, ‘Air Task Force Lentus 18-05 _Post Operation Report - Annex A’, 2/14.

²⁷ Ibid., 10/14.

²⁸ National Defence, ‘Air Task Force Op RENAISSANCE 17-01 _Post Operation Report’, 7/9.

Correcting such an imbalance would also position the RCAF to address the future of warfare. Indeed, as noted in the RCAF Strategy: “the old safe haven provided by distance is now threatened by the advent of long-range hypersonic weapons, as well as the exploitation of the information environment and cyber and space domains.”²⁹ As such, the United State Air Force (USAF) has developed an Agile Combat Employment (ACE) concept. It involves employing smaller, more mobile teams to operate and maintain aircraft in austere or non-traditional locations instead of relying on large, centralized bases. The idea behind ACE is to make it harder for an adversary to target and destroy USAF assets by spreading out aircraft and personnel across a wider range of locations. By doing this, the USAF can maintain its ability to generate combat power even if its traditional bases come under attack.³⁰ In keeping with the spirit of the RCAF Strategy, it can be envisioned to operate in such a way as well, having ATFs able to rapidly change location to maintain the advantage over the enemy. While adopting this concept would require significant effort in testing equipment configuration and adapting standard operating procedures, the absence of a data strategy to manage EAO would make the implementation of ACE-like operations difficult. Indeed, the advantage of having rapidly deployable equipment and fluid procedures requiring low support would be undermined by having minimum situational awareness on the state of its own resources and airfield conditions. In this context, having a holistic system to manage EAO would not only set the stage for ACE-like operations but also, logically, benefit all typical ATFs enhancing the value of the small RCAF.

However, the rationale behind prioritizing the development of a data strategy over equipment acquisition and testing challenges the conventional thinking of capability development. Indeed, dedicating resources to building a data strategy to increase RCAF’s agility goes against the current culture of the Department of National Defence. As stated in an ADM(RS) report, it tends to prioritize the tangible aspects of acquiring new capabilities, such as physical equipment and weapon systems, while information management and technology receive less attention.³¹ This bias may seem reasonable

²⁹ National Defence, ‘RCAF Strategy’, 5.

³⁰ United States Air Force, ‘AIR FORCE DOCTRINE NOTE 1-21_AGILE COMBAT EMPLOYMENT’.

³¹ National Defence, ‘Integrated Strategic Analysis : Force Development’, 11.

since it is easier to envision the immediate impact of physical upgrades. However, this approach is no longer optimal. As highlighted by Brose in his book *The Kill Chain*, with the advent of global sensor systems, the ability to close the decision loop faster will be increasingly important as it will become quasi-impossible to hide forces in the future.³² As such, being able to obtain data in order to make decisions will be critical. Another ADM(RS) report mentions the need for the CAF to be interoperable and integrated to have a common operating picture enabling easy exchange of data.³³ To fulfill this broader CAF goal, the RCAF first needs to be able to obtain the data on itself.

From an EAO perspective, the Air Force Expeditionary Capability (AFEC) project, procuring \$200M of deployable equipment,³⁴ does not include any information management system to track the readiness of force packages assembled using this new equipment. For instance, the 2 Wing Force Posture and Readiness (FP&R),³⁵ which provides a breakdown of human and equipment components of an ATF and indicates their readiness status, currently exists as an Excel file sent by email periodically. Ultimately, the accuracy and granularity of data necessary to identify and solve deficiencies to generate smaller and rapidly deployable packages are inadequate. While \$200M may seem insignificant compared to the billions of dollars being spent on air platforms,³⁶ a missing low-cost radio can impede the effective use of these platforms.³⁷ Essentially, while procuring sensors and systems to gather and process data is critical for an Air Force, the cognitive work of individuals also creates data and must be captured and integrated into the decision loop. As the Privy Council Office mentioned, “Across the government, data are created, used and stored within individual areas and are often limited to use for a single purpose.”³⁸ The newly produced CJOC Search and Rescue (SAR) Mission digital products³⁹ is a good example of cognitive work data capture to

³² Greenwood, ‘The Kill Chain’.

³³ National Defence, ‘Evaluation of Air and Space Force Development’, 15.

³⁴ Royal Canadian Air Force, ‘Air Force Expeditionary Capability Deployable Equipment Library’.

³⁵ Royal Canadian Air Force, ‘2 Wing Force Posture and Readiness SOPs’.

³⁶ National Defence, ‘RCAF Strategy’, 17.

³⁷ National Defence, ‘Air Task Force Lentus 18-05 Post Operation Report - Annex A’, 5/14.

³⁸ Privy Council Office, ‘Report to the Clerk of the Privy Council’, 6.

³⁹ National Defence, ‘CJOC SAR Mission Products’.

track operations; the RCAF should be inspired and build a similar concept for its EAO, allowing for a faster deployable force.

Although the prioritization of technologies to manage data coming from sensors versus cognitive work can be argued in different contexts, one undeniable truth remains: war and conflict are fundamentally human endeavours.⁴⁰ When discussing individual agility, the RCAF Strategy states: “The RCAF must attract, train and retain motivated personnel who have the aptitude to thrive in complex and dynamic environment.”⁴¹ In addition, as identified in the CAF Digital Campaign Plan, CAF members lack digital literacy⁴² and must be put at the forefront of the transformation.⁴³ The conduct of EAO is a core mission of the RCAF⁴⁴ involving most RCAF personnel through the processes of Force Generation and Force Employment.⁴⁵ Implementing a data strategy specifically tailored to EAO has the potential to reach and positively influence most aviators within the RCAF and, therefore, contribute on a large scale to the agility and proficiencies of each member.

Furthermore, there is a growing expectation from younger generations⁴⁶ to be empowered, and this is recognized by the RCAF through Plan Qulliq as it seeks to “increase RCAF operational value . . . [through] empowerment [and] stimulate a culture of innovation [by] flatten[ing] RCAF internal communications.”⁴⁷ This approach aligns with the principles of transformational leadership, which have been shown to enhance performance and morale among subordinates.⁴⁸ A subset of transformational leadership is follower-based leadership which promotes better decision-making, notably through professional dissent.⁴⁹ However, to fully leverage this leadership style with subordinates, a collaboration platform must be available to facilitate open communication.⁵⁰ The RCAF

⁴⁰ Department of National Defence, ‘Canadian Armed Forces Digital Campaign Plan’, 12.

⁴¹ National Defence, ‘RCAF Strategy’, 9.

⁴² Department of National Defence, ‘Canadian Armed Forces Digital Campaign Plan’, 18.

⁴³ Department of National Defence, 8.

⁴⁴ National Defence, ‘RCAF Strategy’, 14.

⁴⁵ National Defence, ‘1 Canadian Air Division Managed Readiness Plan’.

⁴⁶ Northouse, ‘Transformational Leadership. In Leadership: Theory and Practice’, 185.

⁴⁷ Royal Canadian Air Force, ‘RCAF Hangar’.

⁴⁸ Department of National Defence, Leadership in the Canadian Forces - Leading the Institution, 69.

⁴⁹ Craig, ‘Leveraging the Power of Loyal Dissent in the U.S. Army’, 97.

⁵⁰ Klein, ‘Overcoming Complexity through Collaboration and Follower-Based Leadership’.

Hangar, a web-based collaboration platform which seeks to bring together all aviators to collaborate, have discussions, generate ideas and solve problems,⁵¹ is a good example of a collaboration platform that enables follower-based leadership. A data strategy on EAO that would implement a platform for all stakeholders, regardless of levels, to collaborate would be a step towards adapting the RCAF institutional leadership style to the present-day workforce expectation.

From a Command and Control standpoint, a flattened organization is a characteristic of an edge organization⁵² which seeks to push decision-making to the edge of the action rather than relying solely on hierarchical structures.⁵³ This concept is particularly effective in dealing with Complex Adapting System(CAS),⁵⁴ which is: “a system such as a business or other organization that consists of many connected parts which should change as conditions change in order to succeed.”⁵⁵ EAO can be defined as CAS, given the multiple interconnected variables present in deploying military power worldwide. Consequently, a data strategy for EAO that empowers individuals and flattens the organization pushes the power to the edge, enabling agility when facing the complexity of EAO.

In summary, the implementation of a data strategy for EAO would increase the strategic agility of the RCAF as it would rectify the imbalance of having fast air assets but unadapted digital collaboration platforms, position the RCAF for the future during ACE and embrace the future trends on the management of human resources.

FEASIBILITY OF IMPLEMENTATION

While such a data strategy would create agility for the RCAF as a whole, many other initiatives, such as those discussed in RCAF Hanger, are also likely to provide various levels of agility. Therefore, it is crucial to strike the right balance between the added value of implementing a data strategy and the associated costs. While the value of such a data strategy was discussed in part one, the following part will demonstrate its

⁵¹ Royal Canadian Air Force, ‘RCAF Hangar’.

⁵² Alberts and Hayes, ‘Power to the Edge. Command...Control...in the Information Age’, 176.

⁵³ Ibid., 213.

⁵⁴ Ibid., 206.

⁵⁵ Cambridge, ‘Complex Adaptive System’.

feasibility for implementation by highlighting a successful data strategy implemented by Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)) that could be leveraged and by explaining that the RCAF's C2 structure is already well-positioned for this initiative.

At its roots, this data strategy seeks the integration of the three facets of EAO into one holistic system. While various systems already exist to manage some of the aspects of EAO, such as Monitor Mass, they are often complemented by many standalone products to capture the additional necessary information.⁵⁶ Ultimately, this system seeks to reduce to a maximum the number of standalone products related to every aspect of EAO. The CAF Data Strategy mentions that the first step of the data life cycle is planning, which includes: "Identifying what data the business needs, and planning for its capture, storage, and use."⁵⁷ This step needs to be conducted for EAO to merge the existing systems and standalone products into a single, integrated data platform.

This exercise was done in ADM(IE) / Real Property Operation Group (RP Ops Gp) for the creation of the Infrastructure Information Management System (IIMS).⁵⁸ While construction projects were tracked in various modules of the Defence Resource Management Information System (DRMIS), it did not provide all of the necessary details to properly manage the full spectrum of real property operations, notably regarding project planning and approval. Indeed, at the lower echelons, a prioritization card was created outlining foreseeable projects with cost estimates as a standalone Excel file. Each year, based on funding allocation, only the highest priority projects were forwarded for approval by merging various Excel files. This fragmented approach made it challenging for higher-level decision-makers to evaluate projects at the national level and access opportunity funding. This combination of standalone files also limited the speed at which project approval was granted, as each file, which included data duplication, needed to be vetted by each level to ensure accuracy and conformity. IIMS enables data capture into one trusted system eliminating the need for standalone files. Further, IIMS seamlessly imports overnight relevant information already captured in DRMIS, avoiding data

⁵⁶ National Defence, 'Air Task Force Lentus 18-05 Post Operation Report - Annex A', 13/14.

⁵⁷ National Defence, 'The Department of National Defence and Canadian Armed Forces Data Strategy', 25.

⁵⁸ National Defence, 'Infrastructure Information Management System (IIMS) Presentation'.

duplication and improving efficiency. As a result, project approval has been simplified and is granted using data from IIMS, the common operating picture. This trusted system, controlled using access rights, allows for further collaboration by providing read-only access to clients enabling them to monitor the progress of their projects. In some instances, automated notifications are pushed from IIMS to stakeholders, further increasing situational awareness.

This same method of creating a system to eliminate standalone documents and importing data from existing systems is how the RCAF should proceed as a data strategy for EAO. An ADM(RS) report stated that: “multiple IM platforms . . . are created in isolation and are often incompatible resulting in inconsistent information management across the department, out-of-date information, and general inefficiency in the management and sharing of information.”⁵⁹ Correcting this deficiency for force generating CAF-wide existing systems such as Monitor Mass (for personnel management) or DRMIS (for equipment management) will be slow given the number of stakeholders that would be involved. Consequently, creating a unique system for EAO while importing relevant data from existing systems is a viable solution that has already been done, as explained with IIMS.

Reducing standalone documents, creating a common operating picture and leveraging automated notifications is also an IIMS solution that could be implemented for the Force Employment of ATFs. Indeed, information such as requests for effects (RFE), mission status, mission acceptance and launch authority (MA/LA), as well as daily situation reports (DSRs), could be part of one system that seamlessly generates the right level of data from the Air Detachments to the ATF Wing Operation Center to the Winnipeg Combined Air Operations Center (CAOC). From an airfield conditions standpoint, similar to the prioritization cards mentioned above, the granularity of data, its trust and the speed of information exchange matters. Reconnaissance reports should be digital and populate a system so data can be verified and sorted accordingly. In addition to the typical reconnaissance reports, simplified airfield condition reports should be inputted into the system. IIMS allows clients to submit their projects by filling out a

⁵⁹ National Defence, ‘Integrated Strategic Analysis : Force Development’, 13.

prioritization card that RP Ops then vet. Similarly, an aviator landing anywhere in the world should be able to access an RCAF airfield condition system, quickly check existing metrics and contribute to the system seamlessly; it can be as simple as confirming existing Aviation Fuel (AvPOL) capacity.

The operational C2 structure of the RCAF is unique and presents an opportunity to implement a data strategy for EAO. The layout of air bases across the country embodies the concept of centralized control and decentralized execution of the RCAF.⁶⁰ When not deployed, missions are generally conducted from air bases known as MOBs (e.g. Wings), each equipped with specific air platforms.⁶¹ For the conduct of an EAO, an ATF is normally tasked tailored by adding together different air fleets and support elements to meet the mission requirements. As a result, it is only during EAO that the different squadrons and support elements come together under a single organization. This contrasts how the Canadian Army (CA) and the Royal Canadian Navy (RCN) function. Indeed, the CA deploys elements from the same division following their Managed Readiness Plan (MRP), and a division's components are regionally centralized, easing their training as a team.⁶² The RCN deploys ships as formed units. As such, the RCAF has few occasions to work as a formed ATF creating a challenge for effective collaboration. In addition, an ATF rarely looks the same⁶³ as it is specific to a mission and, therefore, continuously seeks to combine different air assets to deliver air power effectively. For these reasons, the need to have a data strategy for EAO is critical as it would standardize how the RCAF operates, ease training and enable collaboration across the whole organization.

However, this standardization must happen across the force generation and force employment spectrum, commanded by separate Level One Commanders.⁶⁴ Indeed, for a seamless system to be in place, some information necessary for the force generation needs to transition to the force employment team as part of the data strategy. An example

⁶⁰ National Defence, Royal Canadian Air Force Doctrine: Command and Control, 14.

⁶¹ Royal Canadian Air Force, 'Wings and Squadrons - Royal Canadian Air Force'.

⁶² National Defence, 'Army Divisions'.

⁶³ Barnes, 'The RCAF Air Task Force: Considerations for the Employment of Air Power in Joint Operations', 3.

⁶⁴ National Defence, CFJP 101, Canadian Military Doctrine, 5-8.

is the personnel and equipment movement information in transit between a MOB and a deployed location. While having a holistic system is essential for the RCAF as it rarely trains as a formed deployable unit, it is likely that the other CAF components would benefit from their own version of this system as well. However, as opposed to them, the RCAF has a C2 structure which would facilitate its implementation across both the RCAF and Force Employers. Indeed, the primary force generator in the RCAF is the 1 Canadian Air Division (CAD) Commander.⁶⁵ That same individual is also a force employer as the Joint Force Air Component Commander (JFACC) for CJOC and as the Canadian NORAD Region Commander (CANR) for NORAD.⁶⁶ In contrast, the CA has multiple Division Commanders who generate forces. Additionally, although the RCN has its Maritime Atlantic Fleet (MARLANT) Commander dual-hatted as the CJOC Joint Force Maritime Component Commander (JFMCC) in a Force Employer advisor capacity, it has two fleets to force generate from and hence, two separate force generator Commanders.⁶⁷ As a result, that same RCAF Commander, the 1 CAD, JFACC and CANR Commander, can use their capacity to build a holistic EAO system as that individual is the main stakeholder; there is no other RCAF force-generating Commander with as many resources. In his book *Leading Change*, Kotter describes eight steps to implement organizational change. Step two is the need to form a powerful coalition.⁶⁸ With virtually no one in 1 CAD/JFACC/CANR Commander's way to build such a holistic system, forming a coalition should be achievable, and thus, the RCAF should grasp this opportunity to implement a data strategy for EAO.

This paper does not discuss in detail the specific data necessary in the three building blocks of EAO, their relationship, or the flow of information between individuals, as it would be very tactical and outside the scope of this paper. However, one must understand that no single tactical entity manages all ATFs within the CAF. Indeed, as mentioned above, ATFs are formed from units nationwide for specific missions and get dissolved once completed. While 2 Air Expeditionary Training Squadron is the Center of Excellence for Expeditionary Training, its role primarily involves conducting

⁶⁵ National Defence, '1 Canadian Air Division - Royal Canadian Air Force'.

⁶⁶ Ibid..

⁶⁷ National Defence, 'Royal Canadian Navy | Our Organization'.

⁶⁸ Kotter, 'Leading Change', 59.

standardized training for ATFs and supporting existing validation processes;⁶⁹ its mandate is not to solve ATFs issues but rather explain them to deploying forces. As a result, the RCAF does not improve its ability to manage EAO tactically.

To be clear, every Wing and Squadron will improve their ability over time, but the RCAF does not move forward in unison. The multiple ATF lessons learned referenced in this paper repeatedly highlight common issues, such as the lack of coordination and slow information flow. This widespread tactical problem affects multiple units within the larger organization, leading to operational implications and impeding the overall improvement of the RCAF. This is, therefore, an operational problem requiring a tactical entity to solve; it is not for 1 CAD to solve the issue, but for it to find a sub-organization to solve it.

Again, the RCAF C2 is well positioned, and 2 Wing, as the spearhead of the RCAF expeditionary capability,⁷⁰ should be given this task. Its mandate is to generate ATFs on short notice and be employed for the delivery of air power in deployed environments.⁷¹ Unlike other Wings, which have permanent domestic missions,⁷² all of 2 Wing's attention is geared toward EAO. It is, therefore, well-suited to lead the implementation of a data strategy on EAO in conjunction with key stakeholders on CAF digitalization, such as RCAF Qulliq. 2 Wing could build and maintain a governance framework and offer training for all ATFs. By doing so, 2 Wing can effectively position itself as the Center of Excellence for data management in EAO, ensuring that all ATFs receive the necessary guidance to accurately capture and process data throughout their operations. With the aid of an integrated EAO system, it is conceivable that a permanent team under 2 Wing could remotely support deployed ATFs in various capacities such as contracting, meteorology, request for effect management (RFE) or intelligence. Further and as explained in the author's paper on the need for a JFACC Tactical Support Element,⁷³ a team could even be empowered to C2, from 2 Wing, various Air

⁶⁹ National Defence, '2 Wing Force Employment Concept Version 2', 18.

⁷⁰ Ibid., 12.

⁷¹ Ibid, 7.

⁷² Royal Canadian Air Force, 'Wings and Squadrons - Royal Canadian Air Force'.

⁷³ Pigeon-Fournier, 'EVEN AIR TASK FORCES CAN WORK FROM HOME: THE NEED TO SUPPORT EXPEDITIONARY AIR OPERATIONS REMOTELY'.

Detachments across the country during an Operation Lentus. Indeed, a permanent team enabled via an integrated EAO system could form a remote ATF Headquarter and C2 multiple dislocated Air Detachments reducing the footprint of deployed personnel, a domestic version of ACE.

In summary, implementing a data strategy across the three facets of EAO is feasible for the RCAF. As shown with ADM(IE) IIMS, a system reducing standalone documents and increasing collaboration without requiring the complex overhaul of existing CAF-wide systems can be developed. Further, although the unique C2 structure of the RCAF poses some challenges in integrating the various elements of each ATF, it also allows opportunities for implementing a data strategy for EAO given the triple function of the 1 CAD/JFACC/CANR Commander and the distinctive role of 2 Wing.

CONCLUSION

In line with the CAF, the RCAF has serious challenges regarding its data. Fortunately, many policies oriented to addressing these issues were recently published. However, this push towards the better management of data will unequivocally require the prioritization of projects given the finite number of resources. The RCAF must understand that it lacks a comprehensive data strategy that incorporates the three facets of EAO: the Force Employment of resources, their Force Generation and the conditions of airfields. Further, it also needs to recognize that developing a data strategy for EAO should be a high priority, given that it would increase its strategic agility while being realistically feasible to implement.

One of the 2023 RCAF Commander's research topics is on organization used for expeditionary operations, and he asks: "Could improvements be made to the air-task-force or air expeditionary-wing concepts to aid in the global delivery of air power?"⁷⁴ While constantly challenging the status quo is necessary to strive as an organization, the organizational structure of EAO should not be questioned now. Next year will mark the centennial of the RCAF;⁷⁵ since its inception, it has innovated and harnessed technology to serve Canadians. This same commitment should be first put towards developing a data

⁷⁴ National Defence, 'Air and Space Power Research List 2022-2023', 3.

⁷⁵ Royal Canadian Air Force, 'RCAF 2024 Centennial'.

strategy for EAO; only then should the RCAF question its expeditionary structure. With the world becoming increasingly interconnected and complex, operating in any environment will require undivided attention to data. Let us first harness its power and then seek to Command and Control it.

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