

CANSOFCOM PROFESSIONAL DEVELOPMENT CENTRE

# SOF EDUCATION

IGNORE AT YOUR OWN PERIL

DR. EMILY SPENCER AND COLONEL (RETIRED) BERND HORN



---

# THE CANSOFCOM EDUCATION & RESEARCH CENTRE

---

## MISSION

---

The mission of the Canadian Forces Special Operations Forces (CANSOFCOM) Education and Research Centre (ERC) is to support the professional development framework within the Command in order to continually develop and enhance the cognitive capacity of CANSOFCOM personnel.

## VISION

---

The vision of the CANSOFCOM ERC is to be a key enabler to CANSOFCOM as an intellectual centre of excellence.

## ROLE

---

The CANSOFCOM ERC is designed to:

1. Develop educational opportunities and SOF specific courses and material to enable CANSOFCOM professional development (PD);
2. Provide and / or assist in accessing academic advice on diverse subjects to support CANSOFCOM personnel undergoing professional military education (PME) and PD;
3. Conduct focused research and provide advice on seeking additional research capacity for CANSOFCOM best practices and force development;
4. Record CANSOFCOM's classified history;
5. Coordinate the publication of CANSOFCOM educational material; and
6. Support CANSOFCOM's "up and out" Communication Strategy.

# **SOF EDUCATION**



# **SOF EDUCATION:**

## **IGNORE AT YOUR OWN PERIL**

Dr. Emily Spencer and Colonel (Retired) Bernd Horn



Copyright © 2020 Her Majesty the Queen, in right of Canada as represented by the Minister of National Defence.



Canadian Special Operations Forces Command  
101 Colonel By Drive  
Ottawa, Ontario K1A 0K2

Produced for CANSOFCOM Education & Research Centre  
by 17 Wing Winnipeg Publishing Office.  
WPO31993

COVER PHOTO: CANSOFCOM

MONOGRAPH 26 – SOF EDUCATION: IGNORE AT YOUR OWN PERIL

CANSOFCOM Education & Research Centre Monograph Series Editor: Dr. Emily Spencer

ISBN 978-0-660-35808-6 (print)  
978-0-660-35807-9 (PDF)

Government of Canada Catalogue Number D4-10/26-2020E (print)  
Government of Canada Catalogue Number D4-10/2020E-PDF (PDF)

Printed in Canada.



---

The views expressed in this publication are entirely those of the authors and do not necessarily reflect the views, policy or position of the Government of Canada, the Department of National Defence, the Canadian Armed Forces, the Canadian Special Operations Forces Command or any of their subordinate units or organizations.

---





# FOREWORD

I am delighted to introduce the latest CANSOFCOM Education & Research Centre (ERC) monograph, *SOF Education: Ignore at Your Own Peril*. This publication is extremely important for Special Operations Forces (SOF), as well as all military personnel at large, because it deals with education, “the shaping of the mind.” Education is an interesting concept in the military because everyone nods energetically when asked if education is important. However, when the acid test of reality rears its ugly head and organizations, as well as their personnel, are required to commit resources (i.e. time and money) it quickly becomes apparent that education is just not that important.

Despite the frequent institutional reticence to invest in education, as this monograph reflects, it is extremely important to prepare individuals, particularly SOF personnel, for the increasingly complex and dynamic security environment our military personnel must face. Training and experience are incredibly important, (and, thus reasonably, most focused on), but to be consistently successful today and, more importantly tomorrow, it is imperative that they be complemented by education.

As such, *SOF Education*, our 26<sup>th</sup> ERC monograph, defines education and its importance to success within the defence environment, and lays out why it is especially imperative for the SOF community. As always, this monograph is designed to inform and spark discussion. Notably, its creation was a result of an initiative within CANSOFCOM to better define and structure senior non-commissioned officer education.

As always, please do not hesitate to contact the ERC if you have questions or comments on this publication, or if you have ideas for future monograph topics.

Dr. Emily Spencer  
Director ERC and series editor



## INTRODUCTION

Education should never be considered a bad thing. In fact, philosophically, there is a strong argument supporting the concept that the more education one has, the richer they are as a person. Nonetheless, the moment resources, in particular time and money, enter the equation, the importance of education to individuals often shifts. What was once thought of as an important goal for now, quickly transforms into a nice to have at a later point in time. Nowhere is this flux more evident than in the military, where time and fiscal pressures inevitably prompt “innovative ideas” that often involve cutting professional development, including education. The argument is normally that it can be easily pushed to a future endeavour. Additionally, these same pressures consistently resurrect dormant inquiries about the actual benefit and value of education: are undergraduate and graduate degrees actually important to the military? Specific questions are frequently floated as a precursor to potential program cuts. These questions may include such things as: whether or not everyone needs a university degree?; if there should be an education gap between Officers and Non-Commissioned Officers (NCOs)?; specifically, do NCOs actually need a degree?; and does anyone really need a graduate degree? Interestingly, the decisions within militaries at large seem to be propelled by budget and time constraints more so than sound reasoning and argument. It is no surprise that the SOF communities also struggle with these issues.

Notably, the military has historically been an anti-intellectual institution and yet, paradoxically, success in the contemporary operating environment (COE), which is predicted to grow in complexity, demands rigorous intellect be applied to problem solving – a key benefit of education. Globalization, persistent conflict, as well as the proliferation of cheap, accessible technologies are all driving the rapid and continuous transformation of conflict

and consequently our conventional understanding of the COE. Additionally, hybrid threats that include diverse combinations of irregular, terrorist, criminal, and conventional forces employed asymmetrically, all operating within populated centres in a variety of culturally diverse environments, do not lend themselves to simple cookie-cutter solutions. While it is too soon to predict the full extent of the COVID-19 impact on the future operating environment, that too is clearly not a simple solution and requires the rigours of intellect to solve.

Simultaneously, the recent American “pivot” to Great Power Competition (that will drive Allied Western response as well), which transpires in both military and non-military domains, has further highlighted the need for smart General Officers/Flag Officers (GOFOs), as well as an educated defence team, which clearly includes military members. Indeed, American Admiral James Stavridis, a former North Atlantic Treaty Organization (NATO) Allied Commander Europe, renowned for his sharp intellect and operational acumen declared, “The quintessential skill of a leader is to bring order out of chaos. You have to be calm, smart and willing to do the brain work; in the end, 21<sup>st</sup> century security is about brain-on-brain warfare.”<sup>1</sup> In fact, the American Joint Chiefs of Staff released guidance in May 2020 that underscored the requirement for continual education. The guidance explained:

There is more to sustaining a competitive advantage than acquiring hardware; we must gain and sustain an intellectual overmatch as well. The agility and lethality of the force must be applied appropriately to deter, fight, and win against adversaries who have studied our methods and prepared themselves to offset our longstanding military superiority. This cannot be

achieved without substantially enhancing the cognitive capacities of joint warfighters to conceive, design, and implement strategies and campaigns to integrate our capabilities globally, defeat competitors in contests we have not yet imagined, and respond to activity short of armed conflict in domains already being contested.<sup>2</sup>

In essence, in order to be effective in the security environment, military professionals of all ranks, and particularly SOF personnel, must be adaptive and agile in both thought and action, as well as adept at critical thinking and sound reasoning. These skill-sets do not just happen overnight or through osmosis. Rather, they represent the fallout of a sound education. In short, militaries require educated men and women who can adapt to their environment and have the intellectual prowess to be able to shape the future to their desired end-state.

## **A TENUOUS RELATIONSHIP: THE MILITARY AND EDUCATION**

Perhaps too often the terms “professional” and “educated” have been seen as interchangeable. United States Marine Corps (USMC) Colonel (retired) Reed Bonadonna, PhD, who is currently a Senior Fellow at the Carnegie Council for Ethics in International Affairs opined that the military profession should be considered a branch of the humanities, since the profession necessitates a lifetime of learning and habits of reflection.<sup>3</sup> While experience does lend itself to growth, this connection is not automatic. Careful deliberation, and more often than not study, are required to transform experience into knowledge.

While the two are not synonymous, education should be a principal pillar of any profession. Eliot Freidson, a leading scholar on the subject of professionalism, identified that “A profession

has a formal program that produces the qualifying credentials, which is controlled by the profession and associated with higher education.”<sup>4</sup>

With a realization that experience is critical, but even more powerful when combined with education, in 2012, General Raymond Odierno, the Chief of Staff of the Army at the time, developed the Advanced Strategic Planning and Policy Program. Odierno’s intent was to use the program “to strike a better balance between a warrior ethos that emphasizes martial virtues on the one hand, and critical thinking on the other.” In essence, it represents a recognition that operational experiences should not be the only factor shaping leader promotion. Rather the program attempts to take individual experiences and combine them with an ability to reason and communicate. Odierno believed that this mix would best serve to create institutional leaders capable of operating in an increasingly complex operating environment.<sup>5</sup>

Notably, the failure to incorporate education into a profession can have serious repercussions, as the Canadian military institution discovered in the 1990s. A number of ethical, moral and leadership challenges in that decade, both at home and on operations, forced the Canadian Armed Forces (CAF) to examine its anti-intellectual culture and make necessary changes to increase the importance of education to the Canadian profession of arms.<sup>6</sup> As Lieutenant-General Michael Jeffrey assessed, “A lack of intellectual discipline in the past has got us where we are today [1990s].” He additionally asserted, “If we don’t change we will die,” concluding, “the longer we resist it, the harder we make it on someone else.”<sup>7</sup>

Within the CAF, Jeffrey found support. Former Chief of the Defence Staff (CDS), General Maurice Baril, insisted that military leaders “need to have the right mindset to change and evolve the profession.” He added, “knowledge must be valued as a key ingredient to our growth as individuals and as a profession.”<sup>8</sup>

By 1997, Doug Young, the Minister of National Defence (MND), General Baril, and Louise Frechette, the Deputy Minister (DM), were all seriously concerned that the balance among the four pillars of professional development – training, education, experience and self-development – had become distorted and very problematic. Missing was an emphasis on education, particularly higher learning.<sup>9</sup> The MND confirmed, “Without higher education you’re not tuned into what’s happening in the larger society.” He concluded, “That’s where we lost the ball.”<sup>10</sup>

Necessary reforms that were required and subsequently implemented included: ministerial direction that all officers must hold a recognized undergraduate degree; the CDS appointment of a Special Advisor to the Office of the CDS for Professional Development; the creation of a Canadian military journal to allow a forum for professional discourse; the creation of a Canadian “war college” course; and the establishment of a Canadian Defence Academy to provide a centre of excellence for CAF professional development, to name a few. In sum, all changes were indications that the CAF had apparently recognized its anti-intellectualism and failure to ensure its personnel received the required education to complement their training, and were now ready, if not forced, to address this deficiency.

While initial momentum for the development of an intellectual force existed, it was short lived. After 9/11, the necessity and immediacy of operations once again trumped the less immediately tangible benefits of having a smart officer and NCO corps.

Unfortunately, the long war in Afghanistan and the post-war return to more fiscally challenging times seemed to have resurrected old attitudes about the value of education for military members. The current reality once again juxtaposes education against training.

SOF, an organization that prides itself on its ability to adapt and exercise the pursuit of excellence, was not immune. In the end, with everyone consumed with operations in Iraq, the Sahel and around the globe, one must ponder once again if there is the time, or even a need, for education.

After all, the vast benefits of education are generally not immediately tangible. Unlike training where quantifiable improvements in behaviour can be physically seen and measured, for instance marksmanship scores or proficiency in drills, education is less evident in the short-term. It deals with creativity, critical thinking and reasoning.<sup>11</sup> These capabilities take time to develop and cannot always be traced back to one lecture or course – they are cumulative in effect and often hard to quantifiably measure.

Additionally, unless you yourself have benefited from an education, it is perhaps even more difficult to see the fruits of such a course of action. Notably, most resource decisions are made by senior ranks. And, unless they are well-educated themselves, their tendency will be to under-rate the value of education. After all, they attained their rank and position without it, and clearly they are doing well. To make matters worse, it is hard to teach an old dog new tricks, or, more directly put, it is hard to change one's "thought patterns in your 40s and beyond."<sup>12</sup>

In this vein, Lieutenant-General (retired) David W. Barno and Dr. Nora Bensahel, Visiting Professors of Strategic Studies at the Johns Hopkins School of Advanced International Studies and Senior Fellows at the Philip Merrill Center for Strategic Studies, questioned whether military leadership was open-minded enough to make the necessary changes that are required to develop a smart thinking force. They observed that the military may not realize that they are at great risk of a failure of imagination due to being unconsciously trapped by their success, experience, and rank. They argued that past success makes individuals



less likely to try new and unproven approaches in the future, explaining that military leaders “are part of an intensely hierarchical organization where age, rank, and power are almost perfectly correlated.”<sup>13</sup>

Not surprisingly, much like the Canadian experience, The American *2018 National Defense Strategy* described U.S. professional military education as stagnating, with a shift in focus toward “the accomplishment of mandatory credit at the expense of lethality and ingenuity.”<sup>14</sup> The strategy document underscored that “the creativity and talent of the American warfighter is our greatest enduring strength.”<sup>15</sup> However, the American Joint Chiefs of Staff also conceded that “intellectual requirements have not been the focus of our current leader development enterprise.”<sup>16</sup>

Notably, the Canadian and American examples are not unique. NATO countries cut their professional military education budgets by an average of 30 per cent between 2008 and 2013.<sup>17</sup>

At the root of the tenuous relationship that the military has had with education is a failure to fully appreciate the importance or, more pointedly, the requirement, of education to military effectiveness. If you eat a bag of chips one day, you are likely not going to put on any weight. If you eat a bag of chips every day, it will be hard to hide from the calories. Education is the same. Its effects are cumulative and slow, and absolutely, as good diet and exercise are to health, not substitutable. The gap will find you, it is just a matter of when.

## **WHAT EXACTLY IS EDUCATION?**

There tends to be a general trend in the military to often conflate training and education. The traditional stress on training, that is “a predictable response to a predictable situation,” is often confused, or considered synonymous, with education, which, in contrast, as

defined by Professor Ron Haycock is “the reasoned response to an unpredictable situation – critical thinking in the face of the unknown.”<sup>18</sup> Because of the CAF’s, and particularly the Canadian Special Operations Forces Command’s (CANSOFCOM), excellent training regimen and their success on operations in Afghanistan, Iraq and elsewhere around the globe, it is easy to be lulled into a perception that the institution’s educational needs are being adequately attended to as well. What is unheeded, however, and at great peril, is that the prescribed application of ideas and methods, as well as drills and checklists, have a purpose and functional utility, but this methodology is no longer, if in fact it ever was, enough to equip leaders to be able to cope with, and function effectively in, the complex post-modern world.

The educational component is crucial to soldiers, as well as senior NCOs and, particularly, officers. Simply put, “education,” according to Royal Military College of Canada (RMCC) Professor David Last, a former artillery senior officer, “is the shaping of the mind.”<sup>19</sup> Education assists in our ability to reason, which in turn is critical in responding to unanticipated circumstances, and indeed, being able to shape environments to your will. In the end, you train for certainty and educate for uncertainty.

To appreciate these distinctions, it is important to understand, and be able to place, the CAF’s/CANSOFCOM’s ultimate purpose and their operations within the context of the larger whole of government and the society they serve. The French Emperor, Napoleon Bonaparte, recognized in the 19<sup>th</sup> century that “Tactics, evolutions, artillery and engineer sciences can be learned from a manual like geometry; but the knowledge of the higher conduct of war can only be acquired by studying the history of wars and battles of great generals and by one’s own experience.” He understood, “There are no terse and precise rules at all.”<sup>20</sup> He also recognized that war was not an individual endeavour and instead required a

cohesive team. This reality is exactly why the U.S. military believes that “successful operational adaptability depends upon educating and developing leaders, training soldiers, and building cohesive teams who are prepared to execute decentralized operations in and among populations in coordination with Joint, Interagency, Intergovernmental, Multinational (JIIMP) partners.”<sup>21</sup>

## **WHY EDUCATION IS SO IMPORTANT TO THE MILITARY MIND**

The requirement to comprehend the “the larger picture” cannot be overstated.<sup>22</sup> According to Professor Last, military leaders “are managers of violence.” He explained:

Their professional education must allow them to understand it. Violence has always been a part of the interconnected human conditions that we label war, conflict, and peace. In the complex world of today and tomorrow, our understanding of these conditions needs to be more comprehensive than in the past. This is more important than technology, doctrine, and strategy, because all are subservient to purpose. There is no purpose without understanding. The officer’s [and senior NCO’s] understanding must match that of society – otherwise he or she cannot serve it.<sup>23</sup>

This societal connection has another, equally important, dimension. The Canadian Military Ethos demands that the CAF, including CANSOFCOM, remain rooted in Canadian society and reflect its most important values and attitudes. In this regard it is critical to understand that, as former Ambassador Paul Heinbecker pointed out, “we are an extensively educated people.”<sup>24</sup> Of the thirty-three most industrialized economies surveyed by the Organization for Economic Co-operation and Development (OECD), Canada ranked

second behind Russia, (Japan was third and the U.S. fourth), in the percentage of the population that has attained at least a university or college-level education. The CAF must remain reflective of this leading-edge sector of Canadian society if we are to retain the trust, confidence and respect necessary to maintain the essential support of Canadian citizens.

In addition, the importance of education to the military profession, particularly in the post-modern world, is clear, especially in light of the series of crises that the CAF endured during the cataclysmic decade of the 1990s.<sup>25</sup> Interestingly, it was recognized as early as 1969, by then-CDS Jean Victor Allard. "It matters little," he wrote, "whether the Forces have their present manpower strength and financial budget, or half of them, or double them; without a properly educated, effectively trained professional officer corps the Forces would, in the future, be doomed at best to mediocrity, and at the worst, to disaster."<sup>26</sup>

Intuitively, a professional soldier is better prepared to face the unknown challenges of the ambiguous, complex and uncertain battlespace by having a broad knowledge of theories that act as a guide to discretionary judgment rather than a narrow ability in only some of the practical applications of the profession of arms. Lieutenant-General (retired) Barno and Dr. Behsahel explained, "The extraordinary pace of global change means that adaptability may be the most important characteristic of the future force – and especially of its leaders."<sup>27</sup> A team of American researchers agreed. "Today's military leaders," they argued, "need to be highly adaptive and capable of addressing complex and ambiguous problems."<sup>28</sup> Another military scholar and veteran elucidated, the military leader must overcome "institutional, environmental, and psychological impediments to clear thinking, some of them particular to military organizations and the practice of warfare, while also cultivating multiple intelligences, to meet the demands of military professionalism: clear thought under stress, a

willingness to face often unpleasant facts, disciplined creativity, and a commitment to constant learning.”<sup>29</sup> Major-General Mick Ryan also emphasized the requirement to gain the “intellectual edge.” He argued, “The intellectual edge for an individual is the capacity for that person to creatively outthink and out plan potential adversaries.” Importantly, he emphasized that the intellectual edge was “founded on the broadest array of training, education and experience, as well as a personal dedication to continuous self-learning over a long period of time.”<sup>30</sup> The aforementioned rationale are all reasons for advocating for the advanced education of military personnel.

Indeed, education is a vital enabler for adaptive thought and action. Barno and Bensahel also highlighted the need for military leadership to improve the ability to rapidly adapt to unforeseen circumstances and to make assessments of how the battlespace is changing at lightning speed. Moreover, these connections need to be achieved under the extreme stress of chaotic conditions, crisis and/or combat. Furthermore, due to the complex and dynamic battlespace, military leaders must be able to, if necessary: ignore, if not disregard current doctrine and Tactics, Techniques and Procedures (TTPs); repurpose technology; and formulate entirely new processes and methodologies on the spot to address problems on operations. Likewise, military leaders will need to be able to effectively act, even if nothing works as they had expected and hoped that it would, and the opponent is prevailing. As Barno and Bensahel noted, leadership must be able to have the resilience to cope effectively with “repeated surprise, shocks, and setbacks.”<sup>31</sup> Combat veteran Dr. Reed Bonadonna further explained:

[Military leaders] are expected to think clearly under extremely stressful conditions. War is a protean activity that makes enormous and ever-changing cognitive demands.

The officer [and/or Senior NCO] may have to adapt to changing tactical situations and a shifting strategic context. She may have to change roles from organizer to warfighter to diplomat and back again as quickly as a harried plebe dressing for parade amidst changes in the uniform. These roles may call for combinations of discipline and creativity, of belligerence and empathy. The breadth (if not always the depth) of cognitive demands which officers can be called upon to meet is perhaps unique among the professions. To attempt to think like an officer [and/or Senior NCO] is to expand one's mind, and likely in multiple directions at once. The unpredictable nature of military operations also means the officer [and/or Senior NCO], no matter how experienced or educated, must be willing to enter a realm of uncertainty, of nearly imponderable and unprecedented factors brought on by the enemy will, by the uncertain impact of technological change, and by unfamiliar histories and cultures. Officers [and/or Senior NCO] today are learning about the unfamiliar cultures of the Middle East, with the impact on the motives and actions of combatants and others in the region. They are also absorbing the impact of new technologies, perhaps most significantly, of the cyber technology that is arguably creating a new domain of warfare as significant as those of land, sea, and sky.<sup>32</sup>

Certainly, it is not possible to over-exaggerate the requirement for good thinking. As one expert concluded, "strategic effectiveness will increasingly be based on the capacity to think like a networked enemy. Therefore, the military leader needs to understand a complex environment and a diverse range of interests, actors and issues while retaining the capacity to 'simplify, focus, decide and execute.'"<sup>33</sup> Moreover, retired American Major-General Robert H. Scales underlined the need for education vice training when he commented, "This new era of war requires soldiers equipped

with exceptional cultural awareness and an intuitive sense for the nature and character of war.”<sup>34</sup>

Consistently, the requirement for education in today’s complex security environment is repeatedly stressed by practitioners who, through the experience in the chaos of conflict, clearly comprehend that education, rooted in critical thinking, problem solving and analytical research, better prepares individuals to think, as well as to cope with problems and unexpected situations. It assists individuals to not only embrace change, but adapt to and anticipate it. More importantly, it instills in people the attitude and ability to constantly learn from one’s environment and to prepare, as well as react, accordingly. Equally important, as Dr. Bill Bentley explained, “formal education becomes the mechanism that allows an individual to better comprehend and understand the integrated, multifaceted, intricate and complex context of the military profession within the larger world it exists in.”<sup>35</sup> Moreover, guidance issued by the American Joint Chiefs of Staff accentuated, “We must consistently prioritize critical and creative thinking, continuous learning and professional development, and the pursuit of transregional and cross-domain excellence in the development and assignment of joint warfighters.” They added, “we require leaders at all levels who can achieve intellectual overmatch against adversaries.”<sup>36</sup>

As such, in the complex, globalized, information rich world we live in, it is essential that officers, as well as senior NCOs, become better prepared to take on senior appointments so that they can excel not only at technical warfighter skills, but also so that they can perform as reliable, credible and astute partners in the whole-of-government framework required to ensure a vibrant, strong country and prevail in conflict.

In the end, the great Prussian theorist, Carl von Clausewitz, identified that “If we pursue the demands that war makes on

those who practice it, we come to the realm of intellect.”<sup>37</sup> Colonel John Boyd stripped it down to its simplest form. “Machines don’t fight wars,” he asserted, “Terrain doesn’t fight wars. Humans fight wars.” He concluded, “You must get in the minds of the humans. That’s where the battles are won.”<sup>38</sup>

This truth has not escaped the Chinese. “In future conflict, the battlefield is expected to extend into new virtual domains,” Major-General He Fuchu, Vice President of People’s Liberation Army (PLA) Academy of Military Science, explained, “The sphere of operations will be expanded from the physical domain and the information domain to the domain of consciousness; the human brain will become a new combat space. Consequently, success on the future battlefield will require achieving not only ‘biological dominance’ but also ‘mental/cognitive dominance’ and intelligence dominance.”<sup>39</sup>

It must be recognized that education is the domain of the human mind. Historian, Sir Michael Howard, wrote:

...academic studies can provide the knowledge, insight, and the analytic skills which provide the necessary basis, first for reasoned discussion, and then for action. They provide a forum, and breed the qualities, which enable the student, the teacher, the politician, the civil servant, the moral philosopher, and not least the soldier to reach a common understanding of the problems which confront them, even if inevitably there is disagreement about the solutions. This dialogue is what civilization is all about. Without it, societies dissolve.<sup>40</sup>

Similarly, closer to home, Dr. John Cowan, a former Principal of RMCC, reinforced the necessity of education in relation to the military. “Today, when a [military leader] may be called upon to be a skilled leader, a technical expert, a diplomat, a warrior, and



even an interpreter and an aid expert all at once,” he insisted, “there is no question that good training is not enough. Skills are not enough.” He added, “The job calls for judgement, that odd distillate of education, the thing which is left when the memorized facts have either fled or been smoothed into a point of view, the thing that cannot be taught directly, but which must be learned. Without the mature judgement which flows from education, we fall back on reflexes, which are damned fine things for handling known challenges, but which are manifestly unreliable when faced with new ones.”<sup>41</sup>

Needless to say, as Cowan affirms, there will always be new challenges to be faced and overcome. This reality was reinforced by Lieutenant-General Andrew Leslie, a former deputy commander of the International Security Assistance Force in Afghanistan. “Individuals were sent home [from Afghanistan],” Leslie asserted because “Immaturity and the inability to actually think outside the box made them ineffective ... What they tried to do was bring their usually very limited experience from somewhere else and apply it the same way that it had been done somewhere else and that didn’t work ... each mission has got its own unique drivers, cultural conditions, local nuances, relationships with your other allies or other combatants.”<sup>42</sup>

Leslie’s observation is undisputable. Up until recently, the common complaint of any deploying body was that they were prepared for the last deployment not the situation that they were currently facing.

Importantly, you don’t know what you don’t know. As such, a culture absorbed solely by experience, whether in the former decades with a reliance on the 4 Combat Mechanized Brigade Group (CMBG) experience of preparing to beat back the Soviet hordes at the Fulda Gap in Germany, or more currently on the Afghanistan experience of fighting the elusive Taliban in Kandahar

Province, or Daesh in Iraq/Syria, or Jihadists in Africa, remains myopic. Experience is essential but it cannot replace the need for education.<sup>43</sup>

The importance of education to enable individuals to be able to deal with the uniqueness of each operational deployment was underlined by General David Petraeus, accomplished soldier and veteran of years of combat in Iraq, a former commander of NATO forces in Afghanistan, and a former director of the Central Intelligence Agency (CIA). Petraeus insisted that military leaders required greater education, particularly graduate education. He affirmed, “that a stint at graduate school takes military officers out of their intellectual comfort zones.” Petraeus believed, “Such experiences are critical to the development of the flexible, adaptable, creative thinkers who are so important to operations in places like Iraq and Afghanistan.”<sup>44</sup> He explained that “through such schooling our officers [and/or military leadership] are often surprised to discover just how diverse and divergent views can be. We only thought we knew the contours of debate on a given subject.”<sup>45</sup> Petraeus concluded that graduate studies “provide a fair amount of general intellectual capital and often provides specific skills and knowledge on which an officer [and/or military leadership] may draw during his or her career.”<sup>46</sup> Moreover, he argued, “graduate school inevitably helps U.S. military officers [and/or military leadership] improve their critical thinking skills.”<sup>47</sup>

Clearly, education is an important tool in enhancing our reasoning ability, which is vital in allowing individuals to respond to unanticipated circumstances. A Department of National Defence (DND) Defence Science Advisory Board (DSAB) report concluded, “education is seen as being fundamental to the building of the breadth of knowledge, judgment, adaptability, maturity and professionalism which Canada’s new roles demand of even very junior officers.” Consequently, the Report concluded, “complexity of thought and maturity of judgment are the products

of strong education, and its application to the interpretation of experience.”<sup>48</sup>

The Report’s conclusion was echoed by David G. Morgan-Owen, an historian and lecturer in Defence Studies at King’s College London. Military leaders, he insisted, “need to be equipped to deal with uncertainty – particularly as they ascend the career ladder to positions of strategic decision-making responsibility. There is no better way of inculcating and fostering this crucial capacity than through the arts, humanities, and social sciences – in other words, through a liberal education.”<sup>49</sup>

## **EDUCATION & EXPERIENCE: A VECTOR FOR SUCCESS**

Too often critics see education and experience as a zero-sum game. Unfortunately, this type of myopic outlook and inward focused mind-set fails to see the inherent flaw of this perception. Experience in itself is valuable and irreplaceable. But it is also constrained by time, geography and memory. One person’s experience, particularly at a specific time and place, does not necessarily represent the knowledge or abilities that are needed for an institution to advance into the future. Moreover, the perspective from a shell-hole, turret or command post is very limited. Service needs become defined in and of themselves without being rooted in their proper societal or strategic context. Most of all, however, a system that values experience as the only true arbitrator of reality suffers from human arrogance and frailty. “We see,” Major Seiberg wrote in the mid-1930s, “that the Spanish Civil War has up to now demonstrated nothing really new, and also that men only regard experience as valid when it is their own experience. Otherwise it would not be possible for the same errors that led to failure in the Great War to be repeated.”<sup>50</sup> Simply put, those who refuse to open their minds are doomed to suffer the limitations of their narrow, restricted and outdated beliefs.

In the Canadian context, the truth in this condemnation of professional development based almost exclusively on the experiential paradigm settled home in the nineties. “Undeniably,” former CDS General Baril wrote, “the 1990s represented the first strong test of the contemporary C[A]F Officer Corps and we found that part of it was broken.” He concluded, “Experience in and of itself was not enough.”<sup>51</sup> He later acknowledged that “over the past 10 years ... we constantly found ourselves thrown into the unknown. Complex, ambiguous and politically charged operations tested our leadership and confronted us with ethical dilemmas.” Baril further conceded, “here at home we were slow to understand and adapt to the large-scale societal changes associated with the end of the Cold War and therefore were not prepared for these demands.”<sup>52</sup>

Quite simply, the warning previously given by General Allard well over two decades earlier had gone unheeded. The acid test of reality clearly demonstrated that experience, as valuable as it is, was simply not enough. The shortfalls of experience are both a function of limited access and also limited scope. Instead, education should be seen as a key enabler and complement to experience that when combined creates a vector that places one on the trajectory of success. After all, education provides knowledge and skills that experience alone can rarely match. For example, former Division Commander and Army War College Commandant, Major General Anthony Cucolo asserted:

When I was commanding U.S. Division-North in Iraq, I needed my command sergeant major to operate at that level with me as much as my two one-stars and as much as my chief of staff. Every member of a command group needs to be operating at the same level. ... You need things like understanding grand strategy, how strategy turns into policy, the economics of warfare, and oral and written communications so you can go toe-to-toe intellectually when you get put into those positions.<sup>53</sup>

Education can help fill that experiential gap. For example, reading can provide that vicarious experience, an opportunity to learn from others with endless boundaries and scope. USMC General and former Secretary of Defense, James Mattis, expounded, “If you haven’t read hundreds of books, you are functionally illiterate, and you will be incompetent, because your personal experiences alone aren’t broad enough to sustain you. Any commander who claims he is ‘too busy to read’ is going to fill body bags with his troops as he learns the hard way.”<sup>54</sup> Mattis’ point may have been born from his experience with generals he met during his career. For instance, many have offered that General William Westmoreland’s poor handling of the Vietnam War was due to his myopic tactical focus and lack of intellectual acuity. One peer observed, “General Westmoreland was intellectually very shallow and made no effort to study, read or learn. He would just not read anything.”<sup>55</sup>

The U.S. Army Field Manual, *Leader Development (FM) 6-22*, articulates that “professional reading programs broaden leader knowledge, understanding, and confidence.”<sup>56</sup> Importantly, the range and scope of the material must not be constrained. Major James Torrence explains, “If soldiers only read books that discuss lessons identified from the perspective of military and government, they will have diminishing returns on exposure to new ideas, critical thinking, and will not be agile or adaptive.”<sup>57</sup> Furthermore, he argues, “One of the factors preventing Army soldiers from transforming to adaptive leaders is an existing culture that does not create opportunities for soldiers to broaden their sources of professional reading.”<sup>58</sup>

The realization that reading and education can be used to fill an experiential gap is not new. In 1931, Major-General W.A. Griesbach stated, “Since wars cannot be arranged in order merely to train officers, it follows that, after a long period of peace the

officers [and/or military leaders] of an army must get their military education from reading and study.”<sup>59</sup>

Former Secretary of State Henry Kissinger perhaps captured the theme best, especially for operational and strategic commanders and leaders, by using the “book” as a symbol of a broad and comprehensive education:

We have entered a time of total change in human consciousness of how people look at the world. Reading books requires you to form concepts, to train your mind to relationships. You have to come to grips with who you are. A leader needs these qualities. But now we are tempted to learn from fragments of facts. A book is a large intellectual construction. You can't hold it all in your mind easily or at once. You have to struggle mentally to internalize it. Now there is no need to internalize because each fact can instantly be called up again on a computer. There is no context, no motive. Information is not knowledge. People are becoming researchers not readers, they float on the surface. This new thinking erases context. It disaggregates everything. All this makes strategic thinking about world order nearly impossible to achieve.<sup>60</sup>

In the final analysis, nine times out of ten, in a crisis, individuals will want to follow a leader with experience. This belief holds great merit. They have been tested, have seen a similar situation, or at a minimum, have had to deal with stress and chaos in the past. Experience should be greatly valued. However, one person's experience is rarely all encompassing. As such, education, with a special emphasis on reading, which provides vicarious experience, allows individuals to fill the experiential gap.

## THE DYNAMIC EVOLVING SECURITY ENVIRONMENT

The requirement for education and reading to supplement experience is particularly relevant when one considers the fact that the security environment is constantly evolving. With the myriad of threats, pressures, social/economic/political/technological/informational/military challenges, around the globe, each with its own unique set of drivers and factors, it is virtually impossible for individuals to amass the personal experience to deal with them all, particularly since they are constantly evolving and mutating.

For example, the current *2018 American National Defense Strategy (NDS)*, heralded a “pivot,” or in other words, a transition from the Department of Defense’s (DoD) primary focus on counter-terrorism as part of the “global war on terror” and counter-insurgency (COIN), to a fundamental shift of emphasis to Great Power Competition with its “peer and near-peer” rivals (i.e. China, Russia) and international rogue states/competitors (e.g. Iran, Republic of North Korea).<sup>61</sup> As a result, the American *2018 NDS* shift in focus had a collateral effect of driving NATO/Western focus to a shift to Europe and Asia as well, which once again became the “priority theatres.”

For many, the “pivot” translates to a return to “high-intensity” combat hearkening back to the Cold War stand-off between super-powers, with the Great Power Competition adding just another suite of complexity to the security environment. The “competition,” however, is more than just a conventional military showdown of muscle, which in its own right requires study and strategic thought. A high-intensity, traditional war scenario is ominous, if not downright horrendous. Globalization, the proliferation of technology and its exponential, consistently increasing capability has made a traditional war almost incomprehensible. An increasing number of nations with substantial

nuclear arsenals, as well as the global propagation of stand-off precision missile systems and platforms, including highly manoeuvrable cruise missiles, as well as hypersonic weaponry (weapons that travel at five times the speed of sound) and glide vehicles, matched with networked sensors, are capable of delivering large payloads of munitions at increased ranges so that targets can be engaged and destroyed almost anywhere with accuracy within a short period of discovery, requiring almost immediate decision-making.<sup>62</sup> Space-based weapons, lasers, directed-energy munitions and high-powered microwaves will only increase lethality and reach.

As a result of this array of lethal ordnance, the delivery of timely and accurate munitions can be easily done. As a plethora of analysts have identified, the world has become one big sensor, thereby making masking military deployments or actions virtually impossible.<sup>63</sup> This reality makes the fielding of large conventional armies and their platforms laden with risk. Added to this formidable range of threats is a myriad of additional perils. Jamming of communications, electronic warfare and cyber-attacks that target networks and the vulnerable software programs that seemingly run the entirety of today's society and militaries will only increase risk and consequence of a high-intensity war. The increasing development and deployment of autonomous systems further contributes to this complexity.<sup>64</sup>

In light of the lethality of the modern battlespace, as well as the substantive, imposing American and Western military capability, no nation would rationally purposely attempt to compete with the U.S. or its Allies in a traditional conventional war setting if at all avoidable.<sup>65</sup> Consequently, the security environment has evolved into a much more complex and innocuous battlespace. American/Western rivals and competitors will wage a different form of conflict, or in the current parlance, "competition."



Although competitors such as China and Russia maintain large military forces and continue to improve and expand their arsenals, arguably leading to a renewed arms race, they remain careful to avoid actions that would possibly activate the conventional war “trip wire.” Rather they maintain the military capability as a substantial, viable and overt threat, but compete on various levels under the threshold of a “hot” or “shooting war.” In fact, they utilize “hybrid warfare,” defined by the North Atlantic Treaty Organization (NATO) as “a wide range of overt and covert military, paramilitary, and civilian measures [...] employed in a highly integrated design.”<sup>66</sup> A 2014, British Ministry of Defence report captured its essence more lucidly. It asserted:

Our adversaries are unlikely to engage us on our terms and will not fight solely against our conventional strengths. They will seek an asymmetric advantage and some will employ a wide range of warfighting techniques, sometimes simultaneously in time, space and domain. Their logic will not necessarily be our logic and thus our ability to understand adversaries – and our ability to make them understand our intent – will be challenging... In some conflicts, we are likely to see concurrent inter-communal violence, terrorism, insurgency, pervasive criminality and widespread disorder. Tactics, techniques and technologies will continue to converge as adversaries rapidly adapt to seek advantage and influence, including through economic, financial, legal and diplomatic means. These forms of conflict are transcending our conventional understanding of what equates to irregular and regular military activity; the conflict paradigm has shifted and we must adapt our approaches if we are to succeed.<sup>67</sup>

In essence, the new competitive landscape, blends conventional, irregular, asymmetric, criminal and terrorist means and methods

to achieve a political objective(s). Importantly, this approach actually makes the opponent largely irrelevant. Whether a state or non-state actor, adversaries will make use of the proliferation of technology and information that has accompanied globalization. Instruments such as cyber, economic coercion or even blackmail, exploitation of social/societal conflict in a target country and the waging of disinformation campaigns and psychological warfare are all in the inventory. Criminal behaviour and terrorism are also in the repertoire of opponents. General Valery Gerasimov, Chief of the General Staff of the Russian Federation, distinctly articulated the application of this methodology of competing (or more accurately great power competition/conflict). He explained, "Moscow is increasingly focusing on new forms of politically-focused operations in the future... new tactics are needed which focus on the enemy's weaknesses and avoid direct and overt confrontations. To be blunt, these are tactics that NATO – still, in the final analysis, an alliance designed to deter and resist a mass, tank-led Soviet invasion – finds hard to know how to handle."<sup>68</sup>

General Gerasimov markedly identified the weakness of modern states. He insisted that history has shown that "a perfectly thriving state can, in a matter of months and even days, be transformed into an arena of fierce armed conflict, become a victim of foreign intervention, and sink into a web of chaos, humanitarian catastrophe, and civil war."<sup>69</sup> This state of affairs is due, in his estimation, to the fact that "the role of nonmilitary means of achieving political and strategic goals has grown, and, in many cases, they have exceeded the power of force of weapons in their effectiveness."<sup>70</sup>

In essence, rather than a kinetic solution to conflict, Gerasimov argues that the focused application of political, economic, informational, humanitarian, and other nonmilitary measures, when applied in a coordinated manner with internal discontent and protest, can wield significant results. In addition, all of

these actions are also combined, at the right moment, normally to achieve final success, with concealed military action, often “under the guise of peacekeeping and crisis regulation.” Gerasimov insisted, “Asymmetrical actions have come into widespread use, enabling the nullification of an enemy’s advantages in armed conflict. Among such actions are the use of special-operations forces and internal opposition to create a permanently operating front through the entire territory of the enemy state, as well as informational actions, devices, and means that are constantly being perfected.”<sup>71</sup>

In fact, from a strategic perspective, the methodology of rivalry in the Great Power Competition entails the mobilization of a wide range of a state’s resources, primarily non-violent, to achieve a desired political end-state. In fact, the use of violence is not even remotely desired. In essence, a “hybrid warfare” approach is seen as a methodology of achieving the political end-state without tripping the threshold of war, which would allow an opponent the recourse to legally use force and/or attract international intervention.<sup>72</sup>

Quite bluntly, hybrid warfare creates a perfect ambiguity that paralyzes opponents since they are not even aware that they are under attack. The case of the Russian annexation of the Crimea and the conflict in Ukraine is a perfect example. Russia was able to skillfully manipulate the U.S. and its NATO allies to remain largely passive while Russia dismembered the Ukraine.<sup>73</sup> It was so successful that the Supreme Allied Commander Europe (SACEUR), General Phillip Breedlove, at the time, proclaimed that Russia’s use of hybrid warfare in Eastern Ukraine represented, “the most amazing information warfare blitzkrieg we have ever seen in the history of information warfare.”<sup>74</sup>

Consequently, the challenge is recognizing that Great Power Competition, as well as dealing with rivals and rogue states, is on a completely different playing field. Although conventional

military capability will always be required, as both a deterrent and back-stop to military aggression, the majority of the never-ending competition/conflict will be waged on economic, informational, political, societal and technological planes. For example: the Chinese use of cyber attacks; the purchase of Western key industries and natural resource producers, as well as entertainment outlets; the dumping of steel thus choking Western steel producing capability; the strangulation of the flow of the Mekong River in China, thus, creating water shortages and drought in its neighbouring countries;<sup>75</sup> the building of foreign infrastructure and loaning of money to underdeveloped countries (e.g. belt and road initiative) thereby allowing economic dominance and control; and trade boycotts, are all examples of how China is working to expand its influence and control in the international arena.

The Russians are no different. A substantive reform of the Russian military in 2008 was based on the premise that large-scale war was unlikely and that modern wars between advanced militaries with nuclear weapons would be centred on the aerospace domain.<sup>76</sup> Although conventional capabilities continue to be upgraded and deployed, the actual method to advance political objectives rests largely within the realm of hybrid warfare. As such, the use of proxy forces in Libya, Syria and Africa, the contracting of private military corporations, the use of state hackers and their cyber attacks on its former republics and international competitors, interference in U.S. elections, troll farms dispensing disinformation meant to create cleavages in the social fabric of target nations, the RT news agency and the use of “little green men” (SOF) to agitate, disrupt and divide opponents, all speak to the use of mostly non-military means to reassert their position and gain advantage.

Adding to the political and military conundrum are other factors, or “wild cards” such as pandemics (e.g. COVID-19) that complicate the security environment. China has embraced a strategy that will

allow it to use the COVID-19 pandemic to further its interests in the great power competition. They are using the downturn in Western economies as a great opportunity. They have sought out more foreign direct investment, are working hard to seize market share in key industries, as well as over-producing goods to flood markets to achieve the same effect. China is also surging production of medical supplies and pharmaceutical ingredients in an attempt to increase trust and dependence on China.<sup>77</sup> Concomitantly, China has been working diligently at countering the West's, particularly the American, criticism of its coronavirus culpability by using an aggressive marketing campaign. In addition, the country has consistently tried to chip-away at U.S.-European relations.<sup>78</sup>

The current global pandemic has also demonstrated how it can completely upend traditional operating plans and TTPs. Illness has sidelined personnel on bases and ships. It has disrupted deployments, training and operations. It has demonstrated the need for new methodologies and processes. In addition, it has shown that states, terrorists, rogue states, non-state actors and criminal elements will all attempt to take advantage of the chaos and turmoil. The pandemic has shown how domestic capabilities can become strained and resources constrained, as well as how internal societal tensions can easily be brought to the fore.<sup>79</sup>

All of these issues require adaptation and innovation. Undeniably, the evolving security environment is complex and dynamic. Moreover, the requirements to operate in and prevail in this realm cannot be mastered by training and experience alone. Education, the foil for uncertainty and ambiguity, becomes a vital enabler.

## **THE SOF/EDUCATION NEXUS**

Clearly there is a requirement for well-educated, experienced and adaptive military leadership within SOF communities. Indeed,

Linda Robinson, a senior international/defence researcher for RAND Corporation concluded, “The two most important steps that the special operations community can take to ensure that special operations mature appropriately are to develop intellectual capital and produce strategic-minded leaders. These two issues are linked, since senior leaders are responsible for setting the community’s direction and ensuring that it becomes an “adaptive learning organization.”<sup>80</sup> In essence, she is arguing for the requirement of a robust education.

In fact, one need only examine the definition of SOF to begin to understand the nexus of education and special operations. After all, “Special Operation Forces are organizations containing specially selected personnel that are organized, equipped and trained to conduct high-risk, high-value special operations to achieve military, political, economic or informational objectives by using special and unique operational methodologies in hostile, denied or politically sensitive areas to achieve desired tactical, operational and/or strategic effects in times of peace, conflict or war.”<sup>81</sup> This definition strikes at the heart of the continually changing security environment, particularly with the current emphasis on Great Power Competition.

Equally fundamental to this definition and SOF effectiveness, is the fact that its strength lies in its people. SOF equip the operator rather than man the equipment. Selection and screening are fundamental principles of all SOF organizations. And, the individuals who are attracted to SOF, who volunteer and who are ultimately chosen to serve in SOF as a result of highly refined selection procedures and standards, are what provide the SOF edge, which is the key element for mission success.

It is this human interface, the in-situ, instantaneous decision-making capability that is all powerful. And, it is only made possible through continuous education. Furthermore, when one looks at

the type of individuals SOF organizations seek, the importance of education becomes even more manifold. In short, SOF selects personnel who are:

1. *Risk accepting* – individuals who are not reckless, but rather carefully consider all options and consequences and balance the risk of acting versus the failure to act. They possess the moral courage to make decisions and take action within the commander's intent and their legal parameters of action to achieve mission success.
2. *Creative* – individuals who are capable of assessing a situation and deriving innovative solutions, kinetic or non-kinetic to best resolve a particular circumstance. In essence, they have the intellectual and experiential ability to immediately change the combat process.
3. *Agile Thinkers* – individuals who are able to transition between tasks quickly and effortlessly. They can perform multiple tasks at the same time, in the same place with the same forces. They can seamlessly transition from kinetic to non-kinetic or vice versa employing the entire spectrum of military, political, social and economic solutions to complex problems to achieve the desired outcomes. They can react quickly to rapidly changing situations and transition between widely different activities and ensure they position themselves to exploit fleeting opportunities. Moreover, they can work effectively within rules of engagement (ROE) in volatile, ambiguous and complex threat environments and use the appropriate levels of force.
4. *Adaptive* – individuals who respond effectively to changing situations and tasks as they arise. They do not fear the unknown and embrace change as an inherent and important, dynamic element in the evolution of organizations, warfare and society.

5. *Self-Reliant* – individuals who exercise professional military judgment and disciplined initiative to achieve the commander's intent without the necessity of constant supervision, support or encouragement. They accept that neither rank, nor appointment solely define responsibility for mission success. They function cohesively as part of a team but also perform superbly as individuals. They continue to carry on with a task until impossible to do so. They take control of their own professional development, personal affairs and destiny and ensure they strive to become the best possible military professional achievable. They demonstrate constant dedication, initiative and discipline and maintain the highest standards of personal conduct. They understand that they are responsible and accountable for their actions at all times and always make the correct moral decisions regardless of situation or circumstance.
6. *Eager for Challenge* – individuals who have an unconquerable desire to fight and win. They have an unflinching acceptance of risk and a mindset that accepts that no challenge is too great. They are tenacious, unyielding and unrelenting in the pursuit of mission success.
7. *Naturally Orientated to the Pursuit of Excellence* – individuals who consistently demonstrate an uncompromising, persistent effort to excel at absolutely everything they do. Their driving focus is to attain the highest standards of personal, professional and technical expertise, competence and integrity. They have an unrelenting emphasis on continually adapting, innovating and learning to achieve the highest possible standards of personal, tactical and operational proficiency and effectiveness.
8. *Relentless in their pursuit of Mission Success* – individuals who embody a belief that first and foremost is service to



country before self. They have an unwavering dedication to mission success and an acceptance of hardship and sacrifice. They strive to achieve mission success at all costs, yet within full compliance of legal mandates, civil law and the law of armed conflict.

9. *Culturally Attuned* – individuals who are warrior/diplomats, who are comfortable fighting but equally skilled at finding non-kinetic solutions to problems. They are capable of operating individually, in small teams or larger organizations integrally, or with allies and coalition partners. They are also comfortable and adept at dealing with civilians, other governmental departments (OGD) and international organizations, as well as non-governmental organizations (NGOs). They are culturally attuned and understand that it is important to “see reality” through the eyes of another culture. They understand that it is not the message that was intended that is important but rather the message that was received that matters. They strive to be empathetic, understanding and respectful at all times when dealing with others. They comprehend that respect and understanding build trust, credibility and mission success.<sup>82</sup>

Important to emphasize, however, is that selection only identifies those individuals that demonstrate the attributes, which, only once fully developed, will provide the institution with the high-calibre individuals they require. The oft heard refrain, “I was selected for that,” actually reflects only the start-state, not the required end-state. It is for that reason that although high-quality personnel are selected, there is still a need for follow-on education.

The requirement for this development is multi-faceted. The immediate response must reference the contemporary operating environment, which as described in detail earlier, is ambiguous,

chaotic, complex, ever-changing and extremely volatile. Moreover, if anything, it will become even more complex in the future. Globalization, the ever-increasing proliferation of cheap, accessible and progressively lethal technology, as well as the explosion of instantaneous information will continue to challenge the current comprehension of conflict. Additionally, the myriad of asymmetric threats and security pressures, combined with a plethora of actors in the COE (i.e. state, non-state, terrorist, criminal, non-governmental organizations, international corporations, media) all operating within populated centres in a variety of culturally diverse environments, are just some of the challenges that have added complexity to conflict, or the global “competition.”

In order to be effective in this environment, SOF must remain adaptive and agile in both thought and action. SOF personnel must be able to apply themselves to a large scope of activities and situations that they neither expected, nor been prepared for. Therefore, they will need to be adept at critical thinking and sound reasoning – both offshoots of education. In short, SOF require warrior/scholars who are capable of operating in the complex battlespace of today and tomorrow and to be able to do so effectively, personnel are going to need to be good thinkers.

Important to note at the outset is that training, as well as experience, are unquestionably critically important. The danger, however, is the fact that education is normally subordinated to training and experience, and much lesser attention is given to its acquisition. As noted earlier, this approach is not unexpected since it is simple to comprehend why the military mindset focuses on training and experience rather than education. While training delivers immediate results, education is less tangible in immediate observable improvement. After all, education deals with creativity, critical thinking and reasoning.<sup>83</sup> These qualities are not always immediately perceptible.

Additionally, SOF's excellent training regimen and its continuous success on operations make it easy for individuals to be lulled into a perception that SOF's educational needs are quite adequately looked after. However, as the adage goes, "you don't know what you don't know." Every SOF member must ensure that they are ready to meet the challenges that face them not only today but also into the future. Education is a critical enabler to ensuring personnel are properly prepared. After all many tenets of scholarship, namely precision, detailed research; communications; breadth of knowledge; placing events in proper economic, political and social contexts; drawing conclusions and trying to discern themes, committing those to paper, and then articulating them so that others can understand the argument put forward and learn from it; are all skills that are necessary for a SOF operator and gleaned only through education. As are the importance of understanding differing perspectives, cultural norms and practices, as well as developing a tolerance to ambiguity and uncertainty.

Equally important, education provides the opportunity to learn through vicarious experience. As already explained, experience is seen as sacrosanct and great emphasis is rightfully placed on it. But, due to real life limitations, experience is often constrained by time and place. Scholarship, on the other hand, allows its virtual experience to be timeless and cover a wider breadth of activity and circumstance. It provides SOF personnel with a greater repertoire of scenarios, possible solutions and context from which to draw on.

As SOF venture forth to develop global partnerships, these skills, attributes, attitudes and mindsets will empower SOF operators to better understand, interact and work with others, particularly when working with unknown and alien cultures. Critical thinking skills, increased knowledge, enhanced tolerance and understanding will all facilitate more effective interaction with others.

In the end, education will endow SOF operators with greater knowledge confidence and critical thinking skills, which when combined with personal training and experience, will allow for greater probabilities of mission success regardless of circumstance.

As USMC Colonel Thomas Hammes, PhD, explained, armed conflict “will remain a contest of human wills and thus the domain of uncertainty, compounded by human passion, friction, and fog.”<sup>84</sup> In this daunting environment, education arms the SOF operator with the ability to deal with the ambiguity and complexity that our personnel face in the battlespace of today and tomorrow.

Additionally, beyond simply the practical benefits there is also the intangible elements that education provides. That is to say, a greater breadth of knowledge, tolerance to alternate interpretations and ideas, a comfort with critical debate and discussion, the honing of analytical skills, as well as the exposure to completely new bodies of literature and thought that expand the mind, just make the SOF operator that much more capable. General Petraeus pronounced, “The future of the U.S. military requires that we be competent warfighters, but we cannot be competent warfighters unless we are as intelligent and mentally tough as we are aggressive and physically rugged.”<sup>85</sup> It is no different for the CAF, particularly CANSOFCOM.

---

## **ABOUT THE AUTHORS**

**Dr. Emily Spencer** has a PhD in War Studies from the Royal Military College of Canada, as well as a Certificate of Management Excellence from Harvard Business School. She is currently the Director of the CANSOFCOM Education and Research Centre. Her present research focuses on personal development and authentic leadership from both academic and applied perspectives. As an Integral Master Coach™, Emily also provides leadership performance coaching for CANSOFCOM and CAF members. Additionally, she has published widely in the areas of cultural intelligence, the importance of cultural knowledge to success in the contemporary operating environment, particularly as it applies to SOF, as well as the role the media plays in shaping understandings of world events. Dr. Spencer is also an adjunct professor of history at the Royal Military College of Canada and a senior fellow at the Joint Special Operations University in Tampa.

**Colonel (Retired) Bernd Horn**, OMM, MSM, CD, PhD is a former infantry officer who has held key command and staff appointments in the Canadian Armed Forces, including Deputy Commander of Canadian Special Operations Forces Command (CANSOFCOM), Commanding Officer of the 1<sup>st</sup> Battalion, The Royal Canadian Regiment and Officer Commanding 3 Commando, the Canadian Airborne Regiment. He is currently the CANSOFCOM Command Historian, an appointment he fills as a civilian. Dr. Horn is also an adjunct professor of history at the Royal Military College of Canada and a senior fellow at the Joint Special Operations University in Tampa. He has authored, co-authored, edited or co-edited over 45 books and innumerable monographs/chapters/articles on military history, SOF, leadership and military affairs.

---



# ENDNOTES

- 1 James G. Stavridis, "Read, Think, Write," *Joint Forces Quarterly*, Issue 63 (4<sup>th</sup> Quarter 2011): 110.
- 2 Joint Chiefs of Staff (JCS), *Developing Today's Joint Officers for Tomorrow's Ways of War* (Washington D.C.: DoD, 1 May 2020), 2.
- 3 Reed Bonadonna, "How to Think Like an Officer: A Prospectus," *War on the Rocks*, 11 September 2018. <<https://warontherocks.com/2018/09/how-to-think-like-an-officer-a-prospectus/>>, accessed 13 September 2018.
- 4 Eliot Freidson, *Professionalism* (Chicago: Chicago University Press, 2001) 127.
- 5 Paul Lushenko, "Warfighters in Ivory Towers: Does the US Army Need Officers with Doctoral Degrees?" *Modern War Institute at West Point*, 8 July 2020. <[https://mwi.usma.edu/warfighters-ivory-towers-us-army-need-officers-doctoral-degrees/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=warfighters-ivory-towers-us-army-need-officers-doctoral-degrees](https://mwi.usma.edu/warfighters-ivory-towers-us-army-need-officers-doctoral-degrees/?utm_source=rss&utm_medium=rss&utm_campaign=warfighters-ivory-towers-us-army-need-officers-doctoral-degrees)>, accessed 8 July 2020.
- 6 See Colonel Bernd Horn and Dr. Bill Bentley, *Forced to Change. Crisis and Reform in the Canadian Armed Forces* (Toronto: Dundurn, 2015).
- 7 Lieutenant-General Mike Jeffrey, Keynote Address, Commanding Officer Course, 21 June 2001, Fort Frontenac, Kingston, Ontario.
- 8 General Maurice Baril, covering letter, "Canadian Officership in the 21<sup>st</sup> Century (Officership 2020) Launch Implementation, 2 May 2001, 3.
- 9 Only 53.3 percent of officers had a Bachelor's degree and only 6.8 percent had graduate level education at the time.
- 10 Vice-Admiral Larry Murray, interview with Dr. Bill Bentley and Colonel Bernd Horn, 6 October 2010.
- 11 "Creativity is critical requirement for adaptation. We need creativity because: When things change and new information comes into existence, it's no longer possible to solve current problems with yesterday's solutions. Over and over again, people are finding out that

what worked two years ago won't work today. This gives them a choice. They can either bemoan the fact that things aren't as easy as they used to be, or they can use their creative abilities to find new answers, new solutions, and new ideas." Richard King, "How Stupid are We?," *Australian Army Journal* (Summer 2009): 186.

12 David Barno and Nora Bensahel, "Are You Enough? Our Speech to the PME Class of 2019," *War on the Rocks*, 18 September 2018. <<https://warontherocks.com/2018/09/are-you-enough-our-speech-to-the-pme-class-of-2019/>>, accessed 20 September 2018.

13 Ibid.

14 DoD, *Summary of the 2018 National Defense Strategy of the United States of America* (Washington D.C.: DoD, 2018), 8.

15 Ibid.

16 JCS, *Developing Today's Joint Officers*, 3.

17 David G. Morgan-Owen, "Approaching A Fork In The Road: Professional Education And Military Learning," *War On The Rocks*, 25 July 2018. <<https://warontherocks.com/2018/07/approaching-a-fork-in-the-road-professional-education-and-military-learning/>>, accessed 7 May 2020.

18 Dr. Ronald Haycock, former Dean of Arts, Royal Military College (RMC), "Clio and Mars in Canada: The Need for Military Education," presentation to the Canadian Club, Kingston, Ontario, 11 November 1999.

19 Major David Last, "Educating Officers: Post Modern Professionals to Control and Prevent Violence," in *Contemporary Issues in Officership: A Canadian Perspective*, ed. Lieutenant-Colonel Bernd Horn (Toronto: Canadian Institute of Strategic Studies, 2000), 26.

20 Cited in Murray Simons, *Professional Military Learning. Next Generation PME in the New Zealand Defence Force* (Canberra: Air Power Development Centre, 2004), 43.

21 United States of America, Department of the Army, *The Army Learning Concepts for 2015*. DRAFT. 20 April, 2010, 2.

22 Major-General Don McNamara asserted that advanced-military professional education is required "to get people to think in two ways. One, to think strategically so that they're not commanding a ship



anymore, they're commanding a force, and that is a mindset that is not easy for a lot of people to change. The second thing is that they are now thinking in terms of dealing at the highest national levels and not at the level of an individual military formation. These are two major changes that are not easy for people to assume without getting some experience before they actually have to assume it." Don Macnamara in John Wood (ed.), *Talking Heads Talking Arms: No Life Jackets* (Toronto: Breakout Educational Network, 2003), 155.

23 Ibid., 9.

24 Paul Heinbecker, *Getting Back in the Game: A Foreign Policy Playbook for Canada* (Toronto: Key Porter Books, 2010), 23.

25 For details on the "decade of darkness" see Horn and Bentley, *Forced to Change*; Bernd Horn and Bill Bentley, "The Road to Transformation: Ascending from the Decade of Darkness," in R.W. Walker, ed., *Institutional Leadership in the Canadian Forces: Contemporary Issues* (Kingston: CDA Press, 2007), 1-25; or Bernd Horn, and Bill Bentley, "The Road to Transformation. Ascending from the Decade of Darkness," *Canadian Military Journal*, Vol. 16, No. 4 (Autumn 2007): 33-44.

26 Department of National Defence, *The Report On The Officer Development Board* (Rowley Report), Ottawa, March 1969, v.

27 Barno and Bensahel, "Are You Enough?"

28 Thang Tran, Michael Oliveira, Josh Sider and Leo Blanken, "Ignorance and Professional Military Education: The Case for Operational Engagement," *War on the Rocks*, 7 November 2018. <<https://warontherocks.com/2018/11/ignorance-and-professional-military-education-the-case-for-operational-engagement/>> accessed 7 November 2018.

29 Reed Bonadonna, "How to Think Like an Officer: A Prospectus," *War on the Rocks*, 11 September 2018. <<https://warontherocks.com/2018/09/how-to-think-like-an-officer-a-prospectus/>>, accessed 13 September 2018.

30 Cited in Major-General Mick Ryan, "The Intellectual Edge. A Competitive Advantage for Future War and Strategic Competition," *Joint Force Quarterly*, Issue 96 (1<sup>st</sup> Quarter 2020): 7.

31 Barno and Bensahel, "Are You Enough?"

32 Bonadonna, "How to Think...."

33 Colonel Roger Noble, "'Beyond Cultural Awareness': Anthropology as an Aid to the Formulation and Execution of Military Strategy in the Twenty-First Century," *Australian Army Journal*, (Winter 2009): 67.

34 Emily Spencer, *Solving the People Puzzle: Cultural Intelligence and Special Operations Forces* (Toronto: Dundurn Press, 2010), 115.

35 Bill Bentley and Bernd Horn, "Higher Education and the Profession of Arms: Explaining the Logic," *Canadian Military Journal*, Vol. 12, No. 3 (Summer 2012): 70.

36 JCS, *Developing Today's Joint Officers*, 3.

37 Carl von Clausewitz, *On War*, ed. by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976) 135.

38 Colonel John R. Boyd, (USAF Ret) cited in Major Jason Hayes, "Preparing Our Soldiers for Operations within Complex Human Terrain Environments," *Australian Army Journal* (Winter 2009): 104.

39 Elsa B. Kania, "Minds at War. China's Pursuit of Military Advantage through Cognitive Science and Biotechnology," *Prism*, Vol. 8, No. 3, (2019).

40 Michael Howard, *The Causes of War* (New York: Harvard University Press, 1984), 83.

41 Dr. John Scott Cowan, RMC Convocation Address, 4 October 1999, Kingston, Ontario. See also Eliot Cohen and John Gooch, *Military Misfortunes. The Anatomy of Failure in War* (New York: Vintage Books, 1991), 233-237.

42 Spencer, *Solving the People Puzzle*, 72.

43 For example, a 1968 Pentagon study of combat effectiveness in Vietnam, "Experience in Command and Battle Deaths," found "that units operating under experienced commanders had roughly two-thirds the death rate of units with less experienced leaders." In addition, it also reported that American soldiers fighting in Vietnam were more than twice as likely to die in the first halves of their yearlong tours than in the second halves." Thomas E. Ricks, *The Generals. American Military Command from World War II to Today* (New York: Penguin, 2012), 279.

44 David H. Petraeus, "To Ph.D. or Not to Ph.D...." *The American Interest* (July/August 2007): 16.

45 Ibid., 18. He further insists, “This is a very valuable experience in and of itself for those of us in uniform who will work and live in other cultures overseas. If the range of views within our own country is greater than we supposed, that can only help prepare officers for an even wider range beyond our shores.”

46 Ibid., 18.

47 Ibid., 19.

48 DND DSAB, *The Role and Value of Education in the Intellectual Development of the Canadian Armed Forces’ Officers and Non-Commissioned Members - DSAB Report 1304* (Ottawa: DND, May 2013), i & 2.

49 David G. Morgan-Owen, “Approaching A Fork in The Road: Professional Education and Military Learning,” *War On The Rocks*, 25 July 2018. <<https://warontherocks.com/2018/07/approaching-a-fork-in-the-road-professional-education-and-military-learning/>>, accessed 7 May 2020. He added, “This much [value of liberal arts education] can be seen from the wealth of studies showing the success liberal arts students enjoy in the worlds of finance, business, technology, and politics.”

50 Major Sieberg, “Tank or Anti-Tank? Does the Spanish War Show Which is Superior?” Translation of an article appearing in the *Militar-Wochenblatt* of 11 February 1938, Library and Archives Canada (LAC), MG 31, G6, Vol 9, File: Articles, Papers, Speeches – U.

51 General M. Baril, “Officership: A Personal Reflection,” in eds. Bernd Horn and Stephen Harris eds., *Generalship and the Art of the Admiral* (St. Catharines: Vanwell Ltd., 2001), 140.

52 Canada, *Canadian Officership in the 21<sup>st</sup> Century (Officership 2020). Strategic Guidance for the Canadian Forces Officer Corps and the Officer Professional Development System* (Ottawa: DND, 2001), foreword, iii.

53 Matthew Reed, “Rethinking Enlisted Education: Expanding the Professional Military Education Debate,” *War on the Rocks*, 19 November 2018. <<https://warontherocks.com/2018/11/rethinking-enlisted-education-expanding-the-professional-military-education-debate/>>, accessed 26 November 2018.

54 Cited in Max Boot, “A Few Good Men. Trump, the Generals, and the Corrosion of Civil-Military Relations,” *Foreign Affairs*, 6 April 2020. <<https://>

[www.foreignaffairs.com/reviews/review-essay/2020-04-06/few-good-men](http://www.foreignaffairs.com/reviews/review-essay/2020-04-06/few-good-men)>, accessed 9 April 2020.

55 Thomas E. Ricks, *The Generals. American Military Command from World War II to Today* (New York: Penguin, 2012), 233. Brigadier General Edwin Simmons recounted Westmoreland talking to a roomful of commanders in Vietnam. He explained he would pass on to them principles of war that he carried in his wallet since WWII. Simmons recalled they were “platitudes of squad leading,” such heady principles as ensuring troops got their mail and a hot meal, and checking their feet. Hardly principles of war to guide a theatre commander’s vision of waging war. *Ibid.*, 234.

56 Department of the Army, *Leader Development FM6-22* (Washington D.C.: Department of the Army, 2015), 3-26-3-27. <[https://armypubs.army.mil/epubs/DR\\_pubs/DR\\_a/pdf/web/fm6\\_22.pdf](https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/fm6_22.pdf)>, accessed 7 May 2020.

57 James Torrence, “Army Professional Reading and Creative Thinking,” *Small Wars Journal*, <<http://smallwarsjournal.com/jrnl/art/army-professional-reading-and-creative-thinking>>, accessed 10 July 2018.

58 *Ibid.*

59 “Military Study: Notes of a Lecture,” *Canadian Defence Quarterly* (October 1931): 19.

60 Cited in Charles Hill, *Grand Strategies: Literature, Statecraft and World Order* (New Haven: Yale University Press, 2010), 298.

61 The terms “peer and near-peer” competitors often create push back, with detractors citing the fact that none of those entities listed are actually peers or near-peers and none could militarily defeat the U.S. However, all of those states, as well as a number of non-state actors, have the capability and have in reality, undertaken actions that have frustrated, delayed and in some cases prevented the U.S. and its allies being able to realize their political objectives.

62 An example of the danger of sensor to shooter timeliness and accuracy was demonstrated by the Russians in the Ukraine since 2014. They had “shortened to mere minutes the time between when their spotter drones first detected Ukrainian forces and when their precision rocket artillery wiped those forces off the map.” Christian Brose, “The New Revolution in Military Affairs,” <<https://www.foreignaffairs.com/articles/2019-04-16/new-revolution-military-affairs>>, accessed 25 April 2019.

63 As one researcher noted:

The amount of data generated by networked devices, is on pace to triple between 2016 and 2021. More significant, the proliferation of low-cost, commercial sensors that can detect more things more clearly over greater distances is already providing more real-time global surveillance than has existed at any time in history. This is especially true in space. In the past, the high costs of launching satellites required them to be large, expensive, and designed to orbit for decades. But as access to space gets cheaper, satellites are becoming more like mobile phones—mass-produced devices that are used for a few years and then replaced. Commercial space companies are already fielding hundreds of small, cheap satellites. Soon, there will be thousands of such satellites, providing an unblinking eye over the entire world. Stealth technology is living on borrowed time.

Ibid.

64 The Turkish use of drone swarms to engage Syrian bases and chemical weapon depots in March 2020, as well as the South Korean demonstration of 1,218 autonomous drones equipped with lights collaborating to form intricate images in the night sky over Pyeongchang during the opening ceremonies of the 2018 Olympics provide a preview of what drone swarms are capable of achieving. See Seclan Hacaoglu, “Turkey’s Killer Drone Swarm Poses Syria Air Challenge to Putin,” *Bloomberg*, 1 March 2020. <<https://www.bloomberg.com/news/articles/2020-03-01/turkey-s-killer-drone-swarm-poses-syria-air-challenge-to-putin> accessed 2 March 2020; and Christian Brose, “The New Revolution in Military Affairs,” <<https://www.foreignaffairs.com/articles/2019-04-16/new-revolution-military-affairs>>, accessed 25 April 2019.

65 As a RAND report concluded, “The potential for escalation associated with precision-strike capabilities may render them too risky to employ in some circumstances.” Dan Madden, Dick Hoffman, Michael Johnson, Fred Krawchuk, John Peters, Linda Robinson, Abby Doll, “Special Warfare. The Missing Middle in US Coercive Options,” *RAND Research Report*, 2014, 1.

66 András Rácz, *Russia’s Hybrid War in Ukraine. Breaking the Enemy’s Ability to Resist*. The Finnish Institute of International Affairs, FIIA Report 43, 41. The Americans use a term called “Gray Zone Conflict” to describe

hybrid warfare. Gray Zone Conflict is defined “as competitive interactions among and within state and non-state actors that fall between the traditional war and peace duality. They are characterized by ambiguity about the nature of the conflict, opacity of the parties involved, or uncertainty about the relevant policy and legal frameworks.” USSOCOM White Paper, *The Gray Zone*, 9 September 2015, 1.

67 Development, Concepts and Doctrine Centre, *Strategic Trends Programme: Future Character of Conflict* (London: Ministry of Defence, 2015), 13.

68 General Valery Gerasimov, Chief of the General Staff of the Russian Federation, “The Value of Science in Prediction,” in “The ‘Gerasimov Doctrine’ and Russian Non-Linear War,” *In Moscow’s Shadows. Analysis and Assessment of Russian Crime and Security*. <<https://inmoscowsshadows.wordpress.com/2014/07/06/the-gerasimov-doctrine-and-russian-non-linear-war/>>, accessed 6 February 2015.

69 Ibid.

70 Ibid.

71 Ibid.

72 For a detailed study of Hybrid Warfare see Colonel Bernd Horn, *On Hybrid Warfare* (Kingston, ON: CANSOFCOM PDC Press, 2016).

73 Maria Snegovaya, *Putin’s Information Warfare in Ukraine Soviet Origins of Russia’s Hybrid Warfare*, Institute for the Study of War, September 2015, 7, 10.

74 Patrick M. Duggan, “Strategic Development of Special Warfare in Cyberspace,” *Joint Forces Quarterly* Issue 79 (4th Quarter 2015): 47.

75 Hannah Beech, “China Limited the Mekong’s Flow. Other Countries Suffered a Drought,” *MSN News*, 13 April 2020. <<https://www.msn.com/en-ca/news/world/china-limited-the-mekongs-flow-other-countries-suffered-a-drought/ar-BB12z9TU>>, accessed 14 April 2020.

76 See Clint Reach, Vikram Kilambi, Mark Cozad, *Russian Assessments and Applications of the Correlation of Forces and Means* (Santa Monica, CA: RAND, 2020).

77 Jorge González-Gallarza Hernández, “Keep Shoddy Chinese Medical Supplies Out,” *Wall Street Journal*, 23 April 2020. <<https://www.wsj.com/articles/keep-shoddy-chinese-medical-supplies-out-11587682617>>, accessed 1 May 2020.

78 Josh Rogin, “How China is planning to use the coronavirus crisis to its advantage,” *The Washington Post*, 16 March 2020. <<https://www.washingtonpost.com/opinions/2020/03/16/how-china-is-planning-use-coronavirus-crisis-its-advantage/>>, accessed 1 May 2020.

79 See Congressional Research Service, *COVID-19: Potential Implications for International Security Environment— Overview of Issues and Further Reading for Congress*, 8 May 2020.

80 Linda Robinson, *The Future of US Special Operations Forces*, Council on Foreign Relations, Council Special Report No. 66, April 2013, 5 / 9.

81 This is the official Canadian Special Operations Forces Command doctrinal definition. Canada, *CANSOFCOM Capstone Concept for Special Operations 2009* (Ottawa: DND, 2009), 4.

82 Ibid., 4.

83 “Creativity is critical requirement for adaptation. We need creativity because: When things change and new information comes into existence, it’s no longer possible to solve current problems with yesterday’s solutions. Over and over again, people are finding out that what worked two years ago won’t work today. This gives them a choice. They can either bemoan the fact that things aren’t as easy as they used to be, or they can use their creative abilities to find new answers, new solutions, and new ideas.” Richard King, “How Stupid are We?,” *Australian Army Journal* (Summer 2009): 186.

84 Cited in Ryan, “The Intellectual Edge...,” 10.

85 Ibid., 20.





---

## CANSOFCOM EDUCATION & RESEARCH CENTRE MONOGRAPHS

---

1. *More Than Meets the Eye: The Invisible Hand of SOF in Afghanistan*  
Colonel Bernd Horn, 2011.
2. *Squandering the Capability: Soviet SOF in Afghanistan*  
Major Tony Balasevicius, 2011.
3. *Military Strategy: A Primer*  
Dr. Bill Bentley, 2011.
4. *Slaying the Dragon: The Killing of Bin Laden*  
Colonel Bernd Horn and Major Tony Balasevicius, 2012.
5. *Between Faith and Reality: A Pragmatic Sociological Examination of Canadian Special Operations Forces Command's Future Prospects*  
Colonel Mike Rouleau, 2012.
6. *Working with Others: Simple Guidelines to Maximize Effectiveness*  
Dr. Emily Spencer and Colonel Bernd Horn, 2012.
7. *Operation Dawn in the Gulf of Aden and the Scourge of Piracy*  
Colonel Bernd Horn, 2012.
8. *"We Murder to Dissect": A Primer on Systems Thinking and War*  
Dr. Bill Bentley, 2012.
9. *Breaching Barriers: A Comprehensive Approach to Special Operations Decision-Making in Non-Traditional Security Environments*  
Major Steven Hunter, 2013.
10. *Chaos in Kandahar: The Battle for Building 4*  
Colonel Bernd Horn, 2013.
11. *"Little Giant Killer": The Bill Underwood Story*  
Dr. Emily Spencer with Robbie Cressman, 2013.
12. *From Assassins to Al-Qaeda: Understanding and Responding to Religious Terrorism*  
Kevin E. Klein, 2013.
13. *Amongst the Eagles: The Battle of Mount La Difensa*  
Colonel Bernd Horn, 2013.
14. *Innovation and Daring: The Capture of Fort Eben Emael, 10 May 1940*  
Colonel Bernd Horn, 2014.
15. *Foreign Fighters: A Clear and Present Danger*  
Colonel Bernd Horn, 2014.
16. *Fear: Dare Not Speak Thy Name*  
Dr. Emily Spencer and Colonel Bernd Horn, 2015.
17. *Escape and Evasion in the First and Second World Wars: Canadian Stories*  
Dr. Nathan M. Greenfield, 2015.
18. *Sapere Aude: Toward a CANSOF Officer Professional Development Model*  
Major R.D. Schmidt, 2016.
19. *On Hybrid Warfare*  
Colonel Bernd Horn, 2016.
20. *Entanglements: The Importance of Cross-cultural Competence for Special Operations Forces*  
Jessica Glicklen Turnley, Ph.D., 2016.
21. *Developments in Russian Special Operations: Russia's Spetsnaz, SOF and Special Operations Forces Command*  
Dr. Christopher Marsh, 2017.
22. *The Canadian Special Air Service Company*  
Colonel Bernd Horn, 2017.
23. *Future War: Continuous Conflict in an Era of Rising Peer Competitors*  
Tony Balasevicius, 2019.
24. *L'Union Fait La Force: Future Trends in Shaping the Interoperability Between CANSOFCOM and the Royal Canadian Air Force*  
Major David Johnston, 2019.
25. *Religious Leader Engagement as an Aspect of Irregular Warfare: The Dénouement of a Chaplain Operational Capacity*  
S.K. Moore, 2020.

