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THE REQUIREMENT FOR INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE OCCUPATIONS IN THE CANADIAN ARMED FORCES

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AIM

1. With the current global focus on using Intelligence, Surveillance and Reconnaissance (ISR) to address the growing trend of hybrid warfare, there are a variety of Canadian Armed Forces (CAF) organizations heavily engaged in further developing an ISR capability. The Royal Canadian Air Force (RCAF), the Canadian Army (CA), the Royal Canadian Navy (RCN), the Canadian Forces Intelligence Command (CFINTCOM), the Canadian Joint Operations Command (CJOC) and the Canadian Special Operations Forces Command (CANSOFCOM) are all working on solutions to institutionalize ISR in the CAF. Although CJOC has been tasked by the Chief of Defence Staff (CDS) to take the lead with the recently released Joint ISR (JISR) doctrine in October 2015, the CAF may require more than just coordinated doctrine to address the increasing importance of ISR in today's battlespaces. Like many of its allies, the CAF may require a body of personnel completely dedicated to ISR as an occupation for officers and non-commissioned members (NCM) and not just a capability. It is reasonable to assess that newly created CAF ISR occupations would consist of predominantly RCAF personnel so as to benefit from its dedicated ISR assets and the many civilian and military personnel that are currently employed daily in the fields of ISR and Targeting.

INTRODUCTION

2. Many nations such as the United States and the United Kingdom agree with the new CAF JISR doctrine and 1 CAD ISR Directive that ISR is a battle proven process that has taken highest

priority in modern warfare.¹ Over the last 15 years the RCAF has recognized the growing demand for ISR and Targeting in expeditionary operations ranging from Afghanistan to Libya to Iraq and has been trying to keep on top of the demand for CP-140M Block IIIs, the nascent CH-148 capability, Non-Traditional ISR through CH-146 and CF-188s, and the delayed Joint Unmanned Surveillance Target Acquisition System (JUSTAS), on hold until the CAF purchases a new unmanned aerial system (UAS). There has even been discussions regarding establishing a Canadian Distributed Ground Station (DGS) that can be interoperable with allied DGSs. Those employed in the ISR field have been experiencing levels of stress leading to attrition due to the high demand jobs; the RCAF rarely has enough qualified or experienced personnel to keep up with the demand, especially now with Operation IMPACT. In contrast, the RCN sporadically deploys with the small UAV Boeing ScanEagle, using RCAF crew to exploit its imagery, for purely tactical ISR and the CA has been without a contract on its tactical CU-170 Heron since 2011.² Therefore, the RCAF is undoubtedly the leader in the CAF in regards to ISR employment.

3. ISR, however, is more than just the platforms and personnel that are currently employed in its capacity. It is also more than just the collection of full-motion imagery. It is defined by CAF Joint doctrine as:

An activity that synchronizes and integrates the planning and operation of all collection capabilities, with exploitation and processing, to disseminate the resulting information to

¹ Department of National Defence, CFJP 2-7, *Joint Intelligence, Surveillance, and Reconnaissance* (Ottawa: DND Canada, 2015), 1-1, Department of National Defence, *1 Canadian Air Division (1 CAD) Intelligence, Surveillance and Reconnaissance (ISR) Directive – Spiral One* (Winnipeg: DND Canada, 2016), 1 and Royal Air Force, “RAF Waddington,” accessed 28 January 2016, <http://www.raf.mod.uk/rafwaddington/aboutus/5acsquadron.cfm>.

² Conference of Defence Associations Institute, “Issues Analysis: Drones and the Canadian Forces,” last modified 5 February 2013, <https://www.cdainstitute.ca/en/blog/entry/issues-analysis-drones-and-the-canadian-forces>.

the right person, at the right time, in the right format, in direct support of current and future operations.³

Recent CAF operations have demonstrated that ISR platforms can even be used for Air Power as a deterrent as well as a collection and observation asset.⁴ In addition, ISR includes CAF ISR governance, selection and training, systems and software integration, information collection and storage, doctrine, and force employment.⁵ These issues have been identified by lessons identified from operations, the new JISR doctrine, the 1 CAD ISR Directive and the creation of a new Strategic Joint Staff targeting positions that the current 1 CAD Commander (Comd) will commence leading this summer. They remain somewhat contentious, however, as the various Level 1 (L1) organizations still cannot agree on terminology and employment of ISR assets as seen in their contradictory publications. These discrepancies could be mitigated by the establishment of an occupation under a Force Generator instead of as a capability under a Force Employer such as CJOC.

DISCUSSION

4. The roles and responsibilities of ISR Officers and NCMs would be similar to the current list of skills and tasks associated with ISR in the CAF. There would not necessarily be a requirement for the current Service Level Agreements (SLAs) between the various L1 organizations for mutual support as all training and support would be provided by one occupational authority. The occupations could also encompass the various other initiatives that the CAF is confronting including Targeting, Cyber, Information Management (IM) and

³ Department of National Defence, CFJP 2-7, *Joint Intelligence, Surveillance, and Reconnaissance* (Ottawa: DND Canada, 2015), 1-1.

⁴ Conference of Defence Associations Institute, "Issues Analysis: Drones and the Canadian Forces," last modified 5 February 2013, <https://www.cdainstitute.ca/en/blog/entry/issues-analysis-drones-and-the-canadian-forces>.

⁵ Department of National Defence, CFJP 2-7, *Joint Intelligence, Surveillance, and Reconnaissance* (Ottawa: DND Canada, 2015), 1-1.

Collection Management since they are all becoming increasingly integrated yet fall under varying occupational authorities. As with many NATO partners that are creating ISR as a trade, and not only under their air forces, CAF ISR Officers and Operators would be responsible for many tasks. The main tasks would include ISR mission planning; airborne and ground-based management and operation of ISR information and processing systems; identifying, acquiring and analyzing ISR tasks; acoustic intelligence collection; providing electronic warfare and ISR threat warning; ISR data management; ISR network coordination; ISR publications and skills currency management; and the processing, exploitation and dissemination (PED) of ISR information.⁶ Moreover, in the United States Cyber ISR accounts for the majority of Cyber operations and new RCAF direction stresses the criticality of integrating space and Cyber operations with its ISR capabilities.⁷ These tasks are currently split amongst various trades including Intelligence Officers, Signals Officers, Communications and Electronics Engineering (Air) Officers, Air Combat Systems Officers, Intelligence Operators (Int Ops) and Airborne Electronic Sensor Operator (AESOPs), Naval Electronic Sensor Operator (NESOPs), and Aerospace Telecommunications and Information Systems Technicians (ATIS Techs), along with countless civilian jobs. This division of labour often leads to confusion over who is responsible for what task or skill and redundant training amongst differing trades.

⁶ Department of the Air Force, *Career Field Education and Training Plan Intelligence Officer Specialty AFSC 14NX* (Washington, DC: Department of the Air Force, 13 February 2013), 9.

⁷ *Ibid.*, 17 and Department of National Defence, *1 Canadian Air Division (1 CAD) Intelligence, Surveillance and Reconnaissance (ISR) Directive – Spiral One* (Winnipeg: DND Canada, 2016), 2 and 8. The 1 CAD ISR Directive defines the “1 CAD Processing, Exploitation and Dissemination (PED) Imagery Analysts (IAs) Section/dedicated PED element” as “a unit of qualified sensor analysts performing the processing, exploitation and dissemination (PED) of collected ELINT, FMV[Full Motion Video] and SAR [Synthetic Aperture Radar] imagery at the operational level, with both a domestic and expeditionary mandate. .. A dedicated PED element can be deployed in support of an expeditionary operation based on immediate tactical needs and the state of the deployed CIS infrastructure.”

5. Combining the myriad of ISR tasks into one trade would allow for a dedicated cadre of personnel for ISR, Targeting, and Cyber all belonging to one Occupational Authority for force generation. This would alleviate some of the issues the CAF currently faces trying to source multiple personnel from multiple commands with conflicting mandates. CAF ISR would clearly be a trade that would work in the joint environment, although it is recommended that the occupation falls under the RCAF as opposed to another L1 such as CFINTCOM since the RCAF already has many qualifications for ISR jobs. Other nations have established the occupation or function in all environmental commands such as the British Army, which has established the 1st ISR Brigade (Bde) incorporating Regular and Reserve Battalions.⁸ Due to the CAF's smaller size and joint nature, however, it would be more logical to have the occupation reside within one environment such as the RCAF with the ability to support all L1s as it does now with its other air assets and personnel.

6. As directed by the Prime Minister, the CAF will be transitioning to a leaner organization with more specialized focus on future missions. In this regard, minimizing the number of various occupations required to achieve an ISR effect into one domain will streamline new initiatives such as ISR, Targeting and Cyber in keeping with the Prime Minister's guidance. These new positions could be offset by some of the positions currently set aside for ISR jobs in the JUSTAS project. Additionally, the positions within the RCAF that are designated ISR or perform a purely ISR or Targeting function, such as PED Analysts in the Combined Aerospace Operations Centre (CAOC), can be converted into an ISR Officer or Operator in order to allow for employment at the tactical, operational or strategic level and career progression in the occupations. Furthermore,

⁸ British Army, "The Intelligence Corps," accessed 28 January 2016, <http://www.army.mod.uk/intelligence/>.

as these jobs are technologically advanced, they should appeal equally to a diverse Canadian population, which would assist the CAF in its recent endeavour to revitalize recruitment.

7. The establishment of a new trade is a complex procedure that does not always address the real issue, which in this case is generating a competent ISR capability that can be integrated into combined operations. Designing a system with multiple functional authorities controlled by an operational headquarters may not be adequate for a capability of this order though. As it stands right now there are a minimum of six different organizations involved in the management of RCAF ISR: the 1 CAD ISR Functional Integration Team Chair is the Comd of 14 Wing Greenwood, but is supported by 1 CAD A2, A3, A6 and is responsible for SLAs with the Canadian Forces Electronic Warfare Centre and Communications Security Establishment Canada for Electronic Intelligence, the Canadian Force Joint Imagery Centre for Imagery Intelligence and with the RCN for Acoustic Intelligence. This arrangement is just for the RCAF and does not include the many other arrangements and SLAs that CJOC will also have to manage in order for ISR to function smoothly in combined and integrated operations.⁹ Additionally, the rigours of ISR analysis require a strict selection process driven by CAF Personnel Selection professionals in order to choose those who will be resilient enough to withstand the mental requirements of this unique task on both domestic and international operations. Furthermore, this capability is most often of a strategic nature although the tasks are performed at the operational level. Therefore, there needs to be a way for the highest echelons of the Canadian Government to directly impact how the occupation is managed and employed, which is difficult to achieve when there are many stakeholders involved.

⁹ Department of National Defence, *1 Canadian Air Division (1 CAD) Intelligence, Surveillance and Reconnaissance (ISR) Directive – Spiral One* (Winnipeg: DND Canada, 2016), 8-9. These pages further detail that other organizations in the CAF perform level 2 and level 3 PED that will be linked with the 1 CAD or CAOC PED sections for a federated CAF PED structure to coordinate ISR data.

Training

8. The specific training requirements for ISR jobs are incredibly expensive and subject to skill fade if not tested regularly. Some aspects of ISR individual training is currently captured in the RCAF training budget, including Pilot Training, ATIS Training, AESOP Training and PED (a combination of imagery and full motion video analysis¹⁰) Training. Additional ISR Training required for the management and planning of ISR and Targeting operations, however, includes courses that are not taught in Canada such as the United Kingdom Qualified Weapons Instructor ISR Course, which is six months long at Royal Air Force Waddington and includes instruction on ISR theory, sensors, the PED of Radiofrequency Intelligence, Signals Intelligence, Measurement and Signature Intelligence, Imagery Intelligence (IMINT), ISR Management, ISR tactics, Space Operations, Cyber, Targeting, UAS ISR, Land Information, Surveillance, Target Acquisition and Reconnaissance, and Maritime ISR.¹¹ This British training, or a shorter but more exclusive American version of it, is required in order for CAF members to work competently in a coalition CAOC. The high cost of this training and the amount of time required to complete it make it cost prohibitive since the training is the same length or longer than many CAF basic qualification courses, yet the ISR specialist is only at the unit for a limited number of years before being posted to an entirely different job. Furthermore, having the qualification and not performing the job is like obtaining pilot wings and not flying; it takes continual technical individual and collective training through all developmental periods to gain the necessary skills to effectively perform full spectrum ISR tasks.

¹⁰ Department of National Defence, *CDI Functional Direction - Training and Qualification Requirements for Motion Imagery Intelligence Analysts*, (Ottawa: Chief of Defence Intelligence, 2010), 2.

¹¹ Ministry of Defence, *Qualified Weapons Instructor ISR Course*, (Royal Air Force Qualified Weapons Instructor ISR Directing Staff Course Synopsis Pamphlet, 2012).

Communication and Information Systems

9. Along with an increased training budget, unless the RCAF is able to put a significant amount of money into Information Management (IM) there might be limits in regards to the RCAF becoming the champion of the ISR occupation in the CAF. Connectivity issues between the four environments (including CANSOFCOM) in the CAF are due to differing communication and information systems (CIS) requirements that often become detriments to delivering accurate and timely information for decision-makers.¹² The CAF's JISR doctrine accurately details that a proposed CIS architecture "not only consists of computer hardware, software, and communications paths, but it also includes, and in fact is under-pinned by, technical and operational standards."¹³ These standards are pointless, however, if the CAF cannot acquire the compatible hard and software required to facilitate ISR in joint and combined operations. If the RCAF were to inherit the management of the ISR occupations and function, however, it should be able to procure all of the associated CIS that could then be distributed amongst the other LIs for their use.

Doctrine

10. The abundance of NATO, Allied and CAF ISR doctrine will be useful in the creation of a new ISR occupation in the CAF. Unfortunately, the doctrine varies depending on the country or environment. Although these variations are minor, some such as the differences in the exploitation of imagery between the CAF JISR doctrine and the RCAF 1 CAD ISR Directive released 19 January 16, are quite diverse and can lead to discrepancies and redundant or

¹² Department of National Defence, B-GA-402-000/FP-001, *Canadian Forces Aerospace Sense Doctrine* (Trenton: Canadian Forces Aerospace Warfare Centre, 2012), 11.

¹³ Department of National Defence, CFJP 2-7, *Joint Intelligence, Surveillance, and Reconnaissance* (Ottawa: DND Canada, 2015), 2-11.

incomplete reporting. For example, the JISR Doctrine explains that there are only three levels of exploitation while the 1 CAD ISR Directive attests that there are four.¹⁴ This may lead to gaps in the accuracy of CAF ISR reporting. If, however, a force generating L1 such as the RCAF is given Functional Authority over CAF JISR in its entirety, it can promulgate the doctrine, training, and CIS standards required on behalf of all of the CAF. It should then attempt to take the inputs from all ISR consumers to ensure that the doctrine agreed upon is applicable to all. Since the majority of ISR in the CAF is an RCAF task, it is logical that RCAF ISR best practices would form the base of future CAF Joint doctrine to ensure that discrepancies are kept to a minimum.

CONCLUSION

11. ISR is the future of warfare and its prominence in the CAF will only continue to increase. Having one champion of ISR in the CAF working on behalf of all commands and L1 organizations in order to coordinate the various aspects of ISR would ensure that the way ahead for CAF ISR is a synchronized process that satisfies all needs. The creation of occupations fully dedicated to ISR and its co-dependent functions of Targeting and Cyber Operations is an invaluable benefit to the future of CAF ISR. Although these occupations would serve a Joint capability in the sense that they would be available to all environments and L1 organizations in the CAF, the most practical home for these occupations would be the RCAF due to its overwhelming mastery of ISR in the CAF.

¹⁴ Department of National Defence, CFJP 2-7, *Joint Intelligence, Surveillance, and Reconnaissance* (Ottawa: DND Canada, 2015), 3-7 to 3-8 and Department of National Defence, *1 Canadian Air Division (1 CAD) Intelligence, Surveillance and Reconnaissance (ISR) Directive – Spiral One* (Winnipeg: DND Canada, 2016), A-2/3. The JISR Doctrine pages above also define Exploitation as “the analytical process of converting single-source data collected by JISR assets in to usable tactical, operational, and or strategic information and intelligence.”

RECOMMENDATIONS

12. It is recommended that the RCAF is granted the Occupational Authority for newly created ISR Officer and ISR Operator occupations in the CAF due to its experience in all levels of ISR, its existing directives and occupations that are almost exclusively ISR related, and the fact that it is the environmental command with the most specialists currently immersed in this field.

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