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RENAISSANCE GUNNER: A STUDY OF GENERALIST AND SPECIALIST APPROACHES OF THE ROYAL REGIMENT OF CANADIAN ARTILLERY

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JCSP 46

Service Paper

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PCEMI 46

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CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES

JCSP 46 – PCEMI 46

2019 – 2020

SERVICE PAPER - ÉTUDE MILITAIRE

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Word Count: 2480

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AIM

1. The aim of this service paper is to provide an analytical study into the debate on whether artillery officers should be trained as specialists within the sub-disciplines of air defence artillery (ADA), field artillery (FA), and surveillance & target acquisition (STA) artillery or as artillery generalists, capable of commanding any or all three sub-disciplines.

INTRODUCTION

2. Over the last two decades, the Royal Regiment of Canadian Artillery (RCA) has faced many challenges that have had real impact on officer training to include technological advances in fire direction and control, target location, weapon systems, as well as the attrition of ground-based air defence (GBAD) systems. As a result, the RCA ceased to run ADA gunner and officer courses, reorganized direct support artillery units to include institutionalized STA sub-units, established a new “general support” regiment, specialized the non-commissioned officer (NCO) corps, and adopted the colloquial “one cap badge” attitude toward officer training, education and professional development. Since the formal Artillery Transformation parade in 2010, debate over specialization and generalization of artillery officers has been fierce. This service paper will examine the pros and cons of each theory, historical examples, and provide a homogenous recommendation of how to best employ both theories given the contemporary conditions within which the RCA finds itself.

DISCUSSION

3. It is prudent to begin with a definition of specialist and generalist within the military context. A US Army review of education and training for officers defined a specialist as “an officer whose training, education and utilization are geared to the need for applying a narrowly definable body of subject matter expertise in the performance of his duties.”¹ The same US Army review defined a generalist as “an officer whose primary efforts are involved in the management of more than one specialty field.”² These definitions are appropriate for this discussion as they are easily transferable to the context of an artillery regiment, made up of many specialties, and its commanding officer (CO). In such case, the CO represents the generalist while his/her subordinate commanders lead different specialties.

4. Since the training and developmental goals of junior officers is to be future COs, it is easy to see through the definitions why the RCA would lean towards generalizing the artillery

¹ US Department of the Army. *Review of Education and Training for Officers (RETO)*, Vol 4. Washington: Government Printing Officer. 1978, glossary-6.

² *Ibid.* P R-4-7.

officer corps. In fact, other militaries have already explored this concept and have produced interesting and often competing conclusions. The United State Marine Corps (USMC) has been a force who traditionally celebrate their generalist approach to training. Every officer is a marine first and always but some will develop into AH-64 pilots, engineers, artillery officers, and so on. Unlike the US and Canadian armies, the USMC has been examining this debate from the other side: should they become more specialized? However, for over 200 years, the USMC has not changed their generalist attitude. Instead they have determined that, “the most effective specialist is one who is thoroughly competent in his own field through training, education, and experience, but who also is a knowledgeable generalist with a strong understanding of many disciplines.”³ This USMC conclusion is frequently found within a range of US Army studies, reviews, and discussions over the same subject. Senior US Army leaders have routinely pointed to the USMC when supporting their arguments for the amalgamation of trades, reforming professional military education, and evolving officer training. One such officer was Colonel Mark McDonald who proposed the question in the *Field Artillery Journal*, “is it time for the ADA and FA to merge?”⁴ He applauded the USMC generalist approach and used it as an argument to merge ADA and FA officers into one general artillery branch. His arguments were given even more support at the time by the US Army chief of staff, General Peter Schoomaker when he declared that “we [the US Army] need to move away from single-event athletes and single-event formations to more of a pentathlete or decathlete model for formations and individuals.”⁵ However, critics to McDonald pointed out that taking the generalist attitude toward education and training and applying them to the merger of two specialties was not in the artillery’s best interest.

5. The US Army has attempted to combine artilleries (be it field, costal, air defence, or missile defence) on eight different occasions in its 243-year history. Some attempts were unsuccessful but a few were ratified in Congress but eventually abandoned.⁶ Two such moments were the decisions to unify FA and ADA in 1950 followed by the decision to split them up again in 1968.

6. After the Second World War, the US was rapidly demobilizing its military and reorganizing its smaller professional army. Senior leaders explored options for minimizing the military while maintaining essential capabilities across the force. In their efforts, they determined that anti-aircraft artillery (AAA) as well as costal artillery could merge with FA. In the late 1940s, the army proposed their amalgamation plan up to congress and in anticipation of approval they proactively combined the three artillery schools. Their artillery conference produced a new creed that artillery officers “were first to be expert as ground force officers, second as artillery officers,

³ Allan A. Cocks. “Tinker, Tailor, Soldier, Specialist” in *Marine Corps Gazette*. Dec 1992; 76; 12; ProQuest, 40.

⁴ COL (P) Mark McDonald. “Is it Time for the ADA and FA to Merge?” in *The Field Artillery Journal*. January – February 2006, 8.

⁵ James Kitfield. Interview with Peter Schoomaker, “Changing and Fighting Simultaneously,” in *The National Journal*, Vol 36, Issue 44, p. 3300.

⁶ COL Samuel R. White, Jr. US Army. “Transformation of the Artillery Branches.” Pennsylvania: US Army War College. 2007, 6-12

and lastly as generalists on all artillery systems and weapons.”⁷ In 1950 the Army Reorganization Act was approved by congress and artillery officers were “bound together ... under one insignia.”⁸ Over the next 18 years, two major conflicts in Korea and Vietnam put this new concept to the operational test.

7. Three days after signing the Army Reorganization Act the Korean War began. US artillery officers found themselves assigned to either FA or AAA in Korea, regardless of their background or personal strengths. Their lack of expertise in their cross-disciplined field was quickly apparent. One Korean war FA veteran recalled, “I remember the succession of willing but bewildered AAA majors and captains who came into our headquarters under the non-discriminating “Arty” label which seeks to be all things to all artillerymen. There are just so many S1 and S4 jobs.”⁹ Other leaders, however, noted that as the war progressed and artillery units remained relatively static, integration and training did improved. They went on further to describe that integration at the colonel-general level and junior officer levels was working but considerable challenges in branch experience, necessary to achieve mission success, was plaguing the captain to lieutenant-colonel levels. Senior army leaders blamed the branch leadership for foot-dragging. They didn’t believe that the challenges were a result of the merger but instead poor leadership.¹⁰ Subsequently, the two branches remained merged through to the Vietnam War.

8. In the years leading up to Vietnam, technology had rapidly advanced and introduced new levels of complexity to the unified artillery branch. Missile technology and integrated air defence radar transformed AAA into modern ADA. Further, rockets and ground-to-ground missile systems evolved and became increasingly important within the FA arsenal, along with self-propelled guns. Surveillance and target acquisition pieces became integral to both FA and ADA sense capabilities. While proponents for integration had traditionally pointed at guns and missiles as the common ground for ADA and FA, the complexities of modern weapon systems, missiles, and sensors had stretched the concept of ‘an expert of one missile being an expert on all missiles’ to the point of lunacy. Clearly the properties, characteristics, and employment of FA missiles is significantly different from, say, a ballistic or cruise missile. Yet, in 1965 the US artillery once again went to war with generalist gunners.

9. For reasons similar to Korea as well as the abovementioned evolutions in gunnery, artillery leaders immediately identified the limitations of cross-trained officers.¹¹ They were refused from serving in FA or ADA depending on their background or once again relegated to non-operational positions such as S1 or S4 officers in artillery headquarters. By 1967, army journals began to flood with opinions and testimonials for why the branches should split. In

⁷ *Ibid*, 8.

⁸ Brigadier General Charles E. Hart. “Integration of the Artilleries,” in *Military Review*, Vol XXIX, November 1949, 22.

⁹ Major William W. Cover, USA, “Letter to the Editor,” in *The Army Combat Forces Journal*. March 1995, 8

¹⁰ White. 2007, 9-10

¹¹ *Ibid*, 12

response, the US Army established a branch study under Colonel A.D. Pickard where he discovered that “artillery integration has never measured up to its advanced billing. Not one of the benefits envisioned at its conception have been realized.”¹² The following year, General Order No. 25 was signed and ADA was assigned as a basic branch of the Army, splitting from FA permanently.

10. The value in this case study is not to recap what the US Army had gone through as means of predicting where the RCA is headed. The two armies are too dissimilar for reasonable contrast. Instead, the value is in interrogating *why* the generalization of artillery officers had failed. The reasons for which are very relevant for the RCA. There are two key themes to the US artillery’s failed experiment with generalization. The first is mission and role of FA and ADA. The second is the nature of the speciality and its employment on operations.

11. Though Canadian artillery officers stand under one cap badge and motto, they do not necessarily stand under the same role and mission. The role of the air defence is “to prevent the enemy from interfering from the air with our operations on the ground,”¹³ while the role of the field artillery is “to destroy or neutralize the enemy with indirect fire as part of the all arms battle.”¹⁴ The US examined these different roles through the lens of their warfighting functions, which are “a group of tasks and systems (people, organizations, information, and processes) united by a common purpose that commanders use to accomplish missions and training objectives.”¹⁵ They determined that ADA and FA occupy different warfighting functions; protect the force and fire support, respectively. These warfighting functions transpose into Canadian doctrine as well via the shield and act functions. Though Canadian doctrine applies the functions more fluidly than the US, shield and act are nevertheless separate functions and considerations at the operational and strategic levels.

12. The doctrinal argument is less important than the discussion at which levels these functions are carried out. FA officers are expected to operate in the close fight, as direct support artillery officers intimately support manoeuvre operations with fire direction, control, planning, and intelligence. ADA “must extend its reach upward, as part of a regional, or national, or theater, or global air and missile defense network.”¹⁶ Tactical level air defence (such as man-portable air defence systems) may have tactical-control relationship with manoeuvre forces, but they are still part of the overarching integrated air defence plan. Otherwise, it has no other relationship or interaction with manoeuvre.¹⁷ Even with Canada’s limited ADA capability (assuming that GBAD does arrive as part of *Secure, Strong, Engaged*), Canada’s contribution

¹² US Army. Department of Defense. “The Artillery Branch Study.” Morris Sweat Technical Library. Oklahoma: Fort Still. 1966, 115

¹³ Canada. Department of National Defence. “Artillery.” <https://army.ca/wiki/index.php/Artillery>, retrieved 23 Oct 2019

¹⁴ *Ibid.*

¹⁵ US Army. Department of Defense. Field Manual 5-0.1. *Joint Operations Process*. Washington, DC. 2006, 1-5

¹⁶ White. 2007, 16

¹⁷ *Ibid.*

approach to warfare would see Canadian ADA assets being imbedded within a combined joint task force's integrated air defence plan. The coordination of which would be held at the highest levels. Therefore, ADA officers are expected to work within an entirely different context, function, mission, and task than FA officers.

13. To this point the discussion has been pro-specialist when addressing ADA and FA. However, STA has developed in Canada as a complex but critical capability requiring its own analysis. As mentioned above, both FA and ADA employ STA as a capability, albeit with different technology and systems. The US Army has not explored this speciality with the same energy as it has with ADA and FA simply because it sees STA as a function of all trades. Again, that is not dissimilar to the Canadian Army as every combat arm has STA tasks and complementary equipment; from special optics to reconnaissance forces to unmanned aerial systems. In other words, STA is an organic part of both FA and ADA as they represent the sensor in the sensor-to-shooter link. Both artilleries must use a complex suite of target acquisition systems in order to be relevant on the battlefield. FA must use hostile artillery locating systems, for example, to effectively counter enemy artillery. ADA must be part of an integrated system of acquisition radars and sensors in order to effectively shoot down enemy aircraft.

14. Artillery officers must therefore be well versed in both the sense and shooting aspects of either FA or ADA. Commanders of FA and ADA units are required to synergize the efforts of all specialities within each branch and must therefore be generalist in their approach. The key to success for these commanders is in the generalization of their training and education throughout their careers. Being too focused on one area of fire support or air defence, such as the gun/GBAD group, inhibits the commander's ability to appropriately weigh priorities as part of the unit in operations. An ADA or FA officer who does not have a functional understanding of the sensor portion of the sensor-to-shooter link, is not a well rounded gunner.

CONCLUSION

15. Generalist theory has built up great momentum over the last few years, specifically beyond the military context. David Epstein's book *Range: Why Generalists Triumph in a Specialist World* is a best-seller and significant proponent to generalist theory. However, taking him out of context poses significant risk to the health and effectiveness of FA and ADA within the RCA as was the case in for the US Army in 1950. Instead, FA and ADA must separately embrace generalist theory and produce officers who can command a wide range of sub-specialities within their units.

RECOMMENDATIONS

16. Given the considerations for the foundational differences between FA and ADA, the RCA should maintain separate MOSIDs for field and air defence artillery officers. Each trade must be capable of producing experts, stewards, and innovators to ensure that future adaptation,

relevance, and growth are maintained. In order to do so, the RCA must encourage separate centers of excellence for FA and ADA in the form of dedicated instructor-in-gunnery programs. Both trades must then become more generalist in their training to include comprehensive understanding of target acquisition, fire support and control, as well as tactical employment of FA or ADA weapons systems.

17. Canada has shown that it has an appetite for furthering the technological capabilities of the artillery. This continues to lead to the procurement of cutting edge technologies that extend beyond the comfort zones of tube field artillery and short-range air defence. Currently, there is no doctrinally sound organization or infrastructure to house, develop, and employ these capabilities. The 4th Artillery Regiment General Support is becoming inundated with competing mandates. They are responsible for operational level radar, tactical level airspace coordination, tactical unmanned air systems, and potentially GBAD and ground-to-ground rocket artillery. Meanwhile, the basic artillery officer training is anchored around towed FA. Reorganizing air defence weapons and target acquisition systems back into holistic air defence regiments needs to be considered in the near future. Sub-units responsible for GBAD, medium range radar (MRR), small unmanned air system, airspace coordination, and potential rocket artillery will not be able to operate simultaneously at the tactical and operational levels performing different and sometimes mutually exclusive operational functions (such as the MRR in air sense versus ground sense modes). The RCA needs two specialty branches, each with their own generalist officers.

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