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Educating the Canadian Forces:

The Introduction of the Operational Level of War

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Educating the Canadian Forces: The Introduction of the Operational Level of War

The inclusion of the operational level of war as an underpinning of professional military education has been accepted by the US Army, the German Army and the Soviet Army. It is believed that this concept also has a place in the CF and particularly, in the CFSC [Canadian Forces Command and Staff Course] curriculum.¹

– Colonel E.R. (Ted) Nurse

These seemingly innocuous words written by the Director of Land Studies at the Canadian Forces College (CFC) in 1987 heralded the only significant paradigm shift to take place in Canadian military thought since the Second World War. The operational level was a notable departure from how the Canadian Forces (CF), particularly the Army understood and conducted war. Nurse's statement acknowledged that the complexity of modern warfare had increased to such an extent that new ideas from other armies were displacing older concepts and it was necessary that Canada follow suit.²

The resultant paradigm shift occurred as hypothesized and adhered to the model advocated by theoretician Thomas Kuhn.³ Its rapid acceptance and institutionalization from primarily American, German and Soviet sources demonstrates that the Canadian military identified itself as part of a larger group of military practitioners, who shared fundamental beliefs and values.⁴ But that wider community was not as inclusive as the initial proposal would have one believe. Upon analysis and reflection it is clearly evident that in large part this paradigm shift was determined by the military relationships of the Cold War. For Canada this meant that the introduction and implementation of the operational level of war was determined in large part by ideas advocated by the United States Army.

Kuhn's ideas, while oriented towards scientific research, emphasize the presence of a sociological factor as being necessary to the creation and migration of knowledge. He utilizes the concept of the paradigm to include groups who share common beliefs, as well as to describe that shared belief, or theory. His concept of a paradigm shift describes the process by which practitioners change their belief systems or paradigms. Change occurs as anomalies gradually appear that cannot be explained by the existing paradigm and this in turn prompts new research to clarify the previously unexplainable anomaly.⁵ Kuhn proposes that a continuous transformation from one paradigm to another through successive paradigm shifts is normal.⁶ He also believes that as the new paradigms, or schools of thought, gain credence and attract practitioners the older paradigms disappear. Specialized journals, groups of practitioners and demands for specialized curriculum are also associated with the implementation of new concepts.⁷

The paradigm shift connected with the operational level of war could not have taken root without the approval of the Officer Professional Development Council (OPDC). This Council provided recommendations on selected facets of the Officer Professional Development (OPD) system, such as curriculum matters, course objectives, recommendations on the career aspects

of professional development policy, integration of doctrine and organizational development.⁸ It was a body with considerable influence in Canadian military education and as a result determined the body of knowledge taught within the curriculum of the staff colleges.

Accordingly the proposal that was forwarded by the CFC to the OPDC for its general meeting at National Defence Headquarters (NDHQ) on 22 April 1987 was designed by Land Studies instructors to permit the Staff College a great deal of flexibility in the adoption of this new idea of the operational level of war. It was also intended to facilitate dissemination of the results of this initiative throughout the Canadian military. CFC recommended to OPDC that:

- a. the concept of the operational level of war be officially recognized;
- b. the CFCSC be authorized to develop a CF position on the concept of war at the operation level in its curriculum; and
- c. the CFCSC be authorized to develop a CF position on the concept of war at the operational level in consultation with NDHQ [National Defence Headquarters], FMC [Forces Mobile Command] and CLFCSC [Canadian Land Forces Command and Staff College] staffs.⁹

Also noteworthy is the opening sentence of that paper: “During *the past four years* [emphasis added] the Army staff at the CFCSC have become increasingly aware of a new dimension in Western military thinking, that is the concept of the operational level of war.”¹⁰ This coincides with the publication of the 1982 version of the United States Army Field Manual *FM 100-5 Operations*, which clearly articulated to American officers that warfare is a “national undertaking” and “must be coordinated from the highest levels of policy making to the basic levels of execution.” It then laid out the “Levels of War” and for the first time clearly delineated the operational level of war:

STRATEGIC

Military strategy employs the armed forces of a nation to secure the objectives of national policy by applying force or the threat of force. Military strategy sets the fundamental conditions for operations...

OPERATIONAL

The operational level of war uses available military resources to attain strategic goals within a theater of war. Most simply, it is the theory of larger unit operations. It also involves planning and conducting campaigns. Campaigns are sustained operations designed to defeat an enemy force in a specified place and time with simultaneous and sequential battles...

TACTICAL

Tactics are the specific techniques small units use to win battles and engagements which support operational objectives...Tactics involve the movement and positioning of forces on the battlefield in relation to the enemy, the provision of fire support of forces prior to, during and following engagements with the enemy...¹¹

Accordingly, the operational level of war put forward in 1982 by *FM 100-5* existed to provide an orderly conceptual process to reconcile the politics of strategy with the violence of tactics and had various gradients ranging from the interface of operations and tactics to that of strategy and operations. It also implied the arrangement of engagements, battles and, ultimately, campaigns over time and geographical space to achieve strategic ends and thus addressed the nature of conflict in the twentieth century.

The formulation of doctrine concerning the operational level of war was prompted in the United States Army through the efforts of General William E. Depuy, Commander of the United States Army Training and Doctrine Command (TRADOC), with the publication of the 1976 version of *FM 100-5*.¹² While the operational level was not explicitly discussed in it, that edition represented a significant departure from previous editions of the manuals by focusing on the future. It caused a great deal of intellectual ferment by attempting to describe how the American Army would fight wars in the modern age.¹³ Its emphasis on technology and the necessity of integrating the various operational specialities of the Army into a coherent whole, in addition to other initiatives, made the United States Army care about doctrine.¹⁴ The resultant debate culminated in the revised 1982 edition and initial articulation of the operational level of war.¹⁵

This movement towards a new paradigm of conducting warfare was the result of the catastrophic effect that the Vietnam War had on the United States Army, particularly its collective psyche.¹⁶ The generations of officers that continued to serve in the post-Vietnam period were determined that its lessons would not be lost. They took action to revolutionize the American way of war to ensure the military, particularly the Army, would be equipped, trained and structured to meet the challenges of the modern age.¹⁷

As a result, the emergent ideas of the *FM 100-5* series were not confined to the desks of doctrine writers but engendered open discourse amongst these senior officers providing the writing guidance, their staffs, the larger community of American military practitioners, and, surprisingly, civilian officials and academics.¹⁸ In a move towards creating acceptance General Don A. Starry, who was the Commanding General of TRADOC between 1977 and 1981, took the unprecedented step of engaging government defence officials and politicians, in addition to noted scholars, like futurist Alvin Toffler.¹⁹ This dialogue further expressed itself in a myriad of articles in professional journals.²⁰ However, unlike dissention regarding the 1976 edition of *FM 100-5*, the numerous activities that surrounded the introduction of the 1982 version made certain the United States Army addressed the issues raised by critics of the earlier edition and ensured acceptance of the newer adaptation, while at the same time ensuring a successful paradigm change.²¹

Canadians were not isolated from these thoughts. For instance, Starry presented briefings to visiting Canadian officers at a time when he was actively promoting the emergent concepts contained in the 1982 version of *FM 100-5*. On 22 February 1982 he spoke to students of the Canadian National Defence College, who were touring McDill Air Force Base, Florida on the topic of “The Air Land Battle,” and a few days later to the CFC, at Toronto, on Joint Canadian/ United States defence, “REDCOM/JDA Joint Procedures.”²² While the latter presentation was oriented towards the fifty or more plans that were held by Readiness Command and the Joint Deployment Agency, there would have undoubtedly been discussion of military methods that would support these plans, to include the newest innovations in American Army doctrine. Starry took the opportunity presented by being at the CFC to re-affirm the existence of the close links that existed between the American Army and the Canadian equivalent, Mobile Command. While discussing the necessity of joint planning and implementation Starry noted, “In fact, we practice them. The Commander of the Canadian Forces Mobile Command is coming to see me. A good friend of mine – Gen [eral] Charlie Belzile who is coming to see me next month – we are going to sit down and talk about that fine US-Canadian Defense Plan.”²³

There was an audience receptive to these new American ideas in Canada. Colonel Nurse, who drafted the initial OPDC documentation, outlined the measures taken by the United States Army to institute operational doctrine and thought. He noted that the curriculum of the United States Army Command and Staff College at Fort Leavenworth, Kansas had been amended to include operational concepts and problems; on top of that an additional year had been added to the course for selected students to further refine their understanding and ability to adapt and apply this doctrine to the “changing conditions of combat.” He also described the American use of centralised headquarters exercises in Europe and the United States to inculcate this new doctrine of the operational level of war in high level army formations. Nurse pointed out the related “cerebral outburst of thinking” that had taken place in professional journals affiliated with the United States military.²⁴

These ideas not only migrated from American military practitioners to their Canadian colleagues through lectures like Starry’s and periodicals, but also via military-to-military contact like exchange postings to the United States services and attendance at American professional military education institutions. For example, Nurse was a 1980 graduate of the United States Armed Forces Staff College.²⁵ In his briefing Nurse not only alluded to these American influences, but also provided context to the relevant issues. He argued that Canada needed to educate officers about the intricacies of the operational level of war to remain relevant within the environment of alliance and modern conflict.²⁶

This recommendation was accepted by the OPDC with little recorded discussion or debate. The minutes note laconically that the “Council accepted the concept of an intermediate, theatre-level of war strategy, between tactics and grand strategy.” Despite this comment, the minutes indicate that the Council had agreed to a model that was not understood by the members of the OPDC. This was evidenced by the decision taken to direct the CFLCSC to teach this doctrinal concept at the Tactical Level of divisions and below, while the CFCSC would instruct at the corps and echelons above corps level.²⁷ It was also directed by the OPDC that all

proposals concerning the implementation of changes to the curriculum were to be forwarded to the Chairman of the OPDC for approval prior to carrying them out.²⁸

Reaction to the Council's decision was swift and a joint update document from the two staff colleges was put forward at a meeting held one year later at NDHQ on 20 April 1988. However, this short four page document set a completely different tone than the ebullient briefing package provided to the OPDC a year previously.²⁹ It noted that there were two facets of the previous decision that created challenges. Firstly, in accepting the reality of the construct of the operational level of war the Council had overstepped their bounds by moving from being an educational consultative body to making a doctrinal pronouncement.³⁰ Secondly, the divergent evolution of the two separate staff courses since the 1960s had led to dissimilar emphasis in curriculum content and these differences came into play in the debate. The direction provided a year previously created an impression in the Commandants of the two educational institutions that the OPDC believed, they were "doing identical work at different tactical levels," which was not correct. It was emphasized that the role of the CLFCSC was to teach tactical activities. Conversely it was argued that the role of the CFC was to educate senior officers beyond "...the mental process that will allow them to function as LCol [Lieutenant Colonel] and Col [one] in the same army staff to which they were introduced at CLFCSC." As a result, while both Colleges had some overlap in their curriculum, it was for entirely different purposes.³¹

Related to this, the position paper also noted that the imposition of this additional requirement simply was not attainable within the current limitations of the CLFCSC course length. Compounding this pedagogical challenge and the lack of Canadian doctrine concerning the operational level of war, there was also no North Atlantic Treaty Organisation (NATO) doctrine to serve as a vehicle to teach these ideas. Accordingly, it seemed that any further development in this realm would lie within the purview of the senior Staff College.³²

There were two recommendations which fell out of this debate. The position paper advocated that the various doctrinal development agencies of the CF (Joint, Navy, Army, and Air Force) adopt this concept and once doctrine was created incorporate it into the CFCSC syllabus. On top of this it was recommended that the CLFCSC should focus primarily at the Tactical Level of War. Any necessary coordination between the two Colleges to ensure there were no discontinuities in curriculum would be addressed by the two Commandants.³³ Accordingly the minutes of the OPDC stated:

After a short discussion the Council accepted the Comdt CFC/Comdt CLFCSC recommendation that when the "Operational Level of War" is accepted as Canadian doctrine it will be included in the joint curriculum of CFCSC. ITEM CLOSED³⁴

It is difficult to determine the reasons behind this apparent *volte face*. It may be as simple as a change of key personalities, seeing that Colonel Nurse had moved from the CFC by the commencement of the 1987/1988 academic year, or perhaps a straightforward practicality, in that without an existent common Canadian doctrine concerning the operational level it would be extremely difficult, if not impossible to teach the concepts in an educational setting at the CFC that included Navy, Army and Air Force students.³⁵ However, while the initial impetus

behind the proposed change had lost momentum, the CFC continued to explore the operational level of war and on 12 July 1990 forwarded a major curriculum change proposal to the Chief of Personnel Development (CPD), who was the Chairman of the OPDC.³⁶

The recommended amendments were to the Land Command and Staff Programme (LCSP), which was the environment-specific portion of the larger Command and Staff Course delivered to Canadian Army officers attending the multi-service course. This separate environmental component was mirrored within the overarching framework of the CFCSC by the other two services, through Maritime and Air studies. These distinct courses ensured that the officers of each CF component were educated in the service specific intricacies of employing sea, land and air forces. The proposed changes to the Army programme noted that “supporting” operational doctrine was being concurrently developed by the Land Forces Combat Development Committee and that a copy of the package had been sent to the CLFSC.³⁷ In the absence of national joint doctrine the Canadian Army had created a service doctrine that would ultimately serve to provide guidance to the remainder of the CF.

Following this exchange, early in 1991, the new Director of Land Studies, Colonel Keith T. Eddy, having liaised with his counterparts at the United States Army Command and General Staff College, Fort Leavenworth, recommended closer examination of American operational level developments.³⁸ This proposal was likely given impetus by the recent overwhelming American coalition victory in Kuwait against the Iraqi Army. This military success had utilised the latest operational doctrine – the same doctrine which was being debated and discussed, but not yet taught, in Canada.³⁹

Unlike his predecessor Colonel Nurse, Eddy had no specific American posting in his career, but had served as a junior officer in the NATO Brigade in Europe from 1977-1980.⁴⁰ Despite the College’s outward support for implementation of the operational level of war curriculum at the CFC, internal correspondence indicates some doubts concerning the direction that had been taken within the Land programme. Specifically, the Commandant, Brigadier-General J.A.R (Ray) Desloges, an aeronautical engineer who had served with air elements of the United States Navy from 1976-1978, was not sure about these new ideas. He suggested that with its emphasis on high intensity general combat these changes to the LCSP were not in keeping with developments that seemed to be taking place in Canadian defence plans and force structures.⁴¹

Eddy concurred with the need for the College programmes to remain timely and pertinent but in order to do that it was necessary to focus beyond the norm of Canadian military operations and, amongst other things, take note of activities of allied militaries. Desloges agreed with this suggestion.⁴² Consequently, by 1991-1992 the LCSP changes had been put into motion and the first course to include the operational level of war as a major portion of the curriculum, Command and Staff Course 18, commenced.⁴³

Within the LCSP there were four general areas of study all of which involved operational level understanding. These were Force Preparation, Force Projection, Force Application, and Force Sustainment. Each topic was designed to contribute to the goal of preparing Canadian

Army officers “for staff appointments at command and national headquarters, and at higher formations, with emphasis at the corps level.”⁴⁴

Firstly, Force Preparation dealt with the direction and organisation of forces at the higher levels of war; as well, it examined the military force structures and concerns that would affect the CF and its allies while meeting the goals of national or grand strategy.⁴⁵ Secondly, Force Projection was concerned with giving students an understanding of command and control of military forces at the operational level of war. This curriculum also included the chance to study deployment of large forces to a theatre of operations in response to national direction.⁴⁶ Thirdly, Force Application furnished the knowledge necessary to apply operational ideas and doctrine for a Canadian corps to function during combat of all types, but primarily the high intensity sort envisioned in Western Europe. While the pedagogical methodology of the bulk of the LCSP focused on lectures and seminar discussion, this specific topic utilised practical exercises within the CFCSC, in addition to “field study exercises” in Europe and the United States to understand the functioning of allied military formations and headquarters. This portion of the LCSP was the only part that included the involvement of students from the other services. Air Force students were drawn in through joint studies with the Army officers in order to understand the role of fixed and rotary air assets on the battlefield within an Army setting and mirrored American army doctrinal developments over this period.⁴⁷ Finally, Force Sustainment was created to ensure that students understood operational level systems designed to sustain the forces involved in campaigns, major operations and battles. The administrative and logistic systems presented were put in the context of a theatre of operations that involved both national and allied systems and requirements.⁴⁸

In the absence of uniquely Canadian doctrine, the LCSP took the American perspective of the operational level of war. While the experiences and doctrines of other countries like Germany, the Soviet Union, and the United Kingdom were touched upon, those of the United States were pre-eminent within the material that was taught. For instance, the key lecture of the Force Preparation series, entitled “The Operational Level of War,” was designed “to develop the student’s understanding of the operational level of war,” and was taught by an American officer from the Doctrine Division of the Centre for [United States] Army Tactics, Fort Leavenworth, Kansas.⁴⁹

At the same time as the first iteration of the LCSP was underway, the OPDC initiated debate with regards to instituting the conceptual model of the operational level of war within the context of advanced military education: “A discussion followed which focused on the subject of the ‘operational level of war’ and the extent that CF professional courses are teaching or should be teaching in this respect.”⁵⁰ The 1991 American success in Kuwait had highlighted the need for joint (Maritime, Land and Air) doctrine within the realm of these types of contingency operations and these ideas were reinforced through other perspectives. In a briefing to the Council based on his experiences as a student at the British Army’s Higher Command and Staff Course, Brigadier-General R.A. (Romeo) Dallaire argued, “I contend that a capability deficiency does exist in our warfighting knowledge and skills at the operational level where joint and combined operations are the order of the day.”⁵¹ Dallaire’s briefing drew upon his experiences in the United Kingdom. He also incorporated the thoughts of senior Canadian commanders and relevant studies that had bearing on this issue of higher command.⁵² While

Dallaire's presentation was well received and the Council decided to hold a "brainstorming" session for its membership to examine the feasibility of developing a Canadian equivalent to the Higher Command and Staff Course this session never occurred, due to "heavy turbulence in personnel during APS [Annual Posting Season 19] 91 and higher priority projects such as the review of command and staff training." In fact this latter review was much more encompassing and took in the complete Officer Professional Development System, including education and career management.⁵³

During this period of discussion and debate the OPDC directed that the CFC, organise and conduct a more inclusive weekend seminar for selected generals and senior officers to discuss the development of a Canadian Higher Command and Staff Course. For this activity, the Chairman of the OPDC, who was also the Chief Personnel Careers and Development (CPCD) (formerly CPD), acted as the convenor and sponsor, while the CFC provided the necessary organisation and administrative resources.⁵⁴ The seminar took place at the National Defence College in Kingston, Ontario during January 1992 and did not result in the development of a separate educational activity, but rather "the Chief of the Defence Staff [General John De Chastelain] directed the Commandant Canadian Forces Command and Staff College to consider the development of a seminar to familiarize generals and senior officers with the state of the art in joint and combined warfare."⁵⁵ The timing was propitious as within the same period the Auditor General's report noted that the CF needed to examine its requirements for professional education with a view to understanding the "operational and managerial demands faced by senior officers" and to ensure that both career management and development reflected these requirements.⁵⁶ It is likely that this awareness of a potential deficiency in the realm of cognitive and practical skills amongst higher-ranking officers, along with ongoing review of the Officer Professional Development system, combined with the direction of the Chief of Defence Staff (CDS) helped to ensure that the concept of the operational level of war became firmly entrenched within the professional military education system and the larger CF.

Meanwhile the CFC continued to push ahead with amendments to the sub-components of the Command and Staff Course. In addition to those changes already identified within the LCSP, the other environmental programmes, the Naval Command and Staff Programme (NCSP) and Air Command and Staff Programme (ACSP), as well as the tri-service inclusive Joint Command and Staff Programme (JCSP), were also changed to include the operational level of war. The JCSP was modified to reflect United States joint operational doctrine because Canadian material was non-existent with regards to this topic. There was nothing surprising about this adoption of American methodology, as usage of American conceptual approaches was previously established to address subject areas where Canadian concepts and procedures were lacking.⁵⁷

Specific changes to the JCSP included lectures on theatre-level warfare and campaign planning. These were designed to teach operational concepts and joint planning for major war. Additionally, two examples of important military campaigns were added to reinforce these ideas; "Campaign Planning: A Case Study – Northwest Europe 1944/45" and "Campaign Planning and Execution: Operation Desert Shield/Desert Storm." The former strengthened an understanding of operational level concepts and provided a historical example of the prerequisites necessary for a large campaign by examining the activities that took place in the

European Theatre during the last two years of the Second World War. At the same time the latter case study provided an example of the successful design and execution of a contemporary major military operation by American forces.⁵⁸

Simultaneously, corresponding amendments were being made within the NCSP and the ACSP. To address the maritime dimensions of operational thought new lectures and amendments to existing practical exercises were carried out. The new presentations were “Naval Operational Art and Campaign Planning,” “Command, Control, Communications and Intelligence,” and “The Role of Sealift in Campaign Plans.” Two existing exercises, “Exercise Steel Drum” and “Exercise Bold Decision” were changed to include operational planning principles.⁵⁹ Within the ACSP, operational activities were also addressed through classes, seminar discussion and a practical exercise. An address on “The Theatre Air Campaign” and two seminar activities “Air Warfighting Doctrine” and “Command and Control of Air Forces” were also added. An existing exercise “Theatre Plan” was amended to better align it with the capstone activity “Exercise Agile Maple,” a computer assisted theatre of war level learning activity.⁶⁰

At the same time as these curriculum changes were adopted, the CFC returned to the OPDC with proposals for a “General and Senior Officers’ Seminar on Joint and Combined Operational Level Concepts.” Two options for a three and five day colloquium were recommended and the objective for both would be “...to familiarize senior CF officers with joint and operational level warfare concepts.” While the briefing paper that was tabled did not make overt strong representation for either option, the recommendation contained within a section entitled “Methodology” stated that the five day activity would permit greater attendee participation and understanding through practical exercises, which could not be conducted during the shorter three day option.⁶¹ Despite this recommendation the three day seminar programme was chosen, but the Chairman of the OPDC closed the discussion observing that the symposium would continue to be reviewed in order to examine resource requirements, attendance, content, and scheduling.⁶² This seminar series ended in 1995.⁶³

Yet, despite the efforts being made to inculcate the operational level of war through changes to professional education and senior officer symposiums, considerable challenges remained to achieving this paradigm shift. Brigadier-General Desloges wrote to the CPCD a few days prior to the first seminar in January 1993 and outlined the difficulties that would be encountered in creating organisational acceptance of the operational level of war. Desloges suggested that while the Army had a formalised process for planning activities at what could be considered the operational level and would likely agree to these new ideas, acceptance by the other services might be problematic. The Navy had only in recent years started to adopt such a process, while none existed within the Air Force. Desloges did note that the naval planning process had been devised at the Staff College and a similar effort was being made on behalf of the Air Force. He thought these efforts were akin to the important work being done to propagate the operational level of war and highlighted the CFC as a valuable agent of conceptual change, “This is another example of the College taking the lead instead of being in a supportive role as would normally be expected.” Furthermore, he emphasised the CF, as a whole, lacked general operational level procedures and specific joint doctrine at the level of multi-service military activities. In light of the lack of Canadian knowledge in these areas Desloges wished to ensure through this correspondence that the CPCD understood that the

Staff College had adopted American publications to address these topics. He continued, noting that American manuals were most suitable because they were, "...after comparative evaluation against that of other countries and NATO...found to be the best developed, most sophisticated, most clearly articulated, and the most proven."⁶⁴

Desloges also put forward concerns about the state of Canadian military education. He was particularly troubled about adopting the operational level of war as part of the body of professional knowledge by means of the upcoming seminar. Firstly, he argued that the pedagogical approach of teaching senior military commanders through discussion group alone did not follow accepted methodology and, as a result could not create adept practitioners. While the seminar did address theory and doctrine, it could not develop facility with these ideas. It would be necessary to do that through practice, which could only be obtained during computer assisted or field exercises, he argued. Some element of this practical application needed to be incorporated into future seminars in order to provide a solid comprehension of operational theory.⁶⁵ Along with an appropriate seminar methodology was the necessity of providing a continuous stream of articles in emergent warfare concepts and doctrinal innovation as reading for senior officers. This would assist with the education of the senior leadership at large.⁶⁶

Secondly, Desloges recommended that a more structured approach to formal military education was needed if Canada was to ensure the ability of officers to command at the operational level of war and he cited the American model as the furthest advanced. In comparison with Canada, which had only the CFCSC, Desloges described the American military as providing an integrated and progressive educational experience for senior officers throughout their careers. He urged discussion at the highest military levels to address the lack of coherently programmed professional military education in Canada.⁶⁷

Finally, Desloges highlighted the failure of senior Canadian officers to read the classics of military studies, such as those to do with Napoleon and von Moltke. He supported this opinion with observations to the effect that the senior officers attending the CFCSC, supposedly the "most promising" were lacking in this domain. Desloges' recommendations to address this failure ranged from developing mandatory pre-reading lists for attendance at the CSC to embedding enduring military texts in the professional education system or providing grants that would assist in defraying the costs of the recommended books.⁶⁸

Notwithstanding these apparently pessimistic pronouncements, a short time later over 80 of the senior leadership of the CF attended the 1993 discussion group. The attendees included the Vice Chief of the Defence Staff and the three environmental commanders.⁶⁹ The invited guests for the landmark 1993 session were from the United States: General (Retired) C.E. (Crosbie) Saint, former Commander United States Army Europe, General C.W. (Carl) Stiner, Commander Special Operations Command and noted military researcher, Dr. Jay Luvaas.⁷⁰ Luvaas, from the United States Army War College lectured on the "Historical Development of the Operational Level of War," and it was noted that the "essence of the presentation was oriented toward operational art in a purely land warfare context." Another American, Lieutenant General (Retired) John Yeosok, former Commander of the United States' Third Army during the Gulf War, was to have presented on the practical application of Operational warfare

with “Campaign Planning and Execution: Op[eration] Desert Storm.” However, General Saint spoke in his stead examining topics such as Operational Art in the United States Army, the relationship between Civilian and Military Strategic authorities and the development of campaign plans, and the importance of education and training. Additionally, he discussed his role, as the European Commander, in supporting Central Command during Operations Desert Shield and Desert Storm. Later, General Steiner lectured on the “Planning and Execution of Operation Just Cause” with special emphasis on how the 1989 intervention in Panama actually transpired as compared to the original campaign plan.⁷¹

There were a number of other presenters during this symposium, however, of significance was that the Canadian commanders of the three environmental commands, sea, land and air, were present and gave their views on operational art. It was also acknowledged in the notes from the symposium that the formulation of draft Canadian doctrine regarding the operational level of war, “compatible with those of our major allies,” was in progress. While all three heads of services were generally supportive of the operational level of war and the progress to date their viewpoints reflected their separate environmental cultures. Navies are traditionally resistant to articulated doctrine, as naval activities are viewed as the purview of the fleet-in-being and do not need to be codified. Vice Admiral P.W. (Peter) Cairns, the Commander Maritime Command reinforced that idea through articulating what he considered the positive aspects of operational art. But he argued that the Navy did not view “Op Art with the same gravity because the Navy has been there for the past 50 years” through large scale multinational exercises. Armies are strong adherents to ideas of doctrine due to an organisational emphasis on establishing a common understanding of procedures and techniques for the conduct of military activities. Lieutenant-General G.M. (Gord) Reay, the Commander Land Force Command emphatically advocated education in operational art as “to ignore it would not be true to our profession.” Air forces are seldom focused on creating formal doctrine but operate on the basis of choosing targets and achieving desired effects against opponents. Furthermore, due to the mechanical complexity of air operations the service orientation is often towards the technological factors of the profession. As a result they have developed a *laissez-faire* attitude towards the formalised strictures of doctrine. Consequently, although Lieutenant-General D. (Dave) Huddleston, the Commander Air Command, discussed the necessity of improving joint operations capabilities with the other two services he focused on the inability of staff procedures to deal with large scale operations and the inadequacy of contemporary military information systems to assist decision making in wartime, as he believed those arrangements were designed for peacetime.⁷² Despite these criticisms, after conducting a retrospective analysis of the 1993 symposium Brigadier-General Desloges felt that it had made a positive impact on the senior officers that had attended:

It would appear, based on verbal feedback, that the GSOP [General and Senior Officers’ Professional] Seminar was a success. Many of those attending the Seminar had little knowledge and experience with the Operational Level or Operational Art before the Seminar. By the conclusion, however, most appeared to have gained useful insights and had a basis to furthering their knowledge and promoting training in this area.⁷³

Regardless of the apparent achievements of the presentations, there was still debate as to the institutionalization of the concepts that had been advocated and Desloges sought

direction for the conduct of future seminars.⁷⁴ By March 1993 Rear Admiral H.T. Porter, the CPCD and current Chair of the OPDC, had signed correspondence on behalf of the CDS directing that the CFC continue with future initiatives of this type, stressing that the primary body for the guidance of future seminars would be the OPDC. At the same time, Porter wrote that while there was "...little doubt that current expertise and developmental capability rests within CFC, DCDS [Deputy Chief of Defence Staff] input, if not leadership is required if we are to respond to the operational (and operators) need(s)." Porter stressed that the OPDC would be "the instrument which will capture DCDS staff attention."⁷⁵

Subsequent seminars were conducted in March 1994 and March 1995. The curriculum became more formalised and eventually addressed some of the concerns raised by Desloges in 1993.⁷⁶ The 1995 Seminar included pre-reading of relevant literature, as well as completion of a required study exercise. Additionally, the seminar itself was of five days duration and incorporated a practical exercise designed "to reinforce officers' understanding of the operational level of war through exposure to decision-making at the strategic and operational levels."⁷⁷

In the meantime discussion continued regarding the manner in which Canadian officers would become skilled with these operational concepts. The Army was particularly vociferous in advocating their point of view. The Deputy Commander Land Force Command, Major-General J.M.R. Goudreau, on behalf of his Commander, Lieutenant-General Reay, emphasised the necessity of continuing senior and general officer education to prepare these professionals to serve at the operational level of war. Further education beyond the level provided by the CFCS was necessary to permit senior leaders to develop the broad competencies necessary to work effectively in the context of joint and multinational environments. In particular, Goudreau noted deficiencies in four general areas, which taken together emphasized the need for CF officers to receive comprehensive and progressive military education at the higher levels of war in order to compensate for these shortcomings. His four concerns were: the lack of continuous education throughout military careers; the deleterious impact of the limited experience of CFC instructors; the ongoing budget challenges in the acquisition of cutting edge military technology; and the negative effects of CF downsizing in Europe.⁷⁸ While this letter in itself did not directly promote any further activity than that which had already occurred, it is indicative that some professional debate created by this intellectual change, and further underscores the interest in focused higher level education as had, most recently, been recommended by Dallaire.⁷⁹

This professional discourse was symptomatic of the ongoing paradigm shift linked with the general acceptance and institutionalisation of the operational level of war. Indeed the 1995 seminar was the last of its type, since their purpose had been achieved and a conceptual revolution had taken place.⁸⁰ During that year Joint doctrine for the operational level was promulgated and in rapid succession Land Force doctrine followed in 1996. Both publications defined the operational level of war as "...the level of war at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theatres or areas of operations."⁸¹ At the same time these Canadian doctrinal definitions confirmed the provenance of these ideas from American operational thought. The earlier 1995 edition of the United States Joint Chiefs of Staff *Joint Publication 3-0 Doctrine for Joint Operations* had described the operational level of war as, "The level of war at which campaigns

and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or areas of operations.”⁸²

During the same period the demise of the National Defence College in 1994, ostensibly due federal budget reductions, created an impetus within the CF to address the unease regarding higher level education for senior and general officers. This concern was not only that articulated by Dallaire, Desloges, Goudreau, and Reay, but also had resulted from recommendations of a number of official reports starting in 1969 with the *Rowley Report* through to the most recent 1995 *Report on the Officer Development Board: Part I*. All these indicated that a revision of senior professional military education was needed to provide educational experiences that focussed on the higher level aspects of fighting wars, as well as national and international studies.⁸³ This led to the approval and establishment of the Advanced Military Studies Course (AMSC) and the National Security Studies Course at the CFC in 1998. The curriculum of the AMSC specifically contained competencies pertaining to the operational level of war.⁸⁴

Incongruously, there was little written from a Canadian point of view concerning this doctrinal transition. *Canadian Defence Quarterly (CDQ)*, the professional journal of the CF, published only two articles about the operational level of war during this entire period. The first in 1991, by Canadian military historian Bill McAndrew, “Operational Art and the Northwest European Theatre of War, 1944,” was constructed from a presentation given to Directing Staff at the CFC, provided in support of the case study on the same topic instituted in the changes to the JCSP that same year.⁸⁵ The second article was written in 1992 by the Director of Land Studies at the CFC, Colonel Eddy. Entitled the “Canadian Forces and the Operational Level of War,” it laid out not only the basics of the operational level of war, but why Canada needed to adopt it and how that progress should transpire. In effect this article was a reprise of the arguments made by Eddy, and his predecessor, Nurse, since 1987.⁸⁶

The only other sign of intellectual discourse on these theoretical concepts and their place in the Canadian military was a compilation of essays from the Twenty-First Annual Military History Symposium held at The Royal Military College of Canada in 1995. The symposium proceedings, published as *The Operational Art: Developments in the Theories of War*, had a mostly American focus; however, there was one essay by McAndrew, “Operational Art and the Canadian Army’s Way of War” that was extremely noteworthy.⁸⁷ In this essay McAndrew put forward the idea that adoption of this American construct was problematic and risky. He explained that the search for answers by the United States Army during the post-Vietnam period resulted in the discovery of the operational level of war. A similar pattern of crisis and response had not taken place in Canada and consequently:

The Canadian Forces have not experienced that vital intellectual search for first principles. Instead of stimulating an exchange of ideas on which to construct a sound intellectual base, a bureaucracy arbitrarily directed that Operational Art was to be adopted. Unfortunately, this came at a time when, elsewhere, categories were hardening and insights were being engraved in doctrinal manuals. Accepting those manuals without having experienced or really understood, the essential first phase builds on a precarious foundation...It is doubtful that a way of thinking can be changed

by fiat, nor is it likely that the way an army thinks about itself can be imported. Trying to absorb foreign doctrines secondhand will be as fruitless as transplanting tropical plants in the tundra.⁸⁸

Despite Eddy's seemingly controversial proposal to adopt the operational level of war, as a result of the experiences of the American military, and McAndrew's strongly worded caution regarding the operational level neither of these two pieces nor McAndrew's earlier *CDQ* article elicited comment or prompted much public debate. One could argue that this was due to a lack of introspection by Canadian military professionals, yet, that argument would not be supported by activities undertaken by both Nurse and Eddy, amongst others, at the CFC to capture these ideas in the curriculum and promulgate the concepts to a wider audience in the CF. The explanation of this lack of professional and public discourse therefore likely revolves around the self-image of the profession of arms, particularly that of the Army, in Canada. Due to affiliation and interaction with the American military in the modern era, CF personnel viewed themselves implicitly as members of a transnational profession that encompassed North America and were, in effect, a sub-group of that larger community of practice.

Examining Kuhn's ideas of knowledge change one can discern all facets of a paradigm shift in the events surrounding the formulation and institutionalisation of the operational level of war by the United States Army. Failure in Vietnam provided the Army with impetus to create and adopt new doctrine in order to address perceived deficiencies in the method by which strategy was connected with military activities. The creation of this new explanatory paradigm, the operational level of war, was inclusive to all constituencies and involved professional and public debate. Military professionals and academics were involved in the development of supporting doctrine and education, in addition to the writing of books and articles on the subject. Of note, is that while all the hallmarks of Kuhnian theory regarding intellectual shifts are present in this American change process, there seems to have been no conscious effort to use Kuhn's work in an effort to ensure success of the conceptual shift. Rather the change process was designed to create consensus and acceptance, avoiding the controversies that had followed the introduction of the earlier 1976 edition of *FM 100-5*.⁸⁹ Brigadier General (Retired) Huba Wass de Czege, United States Army, who was one of the team that formulated the 1982 *FM 100-5* noted that they did not deliberately attempt to implement Kuhn's ideas although he "...had read Kuhn's book as a graduate student at Harvard some years before."⁹⁰ Regardless of methodology, the change process which occurred validates Kuhn's model.

On the other hand, when one examines the change process underlying the adoption of the operational level of war by the CF, McAndrew's observations in "Operational Art and the Canadian Army's Way of War" seem to contain elements of truth. His suggestion that the process was a bureaucratically directed initiative which would have no permanence was supported by the manner in which the OPDC, and later the CDS, mandated the adoption of this conceptual framework. Furthermore, as McAndrew suggests, unlike the United States, there was no great intellectual introspection, either public or professional, concerning this new idea in Canada and, as a consequence, there were no firm intellectual underpinnings to the doctrine derived from it and the shift should have failed. This was not the case; the change process succeeded in Canada and the operational level of war was adopted by the CF and continues to be studied, as well as used in military operations, today.

More understanding of this seeming anomaly can be gained from the theories of Ludwik Fleck, which were utilised by Kuhn in the formulation of his hypothesis. Fleck advocated the concept of thought collectives, which he defined as participants in a definable and collective structure of thought generated by an esoteric circle of authorities, or experts. This group communicates knowledge with a circle of laypeople that provide feedback on these views. Knowledge passes from the inner to outer circles and back again so this cycle is strengthened and collectivized. This complex open system of exchange can create a weakening of existing systems of beliefs and encourage new discoveries and ideas.⁹¹ This process is analogous to that which transpired within what can be termed the “North American military thought collective.” One must put the paradigm shift in the context of a single group of military professionals defined by purpose as opposed to two groups separated by nationality.

The experts within the larger collective were firstly the doctrine writers of TRADOC, and then the practitioners of the United States Army. The collection of experts within the Canadian sub-group of the collective resided in the CFC and they absorbed and promulgated these new ideas in the manner described by Fleck. None of the hallmarks of the paradigm shift that Kuhn would have attributed to professional discourse took place in Canada because *it had already occurred in the United States* and the Canadian military implicitly viewed itself as part of a single community of practice that extended across the continent.⁹² This was and is evidenced by the verbatim adoption of American examples, practices and doctrine throughout the Canadian promulgation of the operational theory and explains the lack of indices of Kuhn’s model during the acceptance of the operational level of war in Canada. McAndrew was correct in his observations concerning the transplanting of foreign ideas, and if the CF, specifically the Army, had not viewed itself as an extension of the community of practice originating in the United States, this initiative should have failed.

Both Ludwik Fleck and Thomas Kuhn put great emphasis on the role of concurring practitioners in the spread of knowledge. Accordingly, while one could be tempted to view the institution of the operational level of war in the United States and Canada as two separate, but closely related, paradigm shifts conducted by different groups of military professionals, the events that took place in Canada between 1987 and 1995 do not support this model. The adoption of the operational level of war by the CF was part of a single intellectual change that originated in the United States Army and was promulgated in Canada through officers, primarily those of the Canadian Army, serving at the CFC. These officers were immersed in American concepts through professional education and military assignments. As a result, the learning, dialogue and easy acceptance that this paradigm shift engendered within the CF not only demonstrated the influence of the College in the realm of military professional knowledge, but also the unquestioning acceptance of American ideas by the Canadian Army and larger CF. More importantly it showed how quickly the leadership of the Canadian military, as likeminded professionals, were prepared to adopt a primarily American vision of organising war, one that attributed its provenance to the historical experience of the United States Army. This perspective has had a corresponding and continuing impact on not only the professional education of the Canadian military, but more importantly on the intellectual approaches utilised by its senior leaders and commanders when putting together military activities in response to national direction and, in effect, determining the Canadian Way of War in the postmodern era.⁹³

¹ This statement formed the core of a proposed agenda item for Canada, Department of National Defence (DND), Canadian Forces College (CFC) Archives, Papers Relating to Meetings of the Officer Professional Development Council 1980-1997 (henceforth *OPDC Papers*), Officer Professional Development Council (OPDC) General Meeting in 1987. "Officer Professional Development Council 1987 General Meeting Agenda," 5570-1(Comdt) dated 3 March 1987, B-1.

² The operational level of war is now a commonly accepted concept and forms the basis of how western armies utilise military activities to support strategic goals. Allan English, Richard Gimblett and Howard Coombs, "Beware of Putting the Cart Before the Horse" (Toronto: Defence Research and Development Canada, Contract Report CR 2005-212 (19 July 2005)) [report on-line], available at http://pubs.drdc-rddc.gc.ca/inbasket/CEBsupport.050720_0917.CR%202005-212.pdf; internet, accessed 6 February 2007, 49-51.

³ For the results of Kuhn's research into the process of intellectual change within the scientific community see Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 3rd ed. (Chicago: University of Chicago Press, 1996).

⁴ *Ibid*, 175.

⁵ *Ibid*, 84-85.

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

⁷ *Ibid*, 18-19.

⁸ This board was created as an advisory body to the Assistant Deputy Minister (Personnel) (ADM(Per)), as a result of reforms put forward by the *Report on the Officer Development Board*, commonly known as the *Rowley Report*, after its chair Major General Roger Rowley. For discussion of the Rowley reforms see Directorate of Professional Education and Development, "The Officer Professional Development System" (Ottawa: National Defence Headquarters, 22 May 1976), 1; and see also Lieutenant Colonel Randy Wakelam, "Senior Professional Military Education for the Twenty-First Century." *Canadian Defence Quarterly* 27, no. 1 (Autumn 1997): 14-15; and see also, Canada, DND, CFC Archives, *OPDC Papers*, "Terms of Reference for the Officer Professional Development Council," Annex A to 5570-23 (CPD) dated 26 November 1987, in "Minutes of the Eleventh General Meeting of the Officer Professional Development Council, Held at NDHQ [National Defence Headquarters], 0830-1700 hrs Wed 22 April 1987," 5570-23 (DPED 3-2) dated 14 June 1987, A-1 to A-2.

⁹ In the documentation of the period CFC and CFCS are used interchangeably to denote the Staff College in Toronto. This can only be attributed to the fact that the Canadian Forces College conducted only one formal course per year; the Canadian Forces Command and Staff Course. Since this professional military education experience was the *raison d'être* of the College the two terms seemed to have become synonymous; Canada, DND, CFC Archives, *OPDC Papers*, "Officer Professional Development Council 1987 General Meeting Agenda," 5570-1(Comdt) dated 3 March 1987, B-1.

¹⁰ *Ibid*.

¹¹ United States, Department of the Army, *FM 100-5[Field Manual] Operations* (Washington: Headquarters Department of the Army, 20 August 1982), 2-3.

¹² The 1976 edition of the United States Army *FM 100-5 Operations* articulated elements of operational thought and the design of the AirLand Battle that Depuy had analysed and synthesized from German doctrine and developed in collaboration with the United States Air Force. United States, Department of the Army, Major Paul H. Herbert, *Leavenworth Paper Number 16 Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations* (Fort Leavenworth, KS: United States

Army Command and General Staff College Combat Studies Institute, 1988); and the CFC paper was careful to include the influence of Soviet theoreticians and their concepts of Deep Battle, along with German influences, on the formulation of the operational level of war. "The Operational Level of War," 3-5.

¹³ United States, Department of the Army, *FM 100-5 Operations* (Washington: Headquarters Department of the Army, 1 July 1976), 1-1 to 1-2.

¹⁴ Herbert, *Deciding What Has to Be Done*, 1-2 and 106.

¹⁵ For more detail concerning United States Army doctrinal development during this period see John L. Romjue, *TRADOC Historical Monograph Series - From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982* (Fort Monroe, Virginia: Historical Office United States Army Training and Doctrine Command, June 1984), 23-50; and elaboration of the discussion concerning the 1976 edition of *FM 100-5* read General William E. DePuy, US Army (Retired) "One-Up and Two-Back," in United States, Department of the Army, Colonel Richard M. Swain, compiler, Donald L. Gilmore and Carolyn D. Conway eds. *Selected Papers of General William E. DePuy: First Commander U.S. Army Training and Doctrine Command, 1 July 1973* (Fort Leavenworth, Kansas: United States Command and General Staff College Combat Studies Institute, 1994), 295-309 (originally published in *Army* 30, no. 1 (January 1980): 20-25).

¹⁶ See Andrew F. Krepinevich, Jr., *The Army and Vietnam* (Baltimore and London: The Johns Hopkins University Press, 1986; reprint, 1988); and Colonel David H. Hackworth, United States Army Retired, and Julie Sherman, *About Face: The Odyssey of an American Warrior*, with an introduction by Ward Just (New York: Simon and Schuster, 1989); and see also, United States, Department of the Army, Colonel Harry G. Summers, Jr., Colonel of Infantry, *On Strategy: The Vietnam War in Context* (Carlisle, PA: United States Army War College, Strategic Studies Institute, April 1981).

¹⁷ See James Kittfield. *Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized the American Style of War* (New York: Simon & Schuster, 1995); and for a firsthand account of the post-Vietnam generation of United States Army officers and discussion of the impact of the Vietnam experience see Colin Powell with Joseph E. Persico, *My American Journey* (New York: Random House, 1995).

¹⁸ For further examination of this dialogue concerning the 1982 edition of *FM 100-5* see United States, Department of the Army, Army Heritage and Education Center (AHEC), The Don A. Starry Papers (henceforth *Starry Papers*), Box 33, *FM 100-5* File.

¹⁹ While the origins of the 1982 edition of *FM 100-5* were connected to work that had commenced a decade earlier Starry is credited with providing the vision and guidance that led to its acceptance. Romje, *From Active Defense to AirLand Battle*, 1,43 and 65-66; and for Toffler's impressions of these ideas see Alvin and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century*, (Boston, New York, Toronto and London: Little, Brown and Company, 1993), 10-12.

²⁰ For an indication of the discourse established in journals see the bibliography contained in Romjue, *From Active Defense to AirLand Battle*, 123-25.

²¹ *Ibid*, 66.

²² United States, Department of the Army, AHEC, *Starry Papers*, "The Air Land Battle" and "REDCOM/JDA Joint Procedures," Box 37, Book 8, TAB A.

²³ United States, Department of the Army, AHEC, *Starry Papers*, "REDCOM/JDA Joint Procedures," Box 37, Book 8, TAB A, 14.

²⁴ Canada, DND, CFC Archives, *OPDC Papers*, "The Operational Level of War," 13.

²⁵ For a biography of Colonel E.R. Nurse see Canada, DND, CFC Archives, *1986-1987 Directory Canadian Forces Command & Staff College*.

²⁶ Canada, DND, CFC Archives, *OPDC Papers*, "The Operational Level of War," 12-14.

²⁷ While it is possible to instruct tactical audiences on operational thought and activities the utility of the concept is extremely limited when dealing with less than theatre size formations of corps, armies and army groups. It is at that plane where operational thought takes place by transforming the goals of strategy into objectives which can be implemented by tactical commanders.

²⁸ Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Eleventh General Meeting of the Officer Professional Development Council," 6.

²⁹ Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Twelfth General Meeting of the Officer Professional Development (OPD) Council, Held at NDHQ, 20 April 1988," 5570-23 (DPED) dated 19 May 1988, 3 and Annex B.

³⁰ Canada, DND, CFC Archives, *OPDC Papers*, "OPD Council Twelfth Annual General Meeting CFC Position Paper The Operational Level of War Agenda Item I," in "Minutes of the Twelfth General Meeting of the Officer Professional Development (OPD) Council," 1; and see also the enclosed two page bibliography from the Canadian Forces College Library, entitled "Operational Level of War."

³¹ Canada, DND, CFC Archives, *OPDC Papers*, "OPD Council Twelfth Annual General Meeting CFC Position Paper The Operational Level of War Agenda Item I," in "Minutes of the Twelfth General Meeting of the Officer Professional Development (OPD) Council," 2.

³² *Ibid.*

³³ *Ibid*, 2-3.

³⁴ Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Twelfth General Meeting of the Officer Professional Development (OPD) Council," 3.

³⁵ Colonel Nurse is not listed as CFCSC staff during 1988. He was replaced by Colonel A.L. (Luc) Bujold a French-Canadian infantry officer, who had spent the majority of his career in Quebec. See Canada, DND, CFC Archives, *1987-1988 Directory Canadian Forces Command & Staff College*.

³⁶ See Canada, Department of National Defence, CFC Archives, Miscellaneous Documentation Pertaining to Curriculum Development (henceforth *Curriculum Documents*) "Revision to Operational Level – Land Command and Staff Programme (LCSP)" 4955-4 (Comdt) dated 12 July 1990.

³⁷ *Ibid*, 1.

³⁸ Canada, DND, CFC Archives, *Curriculum Documents*, "Visit to Fort Leavenworth 4-5 Mar 91" 1775-1 (DLS) dated 7 Mar 91, 2.

³⁹ General Robert H. Scales, *Certain Victory: The US Army in the Gulf War* (Washington, D.C.: Office of the Chief of Staff United States Army, 1993; reprint, Leavenworth, KS: U.S. Army Command and General Staff College Press, 1994), 12-15.

⁴⁰ Canada, DND, CFC Archives, *1990-1991 Directory Canadian Forces Command & Staff College*.

⁴¹ *Ibid.*; and "Enclosure" to Canada, DND, CFC Archives, *Curriculum Documents*, "LCSP" 4500-1 (DLS) dated 12 Aug 91, 1-2.

⁴² Canada, DND, CFC Archives, *Curriculum Documents*, "LCSP" 4500-1 (DLS) dated 12 Aug 91, 1-2.

⁴³ Canada, DND, CFC Archives, Command and Staff Course Papers (henceforth *CSC Papers*), "91-92 Syllabus Canadian Forces Command and Staff College Command and Staff Course 18," 1-8.

⁴⁴ Canada, DND, CFC Archives, *CSC Papers*, "Canadian Forces Command and Staff College Armour Heights, Toronto 1991-1992: Command and Staff Course No. 18," 16.

⁴⁵ *Ibid*, 17; and see Canada, DND, *Canadian Land Force Command and Staff College Staff Officers' Handbook* (Kingston: Canadian Land Force Command and Staff College, May 1994); and at this time the total number of personnel in Canadian Forces (Maritime, Land and Air) was about half that included in the Corps 86 model, an Army-based formation. See Desmond Morton, *A Military History of Canada From Champlain to Kosovo*, 4th ed. (Toronto: McClelland & Stewart Inc., 1999), 276.

⁴⁶ Canada, DND, CFC Archives, *CSC Papers*, "Canadian Forces Command and Staff College Armour Heights, Toronto 1991-1992," 17.

⁴⁷ *Ibid.*; see also *FM 100-5 Operations* (1976), 8-1 to 8-7; *FM 100-5 Operations* (1982), 7-1 to 7-25; and United States, Department of the Army, *FM 100-5 Operations* (Washington: Headquarters Department of the Army, 5 May 1986), 9-26.

⁴⁸ Canada, DND, CFC Archives, *CSC Papers*, "Canadian Forces Command and Staff College Armour Heights, Toronto 1991-1992," 18.

⁴⁹ See Canada, DND, CFC Archives, *CSC Papers, Land Command and Staff Programme Force Preparation Series* (1990-1991); and Canada, DND, CFC Archives, *CSC Papers, Land Command and Staff Programme Force Preparation Series, "L/PREP/L-3 Canadian Forces Command and Staff College Command and Staff Course 18 - 1991/92 – Land Command and Staff Programme Force Preparation Series Lecture – The Operational Level of War,"* 1/3.

⁵⁰ Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Fifteenth General Meeting of the Officer Professional Development (OPD) Council, Held at NDHQ, 0830hrs 29 April 1991," 5570-23 (CP Per) dated 3 July 1991, 5.

⁵¹ "Higher Command and Staff Course Briefing to the Officer Professional Development Board By Brigadier-General R.A. Dallaire, Commandant CMR St-Jean," enclosed in Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Fifteenth General Meeting of the Officer Professional Development (OPD) Council, Held at NDHQ, 0830hrs 29 April 1991," 5570-23 (CP Per) dated 3 July 1991.

⁵² See "What is Happening at the Higher Levels of Field Command and How are the Senior Operational Commanders Being Prepared?" enclosed as Annex C to Canada, DND, CFC Archives, *Curriculum Documents*, "End –of-Course Report British Higher Command nd Staff Course 4," Pers 221 862 469 dated 8 April 1991.

⁵³ Canada, DND, CFC Archives, *Curriculum Documents*, "Higher Command and Staff Course," undated briefing note.

⁵⁴ Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Fifteenth General Meeting of the Officer Professional Development (OPD) Council," 5.

⁵⁵ "OPD Council Sixteenth General Meeting Canadian Forces College Brief General and Senior Officers' Seminar on Joint and Combined Operational Level Concepts," 1 enclosed in Canada, DND, CFC Archives, *Curriculum Documents*, "General And Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 11 February 1993; and General De Chastelain was at one point the "Director General Land Doctrine and Operations at National Defence Headquarters in Ottawa" and, resulting from that assignment, undoubtedly would have had a keen interest in doctrinal issues, particularly those pertaining to the Army. See Army Cadet History, "Biography – General John De Chastelain, OC, CMM, CD, CH, LL.D., BA," [document on-line], http://www.armycadethistory.com/Valcartier/biography_LCol_De_Chastelain.htm; internet, accessed 30 May 2007.

⁵⁶ Canada, DND, CFC Archives, *Curriculum Documents*, "Higher Command and Staff Course," undated briefing note; and the review of Officer Professional Development was the subject of an extraordinary meeting of the OPDC in October 1992 and entailed considerable effort as it is included an examination of all components of the Officer development system. See "Final Draft - Officer Professional Development" enclosed with Canada, DND, CFC Archives, *OPDC Papers*, "Agenda Extraordinary Meeting OPD Council To Be Held In Room 1614, Export Canada Building At 0800 Hrs, 8 October 1992," dated October 1992.

⁵⁷ Canada, DND, CFC Archives, *Curriculum Documents*, "CFCSC Curriculum Amendments Revision to the Operational Level of War," 1180-3 (Comdt) dated 8 January 1992, 2-3. Quote from page 2.

⁵⁸ *Ibid.*, 2.

⁵⁹ *Ibid*, 2-3; for discussion of the role of command and control technology in the Canadian Navy see English et al., "Beware of Putting the Cart Before the Horse."

⁶⁰ Canada, DND, CFC Archives, *Curriculum Documents*, "CFCSC Curriculum Amendments Revision to the Operational Level of War," 3.

⁶¹ Canada, DND, CFC Archives, *Curriculum Documents*, "OPD Council Sixteenth General Meeting Canadian Forces College Brief Senior Officers' Seminar On Joint And Combined Operational Level Warfare Concepts," no date, 1-6. Quote from page 1.

⁶² Canada, DND, CFC Archives, *OPDC Papers*, "Minutes of the Sixteenth General Meeting of the Officer Professional Development (OPD) Council, Held at NDHQ 0830 Hrs, 16 June 1992," 5570-23 (CPCD) dated 20 August 1992, 7/11 to 8/11.

⁶³ Colonel Randy Wakelam, current Director of Research and Symposia CFC and a staff officer at the College during this period, provided the date of cessation of this activity.

⁶⁴ Canada, DND, CFC Archives, *Curriculum Documents*, "GSOPD Seminar – Operational Art," 4640-1 (Cmdt) dated 11 January 1993, 1-2. Quotes from page 1.

⁶⁵ *Ibid*, 2.

⁶⁶ *Ibid*.

⁶⁷ *Ibid*.

⁶⁸ *Ibid*, 3.

⁶⁹ "General And Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 4 Feb 93, 1 enclosed in Canada, DND, CFC Archives, *Curriculum Documents*, "General and Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 11 February 1993.

⁷⁰ "General & Senior Officer's Professional Development Seminar Operational Art: Evolution and Development Nominal Roll 15-17 Jan 93," 3 enclosed in Canada, DND, CFC Archives, *Curriculum Documents*, "General And Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 11 February 1993.

⁷¹ Canada, DND, CFC Archives, *Curriculum Documents*, "General And Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 4 Feb 93, 1-2; "General and Senior Officer's Professional Development Seminar Operational Art: Evolution and Development Programme," enclosed in Canada, DND, CFC Archives, *Curriculum Documents*, "General And Senior Officers' Professional Development Seminar 15-17 Jan 1993."; and for more information on Lieutenant General Yeosock and his command of Third Army during the 1990-1991 Gulf conflict see United States, Department of the Army, Richard M. Swain, *"Lucky War" Third Army in Desert Storm* (Fort Leavenworth, KS: United States Army Command and General Staff College Press, 1997).

⁷² Canada, DND, CFC Archives, *Curriculum Documents*, "General and Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 4 Feb 93, 2-3. Quotes from page 3; and for discussion of Canadian military culture see Allan English, *Understanding Canadian Military Culture* (Montreal & Kingston: McGill Queen's University Press, 2004).

⁷³ Canada, DND, CFC Archives, *Curriculum Documents*, "General and Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 4 Feb 93, 4.

⁷⁴ Canada, DND, CFC Archives, *Curriculum Documents*, "General and Senior Officers' Professional Development Seminar 15-17 Jan 1993," 4640-1 (Cmdt) dated 11 February 1993, 1.

⁷⁵ Within the command structure the time the DCDS was responsible for all military operations at home and abroad. Canada, DND, CFC Archives, *Curriculum Documents*, "General and Senior Officers' Professional Development (GSOPD)" 4690-1 (CPCD) dated 09 March 1993, 1.

⁷⁶ Canada, DND, CFC Archives, *Curriculum Documents*, "Operational Level of War Seminar," 1180-1(Cmdt) dated 05 September 1993; and Canada, CFC, "Canadian Forces Command and Staff College, Toronto Operational Level of War Seminar March 1995," (1995(?)).

⁷⁷ Canada, Department of National Defence, CFC "Operational Level Seminar March 1995: Exercise Seminar Lance Part One," (1995(?)), Serial 1; See also Canada, DND, CFC, "Canadian Forces Command and Staff College, Toronto Operational Level of War Seminar March 1995 Course Package," (1995(?)); and Canada, DND, CFC, "Operational Level Seminar March 1995: Exercise Seminar Lance Part Two," (1995(?)).

⁷⁸ Canada, DND, CFC Archives, *Curriculum Documents*, "Senior and General Officer Training at the Operational Level of War," 4640-2027 (DComd) dated 8 July 1994, 1-3.

⁷⁹ For CFC comments on Canada, DND, CFC Archives, *Curriculum Documents*, "Senior and General Officer Training at the Operational Level of War," 4640-2027 (DComd) dated 8 July 1994 see Canada, DND, CFC Archives, *Curriculum Documents*, "Senior Officer Training," undated briefing note.

⁸⁰ Colonel Randy Wakelam, current Director of Research and Symposia CFC noted that in 1995 a staff check was conducted by the College that confirmed all Lieutenant Colonels and above had received the operational level of war seminar or attended the CSC after the introduction of the operational level of war.

⁸¹ Canada, Department of National Defence, *B-GG-005-004/AF-00 Joint Doctrine For Canadian Forces Joint and Combined Operations* (Ottawa: National Defence Headquarters, 1995-04-06, Ch 1 – 1995-09-05), 1-9; and Canada, Department of National Defence, *B-GL-300-001/FP-000 Land Force - Conduct of Land Operations – Operational Level Doctrine For The Canadian Army Volume 1*(Director of Army Doctrine, 1996-09-15), G-9

⁸² Department of Defense, Joint Chiefs of Staff, *Joint Publication 3-0 Doctrine for Joint Operations* (1 February 1995), GL-10 to GL-11.

⁸³ Wakelam, "Senior Professional Military Education for the Twenty-First Century," 14-15.

⁸⁴ *Ibid*, 15-17.

⁸⁵ Bill McAndrew, "Operational Art and the Northwest European Theatre of War, 1944." *Canadian Defence Quarterly* 21, no. 3 (December 1991): 19-26.

⁸⁶ Colonel K.T. Eddy, "The Canadian Forces and the Operational Level of War," *Canadian Defence Quarterly* 18, no. 5 (April 1992): 18-24.

⁸⁷ "The Army Professional Reading List." *The Canadian Army Journal* 2, no. 4 (June 1999): 5; and see B.J.C. McKercher and Michael A. Hennessy, eds, *The Operational Art: Developments in the Theories of War* (Westport, CT: Praeger Publishers, 1996).

⁸⁸ William McAndrew, "Operational Art and the Canadian Army's Way of War," in McKercher and Hennessy, *The Operational Art*, 97.

⁸⁹ Huba Wass de Czege, "Lessons from the Past: Making the Army's Doctrine 'Right Enough' Today," *Landpower Essay*, no. 06-2 (September 2006), 4.

⁹⁰ Email from Brigadier (Retired) Huba Wass de Czege, United States Army to Author (Tuesday, February 13, 2007 11:33 AM).

⁹¹ Ludwik Fleck, *Genesis and Development of a Scientific Fact*, with a foreword by Thomas S. Kuhn, edited by Thaddeus J. Trenn and Robert K. Merton, translated by Fred Bradley and Thaddeus J. Trenn. (Chicago: University of Chicago Press, 1979; reprint 1981, original edition Basel, Switzerland: Benno Schwabe & Co., 1935), 98-111.

⁹² See Diane Forestell, "Communities of Practice: Thinking and Acting within the Territory," (Kingston: Canadian Forces Leadership Institute, 2003), 1-5; and 24.

⁹³ For further readings concerning postmodern operational thought in Canada see Allan English, Daniel Gosselin, Howard Coombs, and Lawrence Hickey, eds., *The Operational Art – Canadian Perspectives: Context and Concepts* (Kingston: Canadian Defence Academy Press, 2005).