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Two of the Canadian Army's prominent intellectuals from the inter-war years, Lieutenant-Colonel (later General) H.D.G. Crerar, and Lieutenant-Colonel (later Lieutenant-General) E.L. M. Burns, pictured here in Italy, 1944.

Left Out of Battle: Professional Discourse in the Canadian Armed Forces

by Howard G. Coombs

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The nature of war has not changed, but that which surrounds and enables war has.[1]

~Major-General Walter M. Holmes, MBE, OStJSB, MSM, CD

Introduction

After a presentation on his experiences as a United Nations peacekeeper in the Middle East and Cyprus, one of the Royal Military College of Canada (RMC) students in the audience asked Major-General (Retired) Walter Holmes what one should study to ready oneself for the challenges of current and future operations. To this question, Holmes in part answered with the above statement. This response prompted a degree of introspection, and later, class discussion. That further exchange concerned the nature of the contemporary security environment, and, more importantly, how one could become cognizant of those issues that were important to the Canadian profession of arms. This was all very interesting, as I was at the time researching an article on the counterinsurgency debate in the United States, and what similar discussion was happening in Canada. Surprisingly, I had discovered little indication that demonstrated substantive Canadian debate around perceived issues with counterinsurgency, and certainly nothing that mirrored the heated dialogue that had occurred, and is still ongoing, within the American military. My research question then changed from "what?" to "why?"- Why was there a lack of similar professional debate in Canada concerning how we conducted warfare in Afghanistan, particularly since the cost of our involvement was so high.[2] From there, the line of inquiry became broader, to encompass the idea of Canadian Armed Forces (CAF) professional discourse and why did it not seem to evidence itself in any consistently-discernable or institutionalized fashion. The absence of such indicators helps

demonstrate that the CAF looks to other militaries for guidance regarding key aspects of the profession of arms, and that intellectual tradition has existed, to a greater or lesser extent, from the earliest years of the Canadian services.

Ludwig Fleck and Thomas Kuhn – Theories of Intellectual Change

Ludwik Fleck, a Polish doctor who examined the philosophy, sociology, and history of science, advocated the concept of "thought collective," which he defined as those who were participants in a definable and collective structure of thought, generated by an esoteric circle of authorities, or experts. This group communicates knowledge with other practitioners and interested parties to solicit feedback on their views. Knowledge passes from the inner to outer circles and back again so this cycle is strengthened and collectivized. Fleck believed that this complex open system of exchange can at times create a weakening of existing systems of beliefs and encourage new discoveries and ideas.[3]

Fleck suggested that all participants in thought collectives have shared ownership of experience and theories, and, therefore, changes in knowledge are most likely during periods of confusion when dissonance exposes differences between competing belief systems, and eventually produces new thought styles in an effort to address perceived inconsistencies.[4] It must be noted that in the Canadian context, the absence of structured and progressive evolutionary change within the bodies of knowledge can be indicative of, at times, the overwhelming influence of thought collectives formed by allied military practitioners in the United Kingdom or the United States.

In a similar manner to Fleck, theorist Thomas Kuhn emphasized the relationships within and between professional groups as being necessary to the creation and migration of knowledge. He utilized the concept of the paradigm to include communities of scientific practitioners who share common beliefs, as well as to describe the shared belief, or theory. His thoughts concerning paradigm shifts describe the process by which practitioners change the paradigms that provide their mental frameworks. Kuhn proposed that over time anomalies gradually appear, which cannot be explained by the existent paradigm through "normal" science and these incongruities prompt new research and eventual reconstruction of the field in a manner predicated upon a need to account for the previously unexplainable irregularity.[5] Kuhn believed that paradigms are necessary to focus research, and that the true sign of a mature science is a continuous transformation from one paradigm to another through successive paradigm shifts produced by scientific revolutions.[6] He also believed that as the new paradigms, or schools of thought, gain credence and attract practitioners, the older paradigms and communities of practitioners disappear. Specialized journals, the activities of groups of practitioners and demands for specific professional curricula, such as that in staff colleges, are associated with the implementation of new paradigms.[7]

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Canadian Forces College Toronto.

The Role of Staff Colleges

Related to these ideas is the content of professional military education. If one wishes to understand a nation's interpretation of war and other conflict, one must understand the professional education of that nation's military. A firm grasp of the professional education of the military is vital because this learning shapes the activities of a nation's military by providing paradigms to interpret war and other conflict. The composition and provenance of such education plays an important role in the formation of specialized military competencies that permit the profession of arms to perform its primary function – the structured use of violence on behalf of the state.[8] Canada's military has adopted three discernible paradigms in the material used in its professional military education. These have been derived from the allied influence and the experience of conflict since the 19th Century. The creation and manifestation of these paradigms in Canadian staff education stemmed from British, then Canadian, and, more recently, American influences.

"If one wishes to understand a nation's interpretation of war and other conflict, one must understand the professional education of that nation's military."

It would be inaccurate to conceptualize staff colleges merely as military technical institutions. Rather, staff colleges are holistic in their curriculum, and reinforce the professional aspects of the profession of arms; empiricism, administration, and specialized knowledge.[9] Staff colleges also provide students the opportunity to form relationships with other military practitioners, both instructors and students. The professional relationships created in this fashion also include alliance and coalition partners who send instructors and students to each other's institutions. This transnational[10] community has bonds that facilitate the transmission of professional knowledge between connected militaries.

One could opine from this discussion of theories of intellectual change and the relationship of staff college curricula as indicators that the emergence of new ideas pertaining to military knowledge and practice would be indicated by vigorous debate in a myriad of forums – public and professional. Conversely, the absence of Canadian discourse, coupled with knowledge change within Canada's profession of arms indicates that the discussion had likely occurred elsewhere prior to Canada adopting those ideas.

Canada's Imperial Military – Supporting the *Pax Britannica*

Dr. Doug Delaney, an RMC professor and former infantry officer, recently published *The Imperial Army Project: Britain and the Land Forces of the Dominions and India, 1902 – 1945*, which explores the relationship of Canada's military, primarily the Army, to that of the British Empire.[11] Delaney's study of this relationship is a detailed examination of the Imperial ties that bound the Dominions to the Empire. This was a common theme with Canada's professional soldiers even after the First World War.

In 1935, Lieutenant-Colonel Kenneth Stuart, editor of *Canadian Defence Quarterly* (*CDQ*) and a future Canadian Chief of the General Staff (CGS), produced a draft article entitled "Canada and Imperial Defence – The Application of the Principles of Imperial Defence," which he intended to publish in the CDQ.[12] Stuart believed that each nation of the British Empire had a responsibility for Imperial defence, at least in broad terms, and each had to be prepared to render "mutual support" when the military and political situation demanded. Stuart defined mutual support as assistance that might be provided to the United Kingdom or any other "important part of the Empire" in times of war.[13]

These discussions had roots that reached back to the Edwardian era, when political and military authorities from Britain and the Dominions met during a succession of colonial and Imperial conferences to discuss closer military cooperation. In 1907, a resolution was passed to create an Imperial General Staff to coordinate with and advise the land forces of the empire through local sections in member countries. The 1909 conference commitment to standardize as much as possible the equipment, organizations, and operating procedures of the military forces of Britain, India, and the Dominions also furthered the aim of Imperial cooperation. Canadian military historian George Stanley argues that the 1909 agreements "had one aim, that of making the Canadian militiaman into a replica of the British Territorial Tommy in arms, training, equipment, and habits of thought."[14] These conferences continued throughout the interwar years as a discussion forum for Imperial defence, among a vast array other issues, and the Imperial General Staff did its best to extend its influence throughout the empire.

Staff colleges were crucial to producing qualified staff officers, as well as creating, implementing, refining, and preserving specialized professional knowledge. Canada needed staff-trained officers for its Permanent Force, so from 1903 onward, the Dominion sent selected officers to the British Army Staff College at Camberley, where they trained up to GSO I level. In the system of staff appointments used at that time, the lowest grade general staff officer was a GSO III, normally holding the rank of captain, who assisted more senior appointments. The usual GSO II was one rank higher, and customarily, a major in charge of a portion of a staff, or supporting a more senior-ranked staff officer. At the highest level was a GSO I, typically a lieutenant-colonel, but could be of higher military rank depending upon the size of the organization. The Militia List of 1914 indicates that eight serving officers had passed staff college (psc), and another four were in the process of completing their training.[15] The material taught at staff colleges created, among practitioners, a collective understanding of how a military organization or its components were intended to operate in a chaotic world. By the early 20th Century, some of this material had been formally codified for the armies of the Empire in the *Field Service Regulations* (1909). Canadians accepted that the British would supply guidance, operating procedures, and principles with respect to military matters. They had agreed to the cooperative agreements of the Imperial conferences. Besides, the small size

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General "Harry" Crerar just before going to France, 1944.

of the Canadian militia worked against the creation a Canadian separate staff education system or a uniquely Canadian staff college. And it would have been bad for Imperial cooperation. Lieutenant-Colonel H.D.G. (Harry) Crerar, also a future Chief of the General Staff (CGS) and First Canadian Army commander during the Second World War, was not alone in thinking that he could "…imagine no worse blow to the practical assimilation of the Military Forces of the Empire than that each Dominion should have its own Staff College."[16] The implication was that a distinct national staff college would feed a distinct national army and therefore erode Imperial ties.[17]

The Imperial cast of the Canadian Militia was mirrored in its more recently- created sister services, the Royal Canadian Navy (RCN), established in 1910, and the Royal Canadian Air Force (RCAF), created in 1924. Both these elements looked to their British counterparts, the Royal Navy (RN) and the Royal Air Force (RAF), for guidance and assistance in professional matters. Members of the RCN attended RN institutions for professional education and advanced training, while the RCAF followed suit with the RAF.[18]

If there was one noteworthy Canadian initiative during these inter-war years, it was the establishment in 1923 of the professional journal, *CDQ*. The existence of this journal demonstrated a desire to establish discourse on defence issues.[19] The Chief of the General Staff, Major-General J.H. MacBrien, a 1914 graduate of Camberley, had noted the need for a service publication in Canada that would attempt "…to reflect military thought, examine critically the direction of military development, and study in some degree the trend of world movements" and *CDQ* grew from that need.[20] One example of the intellectual engagement it engendered was a lively dialogue which took place between Lieutenant-Colonel E.L.M. "Tommy" Burns (later a Lieutenant-General and Corps Commander, as well as being responsible for the initial United Nations Expeditionary Force I), and Captain G.G. (Guy) Simonds (later a Lieutenant-General and Chief of Staff of the Canadian Army), in 1939 as to the correct balance of tanks and infantry in a division for the best achievement of flexibility and interoperability.[21] Both men were staff college graduates, Simonds from Camberley in 1937, and Burns from Quetta in 1928.[22] However, it is necessary to emphasize that while this discussion has been quoted numerous times, it followed on from discussions that had already taken place in Europe.[23] In retrospect, the *CDQ* was an especially significant journal with regard to professional knowledge, since its establishment acknowledged that there might be a distinctive "school of military thought" in Canada that was separate from its Imperial counterpart.[24] However, this prediction was not fulfilled until after the Second World War with the emergence of a distinctly-Canadian paradigm in staff education as a result of the experiences of the Canadian military during that conflict. Regardless, it is evident that in the late-1930s, *CDQ* assisted in creating and maintaining a degree of discourse within the professional community of the Canadian military, albeit for the most part, discussions that reflected the Imperial relationship.[25]

"If there was one noteworthy Canadian initiative during these inter-war years, it was the establishment in 1923 of the professional journal, *CDQ*."

Lieutenant C.E. Nye/DND/LAC/PA-171701

Lieutenant-General "Tommy" Burns, General Officer Commanding 1st Canadian Corps, consults a map enroute to Rimini, Italy, 23 September 1944.

DND/Library and Archives Canada/1967-052 NPC

(Left to Right) Lieutenant-General Guy Simonds, Field Marshal Bernard Montgomery, and General Harry Crerar in consultation.

Renaissance and Decline

The Second World War created momentum for the education of the Canadian military, and it had a positive impact upon the degree of professional introspection generated. Britain could not support the education and training of a greatly-expanded Canadian military, and, as such, national institutions were created to address that need. Furthermore, the post-Second World War discussion that took place within the Chiefs of Staff Committee seemed to indicate that from 1939 to 1945, there had been a lack of interoperability between the RCN, the Canadian Army (CA),[26] and the RCAF. This shortcoming was attributed to the development of a "single-service" focus. Consequently, the form of future Canadian professional military education was debated during November 1945. These inter-service deliberations revolved around the perceived need for a *unified* versus *single service* education. Through this discussion, the decision was made that the services would continue to provide staff education for junior and intermediate officers. Still, the requirement for a jointly conducted staff education at the senior officer level was highlighted.[27] This need was later addressed, albeit at a higher level of education than envisioned in these original discussions, with the establishment of the National Defence College (NDC) three years later.[28] From this immediate post-war discussion, one can discern that the Chiefs of Staff of the respective services recognized that professional military education needed to contain the knowledge gained during that conflict. In turn, this understanding of the necessity to include those lessons impacted the content of the curriculum of both the Canadian Army and the RCAF Colleges. Throughout the post-war years, the RCN addressed its need for staff officers by sending a small number of students to the Canadian Army and the RCAF Staff Colleges, as well as the Royal Navy Staff College in Greenwich.[29]

To a certain extent, it seems as if post-war inter-service cooperation was determined by the RCAF, whose correspondence during and after the Second World War demonstrated that they vigorously sought the involvement of both the RCN and the CA in the RCAF war staff courses. While the Army also conducted similar activities, the same breadth and depth of primary sources pertaining to this subject does not exist. One might be able to attribute these initiatives to the legacy of cooperation with the Empire imbued within the pre-war staff army college system.[30]

On the other hand, the origins of staff education in the RCAF lay within the more recent RAF College at Andover.[31] Much of the early RAF curriculum was broad in nature, focused upon producing progressive officers versed in the employment of their newly-formed air force. The first commandant of the RAF Staff College, Air Commodore H.R.M Brooke-Popham, later the wartime Supreme Commander Far East, observed that the curriculum was designed to develop "…the habit of steady reading and thinking rather than…the acquisition of a mass of detail."[32] One can argue that this flexible and strategic intellectual approach, combined with the ongoing needs

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Air Chief-Marshal Robert Brooke-Popham with General Archibald Wavell in the Far East, 1941.

of Land-Air (in early years sometimes known as Army-Air),[33] Combined[34] and Joint[35] Operations of the Second World War, created a desire to integrate other services as much as possible into the curriculum of the RCAF War Staff Courses, which commenced in 1943.[36] Wartime curriculums had a pronounced emphasis upon understanding those with which they would have to *operate*, and those they would have to *fight*.

Consequently, while during the Second World War both War Staff Courses had instructors and students of the other services and taught about each other's service, it was the RCAF that – due to the nature of their operations, ranging from *strategic* to *tactical*, with a multi-service and multi-nation perspective – had a much more integrated and wide-ranging philosophy of professional education. It was not a vision of education focused upon a single service. At the end of the Second World War, the RCAF began designing future longer courses that had significant elements of inter-service knowledge, land-air cooperation, and combined operations. The first of these longer courses commenced immediately after the war, in October 1945. Initially six months in duration, in 1948, this staff education was extended to ten months. These ten-month RCAF courses continued until 1966, when the impending unification of the Canadian services into a single military force initiated the commencement of transition courses at the newly created inter-service Canadian Forces College (CFC).[37]

After the Second World War, the CA established a staff course that was conducted on an annual basis and had a ten month duration.[38] Its purpose was the same as that of the war staff courses and pre-war staff colleges, and was *narrowly* but *precisely* defined as, "...to train officers for second grade [GSO II] appointments in field and static formations."[39] While the ten month criterion reflected the duration of other Commonwealth staff colleges, the CA course eventually become almost two years in length, between 1959 and 1965, as a result of a desire to teach all aspects of conflict, nuclear and non-nuclear. However, with unification of the Canadian military in 1966 the course was reduced back to ten months until 1973, when the final restructuring of staff education resulted in CA students becoming part of the Canadian Forces professional development system for this level of staff education. Despite this change, a junior version of the CA staff course continued from 1974, and it still exists.[40]

The RCN students who participated in RCAF staff education saw this professional experience of value. In 1945, Lieutenant Commander J.E.M. Hoare, Royal Canadian Navy Volunteer Reserve (RCNVR), who was attending a wartime RCAF staff course, opined: "My colleagues here are a good bunch and the course is well worthwhile."[41] In 1955, the RCN requested additional vacancies from the RCAF.[42] This support for RCN participation at the RCAF Staff College continued, and in 1957, the RCN chose to focus their priorities for staff education upon the RCAF Staff College.[43] By 1965, the RCN was utilizing a *number* of RCAF professional education opportunities.[44]

"The RCN students who participated in RCAF staff education saw this professional experience of value."

Perhaps this can be attributed to the RCAF view of professional military education. In the years after the Second World War, the RCAF had embraced a philosophy of holistic education to develop a breadth and depth of competencies necessary throughout an officer's career. This educational construct was formed in a manner akin to that of the United States Air Force "Air University" concept.[45] By the 1960s, this included oversight by RCAF Training Command, an Air Force College Headquarters, based at the RCAF Staff College, the Staff College, the RCAF Staff School, used to qualify officers for squadron command, and an Extension School, which allowed graduates of the RCAF Staff School to qualify for Staff College.[46]

CFJIC/DND photo ISC93-10411

Members of "A" Squadron, Royal Canadian Dragoons, stop for lunch and a chat with local villagers on patrol near Mataban, Somalia, in 1993.

During this time, discussions began over combining the three services and their professional education systems. It was recognized that integration would create mixed staffs of navy, army, and air force officers, who all needed an understanding of joint operations. Thus, a joint education system was of concern to all. Accordingly, in December 1964, the Vice Chief of the Defence Staff (VCDS) directed that a study be conducted "…to determine the staff officer training requirements for the services with the object of introducing an integrated staff course in September 1966."[47]

In 1965, the VCDS Working Group produced a short report on the future of staff education for the Canadian Forces. This report marked the demise of single service staff colleges. The RCAF Staff College was deemed the best organization to serve as a model for a centrally-run professional education system. In 1966, the RCAF Staff College became the Canadian Forces College. The goal of this new organization was to provide a comprehensive Officer Development System for all Canadian services.[48]

The Diminution of Professional Discussion

In the absence of joint doctrine and the dismemberment of what had been a thriving Canadian professional military education system, Canada looked towards the United States, which had supplanted Great Britain as her primary ally. The effects of utilizing United States sources for doctrine and education can be discerned in 1977 CFC curriculum guidance to its directing staff. The syndicate discussion concerning the American Joint Planning Process (JPP) included a query with respect to the relevance of learning a foreign planning procedure. The notes provided as instructor guidance stress that this seminar is designed to bring students to the conclusion that, given the absence of a corresponding Canadian system, this American process was the desired option.[49]

While the courses offered by the Canadian Army and the RCAF staff colleges were created using the Canadian knowledge painfully gained over years of conflict, the curricula retained some of its British heritage, and also absorbed increasing American content. Some of this inherited alchemy was lost in the 1970s. In the absence of Canadian joint professional military knowledge following unification, that of the United States was used. One example of this was the 1995 adoption and teaching of the "operational level of war" verbatim from American doctrine, with little discussion or comprehension of its implications.[50] The result was a Canadian unified force that did not "own" aspects of its own professional knowledge, with a commensurate impact upon the coherence of its professional capability.

The incidents in Somalia resulted in the Commission of Inquiry into the Deployment of the Canadian Forces (CF)[51] to Somalia (1993-1997). Some of its results pertained to academic and professional education. By the late-1990s, ministerial direction

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Clouds of smoke rise over Manhattan as the twin towers of the World Trade Center in New York collapse, 11 September 2001. More than 3000 people were killed in the 9/11 attacks, including those killed in the Pentagon strike and the occupants of the hijacked aircraft.

was issued that raised academic requirements for officers and expanded professional military education. The former created a "degreed" officer corps, while the latter increased professional requirements. The gap in professional military education caused by the 1994 closure of the National Defence College in Kingston led to the approval and establishment of the Advanced Military Studies Course (AMSC) and the National Strategic Studies Course (NSSC) at the Canadian Forces College in Toronto in 1998. These two separate courses have since been combined into the ten-month senior leadership National Studies Program. Mid-level leaders were educated at the then-Canadian Forces College Command and Staff Course, which was revitalized to become the Joint Command and Staff Program. For the Army, with its Staff College in Kingston, the post-1972 five-month Canadian Land Forces Command and Staff Course for junior officers has become a much-shortened Army Operations Course. Both the Navy and Air Force have taken steps to revitalize professional development for officers in the first part of their careers. Furthermore, these changes have not been confined to the officer corps; the Non-Commissioned Member Professional Development program in St.-Jean, Quebec, was created in 2003, and is focused upon the professional education of NCOs in the broader, non-service or trade specifics. Throughout the same period of educational reform, steps were taken to ensure that all officers had an undergraduate degree and access, if needed, to postgraduate education. All this was done in an effort to ensure that the CAF leadership was intellectually able to deal with the complexities of the 21st Century security environment.

"The 9/11 terrorist attacks provided the Canadian government with the impetus to reestablish defence and security credentials with the Americans…"

Despite this intent, these initiatives were still nascent or had not yet been enacted when Canada became involved in Afghanistan. The 9/11 terrorist attacks provided the Canadian government with the impetus to reestablish defence and security credentials with the Americans, which took the form of a military contribution to Operation *Enduring Freedom*. Whether knowingly or not, Canada became bound to a commitment that inexorably grew with time and more inextricably bound us to our American allies. In a similar fashion to the adoption of the operational level of war, our use of United States counterinsurgency doctrine in Afghanistan demonstrates the continuing prevalence of the American influence on the Canadian profession of arms.

Fight to Win ~ First Battalion Princess Patricia Canadian Light Infantry in action in the Panjway District of Afghanistan during the summer of 2006.

Conclusion

> "We steal things from other countries because they 'sound cool' or they worked in a past war and we put them in our doctrine without ever developing the foundation (intellectual base, experience, understanding, etc.) and they are never incorporated properly…"[52]
>
> ~Email from a Canadian Senior Officer 2017

This snippet from a recent email sums up the crux of the problem. The CAF is not intellectually inquisitive regarding the knowledge required by the Canadian profession of arms. The hallmarks of paradigm change are absent from alterations to professional knowledge. Both Ludwik Fleck and Thomas Kuhn emphasized the role of concurring practitioners in the spread of knowledge. The Canadian military, as likeminded professionals, have prior to the Second World War and in the years since Unification adopted the perspective of its major ally in professional matters. This unquestioning assimilation of a foreign viewpoint has had a corresponding and continuing impact, not only upon the professional education of the Canadian military, but more importantly, upon the intellectual approaches utilised by its senior leaders and commanders when planning military activities in response to national direction, and in effect, determining the Canadian Way of War.[53]

In military terms, the phrase "left out of battle" denotes the percentage of the unit strength deliberately not included in high-risk operations, and would, if the worst occurs, be the elements upon which a unit could be reconstituted. It is evident from the articles in professional journals, such as the *Canadian Military Journal*, discussions via emails and social media, as well as other interactions, that the desire for professional discourse exists, but that it needs to be operationalized by the senior leadership, both the General/Flag officer and Chief Warrant/Chief Petty Officer senior appointments of the CAF. They are not only institutional leaders, but "Stewards of the Profession of Arms."Their active participation in professional and public discourse could be much increased and could provide an example for all. Furthermore, it is necessary to promote common understanding of Canadian military knowledge, along with integrated structures that encourage such examination and dissemination over the course of a career.[54]

Without an invigoration of dialogue in both public and military spheres, the professional understanding of the CAF will continue to be taken from our primary allies. As Canadian historian and Korean War veteran Bill McAndrew observed when discussing the unhesitating 1995 adoption of the American vision of the operational level of war: "Trying to absorb foreign doctrines second-hand will be as fruitless as transplanting tropical plants in the tundra."[55]

This article is respectfully dedicated to the memory of Dr. Bill Bentley, MSM, CD, who devoted many years to enhancing Professional Development within the Canadian Profession of Arms.

I would like to thank Lindsay M. Coombs for her assistance in the editing of this manuscript.

NOTES

1 Major-General (Retired) Walter M. Holmes, "Cyprus 1970 (UNFICYP) and Egypt 1978 (UNEF II): Chapter 6, United Nations Operations," in *History in English*, p. 362; and History of Peacekeeping since 1980 (presentation, Royal Military College of Canada, Kingston, Ontario, 9 March 2018).

2 Between 2001 and 2014, Canada suffered 162 fatalities in Afghanistan. That constitutes one per 407 active duty military personnel. See "Appendix B: Coalition Fatalities in Afghanistan," in Stephen Grenier and Gale Mattox, (eds.), *The Politics of Alliance: Coalition Challenges in Afghanistan* (Redford City, CA: Stanford University Press, 2015), p. 308.

3 Ludwik Fleck, *Genesis and Development of a Scientific Fact*, with a foreword by Thomas S. Kuhn, Thaddeus J. Trenn and Robert K. Merton (eds.), translated by Fred Bradley and Thaddeus J. Trenn. (Chicago: University of Chicago Press, 1979; reprint 1981, original edition Basel, Switzerland: Benno Schwabe & Co., 1935), pp. 100-105.

4 Fleck, pp. 123-124.

5 Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 3rd Edition (Chicago: University of Chicago Press, 1996), pp. 84-85.

6 Kuhn uses the idea of a scientific revolution to describe the processes and effects of a paradigm shift. *Ibid*., pp.12-15 and 89-90.

7 *Ibid*., pp. 18-19.

8 Lieutenant-General Sir John Winthrop Hackett, *The Profession of Arms – The Lees Knowles Lectures for 1962* (London: The Times Publishing Company Limited, 1962), p. 3.

9 See David Kahn, "Note: The Prehistory of the General Staff," in *The Journal of Military History*, Vol. 71, No. 2 (April 2007), pp. 499-504.

10 "Transnational" is used in the sense of operating between or outside national borders.

11 See Douglas E. Delaney, *The Imperial Army Project: Britain and the Land Forces of the Dominions and India, 1902 – 1945* (Oxford: Oxford University Press, 2017).

12 Canada, Library and Archives Canada (LAC), MG 30-E157, vol. 11, file 3, "Henry Duncan Graham Crerar Fonds – Royal Military College Files – 958C.009 (D210) Private Papers Liaison Lt-Col Stuart (re C.D.Q)," Letter from Crerar to Stuart, 6 March 1935, with amended "Canada and Imperial Defence – The Application of the Principles of Imperial Defence."

13 *Ibid*., Quote from page 3 of the enclosure.

14 Canada's Army at that time was the Permanent Active Militia, also known as the Permanent Force, while what is now the Canadian Army Reserve was the Non-Permanent Active Militia. George F.G. Stanley, *Canada's Soldiers 1604–1954: The Military History of an Unmilitary People* (Toronto: McClelland and Stewart, 1996), pp. 302–303 and 304. Quote from page 304. Also, at the conference of 1909, there had been tabled a proposal to combine all the forces of the Empire into one army. Gwynne Dyer and Tina Viljoen, *The Defence of Canada: In the Arms of the Empire 1760–1939* (Toronto: McClelland and Stewart, 1990), pp. 177–178.

15 Brigadier General (Retired) James D. Hittle, United States Marine Corps, *The Military Staff: Its History and Development*, 3rd Edition, (Harrisburg, PA: The Stackpole Company, 1961), p. 160; C.P. Stacey, "The Staff Officer: A Footnote to Canadian Military History," in *Canadian Doctrine Quarterly* Vol. 3, No. 3 (Winter 1973/74), p. 46.

16 Originally a speech presented to the Royal United Services Institute Canada: "The Development of Closer Relations between the Military Forces of the Empire," 31 March 1926. Canada, LAC, MG 30-E157, vol. 11, file 4G, "Henry Duncan Graham Crerar Fonds – Royal Military College Files." Later published as Lt.-Col. H.D.G. Crerar, "The Development of Closer Relations between the Military Forces of the Empire," in *Journal of the Royal United Services Institute,* Vol. 71, 483 (August 1926), pp.451–62, quote from page 452, and also published in *Canadian Defence Quarterly* (*CDQ*) 3 (July 1926), pp. 423–32.

17 For discussion of the development of a national army in the post–Second World War years, see Peter Kasurak, *A National Force: The Evolution of Canada's Army, 1950–2000* (Vancouver: UBC Press, 2014); and Stephen J. Harris, *Canadian Brass: The Making of a Professional Army, 1860–1939* (Toronto: University of Toronto Press, 1988).

18 The RCN and RCAF official histories provide a great amount of insight into this relationship. See William Johnston, William G.P. Rawling, Richard H. Gimblett, and John MacFarlane, *The Seabound Coast: The Official History of the Royal Canadian Navy, 1867-1939, Volume 1* (Toronto: Dundurn Press, 2010); and also, W. A.B. Douglas, *The Creation of a National Air Force: The Official History of the Royal Canadian Air Force Volume II* (Toronto: University of Toronto Press, 1986).

19 J.L. Granatstein, *The Generals: The Canadian Army's Senior Commanders in The Second World War* (Toronto: Stoddart Publishing Co. Limited, 1993), p. 260.

20 "Editorial," in *Canadian Defence Quarterly* (*CDQ*), Vol. 10, No. 2 (January 1933), p. 135; and Canada, Department of National Defence (DND), Directorate of Heritage and History (DHH) Archives, file 530.03 (D1), "Folder listing personnel who have attended Staff Courses, gradings obtained, files applicable to Courses, received from DMT, Aug 1962," "Canadian Officers – Camberley."

21 See Lieutenant-Colonel E.L.M. Burns, "A Division That Can Attack," in *CDQ,* Vol. 15, No. 3 (April 1938), pp. 282-298; Captain G.G. Simonds, "An Army that can Attack – a Division that can Defend," in *CDQ,* Vol. 15, No. 4 (July 1938), pp. 413-417; also Major Jamie W. Hammond, "The Pen Before the Sword: Thinking About 'Mechanization' Between The Wars," in *Canadian Military Journal,* Vol. 1, No. 2 (Summer 2000), pp. 100-101.

22 Canada, DND, DHH Archives, file 530.03 (D1), "Folder listing personnel who have attended Staff Courses, gradings obtained, files applicable to Courses, received from DMT, Aug 1962," "Canadian Officers – Camberley," and "Canadian Officers – Quetta."

23 See Brian Bond and Martin Alexander, "Liddell Hart and De Gaulle: The Doctrines of Limited Liability and Mobile Defence, in *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*, Peter Paret with Gordon A. Craig and Felix Gilbert, (eds.) (Princeton, NJ: Princeton University Press, 1986), pp. 598-623.

24 "Editorial," in *Canadian Defence Quarterly* (*CDQ*), Vol. 10, No. 2 (January 1933), p. 135.

25 *CDQ* published between 1923 and 1939, and later between 1971 and 1997.

26 The name "Canadian Army" replaced "Militia" in the autumn of 1940. Colonel C.P Stacey, OBE, "The Development of the Canadian Army: Part IV: The Modern Army, 1919-1952," in *Canadian Army Journal* (*CAJ*) Vol. 6, No. 4 (September 1952), p. 16.

27 Canada, DND, DHH Archives, file 193.009, "C.S.C. Copies of Memorandum Chiefs of Staff Cttee, vol 48, Nov 45," "Extracts from Minutes of 338th Meeting of Chiefs of Staff Committee Held 9 Nov 45" ; and Canada, DND, DHH, file 2002/17, vol. 54, file 3, "Joint Planning Committee – Minutes to Meetings and Correspondence, Vol 4, May 1946 to Feb 1947," "Memorandum to D. I.," and "Integration of Service Staff Duties and Nomenclature" (17 February 1947).

28 For Canadians, NDC replaced the Imperial Defence College (IDC).

29 Canada, DND, DHH Archives, File number 82/189, "Memorandum from Chief of Personnel to CDS, P 4500-26 (DT) dated 16 December 1965," "Integrated Staff Training" (Ottawa: Canadian Forces Headquarters, 11 January 1966), p.1; For discussion of RCN staff education philosophy, see Canada, LAC, RCN, "Training and examinations – Officers – General courses – Canadian Army Staff College – Kingston, Ont. 1942-1949, (vol 1)" RG24-D-1-c, vol. 34413, file 4902-121/516.

30 Canada, LAC, CASC "Org and Adm – Canadian Army Staff College. 1947-1948," RG24-C-1-c. vol. 35859, file 2001-81/1, (Vol 1), "CMHQ CoS 2/CWSC/1 (DCGS) 'Post-War Staff Trg Policy' 5 Apr 45," p. 2; "DMT 8401-17 'War Office Staff Trg Policy – Post War'8 Feb 46," p. 2.

31 Allan D. English, "The RAF Staff College and the Evolution of RAF Strategic Bombing Policy 1922-1929" (MA thesis, Royal Military College of Canada, 1987), p. 22; The RCAF, established in 1924, had by 1937 sent 22 officers to Andover for the staff course.W.A.B. Douglas, *The Creation of a National Air Force: The Official History of the Royal Canadian Air Force Volume II* (Toronto: University of Toronto Press, 1986), pp. 63 and 145; and Canada, LAC, RCAF Staff College, "Training – Royal Air Force College Courses – Policy. 1931-1942," RG24-E-1-c, vol. 35535, file 452-85/2-1 (Pt 4) for discussion of RCAF attendance on the RAF staff course.

32 English, "The RAF Staff College and the Evolution of RAF Strategic Bombing Policy 1922-1929," pp. 31, 34 and 45. Quote from page 34.

33 One description is "The application of air power to intimate working with land forces…" Canada, DND, DHH, United Kingdom, "Land/Air Warfare Pamphlet No. 1 – Air Support General," (reprint Canada) November 1947, 87/205, 12; About 15 years later, the description remains similar, "Land operations depend for success upon the assistance of air power. A proportion of our air forces will therefore be specially equipped, organized and trained to provide air support to armies in the field for joint land/air operations." Canada, DND, DHH Archives, Canada, "Canadian Army Manual of Training (CAMT 1-25) Land Air Warfare (1962))," 82/119, p. 1; Also, Canada, LAC, CASC "Org and Adm – Canadian Army Staff College. 1947-1948," RG24-C-1-c. vol. 35859, file 2001-81/1, (Vol 2), "CGS HQ74-117-1 (Trg 3a), 'Change in Commencement of Course Canadian Army Staff College,'" 24 Mar 47," p. 1.

34 Definition – "Combined Operations – land, sea, air of one Nation." Canada, LAC, RCAF Staff College "Visits and inspections – Reports on visits – RCAF Staff College. 1943-1944," RG24-E-1-c, vol. 17794, file 818-107-70/5, "Notes on Visit to RAF Staff College – June 25 – 29/44."

35 Definition – "Joint Operations – as by two or more allies." Canada, LAC, RCAF Staff College "Visits and inspections – Reports on visits – RCAF Staff College. 1943-1944," RG24-E-1-c, vol. 17794, file 818-107-70/5, "Notes on Visit to RAF Staff College – June 25 – 29/44."

36 William R. Shields, "Canadian Forces College History Project – Canadian Forces Command and Staff College: A History 1797-1946 – Draft (Final Edited Version)" (Toronto: Canadian Forces College (CFC), 1987), 3-6/9 to 4-8/30.

37 Canada, Canadian Forces College, "The History of the College,"pp. 3-6.

38 Lt.-Col. R.T. Bennett, "The Canadian Army Staff College Course, 1948," *The Royal Military College of Canada Review: Log of H.M.S. Stone Frigate* (1948), p. 53.

39 Canada, Fort Frontenac Library, Canadian Army, Canadian Army Routine Orders (CARO) vol 13, nos 6303-6646, "6630 – The Canadian Staff College."

40 Canada, CLFCSC, "SC 1325-2027 (Comdt) 4500-1 (Comdt), Army Staff and Related Courses, 13 Feb 81," p. 1; and same document, "Annex A – Course Dates" [In possession of the author].

41 Canada, LAC, RCN, "Training and examinations – Officers – General courses – RCAF [Royal Canadian Air Force] Staff College – Toronto, Ont. 1946-1950 (Vol 1)," RG24-D-1-c, vol. 34412, file 4902-121/12, "Memorandum to: D. of P., R.C.A.F. Staff Course, 16th March 1945."

42 Canada, LAC, RCAF Staff College, "Training – RCAF Staff College. 1955-1961 (Vol. 10 1955-61)," RG24-E-1-c, vol. 32882, file 450-70/5, "NSS 4970-4 Vol. 3, Memorandum To: Chief of the Air Staff, RCAF Staff College 1955-56 Course, 01 April 1955."

43 See discussion in Canada, LAC, RCN, "Training and examinations – Officers – General courses – Royal Naval Staff College – Greenwich, England.1954-1961 (vol 2)," RG24-D-1-c, vol. 34413, file 4902-121/258.

44 Canada, DND, "A Program for Professional Military Education for the Canadian Defence Force – A Report by the Working Group 19 March 1965" (Ottawa: National Defence Headquarters, 19 March 1965), p. 8.

45 For discussion of the United States Air Force Air University concept and its possible relationship to the RCAF, see, Canada, LAC, RCAF, "Training outside RCAF Resources – US Armed Forces Staff College – Courses. 1944-1950," RG24-E-1-c, vol. 35536, file 452-85/3-1 (Part 4).

46 See Canada, DND, "A Program For Professional Military Education For The Canadian Defence Force – A Report by the Working Group 19 March 1965" (Ottawa: National Defence Headquarters, 19 March 1965), pp. 8-9; Canada. LAC, Canadian Forces Medical Service (CFMS), "Canadian Forces Medical Service – Regulations & Orders – Canadian Forces Organization Orders," RG 24-B-2, vol. 1845, file 2-6145-12 Vol. 2, "F 1901-4352/8 (DO) dated 3 October 1966," and "Canadian Forces Organizational Order 1.8 – Canadian Forces College, Toronto," p. 1; Email from Cathy Murphy, Chief Librarian, Canadian Forces College to Author (Tuesday, 14 October 2008, 12:24 PM); and Canada, Department of National Defence, *Officer Career Development Program*.

47 Cited in Canada, DND, "A Program for Professional Military Education for the Canadian Defence Force – A Report by the Working Group 19 March 1965" (Ottawa: National Defence Headquarters, 19 March 1965), p. 1 [In possession of the author].

48 Canada, LAC, CFMS, "Canadian Forces Medical Service – Regulations & Orders – Canadian Forces Organization Orders," RG 24-B-2, vol. 1845, file 2-6145-12 Vol. 2, "F 1901-4352/8 (DO) dated 3 October 1966;" and "Canadian Forces Organizational Order 1.8 – Canadian Forces College, Toronto."

49 Canada, DND, CFC Archives, "JOPS/JPP/DI 1," in "JOPS/JPP/SG Canadian Forces Command and Staff College – Command and Staff Course 4 1977/1978 – Joint Planning Process."

50 See Howard G. Coombs, "In the Wake of a Paradigm Shift: The Canadian Forces College and the Operational Level of War (1987-1995)," in the *Canadian Military Journal*, Vol.10, No. 1 (Spring 2010), pp. 19-27.

51 The name "Canadian Forces" (CF) was changed back to "Canadian Armed Forces" (CAF) in 2013.

52 Email from Canadian Senior Officer (18 December 2017 1:53 PM). [In possession of the Author]

53 For readings concerning postmodern operational thought in Canada, see Allan English *et al*. (eds.), *The Operational Art – Canadian Perspectives: Context and Concepts* (Kingston: Canadian Defence Academy Press, 2005).

54 In some ways, this was the goal of the proposal put forward at Canada, Department of National Defence, Canadian Defence Academy, "Institutional Leadership 2030 (IL 2030): A Road to Institutional Excellence" (2016).

55 William McAndrew, "Operational Art and the Canadian Army's Way of War," in B.J.C. McKercher and Michael A. Hennessy, (eds.), *The Operational Art: Developments in the Theories of War* (Westport, CT: Praeger Publishers, 1996), p. 97.