CANADIAN MILITARY JOURNAL

National Defence   Défense nationale

Canada

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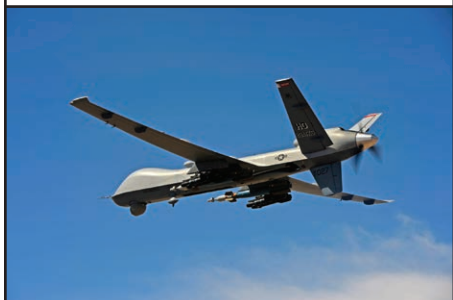
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CANADIAN MILITARY JOURNAL

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NOTE TO READERS

As a bilingual journal, readers should take note that where citations are translated from their original language, the abbreviation [TOQ] at the end of the note, which stands for "translation of original quote", indicates to the readers that the original citation can be found in the published version of the Journal in the other official language.

EDITOR'S CORNER

Welcome to the Summer 2020 edition of the *Canadian Military Journal,* perhaps a tad abbreviated and Spartan, but nonetheless 'up and running and undaunted' in this time of unprecedented, unique global challenges.

This issue's cover is graced by Nova Scotia artist Peter Robichaud's elegant tribute to the retirement of the Sikorsky CH-124 *Sea King* helicopter from the Canadian Armed Forces after an outstanding service life of 55 years, commencing in 1963, and ending at an official ceremony on Vancouver Island in 2018. Although this steadfast warrior suffered from frequent technical issues over its service career, due in no small measure to its advanced age, none were particularly serious, and the Canadian fleet's maintainers were able to sustain a proud 87 percent overall serviceability rate. The *Sea King* was *formally*, and *finally*, replaced by the Sikorsky CH-148 *Cyclone* in 2018, a formidable and worthy successor to this old and distinguished veteran.

Yet another eclectic issue this time out, and again, our proud Reserve forces are very much in focus as they continue to provide essential services, both domestically and abroad. To that end, and in light of the current uncertain and unstable global security situation, exacerbated in no small measure by the recent and ongoing COVID-19 pandemic, Major-General Rob Roy MacKenzie, the Chief of Reserves and Employer Support, along with Colonel Howard Coombs, from the office of the Chief of Reserves, 'take the point' in providing a *fresh look at* and a *new vision for* Canada's Reserve Forces.

Next, long-serving armoured officer Major Chris Young explores, based upon his personal experience, why the United Nations lost the initiative during the South Sudan mission, how the "dysfunctional mindset" developed, and how he believes the mission could work to regain the initiative there, and also to re-establish its credibility. Moving right along, combat engineer Colonel Yannick Michaud explores the *value to* and the *relativity of* capacity building to the Canadian Armed Forces through the formation of partnerships with established allies. He explores this subject from various aspects, including whether such operations have long-term appeal, or are they merely a 'flash in the pan,' as well as the effects, both positive and negative, upon Canada's larger readiness efforts.

Again, and furthering cooperative efforts with Canada's allies, air logistics officer Colonel Simon Poudrier explores the highly-relevant world of artificial intelligence (AI), and its linkage between the commercial and the defence industrial base. Based upon an American perspective, his article "…highlights the immediate requirement for the US to evaluate the impact of its aggressive economic strategy, and to further engage and leverage allied governments in the AI industry defence nexus." Then, in the last of our major articles, air combat systems officer Major Mark Sandner explores the growing operational use of unmanned aerial systems in military operations, which have been identified as a defence priority in Canada's most recently-published defence policy, *Strong, Secure, Engaged*. The author explores the possible effects of operating remotely-piloted aircraft in combat operations upon Canadian Armed Forces personnel and their families, and in particular, concomitant challenges to their mental health, based upon the already-examined effects upon personnel so employed in other countries.

Only one opinion piece this time out, but it is a very compelling and timely submission. Brigadier-General (Ret'd) James Cox, an acknowledged expert in the field of military intelligence, argues "…the need to establish and nurture a serious defence intelligence education program within the Department of National Defence and the Canadian Armed Forces." Then, our own Defence Commentator, Professor Martin Shadwick, tackles the COVID-19 pandemic and its effects upon Canada's armed forces and our national defence policy through analysis of several burning questions generated by this pandemic with respect to the way ahead for our forces in the longer term. Finally, we close with a yet another 'hat trick' (hockey term, eh?) of book reviews on very disparate subjects, which we hope will pique the interest of our readers.

On Top and Tracking, by Peter J. Robichaud. The original painting was commissioned by 12 Wing Shearwater for the outgoing base commander in 2017. It depicts a CH-124 *Sea King* helicopter hovering over a submarine which has been detected and is being tracked by the operators of the *Sea King's* sensors. The painting holds a special significance for the artist. In Peter Robichaud's own words: "This painting will forever remind me of Brenden MacDonald (BMac) – friend, skilled pilot, and colleague, one of six crew members tragically lost in the CH148 *Cyclone* crash off the coast of Greece on 29 April 2020. Brenden won a contest for the naming of this painting, 'On Top and Tracking,' and was the recipient of Print 001, which I was proud to present to him in person."

Until the next time.

David L. Bashow
Editor-in-Chief
Canadian Military Journal

On Top and Tracking, by Peter J. Robichaud

Painting by Peter J. Robichaud

LETTER TO THE EDITOR

Response to Wolfgang W. Riedel, "The Canadian Army Needs a Paradigm Shift," *Canadian Military Journal*, Vol. 20, No. 2 (Spring 2020), pp. 19-34.

Dear Sir,

I read with great interest Colonel Wolfgang W. Riedel's article "The Canadian Army Needs a Paradigm Shift" published in the Spring 2020 edition of the *Canadian Military Journal*. I would like to express my appreciation to the author for taking the time to consider the problems encountered by the Canadian Army and its Reserve Force structure, and for putting together a provocative piece that creates introspection. This is a sweeping *tour de force* of the Army, along with perspectives on recent history, defence policy, force structure and employment, human resource considerations as well as comparisons with the United States (US) and United Kingdom (UK) Reserve Forces – and, of course, how this fits within the international security environment, both now and in the future. However, while I agree with aspects of his exploration, I cannot endorse his conclusions pertaining to the re-organization of the Canadian Army, both Regular and Reserve, because it is based upon invalid assumptions.

Firstly, the article focuses upon the dilemmas posed by the evolving security environment to contextualize and illustrate the shortcomings of the existent Canadian Army structure. Also cited in support of the need for organizational change are the evolutionary efforts of our American and British Allies. Aspects of Canadian military history, albeit not always comprehensive or completely accurate, are likewise brought forward to provide background and support the need for change. Despite this, the most fundamental question is never truly answered: what type of military do Canadians want? The 2017 *Strong, Secure, Engaged: Canada's Defence Policy*, is mentioned in the introduction, and then dismissed as inadequate. Regardless, this defence policy was created with much public and political scrutiny, and it achieved popular consensus. *Strong, Secure, Engaged* offers a vision of the Reserve Force that has evolved from mobilization or augmentation models, to integration within a Canadian Armed Forces (CAF) structure. It presents a Regular and Reserve Force that is both supportable and sustainable, and which meets Canadian needs within our multilateral and bilateral defence arrangements.

Secondly, while discussing Allies and partners, the issue of contributory warfare and Whole of Government or comprehensive operations is subsumed in the goal to create stand-alone Army Forces that could fight within an American formation in mid-to high-intensity multi-domain operations. Furthermore, except for miscellaneous thoughts advanced near the end of the article, the joint or integrated force aspect of the CAF is ignored. Force development is not done in isolation with other services overlaid upon the Army. The reader is left hanging with questions such as: How do we fight as part of the whole force? How do other Reserve elements work in this evolved vision? This is a grave deficiency in the discussion, since the Army does not fight or deploy alone, either at home or abroad. The assumption that the Canadian Army operates by itself in places like Eastern Europe ignores current North Atlantic Treaty Organization (NATO) operational planning for follow-on forces from our NATO Allies. Moreover, while the term multi-domain operations is used several times within this piece, that concept is predicated upon *joint forces*, and not simply *land forces*. This idea, which is still evolving, is never fully explained, and has the effect of leaving a weak doctrinal foundation to the desired outcomes for this proposed force structure. In short, this article suffers from confirmation bias.

Lastly, the article makes an erroneous assumption that Canada's Army Reserve has the capacity, ability, and desire to be organized into credible mechanized formations with the time commitment that entails. That assumption has been made without any evidence, other than some discussion of the American experience, which, in the international Reserve Force community, is the exception. Some examination of other Reserve Force models would have made this part of the discussion more informed. Part-time Reservists often have civilian careers and families, and therefore, they must balance Reserve commitments to meet the needs of their civilian lives. Even if the structures proposed in this article were "staffed" in necessary areas by full-time personnel, the time investment for part-time Reservists would be onerous. To meet current obligations is, at times, difficult. This has been made clear to Army Reserve Senior Leaders who have sought changes

in individual and collective training requirements to minimize the amount of time that is currently demanded of Reservists. Providing legislation for employment or educational protection has already been studied, and it does not address this issue.*

In all, while Colonel Wolfgang W. Riedel's "The Canadian Army Needs a Paradigm Shift," is thought provoking, it does not address the practicalities of Canadian defence. It is a mobilization model that reflects the national legacy and exigencies of the mid-20th Century. Also, while not a consideration when this article was penned, the economic impact of the COVID-19 pandemic will likely have a significant effect upon the willingness of Canadians to invest in defence for years to come. This article neither makes mention of the sterling work done by the CAF and the Canadian Army to achieve some of the integration goals made in the 2017 Defence Policy for the Reserve Force, nor does it acknowledge the aspects of the work that has been done – particularly from a policy perspective – to deal with pan-CAF integration of both Regular and Reserve Forces. In sum, not addressed are the defence needs of a 21st Century force that must operate in a complex multi-national, inter-agency environment that contains many challenges that are not easily discernable, and are below the level of conflict. Consequently, this article is good material for discussion, but it does not address the practicalities of Canada's contemporary and future Army requirements.

~Howard G. Coombs

Colonel Howard G. Coombs, OMM, CD, Ph.D., *is a highly-experienced infantry officer having served in both the Regular Force and the Reserves. He is currently attached to the office of the Chief of Reserves, and is also an Assistant Professor at the Royal Military College of Canada.*

* See Howard G. Coombs, "Enabling NATO for Twenty-First Century Operations: Fielding Agile, Responsive and Innovative Reserve Forces" (Ottawa: Canadian Global Affairs Institute, November 2019).

DND photo CB09-2018-0068-014 by Aviator Caitlin Paterson.

Reservists from the Queen's Own Rifles of Canada participate in Exercise *Pegasus Strike*, in conjunction with 32 Canadian Brigade Group, 436 Transport Squadron, and 450 Tactical Helicopter Squadron, 26 November 2018, at Canadian Forces Base Borden, Ontario.

DND photo 2011-0230-240 by Sergeant Jean-François Néron

Reservists from the Fusiliers du St-Laurent, 35th Canadian Brigade Group (35 CBG) hone their skills during a river crossing exercise.

Canadian Armed Forces: A New Vision for the Reserves

by Rob Roy MacKenzie and Howard G. Coombs

Major-General R.R.E. MacKenzie, OMM, CD, *is a part-time Reservist who is the Chief of Reserves and Employer Support, located at the Canadian Armed Forces National Defence Headquarters. His full-time employment is as a Patrol Sergeant in the Vancouver Police Department. MacKenzie has commanded at all levels, from platoon to brigade, along with serving on operations in Cyprus, Central America, and Afghanistan. Upon promotion to brigadier-general, he became the Deputy Commander 3rd Canadian Division, then following that appointment, the Chief of Staff Army Reserve at Canadian Army Headquarters, before becoming a major-general and taking up his current position in 2019.*

Colonel Howard G. Coombs, OMM, CD, Ph.D., *is also a part-time Canadian Army Reservist who serves with the Office of the Chief of Reserves. In his civilian work, he is an Assistant Professor and the Associate Chair of War Studies at the Royal Military College of Canada in Kingston, Ontario. Coombs is a former brigade commander who has served on operational deployments to Croatia, Bosnia-Herzegovina and twice to Afghanistan. He received his Ph.D. in Military History from Queen's University, also situated in Kingston. His research interests are Canadian professional military education, in addition to Canadian military operations and training.*

The Reserve Force is an integral component of the Canadian Armed Forces… To this end, we will implement a new vision for the Reserve Force that will:

- *enable Reserve Force units and formations to provide full-time capability through part-time service;*

- *ensure Reservists are a well integrated component of the total force; and*

- *appropriately train, prepare and equip Reservists in sufficient numbers to be ready to contribute to operations at home and abroad.*

Whether a task or duty is conducted by a Regular or Reserve Force member, the result will be indistinguishable operational excellence. Progress towards this goal is already underway but must be broadened across the military to ensure a truly integrated Canadian Armed Forces that provides effective operational output.

~ Canada, Department of National Defence, Strong, Secure, Engaged, (June 2017)[1]

Introduction

The security situation of the 21st Century has been characterized by uncertainty, instability, and swift change. Adversaries can be individuals or groups, as well as states. They are empowered by information and technology, presenting dilemmas that are difficult to predict, and they are ever-changing. These challenges sometimes pose a security threat below the threshold of armed conflict. Additionally, opponents are often networked and are able to act quickly to exploit perceived weaknesses. Consequently, familiar methods of defence and security have diminished, and new ones have appeared, with surrounding events evolving at an accelerated rate. The latest challenge posed by COVID-19 saw the Canadian Armed Forces (CAF) not only having to consider the impact of illness upon both military and civilian personnel, but contingency planning for how they would simultaneously fulfil operational commitments while protecting and preserving their forces for future activities. Furthermore, the prioritization of military support to civilian authorities and in what way force contributions would best be employed to alleviate pandemic effects was vital to efficient and effective assistance. All these factors put an unexpected strain on Canada's defence and security structures. Amid constantly-evolving security challenges, it is necessary for the CAF to *comprehend*, and where possible, *foresee* future defence needs, and to plan for them. In particular, the development, support, and retention of a ready-capable, motivated, and relevant Reserve Force as a strategic and operational resource for Canada and the CAF is required, both now and well into the future.
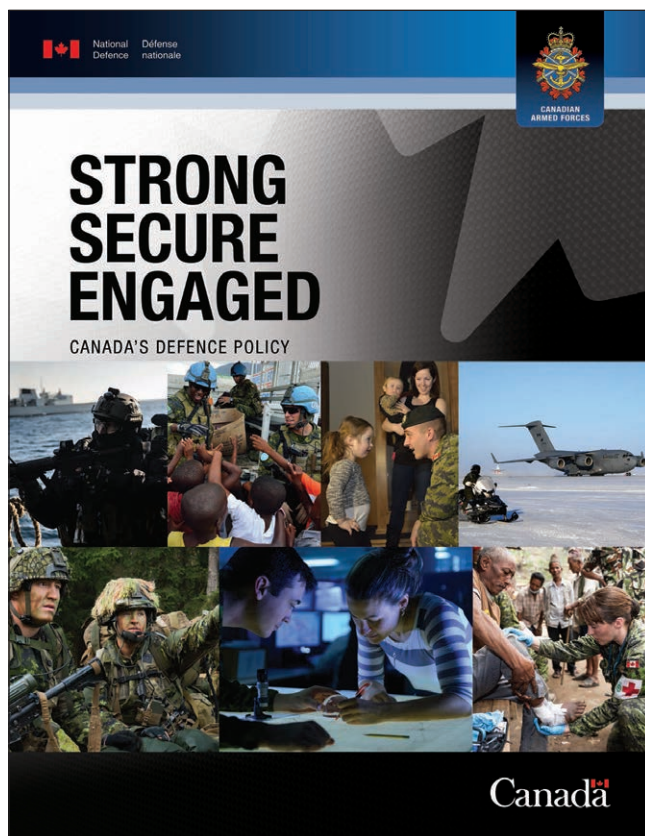
National Defence/Government of Canada

DND photo PA03-2015-0217-005 by Corporal Mark Schombs

Primary Reserve and Regular Forces artillery soldiers from the 4th Canadian Division participating in Exercise *Stalwart Guardian* board a Boeing CH-147 *Chinook* helicopter as part of the mortar insertion exercise at Garrison Petawawa, 19 August 2015.

Working with its force generator counterparts, the aim of the Chief of Reserves and Employer Support team is to assist in the full implementation of the clearly-articulated integrated Reserve Vision outlined in *Strong, Secure, Engaged: Canada's Defence Policy*.[2] This is a vision which has been given impetus by today's complex security environment, as articulated at Note 2. To aid the CAF with attaining the Reserve-related objectives in *Strong, Secure, Engaged*, the Chief of Reserves and Employer Support provides Reserve-specific advice to the Chief of Defence Staff and senior leadership. This assistance primarily falls into four Reserve focus areas to implement the objectives of 2017's *Strong, Secure, Engaged*: (1) support to institutional integration; (2) support to retention; (3) learning from our allies and international partners; and (4) pan-CAF and external engagement. Vital to this effort is understanding the idea of 'integration' within the context of "Strong, Secure, Engaged."[3]

Reserve Integration: The Heart of the Matter

The CAF Reserves have played a substantial part in contributing to Canadian defence and security requirements for over four centuries. Over that time, operational employment has encompassed both domestic and international needs. In the 20th Century, the importance of Canada's Reserve Forces was demonstrated during the First and Second World Wars, as well as during a host of other deployments in support of the United Nations and the North Atlantic Treaty Organization (NATO). Recently, between 2001-2014, the Reserves contributed, at times, up to 20 percent of personnel requirements for CAF operations in Afghanistan. Based upon this history and an assessment of future needs, Canada's most recent defence policy *recognizes* and *underscores* the necessity for enhanced integration between the Reserve and the Regular forces.

> **"The CAF Reserves have played a substantial part in contributing to Canadian defence and security requirements for over four centuries."**

There are several components to Canada's Reserves. Firstly, the Primary Reserve consists of Navy, Army, Air Force, and Health Services units, together with Legal and Special Operations personnel that are each responsible to a service command. They can *conduct* or *augment* various operations with varying degrees of notice, depending upon whether it is a domestic or an international tasking. They may have specialized roles assigned by their element. Along with the ability to respond to these demands, the Reserve Force provides a CAF connection to Canadian communities, and it emphasizes citizenship through service to country. Secondly, the Canadian Rangers are the only continuous CAF presence in remote regions across the country, and they provide surveillance and patrol services. Thirdly, the Supplementary Reserve currently consists of inactive or retired members of the CAF, Regular or Reserve, who are *willing* and *could be available* for service until age 60. There is a five-year limit on retention in the Supplementary Reserve, due to what is referred to as "skill fade." Lastly, the Cadet Organizations

A member of 1 Canadian Ranger Patrol Group leaves base camp on patrol during Operation *Nunalivut 17*, Hall Beach, Nunavut, 1 March 2017.

A domestic response company made up of reservists based in British Columbia fights fires near Riske Creek, BC, during Operation *Lentus 17-04*, 17 August 2017.

DND photo ET2017-0424-17 by Corporal Blaine Sewell

Administration and Training Service (COATS) consists of officers and non-commissioned members who conduct training, and supervise and administer the Canadian Cadet or Junior Canadian Ranger movement.

Strong, Secure, Engaged identifies Reserve integration as achieving "full-time capability through part-time service."[4] This Reserve integration has significant implications for all members of the CAF. It is a 'two-way street.' Building a full-time capability from the Reserves underpins efforts aimed at improving CAF operational capabilities to meet security challenges, both today and in the future. *Strong, Secure, Engaged* envisions a transition towards a highly-integrated CAF – a total force – to achieve this goal. This idea of integration, in turn, visualizes a Reserve Force increasingly supporting operational outputs, and providing full-time capability from part-time service, coupled with integrated policy and program development that supports the emerging role of the Reserve Force. *Integration* will lend itself to *predictability* in terms of organizational growth and alignment with emerging capabilities as Canada adapts to the changing nature of warfare.[5] Reserve integration may eventually lead to an 'adaptive' or 'alternative' career path, with all CAF members able to have 'portable' terms of service to encompass the levels of commitment and time that they can provide to the institution.

To facilitate this institutional and operational evolution, pan-CAF policy and process development will eventually be aligned for Regular and Reserve Force *members*, supporting the institutional integration of Regular and Reserve Force *capabilities*. Accordingly, as the primary advisor of the Reserve Force, the Chief of Reserves and Employer Support organization remains *connected* and *informed* concerning ongoing CAF activities. This allows the Chief of Reserves and Employer Support to monitor Reserve issues, and to provide focused assistance, along with expert advice and policy development, to facilitate an integrated institution.

Support to Retention: Keeping the Force

The Chief of Reserves and Employer Support provides secretariat assistance, including liaison officers, as well as oversight both *to* and *of* the Canadian Forces Liaison Council (CFLC) and its network of civilian volunteers. This organization, which has a national and supporting provincial councils, provides outreach to employers regarding the benefits of supporting Reservists. They also conduct other employer support and retention activities in line with CAF and Department of National Defence (DND) senior leader expectations. The Chief of Reserves and Employer Support works with the CFLC, its volunteer network, and force generators to deliver the *ExecuTrek* program – thereby allowing employers to see what Reservists *do* – and public outreach initiatives including employer recognition programs and awards. Additionally, there is involvement with a wider series of employer support activities, such as: the Reserve Assistance Program, which is a conflict prevention or mitigation service that can be activated between Reservists, their employer, or an educational institution; the Reserve Unit Support Program, which provides Reservists the resources required to gain the support of local employers and educational institutions; and, the Compensation for Employers of Reservists Program (CERP).[6]

This latter activity has demonstrated a great amount of value in permitted reservists to meet operational commitments. CERP provides financial support to both civilian employers and self-employed Reservists who are deployed on both domestic and international operations. Applicants who are eligible will receive a lump sum payment in the form of a grant – following the deployment of the Reserve employee. The operating costs that can be reimbursed with the CERP grant include: the cost of training or hiring replacement worker(s); compensation for increased overtime hours worked by existing employees; reduced revenue; and, the realignment of business that was required to mitigate the reduction in staff.

Also, the Chief of Reserves and Employer Support, along with the CFLC, maintain contact with international and national groups that encourage employers to support Reservists. One prominent group is the International Conference on Employer Support for the Reserves (ICESR). The ICESR is an informal grouping of nations with aligned interests concerning the military and national potential of Reserve Forces. The conference has been held bi-annually since the mid-1990s, with hosting responsibility shared among member nations, a function that alternates on each occasion. Most of the participating countries are NATO members, and the last conference was held in Washington, DC, in 2019.[7]

"The conference has been held bi-annually since the mid-1990s, with hosting responsibility shared among member nations, a function that alternates on each occasion."

Overall, the Chief of Reserves and Employer Support, assisted by the business and educational contacts resident in the CFLC, facilitate employer support for Reservists to participate in CAF operations and training. This ensures that pan-CAF employer support activities are well planned, coordinated, and sponsored within an integrated institution. Along with those efforts, they strive to ensure that civilian employment and education barriers to Reserve service are reduced. This must support and complement chain of command efforts to assist with increasing availability for training and operations, along with encouraging the retention of skilled Reservists. Recently, Chief of Reserves and Employer Support has also taken on a leadership role for a unique program initiated by the Clerk of the Privy Council several years ago that aids the hiring of Reserve Force members into the public service.[8]

Learning from our Allies and International Partners: Obtaining Knowledge

The Chief of Reserves and Employer Support manages pan-Reserve engagements in international forums that support elements of CAF development and training programs. These international engagements take two forms: (1) participation in various committees and sub-committees; (2) and selection and sponsoring Reserve Force members to participate

Corporal Miguel Jacques, a reservist from the Régiment de la Chaudière deployed with the Operation *Reassurance* Land Task Force, provides cover for an aerial medical evacuation during Exercise *Anakonda*, Wędrzyn, Poland, 13 June 2016.

Canadian Army reservists from various units in Montréal and Ontario carry sandbags to the dyke in Pierrefonds, Quebec, during Operation *Lentus*, 11 May 2017.

in international courses or professional forums. Together, the individual training and professional development, along with the institutional connections and learning gained from all these activities, provide significant return to the CAF.

International forums in which the Chief of Reserves and Employer support participation are the National Reserve Forces Committee (NRFC), *Confédération Interalliée des Officiers de Réserve* (CIOR) and its partnered *Confédération interalliée des officiers médicaux de reserve* (CIOMR). All report annually to the NATO Military Committee (MC) concerning their activities. The NRFC was founded in 1981, and it has national representation from 24 countries (Belgium, Bulgaria, Canada, the Czech Republic, Croatia, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Turkey, the United Kingdom and the United States), as well as six observer countries (Australia, Austria, Georgia, New Zealand, the Republic of Korea and Sweden). It meets *regularly*, normally *bi-annually*, and this includes liaison from other NATO military bodies, such as the International Military Staff, Allied Command Operations and Allied Command Transformation. Its principal objectives are the provision of policy advice to the NATO MC, giving a forum for NATO Reserves to share information and 'best practices,' and to liaise with organizations involved in Reserve affairs to maintain awareness and understanding of common activities and interests. The NRFC is mandated to provide an annual report to the MC on its work.[9]

Independent from the NRFC is the CIOR, which campaigns on behalf of National Reserve Officer Associations. Created in 1948, and recognized by NATO in 1976, its advocacy is focused upon promoting the capability and skills of Reserve officers, providing advice to the MC on these matters, and encouraging members to develop their national Reserve Forces. It also meets bi-annually and has several standing sub-committees. These are: (1) Defence Attitudes and Security Issues Committee; (2) Civil Military Cooperation Committee; (3) Military Competitions Committee; (4) Legal Committee; (5) Partnership for Peace and Outreach Committee; (6) Language Academy Committee; (7) Seminar Committee; and, (8) Young Reserve Officers Committee. While the NRFC is a NATO organization, the CIOR is NATO-affiliated, and it receives a significant amount of NATO support, which includes permanent facilities at NATO Headquarters with the international military staff.[10]

Connected to the CIOR is the CIOMR, which was founded in 1947. It represents medical officers within CIOR-member Reserve Forces. Its role is to create closer professional relationships with the medical services of Alliance members, as well as to promote better understanding and liaison with NATO active forces.[11] Another organization of note, that has no official relationship, is the *Confédération Interalliée des Sous-Officiers de Réserve* (CISOR), formed in 1963. It has a mandate to contribute to enhancing the professionalism and effectiveness of their member nations' non-commissioned officers, and its membership does include some NATO nations.[12]

Members of the Naval Reserve and Canadian Army conduct reconnaissance around Rockland and Cumberland, Ontario, during Operation *Lentus*, 3 May 2019.

These organizations are invaluable in creating awareness of Reserve issues, and, primarily through the NRFC and the CIOR, for provision of advice to the NATO MC. They share a common interest in securing the quality of Reserve Forces in compliance with national policies regarding the Reserves. From that, they serve as necessary forums for the sharing of ideas that enhance Reserve readiness, ideas that, with introspection, are useful to the CAF in facilitating the Reserve Vision.[13]

Pan-CAF and External Engagement: Assisting Success

Enabling the three preceding lines of effort requires the management efforts of the Chief of Reserves and Employer Support leadership, and the efforts of staff who handle the affairs of the organisation and join with the CAF and DND to provide an internal connection. National engagement occurs in conjunction with the CFLC, while worldwide involvement happens through a variety of professional development opportunities, as well as via international committees and organizations, most having a NATO nexus.

For internal engagement, the focus of the Chief of Reserves and Employer Support is advice through various working groups and standing meetings. The focus of this work is strategic level institutional advice, focused upon the implementation of initiatives which support the movement of the Reserve Force towards achieving integration, as part of this consists of

> **"For internal engagement, the focus of the Chief of Reserves and Employment Support is advice through various working groups and standing meetings."**

contributions to the capability development work led by Chief of Force Development and the Environments, and policy work on behalf of the Chief of Military Personnel. The focus of outside engagement for the Chief of Reserves and Employer Support supported by the CFLC is to encourage a connection between external institutions and commanders at many levels: typically, formation and above. While the CLFC helps with establishing the network, it is the Chief of Reserves and Employer Support which builds the Reserve support programs in a fashion that meets the intent of commanders at all levels. At the lowest level, this is done by the Liaison Officers and Regional Chief Warrant Officers who *engage with* and *support* unit Commanding Officers. At the next level is the Regional Liaison Officers (colonels/captains (Navy)), and their engagement and support of formation commanders, such as the Canadian Brigade Group, Army, and Division Commanders, Naval Reserve Regional Commanders, or RCAF Wings, depending upon the region/province. These levels of engagement provide liaison and communication between the appropriate commanders and Provincial Chairs of the CFLC from across Canada, who are part of the National CFLC. The Chief of Reserves and Employer Support interacts collaboratively with the Chair of the National Council and the National Council membership to achieve program outcomes. Throughout this process, the CAF senior leadership provides, through the Chief of Reserves and Employer Support, guidance regarding these objectives and goals.

Plus, the Chief of Reserves and Employer Support is building upon the successful interactions accrued by the 2018 hosting of the Summer Congress of the CIOR in Quebec City. Additionally, it must be noted that participation began in CISOR. *Renewed* and *continued* engagement in these fora has the CAF acting as a leader within these Reserve organizations. Efforts in this regard will be maintained, and these positions will be staffed from across the Reserves into the future. Engagement under NATO, through the NRFC, will evolve with Canada's Reserve Force.

Importantly, a key facet of the work of the Chief of Reserves and Employer Support is to monitor, coordinate, and provide Reserve specific advice to senior leaders in support of defence objectives. This work is intended to assist with successfully delivering the initiatives outlined in *Strong, Secure, Engaged*, and to deliver employer outreach and engagement programs in accordance with departmental priorities. Likewise of importance are leader engagements with many Canadian community, business, and institutional sponsors. In the CAF, it can be said that "…we share our men and women with their families;" it can also be said that "…we share our Reservists with their families and employers" It is vital to our success that we communicate with these stakeholders.[14] All these efforts must support and enable the CAF as an institution and the Reserve Force in that which it needs to be able to do, which is to fight threats natural or man-made well into the future.

Evolving to an Integrated Reserve Force

At the end of the 1990s, in the wake of the Cold War, it was apparent to the Canadian defence community that the global security environment had undergone significant change. Over and above this recognition were unfortunate events involving the Canadian military in Somalia, Rwanda, and the former Yugoslavia. In response, the Canadian government undertook a directed review of the nation's military. Consequently, the final years of that decade produced significant military introspection and change. One of the issues examined during this scrutiny was reviewing the role and organization of the Reserves. Then, the Reserves were shaped by the defence exigencies of the Cold War, as well as by the funding available during those years. Arguably, the latest examination of the Reserves started in the 1990s, and it has been ongoing ever since. It has ebbed and flowed, shaped by the escalating threats posed by the first two decades of the 21st Century. These include Canadian military transformation and evolving defence policy, and Canada's related military engagement at home and abroad, notably in Afghanistan from 2002 to 2014. With the issuance of 2017's *Strong, Secure, Engaged: Canada's Defence Policy*, the time is at hand to finalize these longstanding initiatives to create Reserve Forces which will meet the ongoing challenges posed to Canada by complex domestic and international security settings.

CH-146 *Griffon* helicopter pilots from 408 Tactical Helicopter Squadron arrive at High Level Airport to assist the Province of Alberta with wildfires during Operation *Lentus 19-03*, 4 June 2019.

Conclusion

Within this most recent defence policy is clear direction to fundamentally change the way the Reserve Force been recruited, trained, equipped, and employed. This is no small feat, as Canada's own history with respect to making changes to the Reserve Force has not been replete with examples of long-term success.[15] Nevertheless, Canada expects more out of its Reserve Force, with this clear articulation that the Reserves will contribute across the spectrum of operations, be they at home or abroad. Historically, the Reserve Force has operated using an *ad hoc* approach entailing a high degree of uncertainty surrounding whether Reservists were available to train or to deploy. This *must change,* and *is changing*.

The four primary foci of the Chief of Reserves and Employer Support explored in this article are designed to contribute to the achievement of objectives outlined in *Strong, Secure, Engaged: Canada's Defence Policy*. These are: (1) support to institutional integration; (2) support to retention; (3) learning from our international partners and allies; and (4) pan-CAF and external engagement, and all are underpinned by the concept of integration and the activities that support its furtherance. These Chief of Reserve and Employer Support endeavors will assist the CAF towards building, supporting, and sustaining an agile Reserve Force that can predictably commit to operations, thereby increasing military capacity exponentially. It will assist with creating an ability to fully employ and deploy Reservists, provide greater opportunity to tap into Canadian diversity through the Reserve Force, and allow the CAF to attract in-demand skills and trades in a way that is not possible in the Regular Force. This will all contribute to meeting Canada's defence need for an integrated Reserve that can be counted upon to deliver "full-time capability through part-time service."

The authors would like to thank Brigadier-General Shawn Bindon, Director General Reserves, and Ms. Lindsay M. Coombs for their review and suggestions with regards to this article.

CMJ

DND photo by Master Corporal Ken Galbraith

A Tactical Armored Patrol Vehicle from 5th Canadian Division, CFB Gagetown, is seen during operations under the Bill Thorpe Walking Bridge to supply troops working to stem the flooding at the intersection of Waterloo Row and Brunswick Street, Fredericton, New Brunswick, caused by overflowing of the St. John River during spring thaw, Operation *Lentus*, 23 April 2019.

NOTES

1 Canada, Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, (June 2017), at: http://dgpaapp.forces.gc.ca/en/canada-defence-policy/docs/canada-defence-policy-report.pdf, accessed 6 June 2017, p. 67.

2 The Chief of Reserves and Employer Support consists of the Chief of Reserves and Employer Support, a major-general or rear-admiral, the Director-General Reserves and Employer Support, a brigadier-general or commodore, along with the administrative staff who support the structure. There are three directors who, along with their directorates, perform the Chief of Reserves and Employer Support tasks. They are the (1) Director Reserves, a colonel or captain (Navy), who monitors and coordinates reserve-specific advice and counsel to responsible organizations across the Canadian military; (2) Executive Director Employer Support Programs, an executive, who provides support and oversight of the Canadian Forces Liaison Council, as well as employer support/retention activities; and (3) Director International Reserve Outreach, a colonel or captain (Navy), who, with a number of staff, manages reserve international engagements not already done by others. The members of the Chief of Reserve and Employer Support are a combination of full- and part-time reservists and civil servants.

3 All Chief of Reserves and Employer Support functions are governed by four lines of effort, and this is operationalized by internal and external engagement. These four lines of effort are (1) support to institutional integration; (2) support to retention; (3) learning from our allies and international partners; and (4) command support, strategic communications (STRATCOM) and business management. The last line of effort is an internal management and support function necessary for the Chief of Reserves and Employer Support, but not necessarily tied to advice or assistance to senior leadership. Consequently, it is not explored in detail in this article. See Canada, Department of National Defence, "Chief of Reserves and Employer Support (CRES) FY 2020/21 to 2022/23 Business Plan Version 3 (as of 20 February 2020)."

4 "Reserve duties and schedules vary from person-to-person. While some contribute a few days per month, others are on full-time service. This flexibility allows Canadians to serve their country according to their personal circumstances. Full-time capability with a part-time service will require Reserve Force units and formations to bring together the contributions of these various part-time Canadian Armed Forces members to provide 24/7 defined readiness capability according to the new and enhanced roles assigned to them. This construct will allow Reservists to balance a vibrant civilian life and occupation with meaningful, part-time military service, while enhancing the overall Canadian Armed Forces effectiveness." Canada, Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, (June 2017); at:http://dgpaapp.forces.gc.ca/en/canada-defence-policy/docs/canada-defence-policy-report.pdf, accessed 6 June 2017, p, 68.

5 See Canada, Department of National Defence, Canadian Joint Operations Command, "Pan-Domain Force Employment Concept (PFEC) (Draft – Version 9 Amendment 1.2)" (2019).

6 For more information regarding these programs, see Canada, Department of National Defence, "Supporting reservists and employers," at: https://www.canada.ca/en/department-national-defence/services/benefits-military/supporting-reservists-employers.html, accessed 1 May 2020.

7 Paul Earnshaw and John Price, "Employer support for reserves: Some international comparisons of reserve capabilities," in *Australian Defence Force Journal*, No. 185 (July/August 2011), p. 45, at: http://www.defence.gov.au/adc/adfj/Documents/issue_185/185_2011_Jul_Aug.pdf, accessed 26 May 2018.

8 While the Chief of Reserves and Employer Support can mitigate institutional barriers to the Clerk's intent to encourage the hiring of Reserves by the Public Service, actual recruitment and hiring, rests elsewhere in DND or Government through normal hiring processes.

9 NATO, "E-Library: Reserve forces," n.p.; at: https://www.nato.int/cps/en/natohq/topics_69345.htm, accessed 26 May 2018; and, Enclosure to NATO, North Atlantic MC, Secretary General, "Final Decision on MC 0392/1 MC Directive For The National Reserve Forces Committee (NRFC)" (27 July 2012), p. 2.

10 NATO, "E-Library: Reserve forces," n.p.; at: https://www.nato.int/cps/en/natohq/topics_69345.htm, accessed 26 May 2018; Enclosure to NATO, North Atlantic Military Committee, Secretary General, "Military Decision on MC 441/2 NATO Framework Policy on Reserves" (19 January 2012), para 18; and, Enclosure to NATO, North Atlantic MC, Secretary General, "Final Decision on MC 0248/2 The Relationship Between NATO and the Interallied Confederation of Reserve Officers (CIOR)" (27 July 2012), 4; Interestingly, most Reserve Forces have a National Reserve Officers Association, whereas Canada does not. Chief of Reserves and Employer Support represents Canada in such forums in lieu of an association.

11 NATO, "E-Library: Reserve forces," n.p.; at: https://www.nato.int/cps/en/natohq/topics_69345.htm, accessed 26 May 2018.

12 See "CISOR," n.p.; at CIOMR, accessed 31 May 2018; and, Email from NRFC Secretariat dated 18 June 2018 [In possession of the author].

13 Enclosure to NATO, North Atlantic MC, Secretary General, "Final Decision on MC 0248/2 The Relationship Between NATO and the Interallied Confederation of Reserve Officers (CIOR)" (27 July 2012), p. 4.

14 See Jody A. Hudec, "Views and Opinions: Twice the Citizen – Twice the Employer," in *Canadian Military Journal,* Vol. 6, No. 3 (Summer 2005), pp. 84-85.

15 See Major-General Eric Tremblay and Howard G. Coombs. "Canadian Armed Forces Reserves – Quo Vadis?" in *Canadian Military Journal,* Vol. 16, No. 3 (Summer 2016), pp.16-28.

Map by MC Chartrand
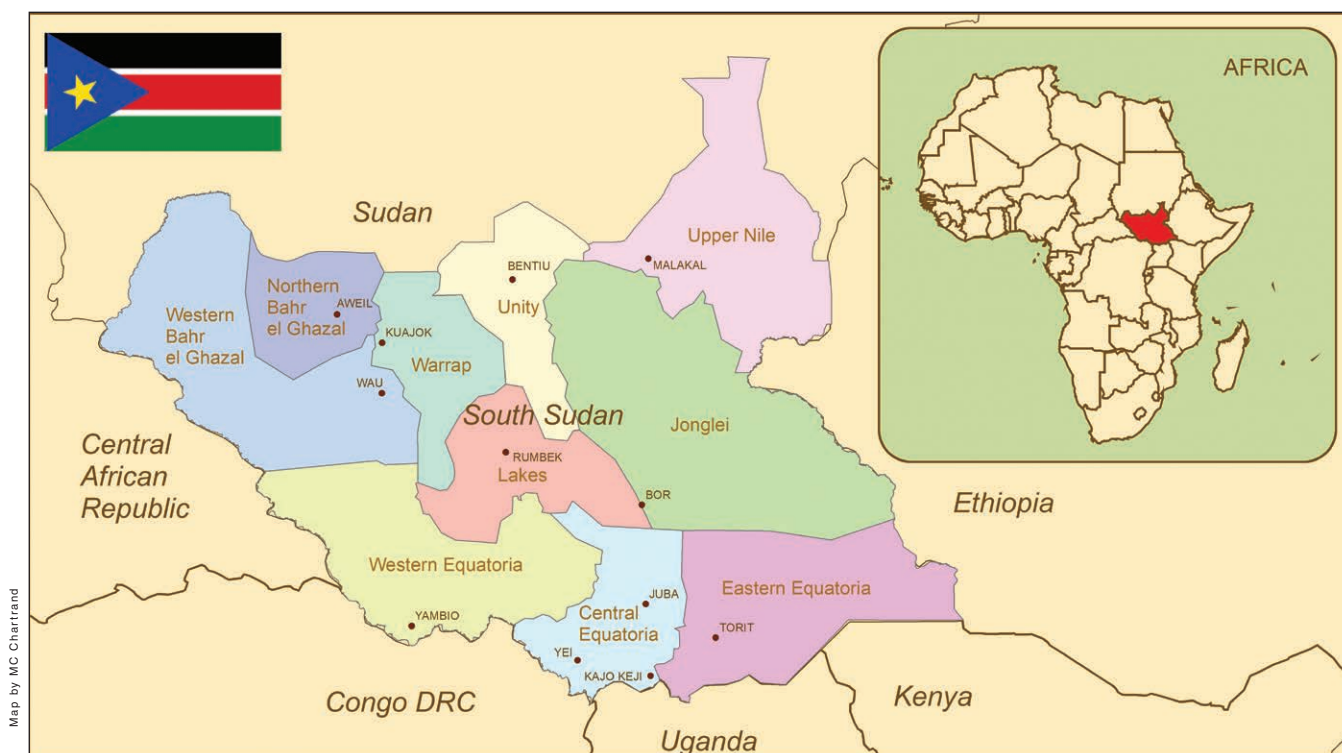
South Sudan and the environs.

Canada and South Sudan: Coming to Grips with "Juba Good"[1]

by Chris Young

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Introduction

The United Nations Mission in South Sudan, or UNMISS, is a mission with many problems, a number of which have allowed a level of dysfunctionality to emerge that threatens to become permanent. Not surprisingly, many of those who deploy on UNMISS end up frustrated and demoralized, unable to affect change to a mission that has, in the minds of many, passed its 'best-before date,' if indeed it ever had one. Why this has happened is quite simple: UNMISS has lost the initiative in South Sudan, and has accepted as an organization that it is reactionary and not proactive in its approach to peacemaking.

My aim in this article is to explore, based upon my personal experiences, why the UN lost the initiative in South Sudan, and how the dysfunctional mindset developed. I will also provide my thoughts on how UNMISS could work to regain the initiative (and its credibility), based upon my own experiences as a military liaison officer (MLO) operating from the capital Juba, during the period from November 2016 to May 2017. Included in that latter portion will be my thoughts with respect to Canada and its role in UNMISS going forward.

By way of background, my prior UN experience was with the UN Protection Force (UNPROFOR) in the former Yugoslavia for the period from July 1993 to July 1994.[2] I was fortunate enough to re-deploy back into Bosnia in 1996, as part of the NATO Stabilization Force, serving as the Strathcona Battle Group faction operations officer, and I was able to see what can be accomplished when a mission has the *will* and *means* to force change. In my opinion, both the will and the means to effect change in South Sudan is missing from UNMISS.

Background

Mornings in South Sudan are quite calming. The temperature is comfortable, the nightly burnings of trash and excrement are mostly complete, and the smoke and smell have largely dissipated. Also, the birdlife is extraordinary before people

UN multimedia photo #114862

A Canadian soldier serving with the United Nations Protection Force (UNPROFOR) in the former Yugoslavia, stands guard amongst destruction in Croatia, 1 September 1993.

Eric Lafforgue/Alamy Stock Photo/2AH0PWB

Longhorn cows in a Mundari tribe camp, Central Equatoria, Terekeka, South Sudan.

are up and about in numbers. And yet, mornings in South Sudan can also hit one in the pit of the stomach. Waking in South Sudan is much like being trapped in the same way that Bill Murray's character was in the movie *Groundhog Day*. Conflict in South Sudan remains the order of the day, and the United Nations (UN) remains as impotent as the day before. Unrelenting poverty, the inability of the country's leadership to make any headway with respect to the peace

process, and the lack of any meaningful progress towards improving the country's situation make each day much like the last.

It was not always like this… Indeed, on 9 July 2011, South Sudan appeared full of promise and was receiving good support from the international community and the UN when it became the 54th independent state in Africa following 20 years of civil war. That civil war had taken an estimated three million lives before it was ended by means of the Comprehensive Peace Agreement (CPA) concluded with Sudan. As is too often the case, initial optimism would quickly be dashed: governance and economic issues, coupled to tribal divisions within the new state led to an unravelling of the coalition that had proven successful in the drive to independence. By 2013, a scant two years after the *declaration* of independence, South Sudan was being ripped apart by civil strife, a civil war which had been seen as inevitable, at least by those Canadians who had been in theatre at the time.

Foreign intervention in the new country continued initially via the Intergovernmental Authority on Development (IGAD), an African Union (AU) organization; it was involved in the Sudanese conflict as early as the 1990s, and its activities included successful mediation that led to the 2005 CPA that ultimately resulted in South Sudan's declaration of independence. IGAD has remained involved in mediation and monitoring activity until today. The United Nations became involved in the Sudanese

> **"By 2013, a scant two years after the *declaration* of independence, South Sudan was being ripped apart by civil strife, a civil war which had been seen as inevitable, at least by those Canadians who had been in theatre at the time."**

conflict in June 2004 with the establishment of a specialized UN mission, the UN Advance Mission in the Sudan (UNAMIS), which was essentially designed to negotiate for the introduction of a UN peace support mission.

Following the success of the IGAD and UNAMIS in facilitating the passage of the CPA, the UN created the UN Mission in the Sudan (UNMIS) in March 2005, with a mandate of supporting the implementation of the CPA. The mission was 10,000-person strong, and it included some 700 civilian police officers plus a civilian mission component. UNMIS was not able to deploy into Darfur as a result of resistance from the government of Sudan and, in July 2006, the UN was able to convince the Sudanese to accept a hybrid UN-AU mission instead—the UN-AU Hybrid operation in Darfur (UNAMID).[3] UNAMID was established as a Chapter VII mission and given the responsibility of supporting the implementation of the 2006 Darfur Peace Agreement.[4] This hybrid mission was intended to showcase African capabilities with respect to resolving regional conflict: the UN Security Council Resolution (UNSCR) specifically stated: "… the Hybrid operation should have a predominantly African character and the troops should, as far as possible, be sourced from African countries."[5]

With the independence of South Sudan in 2011 came the introduction of a follow-on mission to UNMIS—UNMISS—established as a Chapter VII mission with a mandate "… to consolidate peace and security, and to help

Newscom/Alamy Stock Photo/JNXRNH

Walkers on an unsurfaced road in Juba, the capital of South Sudan, 14 January 2012. South Sudan gained its independence in July 2011.

Commander Paul Earnshaw, Canadian military liaison officer to the United Nations Mission in South Sudan (UNMISS) confers with representatives from India upon the arrival of the latter to Yambio, South Sudan, during the UNMISS mandate, 3 December 2012.

establish the conditions for development with a view to strengthening the capacity of the Government of the Republic of South Sudan (GoSS) to govern effectively and democratically, and [to] establish good relations with its neighbours."[6] In 2013, civil war in South Sudan broke out, leading to the breakdown of the independence coalition. In December, in response to fighting in the Juba area, UNMISS troop levels were increased to 12,500, with a police component of 1,323.[7] Those increases, however, were largely affected by transfers from existing regional missions, such as UNAMID.

A UN Security Council briefing by UN Undersecretary-General for Peacekeeping Operations Hervé Ladsous, held to address the South Sudan crisis, in order to address, among options, the imposition of an arms embargo and the reinforcement of the UN Mission in South Sudan (UNMISS), 13 July 2016.

In 2014, the UNMISS mandate was expanded to include protection of civilians as a priority. In January, to support the Cessation of Hostilities Agreement between the government and the opposition Sudan People's Liberation Movement / Army-in-Opposition (SPLM/SPLA-IO), the UN authorized the IGAD to deploy a monitoring and verification mechanism team to ensure compliance. Unfortunately, UNMISS has suffered through the frequent practice of Sudan People's Liberation Army (SPLA) massacres occurring in areas ostensibly under UN control. The most recent, in July 2016, saw the two parties to the conflict, the SPLA and SPLA-IO, initiate fighting in the capital Juba that included a government troop-led assault on the internally-displaced persons (IDP) camp adjacent to the UNMISS UN House camp. The response by UNMISS troops in that attack has been termed "disgraceful"—the Chinese battalion at the time, for example, was found to have abandoned its defensive positions on the perimeter of the UN camp on two occasions, and the Nepalese Formed Police Unit was accused of failing to respond to calls for assistance from UN workers outside the main UN camps and under threat from government troops.

Note that because the Abyei region remains in dispute *vis-à-vis* Sudan and South Sudan, a separate mission (the UN Interim Security Force for Abyei (UNISFA)) was created to deal with that contentious area. However, that mission is outside the scope of this article.

Understanding UNMISS Dysfunction

I use the term *dysfunction*, rather than the harsher term *failure*, largely because I believe the international community, if it shows the will and provides the means, can turn UNMISS around and made it work properly within the peacebuilding framework. My intent within this section is to identify those elements of UNMISS which are contributing to the dysfunctional nature of the mission and provide some ideas on changing them.

The primary issue with UNMISS is that it is a Chapter VII mission that is being run as if it were a UN Chapter VI mission.[8] By this, I mean the mindset of UNMISS leadership is to compel compliance but without resorting to force. Indeed, the use of force was *actively discouraged*, even in the instances when it would have made sense. While advocating mediation and negotiation to defuse tensions and avoid conflict makes sense, there is a need to back that up with the use of force when the other side becomes intransigent. As will be discussed later in this article, Government of South Sudan (GoSS) forces would regularly restrict and deny UNMISS freedom of movement throughout the theatre.

The UNMISS centre of gravity centre of gravity is freedom of movement: without it, the mission is unable to influence events, either through reporting, investigation, deterrent deployments or via its humanitarian operations. However, because of the institutionalization of what I term as good-faith processes, UNMISS operations were seriously compromised. The two processes were known as the Sharing of Information (SOI) process and the Joint Verification and Monitoring Mechanism (JVMM) process.

The SOI process began from a simple enough premise: the UN believes it needs to maintain transparency in all its operations. That concept of transparency was understood both for security and safety reasons, as well as for supporting UNMISS public relations campaign by demonstrating, tangibly, UN operational support of the people of South Sudan. Practically, however, transparency became a weapon used against the UN. By providing documentation of its intended operations, including the numbers of troops involved, their vehicles, and their weaponry, the UNMISS provided the means by which the GoSS and the SPLA were able to exploit the Status of Forces Agreement, or SOFA.[9]

Specifically, the SOFA included paragraph 48, which stated:

…the Government [of South Sudan] shall take all appropriate measures to ensure the safety, security and freedom of movement of UNMISS, its members and associated personnel and their property and assets. It shall take all appropriate steps to protect members of UNMISS and its associated personnel and their equipment and premises from attack or any action which prevents them from discharging their mandate.

Quite skillfully, the GoSS argued the SOFA provided them with the duty of ensuring the safety and security of UNMISS personnel and operations. This, in turn, allowed them to dictate *when* and *where* UNMISS movement was allowed. When UNMISS proposed operations into areas designated by the GoSS as "zones of operations," the GoSS would, essentially, deny UNMISS movement into the area, based upon the argument that it was dangerous in those areas and therefore not safe or secure for UNMISS. It quickly became clear to me during my time with UNMISS that zones of operations were more or less any area the GoSS felt was sensitive, including particularly those areas where it was undertaking either mass murder or genocidal activities in opposition-held territory.

The other process ostensibly instituted in good faith, and this one by the GoSS, was the JVMM. Created by the GoSS as a bureaucratic link (or filter), the JVMM was carefully inserted between UNMISS and the SPLA as the means by which all Signal Operating Instructions (SOI) documentation was handled. The JVMM dealt with UNMISS at the tactical, operational and strategic levels; contacting the SPLA chain of command directly usually resulted in being directed to the appropriate JVMM contact. At the tactical level, the local MLO cell would deal with the local JVMM office, usually dealing with JVMM members ranging from lieutenant through to lieutenant-colonel: most of those at the major or lieutenant-colonel level were senior members in terms of service. The Senior MLO (SMLO, a colonel) in charge of the local MLO cell *would*, when required, deal with the head of the local JVMM office. The UNMISS Deputy Chief MLO (DCMLO) at Force HQ would coordinate all MLO activities in theatre and would deal with the head of the overall JVMM office. Direct contact with the SPLA HQ would only be made by the Chief MLO (CMLO) who was also the Deputy Force Commander (DFC).

> **"Quite skillfully, the GoSS argued the SOFA provided them with the duty of ensuring the safety and security of UNMISS personnel and operations."**

For the SPLA, the SOI documents became a means by which they could exert exercise sovereignty by *allowing* or *denying* UNMISS movement. Because the GoSS/SPLA could not directly deny UNMISS movement (such a denial amounted to a SOFA violation and would in theory dictate a UN response, likely in the form of sanctions or legal action against specific individuals), they would instead issue a response to the SOI stating either that they *approved* the activity in

Sudan People's Liberation Army (SPLA) soldiers in Opposition arrive at Juba airport, 28 March 2016, after the peace agreement signed between rebel forces and the Government in August 2015.

Effectively, the JVMM became an arm's length organization through which UNMISS was expected to communicate with the SPLA, making it, in reality, an information operations mechanism that allowed the SPLA to *mask* and *shield* its command structure. Staffed by SPLA officers, the JVMM became the means by which the SPLA precluded direct UNMISS contact with key SPLA leaders. Coupled to the SOI process, the JVMM perfected its ability to effectively *interfere* or *restrict* almost at will UNMISS operations on a regular basis.

The two processes worked as follows: UNMISS would decide to conduct activities in a specific area and would task its MLO cell responsible for that area with drafting up the necessary SOI documentation. The documents would outline the nature of the activity planned, when it was planned, the UN forces involved including civilian agencies, weapons and numbers of troops, and routes that would be taken to entry and exit the area in question. The SOI would then be submitted to the local JVMM office and was, in theory, furthered to the SPLA Force COS responsible for operations. Once the SPLA had reviewed the operations and decided whether the area was sensitive or not, the SOI documentation would be returned via the local JVMM office to the MLOs. The documents would include either the statement that the operation in question was *approved*, or that it was *not approved* (but allowed to proceed, understanding the risk of proceeding was assumed by the UN). In effect, the SPLA would wash their hands of operations they did not wish the UN to undertake, they being unable to deny UNMISS operations without triggering a SOFA violation. In practice, the MLO team accompanying the UN operation being undertaken would usually find the SOI paperwork was never sent down to the tactical levels: local checkpoints would routinely be unaware of planned UN operations, and would regularly have to contact their higher HQ to confirm the paperwork was valid and the operation could continue its movement.[10]

question, or that they *did not approve* the activity, but allowed it to be undertaken by UNMISS at its own risk. In other words, despite the obligations of Paragraph 48 of the SOFA, the GoSS/SPLA would decline to take responsibility for UNMISS activities when so indicated on the SOI documentation. That refusal to take responsibility for UNMISS safety and security was backed up by denials at each of the local checkpoints along the route. Seeking to reverse such a denial of movement was extremely cumbersome and time-consuming, and it was heavily weighted in favour of the SPLA delaying tactics.

For example, moving from Juba to Kajo Keji during the dry season entailed a trip of about ten hours, there being only one main road. If the trip was delayed by any more than a few hours, the UNMISS operation would either be forced to arrive in Kajo Keji after dusk, which required movement at night, and therefore required Force Commander approval; or the patrol would be forced to find a 'leaguer location' along the route to spend the night. When we were delayed, we would usually seek to have the UNMISS Sector Commander re-schedule the operation for a later time: UNMISS leaders on the Force HQ side of the house were not always amenable to that course of action! Indeed, rescheduling of my March 2017 patrol was not supported, and we ended up arriving in Kajo Keji after dark, only to find an armed militia in the area on high alert and quite jumpy after a daylight attack on their local jail by the local SPLA-IO forces!

Perhaps the most shameful example of UNMISS having lost the initiative and freedom of movement, this at the *strategic* level, involved the ongoing struggle to deploy the Regional Protection Force (RPF) into South Sudan. The RPF was developed in response to the July 2016 crisis and was intended to provide the UNMISS Special Representative of the Secretary-General (SRSG) through the Force Commander with a dedicated reserve force that *could*

A UN base for peacekeeping operations in South Sudan in the capital Juba, 11 December 2016.

and *would* respond to security threats in the Juba area. The intent was to deploy the RPF quickly, stabilize the security situation, and complete its mission by December 2016, allowing for it to be withdrawn. However, despite being ostensibly agreed upon by the GoSS, the deployment has run into numerous issues and delays. Some of the delays were because of issues related to the rainy season, and the lack of suitable space for the force, but most were due to GoSS intransigence on the issue.

Because the mission has been run as if it is a Chapter VI mission, the GoSS has had authority over the *type* and *national identity* of those military contingents deployed into the country. That allows the GoSS to refuse to allow combat units from Western nations to be part of the RPF, and instead, to insist upon troops from regional African nations only. The GoSS has been pushing for the troops to be heavily-weighted towards engineering units, the intent being to have them perform development work. Because UNMISS has insisted upon combat-oriented units, the GoSS has thrown up roadblocks concerning the type of heavy equipment allowed as part of the RPF.

As a result, as of August 2017, only 350 soldiers (two infantry companies and one engineer company) had deployed into Juba out of the 4,000-person strength authorized by UNSCR 2304 (2016). Worse, the negotiated deployment of the RPF saw it restricted to operations within the city limits of Juba. Granted,

the deployment of RPF troops into Juba meant other Juba-based troop-contributing contingents were then made available to move elsewhere in-theatre, but the RPF was, for all intents and purposes, designed to become the UNMISS reserve. Instead of having the flexibility to relocate UNMISS troops *where* and *when* desired, UNMISS leaders instead, once again, allowed UNMISS initiative (and with it, strategic freedom of movement) to be negotiated away.

As an aside, there are several issues with the RPF other than those related to the deployment delays. Many of the regional nations *involved*, and *inclined* to provide forces for the RPF, are already heavily committed to other regional missions. The quality of troops available does not lend itself to operations as the mission reserve.[11] More of a concern is that the GoSS has also dictated the level of offensive capability of those forces committed to UNMISS, which, in turn, ensures that the SPLA retains an 'offensive overmatch' against the UN. Heavy weapons are typically not allowed to be deployed, as per direction from the GoSS. Finally, it remains unclear whether RPF operations within Juba include the vital ability to deploy to protect and secure the international airport, the UNMISS centre of gravity and vital ground.[12]

Another problem area for UNMISS was the expansion of its mandate to include the nebulous protection of civilians (POC) mission.* The adoption of UNSCR 2252 (2015) meant, from a practical point of view, that anywhere UNMISS established an

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* I have used the term 'nebulous' with the phrase 'protection of civilians' to denote the lack of clarity applied to this expansion of the mission mandate. Civilian agencies, for example, seemed to understand this mandate as applying to all civilians within South Sudan, whereas others, including several senior military leaders with whom I spoke, to consider the term to apply only to those civilians within the POC camps (i.e., Malakal, Bentiu and Juba camps). Further complicating matters was that there were clearly economic refugees (those fleeing starvation or poverty) who used the camps to obtain food, education and/or health care: there was no way to identify those fleeing persecution and those fleeing poverty/economic conditions, nor was it clear that such a distinction should have been made. Regardless, the numbers in the POC camps were considerable, and they overloaded the capabilities of the UN and UNMISS: the various attacks on the POC camps demonstrated this firsthand.

armed camp with peacekeeping troops, IDP and refugees would congregate to seek protection, forcing the UN to establish, staff, and police permanent IDP/refugee camps. That significant and large addition to the mandate was made without a concomitant increase in contingent strength.

The lack of coordination between military and civilian agencies is not new, but it has been taken to new heights on the UNMISS mission. During my tour, we would regularly have aid agencies moving through the Central Equatoria without protection, and without notifying the UNMISS sector commander of their activities. In at least one instance, nine aid workers operating without reference to UNMISS were ambushed and killed along a road known and frequented by bandits (rumoured to have local military support). UNMISS was left with the task of recovering the bodies and conducting a post-mortem investigation to determine responsibility for their deaths.

That lack of coordination was not limited to NGOs: on my first patrol to Kajo Keji in December 2016, my meeting with the local elders was interrupted by a UN flight arriving at the local garrison, bringing members of the World Food Programme (WFP) into the area for discussions with the local authorities. This would not have been so surprisingly except that my patrol was originally tasked in support of a request from WFP: they subsequently decided to cancel their participation and claimed they would reschedule for a different date. The Sector South Commander, our boss, however, decided the patrol would continue without aid agency involvement as a military-only patrol. Imagine my surprise as I was explaining why this patrol was military only as a flight with aid workers was landing! This, unfortunately, was not the only time this type of thing happened.

In another instance, and this had serious strategic implications, aid agencies were working to improve road conditions along the route from Juba to Kajo Keji. On what was formerly a dirt road with barely enough room for two vehicles to pass in many spots, the aid agencies began to improve the bridge works along the route. While that appeared admirable at first, and was conducted in apparent support of aid being moved along the route to

> **"The lack of coordination between military and civilian agencies is not new, but it has been taken to new heights on the UNMISS mission."**

Kajo Keji from Juba, the work posed a major strategic issue. First, the route in question was not the main route for aid flowing into Kajo Keji. Most of the inhabitants of the Kajo Keji area, having been ethnically cleansed from the region in December 2016, were either across the border in Uganda, or living in IDP camps close to the Ugandan border in SPLA-IO held areas. Movement of aid from Juba to Kajo Keji was not required. Surprisingly though, route improvement continued even after the ethnic cleansing had been undertaken and had been investigated by UMISS.

However, more critically, the lack of proper bridges along the route had meant it was limited to small cars and trucks: larger trucks and armoured vehicles were not able to use the route. The SPLA armoured forces had been largely precluded from moving along the route because of the time and likelihood of breakdowns of their tanks based on the extremely rough terrain. The route improvement, and that of the bridges, meant that the route was opened to their movement, if they so desired. Without consideration of the consequences, disjointed aid work now risked changing the balance of power dynamic in that area for the worse, particularly considering GoSS's recent genocidal behaviour in the region. Similar ignorance of *tactical* and *operational* awareness was evident throughout my tour in other areas of South Sudan.

Other Operational Issues

Operationally, UNMISS had some very quirky arrangements in place, particularly with respect to the military command and control side of the house as it related to military liaison officers. While there are other UNMISS activities including, for example, human rights investigations and some developmental

An aerial view of South Sudan's capital Juba, dated 28 October 2011.

Joerg Boethling/Alamy Stock Photo/CE.JDFX

Child soldiers in the Sudan People's Liberation Army, South Sudan.

work, I should note that I am drawing upon my experience within the JUBA MLO cell in support of three specific types of UNMISS patrols within the Central Equatoria: UNMISS resupply patrols on land or by barge along the Nile; presence patrols designed to show the UN flag; and investigative patrols to determine the security situation within specific areas of conflict (the latter two were often combined). *Presence* and *investigative* patrols were further sub-divided into either military-only or integrated mission teams (IMT), the latter including a military component and a civilian component from various UN agencies, such as UN High Commissioner for Refugees (UNHCR), or the UN Office for Coordination of Humanitarian Affairs.

Patrols were generally understood to have three constituent parts: the force protection element, which was typically a company-sized element provided by a specific nation and under command of a junior captain or major equivalent; the MLO team of two (*usually* senior majors or lieutenant-colonels); and the civilian component (either UN and contracted drivers mainly for UN resupply missions, or an integrated mission team as above, if a presence or investigative patrol). The force protection element would be typically an understrength truck-mounted infantry company with its heavy firepower based upon one-or-two-wheeled and lightly-armoured cars mounting a heavy machine gun.

> **"It immediately became clear to me that the command and control relationship between the MLO and the force protection element commander *specifically* would be problematic."**

It immediately became clear to me that the command and control relationship between the MLO and the force protection element commander *specifically* would be problematic. Despite the MLO team almost without exception being senior in rank and experience to the force protection element commander, the force protection element commander would be put in command of the mission. The MLO team members would become *de facto* advisors, whose advice was often disregarded or ignored. *Often*, but *not always*, the force protection element commander would realize it was in his best interest to defer to the more experienced MLO for that person's advice and direction. However, there were all too frequently several force protection element commanders who would seek to take complete control of the conduct of the patrol, and would refuse to heed the advice offered by the MLO, or, indeed, that offered in some cases, by the civilian agency members. I should note that, officially, MLOs are identified by the UN as being military expert members, based upon the requirement for them to be better-trained and better-informed about the mission and its aims than their peers within the troop-contributing contingents. Despite that, MLOs were *never*, during my tenure, placed in command of any missions.

The civilians on the team were also problematic from a control perspective. UN and civilian drivers on resupply missions specifically would routinely ignore convoy protocols and place convoy

members at risk. I witnessed at least one instance of a civilian-driven resupply truck deciding to leave our convoy and attempt to pass me on a blind corner on a busy road going uphill during Easter weekend traffic. As an MLO, the only remedy available, after getting him under control and lecturing him on the need to maintain convoy discipline, was to lodge a complaint and recommendation with his employer that he not be considered for duties as a UN driver again.

Other issues with resupply missions revolved around frequent and lengthy truck breakdowns, mainly when dealing with the civilian-hired trucks (less so with the UN vehicles). A blown tire, for example, would consume at least an hour-and-a-half. The patrol would be forced to wait to ensure that the trucks were not targeted for looting. Rarely were any of our resupply patrols provided with anything approaching a proper recovery vehicle; the usual protocol was to have a one-tonne truck with ropes and chains that doubled as the spare truck tire. Ironically, on one patrol, that was the vehicle that broke down twice while enroute, causing approximately four hours of delay in total. The only recourse as an MLO was to conduct pre-patrol inspections of all trucks, and to refuse to allow those in obvious disrepair to accompany the patrol. It was not clear whether we, as military liaison officers, had that right of refusal, but a number of us did exercise it on occasion.[13]

Civilians from other UN agencies were also an issue. Often, they would venture off by themselves and hold meetings without informing the rest of the patrol, or they would venture away from the very necessary patrol security perimeter. I was fortunate in one regard in that most of my patrols were only military. Others were not so lucky. In one instance, during my tour (not my patrol), the civilians accompanying the patrol decided that the accommodations offered and used by the force protection elements were not good enough, and instead, decided to shift to accommodations to a local UNHCR camp 'down the road' two kilometres away. The local UNHCR leader refused to allow military into his camp, and thus, when the UNHCR compound came under fire later that night, the MLO team mobilized the rescue of the patrol's civilian members and brought them back inside their armoured personnel carrier to the force protection element camp. Other issues with civilians involved concerns over safety, with a number of UN agencies refusing to allow their personnel to move outside the Juba area unless inside armoured vehicles. While I, as an MLO, would operate in an unarmoured carrier routinely, civilian movement into conflict areas was almost always via slower, 'up-armoured' patrol trucks.

That is not to say that MLO were without fault. On at least one occasion, an MLO team from Juba decided that the patrol was too slow, and, rather than bed down for the night fifteen kilometres from the main Juba camp, they decided to leave the patrol and return to Juba on their own. A number of the civilian truck drivers, returning empty, likewise wanted to bed down at home and ended up also abandoning the convoy. Both MLOs were junior captains, and both were admonished with respect to their conduct by the acting Senior Military Liaison Officer at the time.[14] Yet, at the same time, the MLO office also wrote up a memorandum defending their action to avoid tarnishing the office's reputation with their desertion. That was not our proudest moment!

Thoughts on Regaining Initiative and Rebuilding Credibility

As should by now be painfully obvious, there are several substantive problems that need to be addressed to regain the initiative for UNMISS, and to reassert UN credibility within the region. The obvious first place to start, in my

A British soldier of the 39 Engineer Regiment, the Corps of Royal Engineers, working under the United Nations mandate in Malakal, South Sudan, 9 May 2017.

opinion, would be by dismantling the Sharing of Information (SOI) process and shifting away from the Joint Verification and Monitoring Mechanism (JVMM). Both allow the GoSS and the SPLA to *de facto* authorize UN movement, something the UNMISS leadership has allowed. They are also responsible for *inhibiting* UN freedom of action, and regaining that should be the first step UNMISS takes to regaining respectability and credibility. End the SOI process: transparency be damned, and insist upon UNMISS movement *where* and *when* it wants it. Period.

This leads to the second issue, which is that the UNMISS mission *has been*, at least, *in part*, about showcasing the capabilities of the African Union (AU) as a regional agency engaged in peace and stability operations. Unfortunately, it is not up to the task. Not only are its forces limited in their operational capabilities, there are also serious regional biases and national conflicts of interest that have come into play with regards to UNMISS. What is required, in the model of IFOR/SFOR as conducted in Bosnia, is a force which has the capabilities necessary to overmatch the SPLA and SPLA-IO: that overmatch is essential for compliance: *begrudging* compliance perhaps, but compliance nonetheless. The reality is that the West needs to engage in South Sudan if it wants this mission to succeed. There is a requirement for the operational warfighting capabilities resident in Western armies that are not available within the African Union.

> **One potential area to examine, from a practical and operational point of view, is the MLO training provided by the UN in-theatre."**

There is also a need to clarify the Protection of Civilians (POC) mission, so that it is not only *understood by all*, but that it is a mission which UNMISS is *capable of fulfilling*. The current demands of POC sites is over-taxing the mission: it has also precluded the establishment of permanent UN camps in problem areas (i.e., Yei or Kajo Keji) because of the operational requirements associated with the POC camps which inevitably follow. The policy needs to be supported with the *right forces* and *right resources* for success. Otherwise, UNMISS credibility will continue to be undermined.

Aid work in South Sudan requires more supervision and coordination. UN agencies that work with NGOs are not doing enough coordination. During the Stabilization Force in Bosnia and Herzegovina (SFOR) mission, at the Battle Group (BG) level, coordination cells were established with the mission of reaching out to NGOs in the BG area of operations, and with working to coordinate activities to avoid undermining the overall vision for the area. That type of coordination is either absent from UNMISS, or is ineffective. There are too many examples of 'poor-to-no' coordination of activities that have had operational impact.

UNMISS, Canada, and the Future?

Canada currently provides ten military personnel to the UN mission, with a number employed as staff officers, and the rest as military liaison officers. The Task Force commander currently fills a Mission Support Centre function in the rank of lieutenant-colonel. From a strategic point of view, the Canadian positions are, in my opinion, mid-level influence *vis-à-vis* UNMISS. No Canadians occupy positions of major influence, save perhaps that of the Task Force commander, and even that position is mid-level. Reportedly, Canada was offered at least one high-level position on UNMISS (the position of political advisor to the UNMISS SRSG) but turned it down. Canada has no Senior Military Liaison Officer positions, and no positions of influence within the various UNMISS commands. Without straying too far into policy, UNMISS is one mission that could be quite easily re-invigorated with more Canadian attention. The amount of our foreign aid flowing into the country certainly should provide us with leverage to push for more senior and influential positions on this mission.

One potential area to examine, from a practical and operational point of view, is the MLO training provided by the UN in-theatre. That currently provided is dismal and disjointed. It is currently split between Uganda for the pre-deployment portion, and Juba for the in-theatre specific portions. Practically, there is a high degree of overlap as well as discrepancies in instructor quality. This is an area that needs a better and more comprehensive program *developed* and *implemented*, an area in which the Canadian Army has a great amount of experience. By taking on this type of tasking, Canada could reorient its contribution to UNMISS into a specific and potentially-influential area. The Indian Army has done something similar, moving into ownership of the UNMISS signals complete. Ownership of that niche activity has provided them a great amount of influence on the mission.

Without correction with respect to many of the clear structural defects associated with the mission, the current UNMISS mission is doomed to remain dysfunctional and subject to Government of the Republic of South Sudan (GoSS) influence activities. Without a course correction, UNMISS will remain marginal and reactive, and will continue to experience regular, periodic massacres. Canada has the potential to shift its small contribution into other areas of influence, and help change this mission around—if the national will and interest exists.

Finally, and from a *tactical* perspective, I believe we, as Canadians, are having more of an immediate effect upon the UNMISS organization than on the SPLA/SPLA-IO. The SPLM-IO, or the GoSS. Where I believe that effect is happening is within the arena of challenging dated cultural and social norms. Without straying into the realm of neo-colonialism (too late?), I believe that introducing gender-based considerations into operational planning, for example, is an example of a *progressive* and *long overdue* change to UN operations. That one change sparked a great deal of discussion during my tour, and Canada, through its deployment of female MLOs, would be able to stand in the front of that manner of change.

CMJ

A UNMISS member waits for the unloading of supplies at Juba airfield, 21 August 2019.

NOTES

1   'Juba good' was one of those ubiquitous terms that crops up on missions. In this case, it denoted something that was not good, but given the conditions in the mission area (and Juba specifically), it was 'Juba good.' It was also used to denote surprise at something (often food-related) that turned out to be better than expected.

2   As with UNMISS, UNPROFOR was also a problematic mission, and likewise required considerable improvement. That notwithstanding, recent academic studies have made the claim that the UNPROFOR mission kept a lid on the worst of the violence that took place during the long and bloody Bosnian civil war. Whether you agree or not, I do not believe that a like claim regarding UNMISS and its work in South Sudan can be made.

3   While the Sudan government did eventually accept the mission presence, it nonetheless did everything in its power to stop any Western nations from deploying troops as part of the mission. The eventual hybrid mission would prove to be weak, ineffectual and disorganized, presaging the ineffectiveness of the UNMISS as well.

4   UNAMID was intended to field some 19, 555 military personnel (360 as military observers and liaison officers), 3,772 police observers, a civilian component and 19 special police units of up to 2,660 officers.

5   UNSCR 1769 (2007).

6   UNSCR 1996 (2011).

7   The troop increases were authorized under UNSCR 2132 (2013), and were intended to be temporary. The resolution also shifted the mission mandate into the area of protection of civilians (POC) which led to the creation of POC camps and the requirement for significant infrastructure to maintain and protect. Ironically, as of early 2017, and in spite of the enlarged mandate, the augmented troop levels had not been fully implemented.

8   A Chapter VI UN mission is one based upon the "pacific settlement of disputes" through negotiation, mediation, and similar peaceful means. Chapter VII, on the other hand, involves disputes that have gone beyond pacific resolution, and instead, now require a firmer hand, including the use of force to maintain or restore international peace and security.

9   The SOFA is a negotiated agreement between the UN and the host country that outlines the obligations, rights and terms of conduct for both sides. In theory, the SOFA affords UN members safety and security through international legal protection.

10   As an MLO 'on point,' attempting to negotiate passage with two young soldiers at a remote checkpoint was typically fruitless. It was almost as bad was attempting to do so with an anonymous superior contacted via an unreliable cell phone.

11   Ironically, the largest contributor of troops to UNMISS in terms of contingent sizes are Asian nations, including India in first place, Nepal in third place, Bangladesh in fourth place and China rounding out the 'top six.' Rwanda (second) and Ethiopia (fifth) are the only two African nations among the six largest contributors.

12   Conversations I had with senior JVMM officers indicated that they did not believe that would ever be allowed to come to pass.

13   Indeed, it was a Canadian, Lieutenant-Colonel Martin Ouellet (signals), who began the practice in the Juba MLO office during my tour. There were no indications that such refusals had been employed prior to our tour in any of the sparse patrol reporting, at least in our MLO office.

14   I am still unclear as to why UNMISS accepted junior captains as MLOs, when the UN doctrine was clear on the requirement for them to be at least majors. On the 'plus side,' as the main operations manager in the Juba cell at the time, I was able to provide a lecture and lead a discussion on why deserting your force protection element is a very bad idea. We had no repeats of this conduct, although other cells did so from time-to-time.

A door gunner from the Tactical Aviation Detachment keeps watch as a CH-146 *Griffon* helicopter flies over Iraq during Operation *Impact*, 23 April 2019.

By, With, and Through: The Value of Capacity Building Operations to the Canadian Armed Forces

by Yannick Michaud

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Our approach is by, with, and through our Allies, so that they own these spaces and the U.S. does not.

~ US Secretary of Defense,
General (Retired) James N. Mattis[1]

Introduction

Capacity building operations has become one of the key elements of the US national security policy. As the epigraph above illustrates, the United States views building partner capacity (BPC) as instrumental in ensuring an enduring exit strategy to military interventions. To further highlight the importance of BPC, the US Army will field six Security Force Assistance Brigades (SFAB).[2] For the former Chief of Staff of the US Army, General Mark A. Milley, [now Chairman of the Joint Chiefs of Staff – Ed.] the SFAB was a key priority: "It is my assessment, and the assessment of the Secretary and the assessment of the Army staff, that we are likely to be involved in train, advise, and assist operations for many years to come."[3]

United States Marine Corps General James N. Mattis, also the 26th United States Secretary of Defense.

Although the new US doctrinal publication *Field Manual (FM) 3-0, Operations*, does advocate a returned focus on large-scale combat operations (LSCO) to deter and defend against peer competitors, the manual does highlight the need to conduct security force assistance during the Consolidation of Gains phase.[4] Combined with the statements from US Secretary of Defense and the former Chief of Staff of the Army, it is clear that BPC will be an enduring mission for the US military.

Does Canada view capacity building in the same light? If so, the more important question is "why?" The answers drive if the Canadian Armed Forces (CAF) will be involved in these missions in the medium-to-long term, or if these are just 'the flavour of the day.' There is another important question: do these missions contribute to the CAF's larger readiness efforts or do they cause atrophy of other core capabilities, such as the CAF's ability to detect, deter, and defend against threats to Canada and its allies? This article examines these questions and argues that capacity building missions fulfill a number of Canada's objectives for international military operations. Furthermore, security force assistance provides a number of advantages to the Canadian military, in particular the Canadian Army in maintaining a high-level of readiness.

A Canadian View to Capacity Building: The Language of the Canadian Defence Policy: *Strong, Secure, Engaged*

To answer the first question, one needs to look no further than the 2017 *Canadian Defence Policy: Strong, Secure, Engaged* (SSE). As Figure 1 states, capacity building, identified as Mission 5, is one of the eight core CAF missions.

Government of Canada, Strong, Secure, Engaged: Canada's Defence Policy, p. 82.

To ensure Canada remains strong at home, secure in North America and engaged in the world, the Canadian Armed Forces will:

DEFEND

Detect, deter and defend against threats to or attacks on Canada

Detect, deter and defend against threats to or attacks on North America in partnership with the United States, including through NORAD

Lead and/or contribute forces to NATO and coalition efforts to deter and defeat adversaries, including terrorists, to support global stability

SECURE

Lead and/or contribute to international peace operations and stabilization missions with the United Nations, NATO and other multilateral partners

Engage in capacity building to support the security of other nations and their ability to contribute to security abroad

Provide assistance to civil authorities and law enforcement, including counter-terrorism, in support of national security and the security of Canadians abroad

PROTECT

Provide assistance to civil authorities and non-governmental partners in responding to international and domestic disasters or major emergencies

Conduct search and rescue operations

Figure 1. Canadian Armed Forces Core Missions.

The Defence Policy Review (DPR) addresses the number of ways capacity building will be conducted. For instance, SSE describes how the CAF will support the North Atlantic Treaty Organisation (NATO): "Canada can deploy, as needed, to effectively contribute to NATO deterrence posture, operations, exercises and capacity building activities."[5] The policy also addresses Canada's involvement with respect to building capacity in the United Nations (UN) Headquarters, and on UN operations.[6] In November 2017, the Government of Canada hosted a UN Defence Ministers Peacekeeping conference, where it announced a new CAF mission. Prime Minister Justin Trudeau said that the CAF will contribute to the UN peace support operations in an innovative manner, by *training UN forces* instead of *providing traditional peacekeeping forces*: "Training support will include a Canadian Training and Advisory Team (CTAT) to work with a partner nation before — and importantly, during — a deployment to enhance the partner nation's contribution to a given mission."[7]

This new UN mission adds to the vast number of current CAF operations focused upon capacity building missions overseas. The CAF is conducting training missions in Iraq, Ukraine, the Democratic Republic of the Congo, the Palestinian Authority area, as well as in a number of other places as part of Canadian Special Operations Forces Command (CANSOFCOM) operations and Canadian Army (CA) strategic engagements. In 2018, there were more than fifteen hundred CAF members deployed on international operations, with nearly seventy percent of those members conducting capacity building operations.[8] When adding the new CTAT commitment announced by Prime Minister Trudeau in November 2017, the number of training missions shows a trend: the Canadian government favors capacity building missions in the pursuit of foreign and defence policies. This raises the important question: *why* capacity building?

The "Why" – The Objectives of Canadian Foreign and Defence Policies

Capability building provides a number of opportunities to meet the Government of Canada's foreign and defence policy objectives. The foreign and defence policies address four key elements that convey "how and why" the government will use the CAF as an instrument of national power during international operations. First, the current government wants the Canadian military to take a more substantial role in preserving and strengthening the global order through conflict prevention. Second, the Canadian military will increase its participation in multilateral institutions and international cooperation, such as UN peace support missions. Third, they will support US national security interests to protect Canada's strong relationship with its closest ally. Fourth, the CAF will counter the threats of terrorism and specific state actors by maintaining a full-spectrum-capable force to deter and defend against these threats. This article will now deconstruct these four objectives articulated in the latest foreign and defence policy statements.

Then-Minister of Foreign Affairs Chrystia Freeland.

Strengthening Global Stability

The new policies outline Canada's views on *failed* and *failing* states, guiding the use of military force, and signaling Canada's role in promoting global stability to protect national values and interests. Then-Minister of Foreign Affairs Chrystia Freeland stated: "We can and must play an active role in the preservation and strengthening of the global order from which we have benefited so greatly. Doing so is in our interest, because our own open society is most secure in a world of open societies. And it is under threat in a world where open societies

> **"One of the ways to support global stability and a rules-based international order is through conflict resolution."**
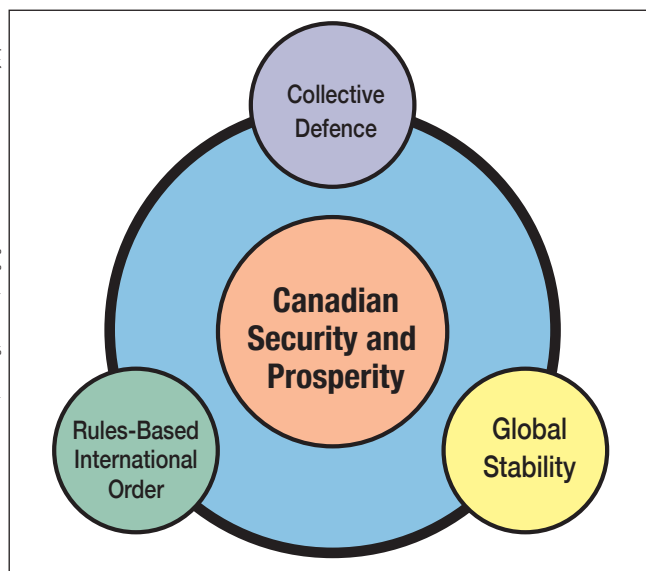
Figure 2. Canadian Strategic Interests.

are under threat."[9] Minister Freeland's speech also emphasized the links between global stability and Canada's national values and interests, acknowledging that in today's interconnected world, Canada cannot be an island.[10]

The Defence Policy Review, *Strong, Secure, Engaged,* reinforces the foreign policy statement by making the case to support international peace and security, conveying the links between national security and global stability, and to leverage the military as an instrument of national power.[11] As illustrated in Figure 2, the DPR states, "Global stability, the primacy of the rules-based international order, and the principle of collective defence underpin Canadian security and prosperity."[12]

One of the ways to support global stability and a rules-based international order is through conflict prevention. The DPR states that the CAF need to achieve "…a deeper and more sophisticated understanding of the root causes of conflict with a view to playing a greater role in conflict prevention, intervening earlier in the conflict cycle when necessary, and minimizing the effects of prolonged conflict."[13] Therefore, the two policies underscore the need for the CAF to *enable conflict prevention through early intervention.*

To achieve the objective of strengthening global stability, the CAF can create capacity in host nation security forces to provide their own security. As summarized in the phrase "by, with, and through,"[14] this approach enables the training of local forces where they can counter threats such as Violent Extremist Organizations (VEOs) and expansionist states by themselves, with coalition partners, and through coalition assets. The consequence of building local security forces is that the host nation is better prepared to counter internal and external threats of illegally-armed groups (IAGs).

The other benefit of conducting capacity building is the prevention of conflict. By teaching local security forces ethics and obligations under the international law of armed conflict, security forces become more competent and responsible in the domain of the rule of law. This is particularly important if a local population views local forces as "…corrupt, ineffective, politicized, or brutal."[15] By increasing their respect for the law of armed conflict, local forces gain the trust of the local population, helping to reduce support to IAGs, especially during an insurgency. The CAF's operation in the Democratic Republic of the Congo provides a good example of training local security forces where the goal is to strengthen the Congolese army, particularly related to respect for its own citizens.[16]

The fight against the so-called Islamic State in Iraq and Syria (ISIS, or AKA Daesh) provides a compelling example of using Canadian military force to support global stability and enable long-term conflict prevention. In 2011, the United States and its allies left Iraq, which created a security void, since the Iraqi Security Forces (ISF) did not have the capacity to maintain stability, allowing ISIS to capture large swaths of ground with near-total impunity.[17] To counter Daesh, the US formed a military coalition in

2014 primarily to train the ISF, using the "by, with, and through" approach.[18] By improving their military, Iraqis ensure their own security and set the conditions for the coalition to leave Iraq with a better chance for long-term stability. The Canadian government promptly supported the coalition, deploying the CAF under "Operation *Impact*" in 2014 with air support and CANSOFCOM troops training, advising, and assisting the ISF against Daesh.[19] In 2016, the CAF tripled the number of trainers, and introduced new capabilities in Iraq and Jordan, clearly demonstrating the government's conviction of the value of capacity building.

Strengthening Multilateral Institutions

Another objective of the current government is to support international institutions, in particular, the UN peace support effort. Canada actively participated in every UN operation since the first mission in the Suez, and ranked among the top ten troop contributors up to the late- 1990s, deploying between 1,000 and 3,000 soldiers annually.[20] Although Canada has considerably scaled back its involvement in UN missions over the past ten years, the current government views UN participation as a key enabler to leverage the instruments of national power, since as a middle power, multilateralism allows Canada to 'pull much more weight' on the global stage given its credibility as a coalition builder.[21] In August 2016, the Liberal government pledged a commitment of 600 CAF soldiers, 150 police officers, and $450 million to UN missions.[22] Although this contribution did not bring it back to contributions made at the 1990s level, it did indicate willingness to re-engage in stability operations under the UN mandate.

However, the Canadian government views the CAF as doing more than traditional peacekeeping. As previously mentioned, the PM announced a new UN mission, the CTAT. The Minister of National Defence (MND), the Honorable Harjit S. Sajjan, explained why this contribution would have a greater impact:

> *We've done a very thorough analysis. We've been places where you could put a thousand troops and it will only have an impact on a small chunk of ground. What we're trying to do here is actually improve the missions… Some peacekeepers are actually part of the problem… Imagine a number of Canadian expert trainers training an entire [UN] battalion to be able to be more effective. That has a much more significant impact.*[23]

By training troop-contributing nations to be more competent and responsible, Canada increases the UN's effectiveness, which increases global stability and conflict prevention, while still contributing to multilateral institutions, three policy objectives of the Canadian government.

Strengthening the CAN-US Relationship

The foreign and defence policies expressed another key objective for Canada: its relationship with the United States. As Minister Freeland stated, Canada's national interests are intricately linked to US national security, and Canada needs to maintain a strong relationship with its closest ally.[24] Both the foreign and defence policies highlight a key takeaway: Canada's credibility in the eyes of its American ally as a defence partner depends predominantly upon how effectively the Canadian

Operation *Naberius* 1702.

Canadian Armed Forces members mentor members of the Forces armées nigériennes while they conduct a patrol at the platoon level as part of Operation *Naberius* 2017 in Nigeria.

military supports US national security objectives. Therefore, the CAF should conduct missions that the United States believes to be worthwhile in promoting US national security interests. As stated in the introduction, the US Department of Defense considers security force assistance as a priority for America's forces.

The counter-ISIS mission demonstrated Canada's willingness to share the burden by joining US efforts, and thus, to strengthen its defence relationship with the United States. As previously mentioned, the government increased the CAF contribution for Operation *Impact* in 2016, nearly doubling the number of troops in Iraq and Jordan.[25] With a total of 830 troops in 2017, the CAF represented almost ten percent of the military coalition of twenty-three nations engaged in the military fight against ISIS in Iraq and Syria.[26] Due to this commitment, the US military viewed Canada as "punching above its weight," favourably supportable to Canada's defence relationship with the United States.[27]

Canada has also invested in other capacity building missions to support US national security. For instance, as part of Operation *Naberius*, the CAF is training the *Forces armées nigériennes* to counter VEOs in the Sahel through GAC's Counter-Terrorism Capacity-Building Program (CTCBP).[28] It is part of the larger US Africa Command-sponsored program of "…reducing sanctuary and support for VEOs."[29] Consequently, Canada's contribution to capacity building shares the burden, particularly in francophone areas, where Canada's bilingualism is an asset. Operation *Proteus* in Jerusalem is another example of partnering with the United States in training the Palestinian Authority, where the CAF is the largest contingent under the Office of the US Security Coordinator for Israel and the Palestinian Authority.[30]

Countering Global Threats through a Full-Spectrum-Capable Force

The fourth objective of the policies is the need for the Canadian military to deter and defend against a wide range of threats. These include VEOs and nation-states that defy the rules-based international order, such as North Korea, Russia, and Syria.[31] Minister Freeland named these threats in her speech: "The dictatorship in North Korea, crimes against humanity in Syria, the monstrous extremists of Daesh, and Russian military adventurism and expansionism also all pose clear strategic threats to the liberal democratic world, including Canada."[32] By unambiguously naming these four threats, Minister Freeland expressed the Canadian government's direction to the CAF to be ready to counter them.

As represented in Figure 1, the new defence policy listed the eight CAF core missions, from being ready to respond to a full spectrum of threats, from humanitarian missions, to defence and deterrence operations. These eight missions are not mutually exclusive, and they have multiple touchpoints that influence the CAF's ability to accomplish these core tasks. For instance, the NORAD and NATO commitments require "…a capable, professional, well-funded and well-equipped Canadian military" to deter and defend Canada and its allies, while contributing to global

stability.[33] The Government of Canada will increase funding from Can$18.9 billion in 2016/17 to Can$32.7 billion in 2026/27, an increase of more than 70 percent of the defence budget.[34] The increase in military spending will increase the CAF's ability to maintain a combat-capable force ready to react to a wide range of scenarios, from war fighting on the Korean peninsula, to countering VEOs.[35]

By having a combat-credible force capable of carrying out its eight core missions, the Canadian government has the flexibility to respond to a multitude of situations, from a humanitarian crisis, to full-scale war. Flexibility is very important, since the government must find a balance of capabilities, given the finite resources available. The military must maximize all opportunities to maintain its effectiveness in responding to the eight core missions. One of the ways is to ensure flexibility is to participate in missions that maintain warfighting skills, that enable learning opportunities, and that operate with allies.

Capacity building can also support the need to retain full-spectrum capabilities. By training for high-intensity conflict, the CAF maintains the expertise to conduct joint and combined operations. A military force can only be credible with respect to training others if it is highly competent. By conducting training internationally, the CAF maintains its ability to conduct joint and combined arms, which, in turn, helps deter threats from state actors, another Canadian defence objective.

The only way the CAF can be credible in capacity building is to be experts regarding tactics. To build these competencies, troops undergo Level 5 live-fire training prior to deployment.[36] The Canadian Army Commander considers Level 5 as the Army's "vital ground," the most important level of training.[37] It is also expensive, and the need to conduct live-fire could be challenged in a fiscally-constrained environment. However, the CAF can 'make the case' to protect funding for these forms of tactical exercises, since it needs to demonstrate proficiency prior to deployment on capacity building operations. By increasing its competencies, the CAF maintains its ability to conduct combined arms tactical operations in a wide range of scenarios.

The mission in the Ukraine, Operation *Unifier,* provides a good example of this assertion. After Russia annexed Crimea and invaded the Donbass region therein, the Ukrainian Ministry of Defence made a formal request for support to *build the capacity of* and *to train* the Ukrainian Armed Forces (UAF).[38] The goal of *Unifier* is "…to enhance Ukraine's military capacity to deal with threats to its sovereignty."[39] With more than two hundred CAF personnel from the Canadian Army, Royal Canadian Navy, and Royal Canadian Air Force, this mission focuses upon providing tactical-level training to the UAF to be more effective through "…doctrinal, institutional, and organizational level reform."[40] Through a 'train the trainer' approach, the CAF enables the UAF to train its own forces, multiplying Ukrainian effectiveness on the ground in the Donbass conflict areas.[41]

> **"Canada has also invested in other capacity building missions to support US national security."**

A Canadian instructor gives the 'thumbs up' to Ukrainian soldiers for their motivation and performance during a live-fire defensive range session in Starychi, Ukraine, 30 June 2016.

Operation *Unifier* also has the advantage of allowing the CAF to gain insight into how the Russian military operates. Previous Task Force Unifier Commander, Lieutenant-Colonel Jason Guiney, provided a number of examples:

We brought back a lot of lessons learned from the Donbass region, a lot about how Russian-backed insurgents conduct their fighting. We learned about the tactics that are being employed there. These are great lessons for the Canadian Army, and it's a bit of a wake-up call to what NATO is calling hybrid warfare. In Donbass the Ukrainians are facing conventional tank-on-tank, insurgents, road-side bombs, electronic warfare, unmanned aerial vehicles, and we are able to get a window on that, and bring it back to Canada.[42]

Additionally, the operational environment provides great insight into a wide range of threats, such as cyber attacks and aerial combat with Soviet-era aircraft, which could be valuable in a hybrid conflict with North Korea or Russia.[43] Capacity building missions offer a 'win-win' situation for the CAF, since it trains itself, maintains those capacities by training others, and gains insight into threats that the CAF cannot replicate back in Canada.

> **"Operation *Unifier* also has the advantage of allowing the CAF to gain insight into how the Russian military operates."**

Conclusion

Canada joins the partners of the Global Coalition Against Daesh in congratulating Iraqis and Iraqi forces on the liberation of Mosul from Daesh control. We salute Iraqi civilians, soldiers and police, who fought side by side against the threats posed by Daesh. Their sacrifices have made their country safer and the region more secure. We also wish to thank the women and men of the Canadian Armed Forces who trained, advised and assisted the Iraqi forces throughout this battle and served selflessly.

~The Honourable Chrystia Freeland, Minister of Foreign Affairs; the Honourable Minister Marie-Claude Bibeau, Minister of International Development and La Francophonie; and the Honourable Harjit S. Sajjan, Minister of National Defence

As previously highlighted, CAF members deployed on some form of capacity building and partnering constitute approximately 70 percent of the total Canadian commitments to international operations in 2018.[44] The rationale for this large number is clear: capacity building missions provide clear advantages for the Canadian

Master Corporal Elizabeth Inman mentors a member of the Jordanian Armed Forces Quick Reaction Force Female Engagement Team during Exercise *Eager Lion* in Jordan, 2 September 2019.

government. First, capacity building supports global stability through conflict prevention by training local forces to be more professional, ethical, and competent. Second, capacity building allows the Canadian government to use its own military force as a last resort since it trains local forces to provide their own security. Training missions also support the defeat of VEOs and, in certain cases, assist nation-states in their fight against other states' expansionist ambitions, thus supporting a rules-based international order. Given American national security objectives, and the US Army's focus upon securing force assistance, the Canadian contribution to capacity building efforts in certain regions sustains Canada's standing as a reliable partner of the United States.

When considering the list of missions illustrated in Figure 1, capacity building can contribute in one way or other to six of the eight core missions articulated in the new defence policy. For instance, by maintaining a combat-credible force through high-end training, the CAF is better-prepared to *deter* and *defend* against threats to Canada (Mission 1) or North America (Mission 2). As exemplified by the case of the operations in Iraq, the Sahel, and the Ukraine, capacity-building missions contribute forces to NATO and coalition efforts to *deter* and *defeat* adversaries, including terrorists, to support global stability (Mission 3), and to engage in capacity building to support the security of other nations and their ability to contribute to security abroad (Mission 5). Additionally,

capacity-building initiatives, such as CTAT, PSTC, and MTCP, contribute to international peace operations and stabilization missions with the United Nations (Mission 4). Finally, the CAF participation in CTCBP assists civil authorities and law enforcement, including counter-terrorism operations, in support of national security (Mission 6).

Capacity building also brings advantages to the Canadian military itself. These missions help to maintain a combat-credible force by 'raising the bar' for the CAF's training requirements. This, in turn, reinforces the rationale for conducting Level 5 live-fire and other high-end training, since a 'trainer' needs to be better than any given 'trainee,' if capacity building is going to be credible. By providing unambiguous requirements, the Army is able to protect funding for expensive, and yet critical, live-fire training. Through training missions in the Ukraine, the CAF also gains insights regarding a peer competitor, namely Russia. In Iraq, the CAF safeguarded its reputation as warriors in the eyes of American and coalition forces.[45] Maintaining its credibility as a fighting force is something it fought to do during the Kandahar mission after spending a half-century focusing upon peacekeeping duties around the world.[46] This is why capacity building also reconciles the military's need to train for the worst-case scenarios, such as full-scale war.

And yet, one question remains… What are the chances that capacity building will remain the focus for the military, particularly after the defeat of ISIS? In July 2017, Iraqi forces liberated Mosul, a major victory in the fight against Daesh, winning the praise of the Government of Canada as highlighted in Minister Freeland's earlier statement. In the wake of the recent memories of the Afghan mission, this is an important 'win' for the Canadian government, and a source of pride for Canadians. Although the fate of Iraq is far from certain, as other terrorist groups could surface, the coalition is fighting violent extremists in a very novel and effective manner. By developing the ISF, the coalition will eventually be able to leave, thus making capacity building appealing to the Canadian government.

Capacity building missions are also desirable for another important reason. Since most military conflicts are also 'a war for public opinion,' the government needs to maintain public support to continue operations overseas.[47] Capacity building missions provide some clear advantages, since the rationale for them can be easily-understood by the Canadian people. For instance, training local forces is an objective that Canadians readily understand. In addition, these types of operations allow the deployment of the military, while reducing the risks of casualties since it does not constitute *capacity replacement*, wherein the CAF would be doing most of the fighting, as it did in Afghanistan. The military also secures its exit strategy, reducing the chances of a protracted conflict with no end in sight. Countering terrorists also contributes to the protection of Canada, since it defeats those who instigate attacks against Canadians, which is an important preoccupation of our public, given recent attacks upon the homeland.[48] Capacity building achieves these objectives, all the while reducing the cost of 'blood and treasure.' These positive outcomes exemplify why these missions will most likely remain the focus for the CAF in the near future.

Nonetheless, capacity building missions are not flawless, and the CAF needs to factor in many considerations before participating in these operations. First, the CAF must determine "what constitutes good enough?" when measuring the effectiveness of training local forces.[49] Second, the CAF needs to consider the advantages of the "assist, advise, and *accompany*" approach to properly validate the training of local forces. "Accompany" missions expose Canadian troops to greater chances of casualties, but they can be more effective in training local forces, since the CAF mentors the 'trainees' while they are on operations.[50] The third issue affecting capacity building is the possibility that western forces may train local security forces that could be involved in a later coup against the host-nation government, or becoming involved law of armed conflict violations, turning the mission into a media relations crisis.[51] Fourth, capacity building normally involves equipping the host nation with lethal aid, to which other nations may protest, as was the case in Iraq where the coalition is training Kurdish forces, upsetting both Turkey and Iran.[52] All these considerations need to be addressed prior to any capacity-building operation. However, based upon recent successes in Iraq and Ukraine, it is highly likely that these types of missions will be part of the CAF's near-future. For the Canadian government and its people, "…by, with, and through" missions are uniquely suited for reconciling the various expectations for the use of the Canadian Armed Forces, since they provide a 'win at acceptable costs.'

CMJ

Canadian Armed Forces infantrymen deployed on Joint Task Force Operation *Impact* (JTF-1) board a CC-130J *Hercules* bound initially for Iraq to begin their seven-month tour of duty at Ali Al Salem Air Base in Kuwait on 27 November 2019.

Aerospace Engineering Officers Captain Shirley Gilbert (left), and Captain Mathieu Gagnon (right) 'take their office outside' as they reprogram Electronic Warfare Operational Support during the NATO coalition Operation *Reassurance – ATF Romania*, 14 October 2019, at the Mihail Kogălniceanu Air Base.

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Department of Defense Chief Information Officer Dana Deasy and USAF Lieutenant General Jack Shanahan, Director of the Joint Artificial Intelligence Center, brief the press on the adoption of ethical principles for artificial intelligence at the Pentagon, 24 February 2020.

Leveraging Allies Regarding Artificial Intelligence: The Critical Link between the Commercial and the Defence Industry

by Simon Poudrier

Colonel Simon Poudrier, CD, *is an Air Logistics Officer who has served across Canada and on deployed operations for 25 years. While a student at the National Defense University (Washington D.C.), he was chosen for the first Industry Study on Emerging Technologies, focusing upon Artificial Intelligence within the Great Power Competition framework of the USA Department of Defense. As part of this study, he interacted with 'cutting edge' labs, schools, and businesses around the USA, Switzerland, and Canada regarding their perspective on related matters.*

We should take advantage of the demand for considered and joined-up ethical principles and frameworks for the development and use of AI in democratic societies. The US is unlikely to take this role. […] the overwhelming dominance of a few powerful technology companies in the development of AI makes it less likely that a truly democratic debate of equals, encompassing the state, the private sector, universities and the public, is likely to emerge there. Similarly, China shows few signs of wishing to limit the purview of the state or
state-supported companies in utilizing AI for alarmingly intrusive purposes.

~ House of Lords of the United Kingdom, 2018[1]

Introduction

The fast-evolving Artificial Intelligence (AI) industry has left the United States (US) government lagging industry in terms of fully understanding AI's impact upon the nation's population and its potential applicability. Large firms have seized upon this control vacuum and have since operated virtually independently in a somewhat-unregulated environment. This lack of regulation, however, is not as prevalent outside the United States. Europeans, for example, seem to have come to terms with the new AI reality, and they have initiated government-wide discourses with respect to adopting AI in their nation's best interests. Acknowledging that current AI commercial applications are powered by the data that is mainly harvested from its population, European countries have enforced

regulations regarding privacy of information, which has *cooled* and *arguably better structured* AI's progression and adoption within their territories.

The US government recently released the "American AI Initiative," an AI perspective centered upon the American "own way of life," as driven by US industry. A glance at other nations' AI policies provides an *alternate* and *insightful* point of view with respect to the AI industry pertaining to defence, and its strong link with global commerce. Based upon a study of current allies' AI policies and perspectives, this article highlights the immediate requirement for the US to evaluate the impact of its aggressive economic strategy, and to further *engage* and *leverage* allied governments in the AI industry defence nexus. The advantages of a strong engagement with America's allies will be examined through the definition of the generic AI industry condition and structure, the inherent challenges of the AI industry related to defence, and the role of various governments and related inherent policies regarding AI with respect to defence.

> **"AI differs from other industries, due to the inherent complex nature of being a convergence of disciplines in an ecosystem."**

AI makes the assessment of its industry rather complicated. For the purpose of this article, the broader definition of AI will be considered and referred to as "…the industry meant to use electronic data to provide an inferring agent or algorithm a human-like reasoning, making an AI system conduct a task."

AI differs from other industries, due to its inherent complex nature of being a convergence of disciplines in an ecosystem. One of the main differences between the AI industry and a more-traditional defence industry, rests in the private sector-driven 'supplies' required for the industry to exist. These supplies are the data, the computer-coding professionals programming the algorithms, the computing power, and the sensors providing the data to the feedback loop. The Internet of Things (IoT) explains the ecosystem composed of the *devices* and *technologies* that send and receive data that powers the overall AI system. These supplies must be in synchronization in order to power AI in its *current form*, and for a specific and limited purpose only. AI applied to the medical field, for example, may be discussed in terms of "…image analysis to determine potential prostate cancer development in patients." The same AI system however, particularly the data-set which are the thousands or millions of images required to teach the AI system to search for traces of prostate cancer, would not be valid for analyzing another type of cancer. Consequently, the expertise and technology required to power an AI system is highly technical, and requires significant capital investments in order to be created.

Filip Radwanski/Alamy Stock Photo/2B1N8NC

AI Industry Definition, Condition, and Structure

AI Industry – Technicalities

AI was discussed for the first time more than half-a- century ago, and it has since gone through periods of development and stagnation. Most of the advancements pertaining to Research and Development (R&D), which have led to today's AI, have originated from US government-funded initiatives. The advancement of computing power and miniaturization, along with the availability of digitized data in recent decades, has greatly-improved the potential uses of AI, making it a viable industry. Large companies have emerged in the US and China, and have taken the global lead with respect to R&D, and consequently, the future of the AI industry. AI applicability may now appear limitless. However, American researchers argue that the lack of an official US government definition of

AI Industry – Capital

The US Defense Advanced Research Projects Agency (DARPA), during the first week of March 2019, was granted an allocation of $2B spread over five years for its sub-projects, which are part of its overall 'AI Next' project.[2] This substantial funding could be considered a significant investment in other industries. However large corporations involved in the AI race spend billions of dollars *every year* on R&D. Amy Webb, a technology futurist at New York University, suggests that there are only nine global companies controlling the future of Artificial Intelligence. These consist of the American companies Amazon, Apple, Facebook, Google, IBM, and Microsoft, and the Chinese companies Baidu, Alibaba and Tencent,[3] and they aim to commercialize products for the masses. They also possess the funding and the scope of ambition to create the ecosystems required to truly power the various applicabilities of the AI industry. Lucidly, a congressional research service report on the AI industry highlighted: "It is unusual to have a technology that is so strategically important being developed commercially by a relatively small number of companies."[4] Arguably, the US possesses the advantage in that the largest firms are American. Outside the US, however, the Chinese firms are gaining ground, and they possess lots of data to power their AI innovations.

AI Industry – Data

An AI system must have access to a large quantity of relevant data to power and improve its algorithms. This requirement is critical to understanding how the AI industry relates to defence. In the civilian AI market, individuals surrender their data to the large firms in exchange for free services through personal computers or mobile devices applications, which aim at improving their quality of life, such as navigation or translation services. In the field of defence, however, an enemy will not provide its critical information in order to power an AI system aimed at taking its forces down. Data access is critical, and the network and IoT providers are capitalizing upon its potential, both for the civilian sector, and *probably* for the defence sector…

The Chinese giant company Huawei, a telecommunication, phone and IoT provider, has equipped the United Kingdom (UK), Spain, and Germany among others, with most of their 4G backbone network technology. Internal figures maintain that 63 percent of the company's global revenue comes from selling telecommunication network equipment, or the so-called operational technology, while Huawei's cellular phone sales in Europe compete closely with Apple's.[5] Huawei is determined to push its 5th generation (5G) of telecommunication network technology to Europe, which will be the next generation of IoT interconnectivity. Faster, and more powerful in its applicability, 5G is the 'missing link' to fully implement disruptive AI products to our everyday life, such as through autonomous vehicles. In other words, Huawei is potentially

in line to connect Europe to its next generation of networks and data exchange, and, *de facto*, establishing itself as the prime AI enabler. The US has major concerns with respect to the potential cross-sharing of data from the private sector to the defence sector. To that effect, the US Secretary of State has threatened European countries to stop sharing military information, should they decide to continue implementing the Huawei telecommunication infrastructure.[6]

AI Industry – Allies

Over the past two years, the US administration has sustained an aggressive economical protectionism strategy against long-time allies, even suggesting, for example, that BMW cars were a threat to the US National Security.[7] The American administration has also suggested that countries hosting US troops should pay the cost of American troop presence, plus an additional 50%, for the privilege of hosting Americans on their territory, in addition to suggesting that Russia should be re-integrated in the G7.[8] Needless to say, these bewildering changes in American foreign policy may adversely alter the decision-making process of long-time allies. Before these recent changes, the US could unquestionably count upon its allies to follow its lead, but the decaying of the commercial and defence relationships may erode some of the strong fabric holding the alliance together. Europeans are currently deciding upon the future of their network provider. The UK has reportedly found a way to ensure that there would be no 'back-door' sharing of data with China through the Huawei network. Other countries, also coveting China's potential commercial

Professor Sabine Maasen (Director MCTS), speaks at the Institute for Ethics in Artificial Intelligence, in Munich, 7 October 2019.

market, may pursue this alternate vision, *forging* US economic ties, while *discarding* their warnings. Highlighting the seriousness of this situation, Germany announced, on 19 March 2019, that it would not close competition to the Chinese giants Huawei and ZTE, and would allow them to compete for Germany's future 5G network.[9] Thailand, an American ally in Asia, announced the same intent by launching a 5G testbed technology powered by Huawei in February 2019.[10]

The private sector of the AI industry depends upon data, and the military AI is no different. A strong alliance would ensure the alignment of the network technology among partners to *power* the next generation of this industrial evolution, as well as the *data* required to power it. The recent acrimonious tone of the US administration towards long-term commercial and defence partners has made observers question the US position regarding the *importance* and *validity* of the alliances previously established. This new strategy may favour the current US manufacturing industry, but it could greatly weaken the development of the ramifications of networks required for the AI industry in defence among America's allies. Because great commercial partners rarely enter into conflict with one-another, one could only hope that the privileged commercial relationship the US has used to extend its global presence since the Second World War remains strong, as we advance through the AI era.

AI Industry in Defence and Its Challenges

AI Industry in Defence – Military Strategy

The US third offset strategy is described by the Deputy Secretary of Defense as encompassing "…autonomous learning systems, human-machine collaboration decision-making, assisted autonomous weapons and high-speed projectiles."[11] All four components of this strategy consider the integration of data-powered technologies critical to military affairs. In line with this strategy, defence analysts suggest that the groundbreaking use of AI for defence will enable faster decision-making, which, in a more kinetic environment, translates to a faster OODA loop (Observation, Orientation, Decision, Action).[12] This speed increase requirement has actually been rendered necessary by the advancement of adversarial weaponry.[13,14] The use of AI in defence is not new. Drones have been used for surveillance, robot soldiers for combat, and imagery analysis has already made its way into our military apparatus. Vehicles and buildings targeted in Iraq and Syria had been recognized by AI powered-systems 80% of the time, since 2017.[15] As enemies increase their understanding of AI systems, it will invariably introduce deception tactics in the field to counter image-powered AI. Cooperation with foreign nations and their

AI capabilities may expedite the continuous improvement of the data-sets required for enemy analysis, and help anticipate any potential adversarial movement. As allies combine their analysis, based upon a multiplication of capability powered by various AI systems, a strong alliance of contributing nations would be able to counter this complex issue.[16] The opposite, therefore, holds true for a more isolated country, such as China or Russia, which could not access a vast network of shared data. This 'double-incentive' constitutes why a strong cooperation among allies must be fostered with respect to AI. A solid allied network powering a world-wide, live surveillance AI ecosystem could provide the US with a formidable AI global presence.

A materials researcher at Wright-Patterson AFB, Dayton, Ohio, examines experimental data on the ARES artificial intelligence planner. The ARES Autonomous Research System, developed by the Air Force Research Laboratory, uses AI to design, execute, and analyze experiments at a faster pace than traditional scientific research methods.

> **"Drones have been used for surveillance, robot soldiers for conflict, and imagery analysis has already made its way into our military apparatus."**

AI Industry in Defence – AI-Powered Software and Hardware

In line with the third offset, air combat simulation tests in 2015 revealed that a top pilot was beaten by an AI system. [While this may well be an isolated incident – Ed.], the assessment of the combat situation worked at 250 times the speed of the human thinking process.[17] Recent advancements in the concept of "loyal wingman," where AI-coordinated drones would fly alongside manned fighter aircraft, suggest a highly probable future for this technology. The exorbitant costs of the F-22 and F-35 programs, as examples, may also trigger a requirement for cost reductions, and precipitate a greater reliability upon AI-powered capabilities. Should the US intend to fight as part of a coalition, it should take the lead in order to ensure further allied integration of development in this domain. Subsequent doctrine required for sustaining this new force structure in combat should also be coordinated through the North Atlantic Treaty Organization (NATO). Such strong coordination for the future AI capabilities regarding air combat can only bring stability to the AI industry with respect to defence, particularly as it applies to the US.
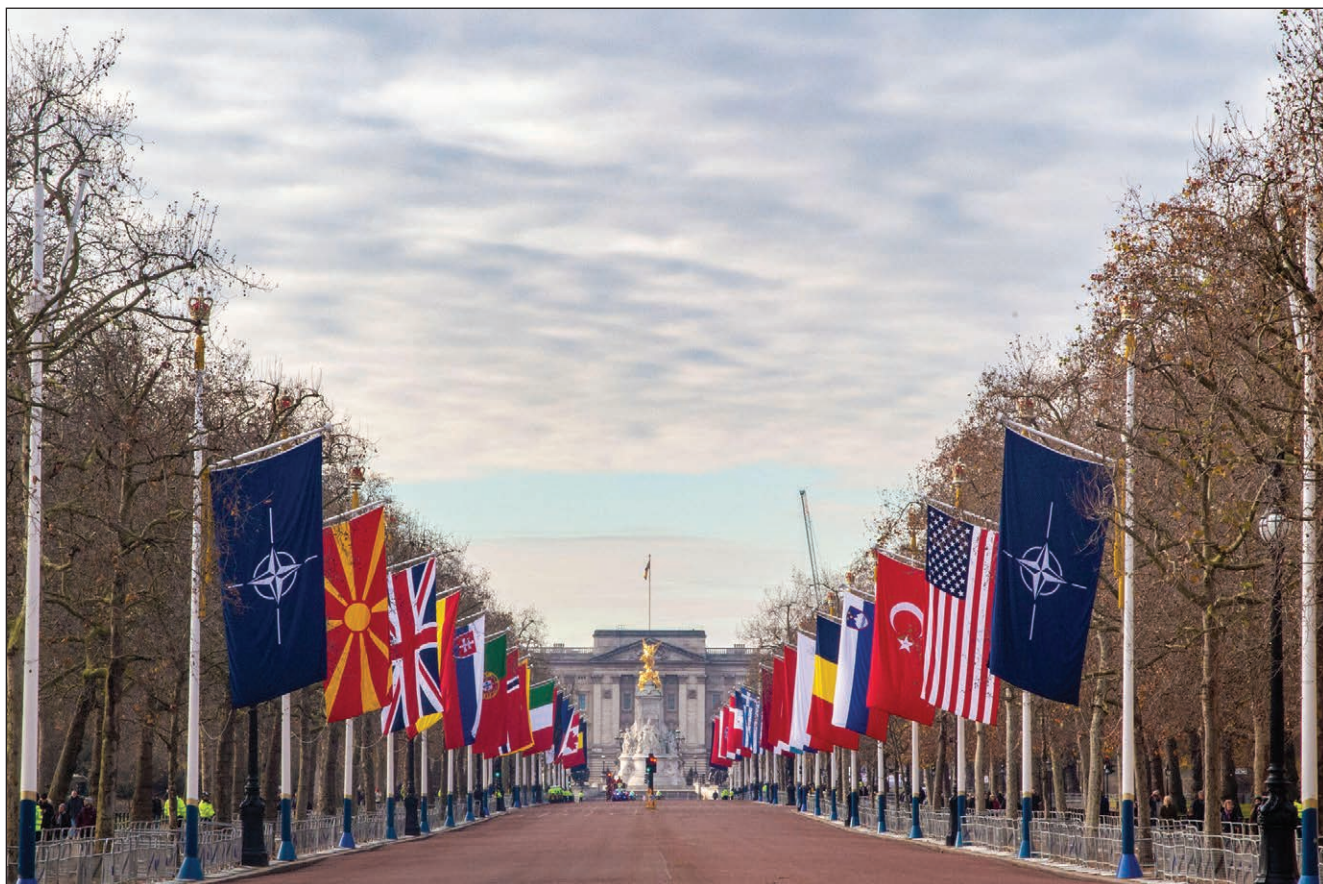
Flags on the Mall awaiting NATO leaders for the NATO summit in London, 3 December 2019.

Since AI applications are mostly being developed by the private sector for mass commercialization, and therefore meant to improve quality of life, the use of AI for autonomous weapons is a relatively-new phenomenon. Societal movements have challenged AI development for defence. Employees in commercial AI companies, such as Google, have been adverse to partnering with the Department of Defense (DoD), due to ethical concerns.[18] Resistance to incorporating AI technology into existing weapons systems and processes exists, even within the Department.[19] Facing a similar issue in France, the French Prime Minister, Edouard Philippe, commanded a study which concluded that the time for alliances was even more critical, as the "…building blocks to create weapons are no longer made by the military industrial base."[20] In other words, he implied that AI technology may create autonomous weapons which basically circumvent the International Traffic in Arms Regulations (ITAR). Taking action on the conclusion of this study, the French government created the *Commission interministérielle pour l'étude des exportations de matériels de guerre* (Inter-ministerial Committee for the Study of Military Equipment Exports) to address the very issue. The committee is composed of representatives from defence, foreign affairs, international development, economy, and finance, and they report to the General Secretariat for Defence and National Security. This new governmental structure provides a solid starting point to address the new reality of sensitive AI powered weapons trade and transfer, as well as their use. A US government cooperative approach with this type of foreign agencies could strengthen the

control over the weaponization and distribution of AI materiel throughout the world, and optimize the limited resources the US would eventually have to throw at this issue.

AI Industry Outlook on Role of Government and Policies

AI Industry in Defence – Ethics

AI used autonomously in a defence system could be described as being an *amoral platform* capable of making *moral actions*. To remain morally acceptable from a defence perspective, the AI industry for defence should be in line with United Nations (UN) principles, something the report to the US Congress views as a limitation. They also suggest that AI failure modes will be multiplied in complex environments, which could rapidly transform a successful operation in a disaster.[21] The US military shooting of a *Patriot* missile, which destroyed a UK *Tornado* and a US F-18 during operations in the Middle East, are examples of such disastrous AI software technological mishaps.[22] It is not surprising, therefore, that a large number of states have called for a treaty banning "…fully autonomous weapon systems" due to ethical considerations, while others have called for formal regulations or political declarations which may eventually put pressure upon American self-reliance defence ambitions.[23] Less than a year ago, the British House of Lords produced a report on AI and its implications for their

EU Commissioner for Internal Market Thierry Breton addresses a press conference on Artificial Intelligence, 19 February 2020, in Brussels.

Commission by the AI High Level Expert Group (AI-HLEG).[26] The AI-HLEG is composed of industry (SAP, Airbus), academics, and governmental representatives, and it demonstrates the will of the EU to *embrace* and *coordinate* the efforts to grow AI in a cohesive manner for all the countries involved in its various potential domains of applicability.

The Multi-layered approach to Europe for the advancement of AI ethics exemplifies cohesiveness in a common desire to improve AI and its use for the greater good. A strong cooperation with such working groups could undeniably help align allies, and create a synergy in the use and development of AI that could benefit the US AI industry. The sharing of networks and technically-specialized manpower required to create and sustain a safe and allied AI ecosystem are graphic examples of the positive returns of such cooperation.

country. They highlighted the differences in the interpretation of AI autonomous weapons, and even compared their version with those of, for example, the Vatican (Appendix A). The UK government drafted an AI Code Overarching Principle to clearly establish their governmental position with respect to the use of AI. The fifth principle of this code states: "The autonomous power to hurt, destroy or deceive human beings should never be vested in artificial intelligence."[24] The US has participated in international discussions of the Lethal Autonomous Weapon Systems (LAWS) at the UN Convention on Certain Conventional Weapons (CCW), but no firm resolution has been adopted. This could represent a unique opportunity for the US to take the global lead in championing this noble effort, which could only be opposed by ill-intended enemy nations.

French President Macron approached the lack of control over AI and weaponry from a government imperative by stating: "The role of the State must be reaffirmed [in AI]: market forces alone are proving an inadequate guarantee of true political independence."[25] Following this intervention, the European Commission (the highest EU governing body) created the European AI Alliance Working Group to support the work done at the European

> **"The UK government drafted an AI Code Overarching Principle to clearly establish their governmental position with respect to the use of AI."**

AI Industry in Defence – Government Perspective

Canada recently welcomed the world's first technology diplomat. Danish government official Casper Klynge was visiting our country in order to discuss how Canada was going to protect itself in preparation for the next federal elections.

Denmark's tech ambassador Casper Klynge poses for a picture in Copenhagen, Denmark, 15 June 2017.

Mr. Klynge sees his job as a protector of democracy from the ill use of AI. A driving force behind his work is preventing another Cambridge Analytica scandal. The British firm had utilized Facebook users' data to power an AI system capable of predicting and influencing American voters during the 2016 presidential campaign. The alleged influence of Russian cyber actions with respect to the same elections also adds a level of concern regarding the lack of control in the AI industry, and suggests a need for the US government to better regulate AI. According to Mr. Klynge's research, over 500M people had their data used without their consent in the last 10 months alone.[27] This fact has raised many questions regarding the use of the AI industry for defence. In a world where AI is controlled by private businesses, who has the responsibility to regulate and ensure its proper use? The Europeans have relayed the matter to their government [the EU], which has not been the case in the US. Does a foreign country's use of data and AI against another democracy constitute a matter of national defence? Allied governments must coalesce to ensure cooperation in the name of world-wide democracy and security. It would be to the benefit of the US to be *part of*, and perhaps *lead* such working groups, which could better protect democracies from adversarial AI use in domains or applications yet unknown, or not yet mastered by the Department of Defense.

AI Industry in Defence – Great Power Competition

China has not let much stand in its path to advance its AI capabilities in trying to reach their 2030 "World Leading Level" of AI. Its leading AI firm, Baidu, (Google equivalent) created AI software capable of surpassing human-levels of language recognition, almost a year ahead of Microsoft. In 2016 and 2017, a Chinese 'start-up' company team won top prize at an international Visual Recognition Competition. In the spring of 2017, a Chinese university with ties to the military demonstrated an AI-enabled swarm of 1,000 unmanned aerial vehicles at an airshow.[28] It is clear that China is making significant progress with AI for defence, and it has the means to be a strong competitor to the US. Their technology, however, is largely being used to monitor the Chinese population, and to enforce the power of the Communist Party.

The US has become the uncontested leader of the free world through pursuit of its democratic idealisms. It would be to the Americans' advantage to use this leadership in AI in order to solidify its moral grounds, ethics, and global leadership through this industrial revolution. The aggressive populist discourse pertaining to the current administration may, however, diminish the strength of US influence. The current state of affairs suggests that firms such as Google and Amazon may be better ambassadors for the US in the field of AI, and yet, they remain global, publicly-traded commercial entities. To that effect, General Dunford, then-Chairman of the Joints Chiefs of Staff, recently highlighted that the new Google AI centre established in China could translate into a transfer of technology that could eventually support their government.[29] The US government has traditionally cultivated a long-standing defence industrial base relationship with NATO, through 'five-eyes,' and through other alliances around the world. These strong, long-standing alliances are of inestimable value as leverage in the developing domain of AI, and should be *harvested* rather than *challenged*, to power the future of AI in the defence industry.

Conclusion

The AI industry is continuously evolving, and it remains largely unregulated. Virtually every country is involved in the race to master AI. The US has built a commanding lead with respect to the commercial civilian application of AI through its global firms, but it may be at the same level as other countries, such as China, regarding its military application. AI sources its power in the successful use and analysis of large, validated data, which virtually everyone produces every day through the use of the Internet of Things. China is 'knocking on Europe's door,' as well as the rest of the world, with tomorrow's network technology to power the IoT. It is simultaneously offering a large marketplace for economically struggling countries.

The US has already established strong economical and defence alliances with most of the countries coveted by China. The US would therefore strongly benefit by cooperating with its long-time allies to develop a *common* and *ethical* AI technology, and strengthen its efforts in developing the applicability of the AI industry for the defence sector. There are plenty of opportunities for the US to lead this effort, but the hostile discourse *vis-à-vis* traditional allies may limit such opportunities, and consequently, have an adverse effect upon alliances which could ultimately compromise tomorrow's AI industry and its defense nexus.

UPI/Alamy Stock Photo/W0N41E

United States Marine Corps General Joseph F. Dunford, Chairman of the Joint Chiefs of Staff.

Austria

Autonomous weapons systems (AWS) are weapons that in contrast to traditional inert arms, are capable of functioning with a lesser degree of human manipulation and control, or none at all.

France

LAWS should be understood as implying a total absence of human supervision, meaning there is absolutely no link (communication or control) with the military chain of command. The delivery platform of a LAWS would be capable of moving, adapting to its land, marine of aerial environments and targeting and firing a lethal effector (bullet, missile, bomb, etc.) without any kind of human intervention or validation.

The Holy See

An autonomous weapon system is a weapon system capable of identifying, selecting and triggering action on a target without human supervision.

Italy

LAWS are systems that make autonomous decisions based on their own learning and rules, and that can adapt to changing environments independently or any per-programming and they could select targets and decide when to use force, and would be entirely beyond human control.

The Netherlands

A weapon that, without human intervention, selects and attacks targets matching certain predefined characteristics, following a human decision to deploy the weapon on the understanding that an attack, once launched, cannot be stopped by human intervention.

Norway

Weapons are weapons systems that are capable of carrying out tasks governed by international humanitarian law, in partial or full replacement of a human in the use of force, notably in the targeting cycle.

USA

A weapon system that, once activated can select and engage targets without further intervention by human operator.

Appendix A: Definition of lethal autonomous weapons systems used by various countries.[30]

Written evidence from Professor Noel Sharkey (AIC0248)

CMJ

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An MQ-9 *Reaper* in flight at Holloman Air Force Base, Alamogordo, New Mexico, 1 April 2015.

The Mental Health Risks Associated with Remotely Piloted Aircraft Operations

by Mark Sandner

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Introduction

Unmanned aerial systems (UAS) have enjoyed an explosion in use by militaries around the world in the past few decades. The United States and Canada, among many other nations, have both made use of UAS in military operations, and that use will only increase in the future. The Government of Canada's defence policy, *Strong, Secure, Engaged* (SSE), identifies the acquisition of armed, remotely-piloted aircraft (RPA) as a priority. What this means for the personnel and supporting families of the Canadian Armed Forces (CAF) is yet to be seen. However, by investigating the effect of RPA operations on personnel in other countries, the CAF can gather valuable data on how best to implement these assets.

The growth of a permanent, Canadian RPA capability operated by the Royal Canadian Air Force (RCAF) will present challenges to the CAF in the realm of mental health, as has been experienced by other countries. Much research has been done in Canada with respect to deployed personnel and the effects of combat upon their mental health. The same cannot be said for personnel conducting operations from home soil. From the limited United States Air Force (USAF) studies conducted, research has indicated that RPA operators, who are far from the physical battlefield, are at particular risk for mental and emotional health problems as a function of the *graphic* and often *disturbing* images witnessed during their manner of duty, the physical and mental fatigue from 24/7 operations, and a lack of decompression time and circumstances. As a result, RPA operators are being pushed to the edge in terms of mental fortitude.

The USAF, the largest employer of armed RPA, has experienced the effects of this first hand, and has, in this writer's view, correctly identified that increased monitoring and treatment of RPA operators not only maintains mental health among this important group of military personnel, but also increases combat effectiveness as an essential asset for the modern battlefield. Regarding the eventual employment of RPA for Canada, operators should be monitored in much the same way as are personnel in combat to ensure that the utility of RPA assets is maximized.

Background on UAS/RPA

The term RPA has been adopted recently by the Government of Canada to be more consistent with changes made by the classification system of such types of aircraft by Canada's allies. It is also a "…more accurate reflection of how the systems are operated" according to the Royal Canadian Air Force (RCAF).[1] For the context of this discussion, RPA can either be armed or unarmed, and are being used in combat scenarios. The USA has a well-founded RPA program within its Department of Defense (DoD). By contrast, Canada does not yet possess dedicated RPA assets of its own, having leased them from various companies for combat in the past. The Remotely Piloted Aircraft Systems Project (RPAS), currently being managed by Canada's Department of National Defence (DND), will change that within the next five-to-ten years, when an RCAF squadron will be activated to employ newly-acquired RPA assets.

> "The term RPA has been adopted recently by the Government of Canada to be more consistent with changes made by the classification system of such types of aircraft by Canada's allies."

Under consideration are medium-altitude, long-endurance (MALE) RPAs. The operation of a typical MALE RPA requires two personnel working as a team. The operating team is located domestically, while the RPA itself is located locally in the area of operations. One operator is required to be the remote pilot (RP) – performing aircraft ground movement duties, take-off and landing oversight, and pilot monitoring duties, much like those performed by a manned aircraft pilot. The RP can pre-program routes into the RPA, or can manually fly it, depending upon the mission requirements. In the USAF, RP has become a completely new trade, separate from traditional manned aircraft pilots, since it was decided that a fully-fledged instrument-rated pilot was not necessary for the type of flying that a typical RPA would perform. For example, an RPA will not conduct aerobatics, nor will it ever fly in a formation.[2] The second operator, the payload officer (PO), controls the payload, including the electro-optic/infra-red camera and/or the radar onboard the aircraft, and directs the onboard weapons through the use of a laser designator.

The RP and the PO control the RPA via satellite data link and have the ability to relay images captured with its sensors to troops on the ground, and to command centres where the gathered intelligence is required. The RP and PO can give commands to the RPA and its sensors in near-real-time, enabling tactical changes during flight, so that the RPA can be re-tasked to new areas of operation with little delay. Although target responsibility rests with senior officers higher up the chain of command, the RP has the final call on whether it is safe to release weapons, by virtue of being the individual that inputs the final command to deploy them.

DND photo KA2003-D058D

A CU-161 *Spewer* UAV at launch.

A CU-170 *Heron* UAV at Kandahar airfield, Afghanistan, 9 June 2010.

MALE RPA crews have a wide variety of mission sets that can be performed. Regarding the missions performed by RPA that are covered by the media, most involve precision strikes against combatant targets, but RPA also perform functions that are not as lethal.[3] RPA are expected to replace nearly all manned intelligence, surveillance, and reconnaissance (ISR) aircraft in the near future.[4] Increased spending and procurement of RPA requires the manpower to operate, maintain, and support these aircraft. In the United States, increased operations of military RPA have put more strain upon the relevant squadrons of the USAF and other Department of Defense organizations. It is expected that the number of operations worldwide *requiring*, or *preferring* RPA assistance will increase as well, further necessitating the need for more personnel. For example, in 2018, the USAF expected to increase production of RPs by approximately 400 operators to meet the shortage of remote pilots it is experiencing.[5] With this shortage, RPA operators face increased workload and longer hours until the shortage is eliminated. The USAF can fully train a PO within four months, while that for an RP takes nearly a year. This means that two-to-four times more POs can be trained in the same period as an RP, explaining why there is a shortage with respect to RPs, and not for POs.[6]

While Canada's new defence policy, SSE, prioritizes the acquisition and employment of MALE RPA, Canada has very little experience in the current RPA model of domestic operators controlling RPA overseas. DND experience with MALE RPA is limited to the CU-161 *Sperwer* from 2003 until 2009, and the CU-170 *Heron* from 2009 to 2012. These two RPA, both employed in Afghanistan, utilize a line-of-sight control link with RPA operators who are deployed with the platform near combat zones. The *Sperwer* paved the way for further use of RPA by the RCAF by virtue of the introduction of the CU-170 *Heron,* employed in Afghanistan as part of Task Force Erebus. Primarily surveillance platforms, the *Sperwer* and the *Heron* provided coalition forces with key intelligence information that was used, not only for protecting coalition soldiers on patrol, but for laying the foundation for future operations. When Task Force Erebus ended, the *Heron* assets were handed back to their owners, Israeli Aerospace Industries, and the RPA operators went back to their respective trades within the RCAF. Since then, the RCAF has not flown another RPA operationally under the ownership of the Government of Canada.

The RPAS project will provide Canada with a *Reaper*-like RPA that can contribute to Canada's strategic national objectives. In the process of implementing the RPA project, groundwork needs to be conducted with respect to training, tactics, and administration. This includes gaining an understanding of the expected workload, and dealing with the unique stressors associated with operating an RPA in a combat environment. This groundwork will be developed and implemented, based upon the experience of nations that have employed RPAs for some time. Key among these nations is the USA.

RPA Operational Complexities

The USA has been operating RPA for more than twenty years. Currently, the 49th Wing Operations Group at Holloman Air Force Base in New Mexico is the hub of USAF RPA operations, conducting 'round-the-clock' operations in various parts of the world, as well as providing local training for all RPs and POs. RPA operators operate in a non-transparent area of military operations, where national security is the top priority. As a result, RPA crews face unavoidable negative media attention, especially if civilian deaths are associated with operations.[7] RPA strikes, precision or otherwise, are generally perceived negatively, and they create diplomatic and political pressures for the home nation, both *internally* and *externally*. As such, MALE RPA operators face significant pressure to make the right decisions. This, in turn, explains why the personnel and work environment of Holloman Air Force Base have been the subject of mental stressor studies conducted by the USAF School of Aerospace Medicine (USAFSAM).

The environment that RPA operators work in does not fit the traditional deployment cycle of combat military forces. Normally, combat forces will spend two-to-six months preparing for a deployment, complete a four-to-six-month rotation in a combat theatre, then have a period of post-deployment leave before resuming normal duties. In contrast, RPA operators at the 49th Wing in Holloman experience and follow a daily dual war fighter/domestic life role, where the demarcation line between operational and personal life is very thin. These operators literally commute to the battlefield daily. Each day that they perform duties in the ground control station (GCS) connected to an RPA on operation somewhere in the world, RPA crews may monitor a location for *days*, or sometimes *weeks* at a time, during which patterns of life and daily interactions of personnel are observed, and, if required, kinetic strikes are made to neutralize targets. Combat stressors are apparent. After observing some targets for often weeks at a time, and viewing potential targets' personal interactions with family members, internal conflict can grow within RPA operators who feel remorse or guilt for killing someone they have observed extensively.[8] Dr. Wayne Chappelle, Chief of the Aeromedical Operational Psychology Program at USAFSAM, identified this feeling of "existential conflict"[9] as a function of "guilt and remorse with respect to (an operator's) perceptions of themselves as aerial snipers, witnessing collateral damage following their strikes, and being psychologically attached to the combatants." This internal conflict is one of the main reasons that RPA operators face increased risk with respect to mental health issues, such as post-traumatic stress disorder (PTSD).

PTSD is a serious psychological condition that an individual can develop after repeated exposure to a mentally- or emotionally-stressful event, in which "…the response involved intense feelings of fear, helplessness, or horror."[10] Individuals who have acquired some form of PTSD experience vivid flashbacks, dreams, symptoms of avoidance, or increased arousal, hyper-vigilance, and outbursts of anger. Two-or-three of these symptoms after returning from combat operations is not uncommon. However, the diagnosis of PTSD occurs when "clustering, severity, and persistence"[11] of such symptoms cause severe life-altering repercussions for the individual. Monitoring for PTSD is a military standard in Canada and the USA for deployed military members. Since RPA operators are exposed to similarly-stressful events by virtue of their day-to-day duties, it is reasonable to insist upon the same evaluation and mental oversight of them on home soil.

Existing mental health studies with respect to RPA operators clearly indicate the existence of stressors that can be harmful to mental health.[12] Stressors that negatively affect the well-being of an individual can be relatively trivial matters, such as long hours, shift work schedules, and secondary duties. While these alone would not cause PTSD-like symptoms, the addition of combat stressors has been suggested to do so. Combat stressors for an RPA operator can be defined as those that involve supporting military operations, using weapons on enemy targets, and witnessing graphic or troubling scenes through the lens of an RPA's camera. While RPA operators are not physically deployed in harm's way, the "…constant exposure to combat operations may elevate the risk for clinical distress and post-traumatic stress disorder (PTSD)."[13]

The increased exposure to combat stressors is an important factor regarding an RPA operator's mental health. Multiple studies of U.S. Army service members have found that "killing" and "being responsible for killing" were "…associated with higher levels of post-traumatic stress symptoms and other emotional behavioral problems."[14] In 2010, Dr. Shira Maguen, a mental health expert at the University of California, along with her colleagues, examined the impact of direct and indirect killing on the mental health of Iraq war veterans. They surveyed 2797 veterans who were deployed to Iraq from 2005 to 2006, using two surveys; the Primary Care PTSD Screen (PC-PTSD), and the Patient Health Questionnaire (PHQ-9), surveys designed to test for PTSD and depression respectively.[15] Other items assessed by the team were alcohol abuse and post-deployment hostility and anger. They concluded that 40 percent of the participants reported that they either *killed,* or were *responsible for killing* during their deployment, and that this killing was a significant predictor of PTSD symptoms and alcohol abuse, even after applying controls for combat exposure. They also concluded that taking a life in combat is a "…potent ingredient in the development of mental health difficulties."[16]

Although this study was conducted with US Army soldiers and not RPA operators, the act of killing that RPA operators experience through existential guilt, since they both *witness* and are the last individuals to *input the command* that fires a weapon. After repeated exposure to this line of work, it is not unrealistic to hypothesize that RPA operators may be at elevated risk of PTSD or other mental health injuries.

> **"Existing mental health studies with respect to RPA operators clearly indicate the existence of stressors that can be harmful to mental health."**

Dutch defence and military officials pose in front of an MQ-9 *Reaper* on the flight line at Holloman Air Force Base in New Mexico, 1 February 2019, where their MQ-9 pilots and sensor operators are training.

RPA operators also face the issue of lack of decompression. Decompression consists of a buffer period between operational deployment and the return to a normal, non-combat related work environment. This consists of time spent at a third location, not quite on post-deployment leave, but not on operations. For regular deployed personnel, decompression takes one-to-three weeks, and serves an important mental health function.[17] During decompression, there is time for contextualizing recent experiences, time to adjust to non-combat related life, and most importantly, an opportunity for professionals to monitor for mentally-vulnerable personnel. The utilization of decompression has been shown to be effective in reducing the amount of mental health disorders in military personnel,[18] and serves as an effective buffer between combat and a return to normal life. For Canadians returning from Afghanistan from 2003 onward, for example, decompression took place on the island of Cyprus, where Canadian soldiers attended mental health sessions, enjoyed recreational activities, and were able to discuss their experiences with Operational Stress Injury Social Support (OSISS) coordinators.[19] While decompression does not identify all individuals that may require assistance with their mental health from combat operations, it serves as an important transition for members who may be developing mental stress injuries.

Research with Respect to Personnel

The unique work environment of RPA operators has been the subject of increasing interest in the military realm. USAFSAM has conducted multiple studies into the mental health of RPA operators. A study published in 2012 by psychologist Dr. Wayne Chappelle and his colleagues at the USAF Office of Scientific Research, entitled: "Prevalence of High Emotional Distress, Symptoms of Post-Traumatic Stress Disorder in U.S. Air Force Active Duty Remotely Piloted Aircraft Operators," remains one of the most important pieces of work on the subject.[20] As they argue, RPA operators who are subjected to combat each and every day of work are not given opportunities to decompress, or to transition from their 'war fighter' lifestyle. At the end of each shift, they go back to domestic roles, unable to discuss their day's work with family members or friends, due to national security constraints. The reorientation to domestic lifestyle must occur every day, which does not allow any of these individuals the opportunity to truly absorb and assimilate the details of the missions being flown.

Chappelle's 2012 study aimed to "identify main sources of self-reported occupational stress," using "standardized self-report questionnaires to identify rates of clinical distress and post-traumatic stress disorder (PTSD)."[21] In total, 1421 USAF airmen participated in the study, including 670 RPA operators, and 751 non-combatant airmen stationed on base, but not exposed to combat. According to the report, participants were asked to complete the OQ-45.2 45-item survey, "…assessing symptoms of emotional distress over a 1-week period, including difficulties in interpersonal relationships, social roles, and general quality of life."[22] Participants were also asked to complete the PTSD Checklist-Military Version (PCL-M) questionnaire, designed to assess "…symptoms of hyper-vigilance, avoidance, and re-experiencing of events and stimuli representative of a stressful military-related event."[23]

The OQ-45.2 survey revealed that RPA operators, as a group, have a significantly-higher total score than non-combatant airmen: non-combatants had an average score of 36.9, while RPA operators had an average score of 45.2 after controlling for operational variables such as rank, time in service, and hours worked per week. Any score above 63 is considered to be indicative of a clinically high level of emotional distress, and therefore cause for concern. 20% of RPA operators and 11% of non-combatants had total scores above 63. Similar results were found from the PCL-M questionnaire. In order to be considered at risk for PTSD, subjects had to have a total score of above 50. Results were then compiled into two groups: those with totals above 50, and those below this threshold. RPA operators had a significantly-higher score (11%) when compared to non-combatants (2%) and were judged to be more at risk of PTSD-like illnesses.[24] Logistic regression conducted by the Chappelle study found that: "RPA operators, as a group, were 3.5 times more likely than non-combatant airmen to report scores at-or-above 50 on the PCL-M."[25] Furthermore, RPA operators that logged more than 50 work hours per week, facing increased mental stressors and physical exhaustion, were 2.9 times more likely to report PTSD symptoms than the non-combatant airmen who logged the same amount of hours.[26]

The levels of emotional stress revealed from the Chappelle research is worrying, and the prevalence of emotional stress among RPA operators should not be surprising, given the nature of the job. Chappelle noted that personnel also attributed increased levels of stress due to long work hours (50+), and shift work. It is apparent that the high-stress nature of their occupation demands a significant level of emotional maturity on behalf of the operators. Emotional stress is further compounded because RPA operators tend to be relatively-young, and also *tend* to lack the emotional maturity required to manage stress well. Distressing images, compounded with the stress of mission failure and long operational hours, make it "…reasonable to perceive those experiencing high levels of emotional distress are at increased risk of performance problems."[27]

Extensive data with respect to the mental health of RPA operator's does not exist in other countries, except that from Israel. A nation in constant conflict, Israel has developed an effective RPA program for the defence of its own borders. Naturally, questions

> **"Extensive data with respect to the mental health of RPA operators' does not exist in other countries, except that from Israel."**

An MQ-9 *Reaper* crew maintaining combat readiness during COVID-19, 15 April 2020.

DVIDS/Airman 1st Class William Rio Rosado/6189935

arose in the Israeli military regarding the mental wellbeing of their RPA operators. Dr. Shiri Gal and her learned Israeli colleagues recently conducted a study with two objectives: "…first, to examine the presence of anxiety, depression, and PTSD symptoms,"[28] and "…second, to examine the factors that may contribute to the development of these symptoms."[29] To date, this is the first study of its kind conducted within the Israeli Air Force (IAF).

The Gal study included 41 RPA operators; the majority with over three years' experience in their position, as well as wartime experience. Their research indicated that RPA operators were not at increased risk for PTSD symptoms compared to other aircrew, which is in-line with the Chappelle research. However, emotional stress, such as depression and anxiety, were found to be elevated, and they increased in severity the higher in seniority of the test subject.[30] In other words, the longer one spent in the RPA operations profession, the more likely one was to develop PTSD symptoms.[31] According to the study, the mean level of depression among the senior operators was "…twice as high as that of the operators with less seniority."[32] Although the Israeli study had several limitations, particularly with respect to the pool of participants, it demonstrated that the emotional stress of combat does not just have an effect upon younger operators. Senior operators who face growing responsibility for troops and life-or-death decisions also face compounding levels of emotional stress within the RPA environment by virtue of the work environment. The Gal study concluded that "…investigating and monitoring the impact of battlefield exposure in UAV [RPA] operators are highly valuable for preventing psychopathology,"[33] a similar conclusion that was reached by the Chappelle study.

RPAS Considerations for Canada

The research from the USA and Israel suggests that PTSD is not a larger risk for RPA operators than deployed personnel, but is more than that for non-combatant personnel who are posted to the same bases that are accommodating a ground control station, and it only increases with further exposure.[34] The stressors that deployed personnel experience are unique. They live and breathe the conflict in which they are participating, with no time to decompress, or relax until their tour of duty is over. The act of taking a life, or with supporting those actions, is a significant factor when predicting the mental health of an individual when they are deployed.[35] Individuals that do so are monitored significantly because of this fact. Although RPA operators are not physically exposed to the same risks as deployed personnel for PTSD, the research suggests that they are certainly not immune to the traumas of war, and that they certainly require more monitoring than personnel who are not working with RPA.

The finding that "…20% of RPA operators report experiencing high emotional distress"[36] should be of interest to Canada. The duties expected of RPA operators that today's conflict environment requires are demanding, and they demand highly-precise skillsets, as well as the mental fortitude to observe and analyze frequently-grisly situations. The added stressors of RPA duties place a higher-than-average level of emotional stress upon an individual, which can cause problems at home, as well as in work performance. RPA operators facing these issues should benefit greatly from support that is greater than the regular mental health support received by other personnel who perform duties at home.[37]

Research in Canada regarding the mental health of RPA operators is non-existent. The studies being conducted in other countries that utilize RPA are extremely important for the future of any 'home-grown' RPA units in the RCAF. The RCAF is in a unique position in this regard. While it lags behind its allies in RPA program development, it has the opportunity to analyze the operations of other countries and to take steps to avoid the unique mental stressors already identified for operators. A prime example of this is the issue of the unique mental stressors faced by RPA operators. If the RCAF adopts a similar RPA pro-

An MQ-9 *Reaper* sensor operator flying a training mission out of Creech Air Force Base, Nevada, 15 April 2020.

gram in Canada as that of the USAF, it can be reasonably expected that the same mental health issues will occur. Taking a proactive approach to preventing these issues, and then implementing them throughout the early years of RPA units that are established, would make it likely that the *number* and *severity* of mental health issues will be seen to be to a lesser extent than Canada's 'neighbour to the south.'

The RPAS project, is currently in the 'options analysis' phase. The acquisition of RPAs for Canada is tentatively scheduled for the early-2020s. The acquisition of such an asset means that groundwork should commence before the arrival of aircraft in order to establish a program in order to how to best manage the identified mental health issues. The experienced personnel currently working on the RPAS project in the CAF have, I believe, correctly identified the high social impact of introducing RPA operations to the CAF.[38] The RPAS business case mentions evidence from the USAF that suggests the psychological impact upon crew personnel and their families is due to the very nature of RPA operations. Already, the business case identifies several issues that come with the increased flexibility of continuous RPA operations, but it does not specifically recommend any actions to take in the future to address the psychological impacts identified. The following section identifies

> **"All CAF bases have medical professionals trained to manage members with mental health disorders."**

several recommendations for future RPA operations in Canada that could help reduce the effects upon personnel engaged in sustained RPA operations.

The Chappelle research reveals that RPA operators reported "… long hours and shift work as their top source of stress contributing to elevations in exhaustion."[39] Mental and physical exhaustion while on duty places one at higher risk of emotional stress and can lead to the mental health issues discussed previously. Chappelle found that those working night shifts, and those working more than 51 hours per week were at greater risk of exhaustion. Canada's RPA program should be extremely cognizant of the hours of work that members are putting in each week and should understand the mental risks that come with extended work weeks. Long hours for RPA operators also entail more time exposed to possibly-disturbing or unsettling images from the battlefield that a team may need to analyze, or maintain 'eyes on' for hours at a time. As the Chappelle study revealed, this can have adverse effects upon the mental health of an individual, and it is another reason why an RPA operator's work week should be shortened. Putting more crews in place to have ample replacements, and to maintain a workable amount of taskings should be considered paramount to a successful RPA program.

All CAF bases have medical professionals trained to manage members with mental health disorders. Less common are medical professionals with the correct security clearances, enabling them to discuss sensitive missions and the outcomes of those missions with members. Without having higher level clearances, medical professionals are unable to fully discuss the issues at hand with RPA operators, since what they do on a daily basis is usually highly classified. Chappelle recommended placing psychologists with top secret security clearance within RPA operational units. Doing so "…may help to increase disclosure and understanding or organization issues affecting higher rates of exhaustion."[40]

While going on a full decompression period, much like deployed personnel, would be fiscally unreasonable, adopting screening activities and decompression-like phases would help RPA operators coming to terms with daily experiences. Members at RPA units should be given the opportunity to participate in a reintegration phase away from the deployed-in-garrison operational environment. Having such a program in place would give operators a block of time off where they do not have to be subjected to the rigours of operational life, and can have pause to digest their recent operational experiences. A decompression phase can have members performing less stressful secondary duties, while still contributing to the mission. A shift system, where members would either be *prepping* for duties, *performing* duties, or *decompressing* from duties, would not only give RPA operators a time of respite from their stressful duties, but would be a more attractive pace of work for members of RPA units.

Decompression for deployed members has had success in Canada as well as in other allied nations. Research from the United Kingdom (UK) suggests that personnel who spent one week or less in a base location post-deployment were "…less likely to report their health as being poor or fair."[41] Although this study refers to military personnel returning from deployed operations, the premise of having access to increased psychosocial support without regular duties could very easily be adapted to RPA operations. This form of support has garnered favour from the troops as well. Dr. Bryan Garber, the Head of the Research and Analysis Section, Directorate of Mental Health, Canadian Forces Health Services, reported that the majority of soldiers returning from Afghanistan who took part in decompression approved of the process, and saw it as useful for reintegration.[42]

Conclusion

Recommendations from this article should be taken into consideration when building RPA capabilities in Canada. The use of RPA by militaries around the world will only increase as more and more countries gain access to the technology, and there is no doubt that this will bring more research and study in the realm of RPA operator mental health. Further discussion should be held to better distinguish the mental effects of RPA ISR operations of any platform from those operations that utilize weapons. This could help better direct efforts to protect Canadians from the harmful mental effects of the RPA operational environment. The RCAF has the opportunity to utilize its previous experience with RPA, as well as the experience of its allied nations, to properly implement these assets into the organization when the time comes. Due to Canada's previous RPA operations in Afghanistan, as well as the experiences of various embedded personnel with allied nations around the world, Canada has some very experienced operators that have since gone on to other duties within the CAF. Not only do these operators have extensive knowledge of RPA operations and tactics, but they also have key insight

into mental health related stressors that they experienced while operating RPAs in a conflict. These personnel should be identified and used as key resources when the eventual RPA unit gets brought on line for the RCAF.

Failure to act upon the unique mental health issues that could face Canada's future RPA operators may induce unwanted levels of mental-stress related injuries and PTSD-like symptoms. This could have an effect upon the RCAF's ability to wage war and project the nation's interests around the world. It would also have an effect upon the personal lives of those operators, possibly leading to a whole host of domestic problems. As the well-being of military families is at the forefront of the recent *Strong, Secure, Engaged* Canadian defence policy, the mental well-being of future RPA operators should be *captured* and *identified* as a necessity for future operations.

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National Defence/Government of Canada

NOTES

1   Government of Canada, "News | Royal Canadian Air Force | News Article | Update and New Name for the Joint Unmanned Surveillance Target Acquisition System (JUSTAS) Project."

2   The decision of who should fly RPAs has been looked at differently, depending upon the country. While the USA has developed a new remote pilot (RP) trade, Australia has opted to require full pilot training for their RPs for the time being. When Canada utilized the *Heron* RPA in Afghanistan, Air Combat Systems Officers (ACSO) were used to fly the RPA with great effect, proving that fully-qualified pilots were not necessary to fly an RPA in military airspace. The question remains in Canada whether ACSOs will continue this role in the future, or if pilots will take on the role.

3   RPAs are also able to deliver cargo for troops or humanitarian missions, provide geo-mapping services, or act as mobile wireless telephone network hubs for disaster relief. This form of mission set applies to both the civilian and the military world.

4   Valavanis and Vac Valavanis, P. Kimon, and George J. Vachtsevanos, (eds.), *Handbook of Unmanned Aerial Vehicles.* (Dordrecht, Netherlands: Springer, 2015), Vachtsevanos, Handbook of Unmanned Aerial Vehicles, p. 92.

5   Barber, "Air Force Has Shortage of Drone Pilots as It Faces 'War for Talent,'" in *TCA Regional News*; Chicago, 20 February 2018, at: <https://search-proquest-com.uml.idm.oclc.org/docview/2004088842/citation/DBBE0475E7AE4333PQ/1.>

6   "U.S. Air Force Remotely Piloted Aircraft Pilot Career Information," U.S. Government. Accessed 28 June 2018, at: https://www.airforce.com/careers/detail/remotely-piloted-aircraft-pilot.

7   Mayer, "The "U.S. Air Force Remotely Piloted Aircraft Pilot Career Information," U.S. Government. Accessed 28 June 2018, at: <https://www.airforce.com/careers/detail/remotely-piloted-aircraft-pilot.>

8   Wayne Chappelle, Kent McDonald, Billy Thompson, and Julie Swearengen. "Prevalence of High Emotional Distress and Symptoms of Post-Traumatic Stress Disorder in US Air Force Active Duty Remotely Piloted Aircraft Operators (2010 USAFSAM Survey Results)," School of Aerospace Medicine Wright Patterson AFB OH Aerospace Medicine Department, 2012 p. 2.

9   Scott Fitzsimmons and Karina Sangha, "Killing in High Definition." San Francisco. International Studies Association Annual Convention, 3-6 April 2013.

10 Chappelle *et. al.,* p. 3.

11 *Ibid*.

12 *Ibid.*

13 *Ibid,* p. 2.

14 *Ibid,* p. 3.

15 Shira Maguen, Barbara A. Lucenko, Mark A. Reger, Gregory A. Gahm, Brett T. Litz, Karen H. Seal, Sara J. Knight, and Charles R. Marmar. "The Impact of Reported Direct and Indirect Killing on Mental Health Symptoms in Iraq War Veterans," in *Journal of Traumatic Stress*, 2010, n/a-n/a., at: https://doi.org/10.1002/jts.20434., p. 87.

16 *Ibid,* p. 89.

17 Hughes Hacker, G.H. Jamie, N. Mark Earnshaw, Neil Greenberg, Rod Eldridge, Nicola T. Fear, Claire French, Martin P. Deahl, and Simon Wessely. "The Use of Psychological Decompression in Military Operational Environments," in *Military Medicine* 173, No. 6 (June 2008), pp. 534–538, at: https://doi.org/10.7205/MILMED.173.6.534., p. 534.

18 *Ibid,* p. 538.

19 Michel Rossignol, "Afghanistan: Military Personnel and Operational Stress Injuries (PRB 07-20E)," Accessed 15 April 2018 at: https://lop.parl.ca/content/lop/ResearchPublications/prb0720-e.htm#third..

20 Chappelle and his team have been at the forefront of RPA operational studies, releasing multiple reports on mental health related issues of RPA operators. Chappelle's reports have spawned several other studies of the same subject.

21 Chappelle *et.al*., p. 1.

22 *Ibid,* p. 5.

23 *Ibid.*

24 Wayne Chappelle, Tanya Goodman, Laura Reardon, and William Thompson. "An Analysis of Post-Traumatic Stress Symptoms in United States Air Force Drone Operators," in *Journal of Anxiety Disorders* 28, No. 5 (June 2014), pp. 480–487, at: <https://doi.org/10.1016/j.janxdis.2014.05.003>, p. 6.

25 *Ibid,* p. 6.

26 *Ibid,* p. 8.

27 Chappelle *et al*., "Prevalence of High Emotional Distress and Symptoms of Post-Traumatic Stress Disorder in US Air Force Active Duty Remotely Piloted Aircraft Operators (2010 USAFSAM Survey Results)," p. 10.

28 Shiri Gal, Leah Shelef, Idit Oz, Nirit Yavnai, Erez Carmon, and Shirley Gordon. "The Contribution of Personal and Seniority Variables to the Presence of Stress Symptoms among Israeli UAV Operators," in *Disaster and Military Medicine* 2, 29 November 29, 2016, at: <https://doi.org/10.1186/s40696-016-0028-1, p. 2.

29 *Ibid,* p. 2.

30 *Ibid,* p. 4.

31 *Ibid.*

32 *Ibid.*

33 *Ibid.*

34 Chappelle *et.al*., in *Journal of Anxiety Disorders* 28, No. 5 (June 2014), pp. 480–487, at: https://doi.org/10.1016/j.janxdis.2014.05.003. p. 480.

35 Maguen *et.al*.,p. 86.

36 Chappelle *et.al*., "Prevalence…" School of Aerospace Medicine, Wright Patterson AFB OH Aerospace Medicine Department, 2012. p. 10.

37 Chappelle *et. al*., p. 12.

38 Government of Canada, National Defence. "Business Case – Remotely Piloted Aircraft Project," 11 November 2017. Government of Canada Capability Investment Database. p. 71.

39 Chappelle *et al*., "Prevalence…» 2012. p. 1.

40 Wayne Chappelle, Kent McDonald, Lillian Prince, Tanya Goodman, Bobbie N. Ray-Sannerud, and William Thompson. "Assessment of Occupational Burnout in United States Air Force Predator/Reaper 'Drone' Operators." Military Psychology 26, No. 5–6 (September 2014), pp. pp.376–385, at: https://doi.org/10.1037/mil0000046. p. 383.

41 Hughes *et.al.,* p. 537.

42 *Ibid.*
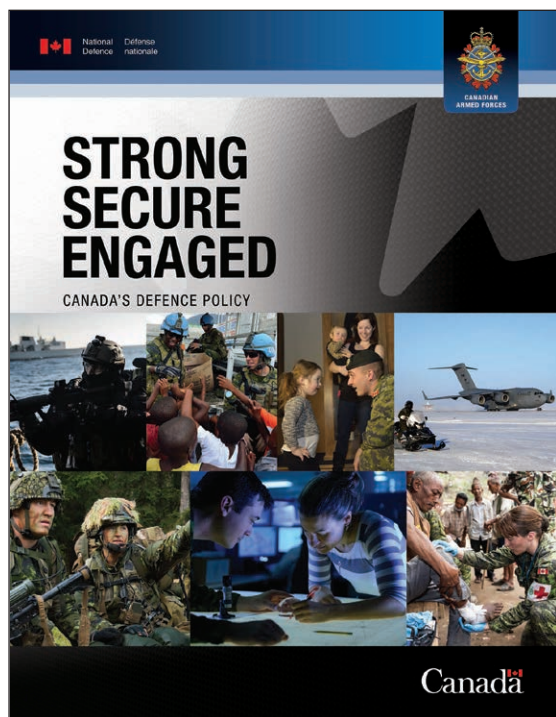
Arndt Freytag von Loringhoven, NATO Assistant Secretary General for Intelligence (right), and Rear-Admiral Scott Bishop, Commander of Canadian Forces Intelligence Command and Chair of the NATO Intelligence Committee, speak at a conference in Ottawa, 24 May 2018.

The Need for Intelligence Education

by James Cox

Introduction

This brief article argues the need to establish and nurture a serious defence intelligence education program in the Department of National Defence (DND) and the Canadian Armed Forces (CAF).

Discussion

Strong, Secure, Engaged: Canada's Defence Policy[1] (2017) (SSE) seems to prioritize defence intelligence development, but not to the extent required. SSE prioritizes enhancements to joint intelligence, surveillance and reconnaissance (JISR), the integration of information and analytical assets into an integrated system of systems and increasing the ability of Canadian Forces Intelligence Command (CFINTCOM) to deliver advanced intelligence support. A number of projects are underway to do all that. As well, CFINTCOM is engaged in a Defence Intelligence Enterprise Renewal (DIER) study, although reports indicate results may be 'underwhelming.' However, amid this enthusiasm, there is a significant shortcoming. Apart from promising talk about enhancing intelligence *training*, there is no discussion of intelligence *education*.
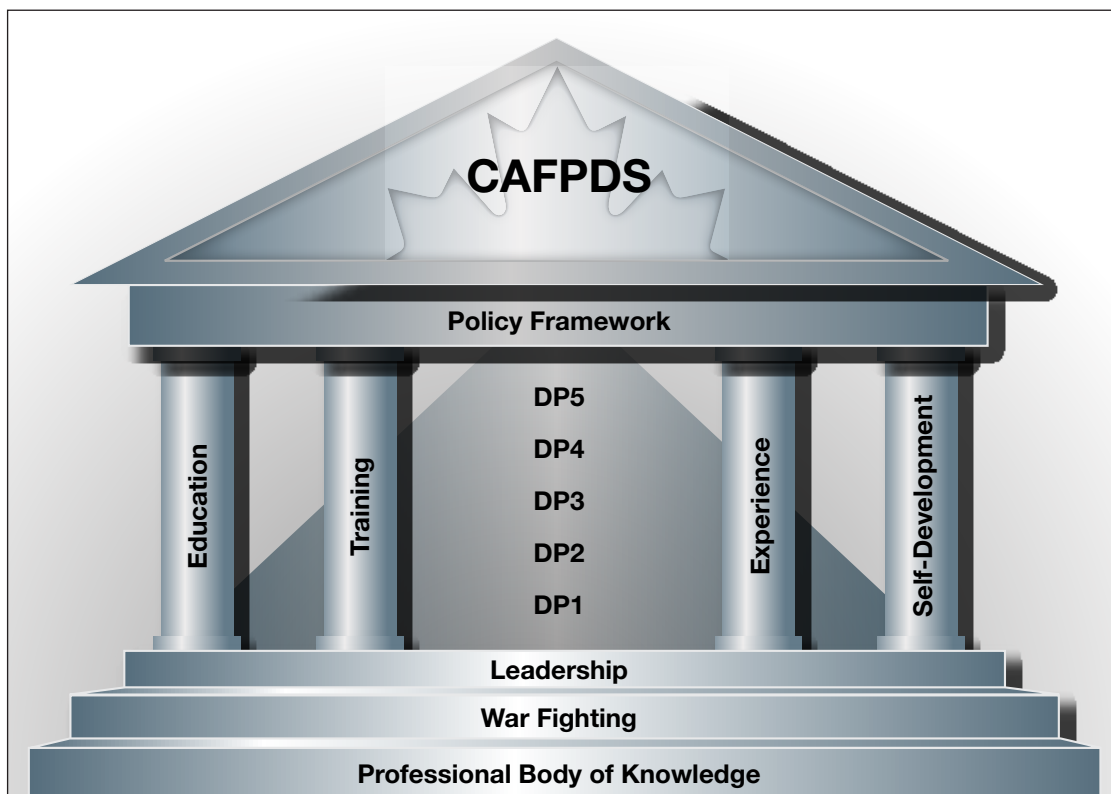
Canadian Armed Forces Professional Development System.
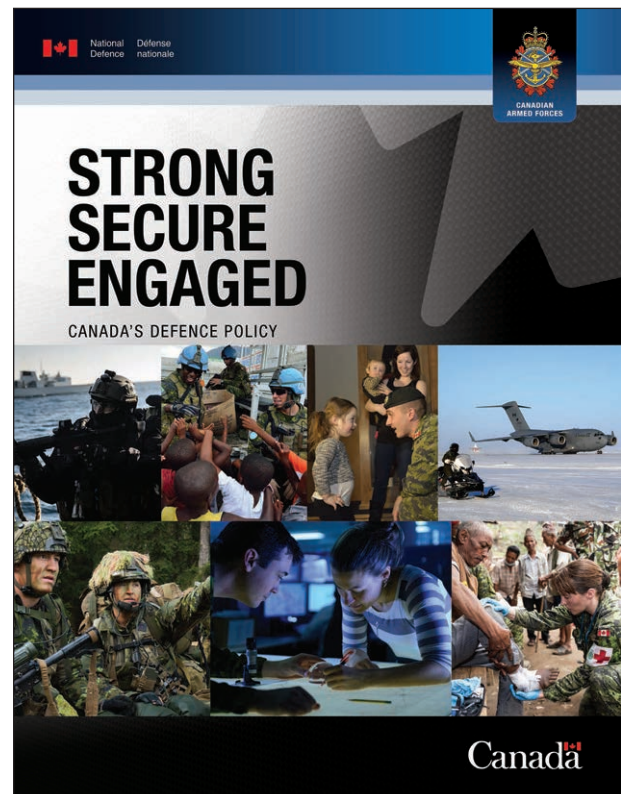
different. It produces understanding *about* the body of knowledge within which the job exists. According to the CAFPDS, education is "the provision of a body of knowledge and intellectual skill sets, upon which judgement among competing facts, information and ideas can be critically examined, assessed and interpreted." Within defence intelligence, the education pillar is 'missing in action.'

Without an established intelligence education program, DND

The CAF Professional Development System[2] (CAFPDS) is built upon four pillars: experience, self-development, training, and education. It defines training as "the provision of specific skills, knowledge and attitudes required to perform assigned tasks and duties." Training teaches one how to *do* a job. Education is

and the CAF run the risk of an inadequately-prepared intelligence workforce, led by mediocre journeymen, and directed by less than intelligence-savvy operational leaders. Without a competent education component, the defence intelligence enterprise can hardly be considered a fully-professional enterprise.

Canadian Forces College Toronto.

With rampant global intelligence activity by friends and foes alike, it is disappointing to see DND and the CAF restrict their efforts simply to intelligence tradecraft training, mainly at low and mid-career levels. There is no serious intelligence training at senior levels, and there are no intelligence education programs at *any* level. There are at least seven graduate level courses relating to intelligence listed in the Royal Military College of Canada (RMCC) War Studies Programme[3], but they are neither regularly conducted nor attended by many. There is one intelligence course offered in the Joint Command and Staff Programme[4] (JCSP) Residential Syllabus at the Canadian Forces College (CFC), but not in the distance learning version. There is no intelligence course or module offered on the senior National Security Programme[5] at CFC. At lower levels, intelligence practitioners are taught how to *do* tactical level intelligence at CAF and allied schools. At senior levels, no one is taught much *about* intelligence *qua* intelligence.

What is defence intelligence? How did it come about? Where does it come from? What does it do? Why is it here? How does it work? How is it best organized? How do we sustain effectiveness? In what manner should we adapt to exploit it? What are the normative criteria that might guide development? These questions invite philosophical and professional reflection. DND and the CAF require a serious program of intelligence education in order for the function to reach optimal significance and effect.

If defence intelligence is to be considered a truly-professional endeavour, in which leaders and intelligence practitioners enjoy deep understanding of an overall conceptual framework and its modern application, the intelligence function needs a universally-accepted and respected definition, and a tested theoretical base. At present, it has neither, largely because no one is thinking about it deeply enough. Despite literally tens of centuries of material, Canadian academic research in the field of intelligence is scant at best.

Beyond conceptual understanding, successful application of intelligence theory by leaders and practitioners requires that they *know* and *understand* the extended context in which intelligence must work. Within government one must learn about the entire intelligence eco-system involving departments; agencies; capability development and delivery; the evolving nature of conflict, warfare and the security environment at home and abroad; applicable legislation and regulations; relevant policies and objectives;

processes and protocols; and technological development. As well, for self-preservation, there is a need for intellectual reflection with respect to the future of the intelligence function itself, and how it might evolve and adapt effectively.

Conclusion

Through lack of action, DND and the CAF find themselves in a bit of a tough spot here. If defence intelligence is to 'walk the talk' of the CAFPDS and reach the professional academic heights demanded by today's security environment, it must be served and enabled by an embedded education program. It has nothing of the sort right now, so the effort could be *difficult* and *costly*, but nonetheless *necessary*. Circumstances are ripe for an effective remedy. *Consideration of* and *implementation of* imaginative recommendations for a truly world-class defence intelligence education program should be pursued within the framework of the current Defence Intelligence Enterprise Renewal study, and workable options aggressively developed.

If not *un-educated*, the Defence Intelligence Enterprise is at least an *under-educated* endeavour. This shortcoming can be eliminated if leadership truly wants a sustainable professional intelligence workforce. Intelligence education programs exist in allied intelligence enterprises. It *can* be done here. It *needs* to be done here.

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NOTES

1   *Strong, Secure, Engaged: Canada's Defence Policy* at https://www.canada.ca/en/department-national-defence/corporate/reports-publications/canada-defence-policy.html

2   Canadian Armed Forces Professional Development at http://www.forces.gc.ca/en/training-prof-dev/index.page

3   Royal Military College of Canada (RMCC) War Studies Programme at https://www.rmc-cmr.ca/en/registrars-office/war-studies-programmes

4   Joint Command and Staff Programme at https://www.cfc.forces.gc.ca/118/406/cfc300-46-eng.pdf

5   National Security Programme at https://www.cfc.forces.gc.ca/119/187/323/331-eng.pdf

Photo by Ken Lin

Canada's aerial ambassadors, the Snowbirds, pay tribute to the COVID-19 pandemic responders in Toronto, May 2020, as part of their cross-country Operation *Inspiration* tour.

COVID-19: The Canadian Armed Forces and Canadian Defence Policy

by Martin Shadwick

The COVID-19 pandemic has, not surprisingly, generated or rekindled a host of important questions and issues. These include: (a) the extent to which Canada's armed forces should be tasked to carry out a diverse array of domestic and international non-military and quasi-military missions, roles and responsibilities, including Humanitarian Assistance and Disaster Relief (HADR); (b) the desirability, or otherwise, of the armed forces being increasingly tasked with such duties; (c) the capabilities, effectiveness, and cost-effectiveness of the Canadian military in such roles; (d) whether the relevant capabilities of the armed forces should be enhanced, either as part of an 'across-the-board' rejuvenation of Canada's overall military capacity or on a 'case-by-case' basis in selected (i.e., medical) niches; (e) the relationship between the military roles, and the non-military and quasi-military roles, of Canada's armed forces and the impact of the latter on the military *raison d'être* of Canada's armed forces; (f) the existence, or otherwise, of synergies between the military, quasi-military, and non-military roles of the armed forces; (g) the relationship between the armed forces and other government departments and agencies, at all levels of governance, and between the armed forces

and the private and volunteer sectors; (h) whether the military's HADR and similar functions should be scaled back in favour of *existing* or *new* civilian actors; and (i) the budgetary implications of COVID-19 for DND and the Canadian Armed Forces in the face of burgeoning federal government expenditures to combat the pandemic.

Analysts have also pointed to the need, at the appropriate juncture, to review the roles and usefulness of the Canadian Armed Forces in responding to the demands of COVID-19. At the time of this writing, in early-May, the military's role had evolved in a somewhat unexpected manner, being notably focused upon the provision of multiple, labour-intensive services to long-term care facilities—arguably the 'ground zero' of COVID-19 in Canada—in Quebec and Ontario. Such a review, which would ideally include a robust comparative component so as to identify best practices from other nations and their military establishments, could be a stand-alone effort, or could form part of a broader study of Canada's overall national response to COVID-19. Such a study could also help to inform a broader review of Canada's defence priorities and defence policy (i.e., an eventual successor to *Strong, Secure, Engaged*).

A valuable contribution to discourse on these issues has been provided by Adam P. MacDonald, a Ph.D candidate and Deputy Director of the Centre for the Study of Security and Development at Dalhousie University, and Carter Vance, a graduate of Carleton University's Institute of Political Economy, in their *Covid-19 and the Canadian Armed Forces: Overview, Analysis, and Next Steps*, a Vimy Paper published by the Conference of Defence Associations Institute (CDAI) in April 2020. MacDonald and Vance were also participants in the CDAI's May 2020 webinar, *Pandemic Response: A CAF Sitrep on COVID-19 and Panel on the National Security Implications*. Highly successful, the webinar drew an astonishing 615 registrants.

"As unprecedented as the COVID-19 pandemic is," argue MacDonald and Vance, "it represents the continuation of a larger trend in terms of ever-increasing demand for CAF support to domestic emergencies. Answering these requests is perfectly reasonable, as providing assistance to civil authorities during domestic disasters or major emergencies is one of eight core missions of the CAF as outlined in the current defence policy. Furthermore, a recent poll by Ipsos, commissioned by the CDA Institute, indicates [nine] out of [ten] Canadians across the entire country are supportive of the CAF being called upon to assist governments in their flight against COVID-19. But such domestic demands question the organization's ability to meet these requests alongside [other] defence duties." Canada's armed forces "will always be ready to defend Canada and help Canadians through a crisis, but are they properly mandated and should they be tasked with the increasing domestic duties they have been asked to take on? Is a more dedicated force, either functionally tasked to do so within the military, or a new civilian agency a better fit to meet the growing demand from domestic emergencies? These are questions that do not have easy answers. Further, they are not exclusively or even primarily questions of logistics, funding or technical capabilities. Above all, they are questions that must be answered by policymakers and the public at a more overarching political level and rest on fundamental beliefs about what their military is *for* [emphasis in the original]."

In advancing the case for a review of the domestic roles and responsibilities of Canada's armed forces, MacDonald and Vance focus upon the need for a reassessment of core missions, the fiscal fallout from COVID-19, the overall security orientation, multi-hatting versus specialization and future options for emergency response both inside and outside of the armed forces.

The 2017 defence policy statement, *Strong, Secure, Engaged*, identified eight core missions for Canada's armed forces:

- detect, deter and defend against threats to or attacks on Canada;

- detect, deter and defend against threat to or attacks on North America in partnership with the United States, including through NORAD;

- lead and/or contribute forces to NATO and coalition efforts to deter and defeat adversaries, including terrorists, to support global stability;

- lead and/or contribute to international peace operations and stabilization missions with the United Nations, NATO and other multilateral partners;

Members of the 35th Canadian Brigade Group (35 CBG) arrive at the Saint-Jean Garrison (Quebec) to receive geriatric care training for assisting in the COVID-19 recovery efforts as a constituent part of Operation *Laser*, 10 May 2020.

- engage in capacity building to support the security of other nations and their ability to contribute to security abroad;

- provide assistance to civil authorities and law enforcement, including counter-terrorism, in support of national security and the security of Canadians abroad;

- provide assistance to civil authorities and non-governmental partners in responding to international and domestic disasters and major emergencies; and

- conduct search and rescue operations.

In the view of MacDonald and Vance, these core missions "…require being able to success-fully operate within complex and fast evolving security environments, placing greater demands on the CAF on virtually all fronts, be that enhanced Search and Rescue capabilities, contributions to NATO missions, and increased calls for support to combat natural disasters and other emergen-cies at home. As well as modernizing much of its forces to operate in existing domains, the CAF is developing new capabilities and competencies in emerging ones such as space and cyber. Even with the expansion of the force in terms of personnel, is it reasonable to expect the CAF can fulfill all of these core missions, especially during periods of simultaneous, large-scale strain on multiple ones?"

The latter, in some respects, goes to the crux of the matter and is, in fact, reminiscent of the questions posed during the debates in the 1980s over the infamous "commitment-capability gap"— a gap that the Mulroney government attempted to bridge through a combination of commitment reductions and capability enhancements in its ill-fated white paper of June 1987. If the commit-ment-capability gaps of the 1980s and the 2020s *shared* or *share* some potential solutions—an 'across-the-board' increase in the capabilities of Canada's armed forces, the elimina-tion of selected commitments/core missions or some combination of the two—they also *differ* in some noteworthy respects. Today's "core missions," six, seven' and eight, for example, received relatively-little attention in the 1987 white paper, and rarely figured in any meaningful way in the 1980s debate regarding how best to resolve the commitment-capability gap. Similarly, the resolution of today's perceived gap could prove more chal-lenging, given a *geostrategic* and *geopolitical* environment that is arguably more stressed and more complex than that of the mid-to-late 1980s, and given the massive amount of government funding consumed by COVID-19 and related pressures upon the public purse. Today's environmental security and Alternative Service Delivery landscapes also differ noticeably from those of the mid-to-late 1980s. Nevertheless, reviewing current Canadian defence dilemmas through a commitment-capability gap-style lens could prove instructive in 2020, and could open the door to some salient questions and potentially innovative approaches. For example, precisely how much of the current and projected load on the Canadian Armed Forces is attributable to core missions six, seven, and eight? Similarly, would harmonizing and prioritizing

Prime Minister Brian Mulroney, 1988.

the core missions—military, quasi-military, and non-military— around home defence, with a somewhat reduced international role, generate some interesting options?

MacDonald and Vance observe, and I believe correctly, that the fiscal implications of COVID-19 for defence are "uncertain." *Strong, Secure, and Engaged* "…includes many ongoing and expensive budgetary commitments for a host of new assets, com-petencies, and augmenting the size of and benefits to the Regular and Reserve forces. Given the huge fiscal burden the Federal Government is currently bearing to combat COVID-19"—and, one might add, the unknowable additional burdens of a potential second wave of the current pandemic or a new outbreak—"it is unclear what the future of current procurement projects will be, such as the National Shipbuilding Strategy, and planned but unbudgeted ones, such as the North Warning System replacement and new fighter aircraft. This is not even considering other multi-billion-dollar asset replacements such as submarines, where a decision is needed soon if there is to be no capability gap. Financial strain in government and the CAF may require re-organizing not just in asset priorities but more fundamentally in missions as well."

Given the long-established tendency of Canadian governments, of all political stripes, to fight deficit and debt problems by, in part, significant reductions in defence spending, one might wish to 'brace for the worst.' After all, the Progressive Conservative government of Brian Mulroney fiscally eviscerated its own white paper on defence in April 1989—less than two years after its release, and *before* the end of the Cold War. Similarly, the fiscal economies mandated by Jean Chrétien's Liberals in the early-to-mid 1990s led to substantial cutbacks in defence spending and reductions in military and civilian personnel, as well as the loss of numerous units, installations, and capabilities. Nor will public opinion come to the rescue of the Canadian Armed Forces and defence-related capabilities. For the foreseeable future, Canadians and their elected representatives are going to be infinitely more interested in the health of the country's medical-industrial base than its defence-industrial base. Moreover, as the *Toronto Star's* Chantal Hebert has reminded us, public opinion polls are already "showing a shift in voters' priorities, with climate change taking more of a back seat not only to the economy

Prime Minister Jean Chrétien, 1994.

but also to health care." If such vital and visible public policy issues as climate change and the environment have been eclipsed by the economy and health care, one can well imagine how low defence has sunk.

A number of medical personnel from 2 Field Ambulance, CFB Petawawa, arrive at Saint-Jean Garrison (Quebec) to assist in different residential and long-term care facilities during Operation *Laser*, 4 May 2020.

Lieutenant-Colonel James Stocker, Commanding Officer of Territorial Battalion Group 1, is assisted in removing his personal protective equipment by Jane Smith, Executive Director of the Altamont Case Community in Scarborough, Ontario, 24 April 2020. Lieutenant-Colonel Stocker was a member of the CAF team that was meeting with representatives of various care facilities to assess their needs during the COVID-19 pandemic.

Some observers have posited that the Trudeau government's apparent willingness to increase the deficit and the debt may spare DND the swingeing cuts seen during the Mulroney and Chrétien eras. It could also be argued that some conceivable cutbacks—such as cancelling the last three Canadian Surface Combatants, or dropping the projected fleet of new fighter aircraft from 88 to the Harper-era figure of 60—would not generate substantial savings in the short term. Cuts that would generate savings in the short term—in personnel, operations and maintenance, infrastructure, existing capabilities (i.e., heavy armour?) and procurement—could be a very different story.

If massive reductions in defence spending do materialize due to COVID-19, they could raise fundamental questions about the *raison d'etre*—and hence, the *capabilities* and force structure—of the Canadian Armed Forces. Readers will recall that, in the wake of Canada's experience in the Gulf War of 1990-1991, some argued that Canada *needed* (and could *afford*) only two combat-capable services—typically, the navy and the air force—and that the army could safely be reduced to a constabulary suitable for such tasks as light peacekeeping, humanitarian assistance and disaster relief, and aid of the civil power. If today's alternative to such scenarios is to 'spread the fiscal pain' equally between all three services—thereby producing three miniature services with sharply- limited and arguably-dubious combat capabilities—variants of the 'constabularization' paradigm could re-emerge.

Some Canadians might, in fact, opt for the constabularization of all three services in light of COVID-19-type domestic emergencies, and a perceived need to bolster military resources to deal with climate change-related HADR requirements.

The authors of the Vimy Paper also make an important contribution to the discussion with the observation that "…there must be the avoidance of seeing military personnel as hyper-competent and multi-purpose agents which can do any task set before them, thus being used as a backstop for any and all challenging situations. The CAF is a not a [Swiss] army knife which can be expected to take on and competently execute multiple, simultaneous duties in a complex security environment." While "…the CAF can be employed in jobs that are either layperson-level in training and/or commensurate with their training (such as engineering and logistics) in supporting domestic crises, there needs to be an investigation as to whether these types of security challenges require more refined, specialized skills sets, [possibly] necessitating the creations of new capabilities to meet these demands."

One "…possible area for such in-CAF specialization…could be the Reserve Force." The "relationship between the reserve and regular forces differs among the three services, but a case could made that if the CAF were to continue to support growing demands associated with domestic emergencies then perhaps the reserves should become a more functional capability charged

HS88-20220-0033-159 by Mona Ghiz

HMCS *Moncton* departs the Halifax dockyard, 16 April 2020, and heads out to sea to remain in Nova Scotia waters in order to assist Canadians in response to the COVID-19 pandemic, *where* and *when* needed.

with these duties exclusively. Alternatively, an additional reserve service could be constructed with distinct trades and training specifically oriented towards disaster management and domestic emergencies support. Such possibilities could help insulate the Regular Force in order to focus on other defence duties while allowing the Reserves, or a subset of these, to focus on domestic emergency support." These are intriguing suggestions, albeit suggestions that could potentially have a number of troubling implications for Canada's overall military capability. Although the contexts, roles, and timeframes differ, it would also be prudent to take note of the recruitment, retention, and morale issues that accompanied the Militia's nuclear-age "national survival" role in the 1950s and early-1960s.

"Beyond the CAF and existing emergency management organizations at the provincial and municipal levels," posit MacDonald and Vance, "Canada may need to consider building a civilian disaster response agency at the federal level which rapidly deploys when authorities are overstretched and that is specially constituted for this task (akin to the United States' Federal Emergency Management Agency)." Such "…a move would not necessarily erase the CAF's mission to be prepared to support, but rather create an intermediary federal organization more specialized and organically-linked to existing [emergency] management organizations which could be better suited to assume such duties and allow the CAF to largely retain focus on their traditional defence duties." This, too, is an interesting suggestion, but one

that could generate fears of increased bureaucratization and angst over the loss of much of the domestic role of the armed forces.

"For too long," argue MacDonald and Vance in their conclusion, "the question of what Canadians expect from their military, and to what extent they are comfortable with military personnel operating on the Homefront in peacetime, has gone without serious consideration. Rather, this drift into serving as the *de facto* disaster response option for the federal government has been a result of reflexive policy-making without a clear vision of the future." There is a measure of truth in this conclusion, but we would do well to recall, for example, that public opinion polling data extending back multiple decades reveals consistently high levels of public support for the disaster relief, humanitarian assistance, search and rescue, and similar roles of Canada's armed forces. The "*de facto* disaster response option" assertion is intriguing, but there is also evidence that Canadian governments and politicians have been pilloried on more than one occasion for a perceived reluctance to summon military assistance.

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Information Wars: How We Lost the Global Battle Against Disinformation and What We Can Do About It

**by Richard Stengel**

Reviewed by Simon Wells

Richard Stengel is the former editor of *Time* magazine and the former Undersecretary of State for Public Diplomacy and Public Affairs (PDPA) in the final years of the Obama administration. He served under Secretary of State John Kelly, having been U.S. Senate-confirmed to the appointment immediately after retiring as the sixteenth managing editor of *Time*, from 2006 to 2013. In this book, Stengel often refers to his extra-governmental career experience, which gives him *alternative* perspectives, and sometimes, in this reviewer's opinion, *lack of perspective*, regarding governmental affairs and practices.

The book takes a narrative form, directly explaining its sub-title, "How we lost the global battle against disinformation," but it is short on "what we can do about it," and offers no real conceptual or strategic analysis of the problems associated with disinformation. Mr. Stengel describes his *arrival at* and *onboarding to* the United States Department of State, and humbly narrates his confusion with respect to the mechanisms of government throughout his tenure. He provides an intimate witness's account of the rise of the Islamic State and pro-Russian, pro-Ukrainian annexation disinformation campaigns, and then frankly describes his department's lack of *awareness of*, *preparedness for*, or *ability to deal with* these activities. Stengel literally explains how the rise of disinformation campaigns came about from a bystander's perspective, offering no depth of analysis of the grand- or military-strategic forces at play.

A telling moment in the narrative is Mr. Stengel's realization, upon being briefed by a military intelligence officer, that the asymmetry of disinformation is its key attraction (in this case, for Russia): creating confusion is both a *method* and an *objective*. This anecdote alone, no more than a page of text in this book, is the most theoretically-substantial contribution made by Stengel herein. The anecdote's implication is even more revealing: senior State Department officials appeared to have no substantial understanding of disinformation until well in to its zenith as a strategy. What Stengel lacks in expertise is made up for in strong story telling ability and an affinity for crediting smart, capable subordinates who enabled both him and other principals of the department.

The colloquial voice that Stengel chooses for his narration makes the book entertaining and easy to digest. Therefore, the account of the rise of modern disinformation is well-presented in that sense, but it is notably casual, and at times, this causes the reader to wonder how seriously the author takes his subject. His final section of the book, which outlines "what we can do about it," is a very abbreviated response to the problems posed by disinformation that would perhaps be appropriate for a memorandum from someone of his stature, had his intent been to brief Secretary Kelly or President Obama. To that end, it might have been expanded into a restructured second half of a book, following up on a more abbreviated narrative to answer the piqued interest in disinformation problems. That said, in this section, more strategic, legal, and technical aptitude is displayed than in the remainder of the book, which provides great credibility to Stengel's arguments that might have been better tied in earlier in the narrative.
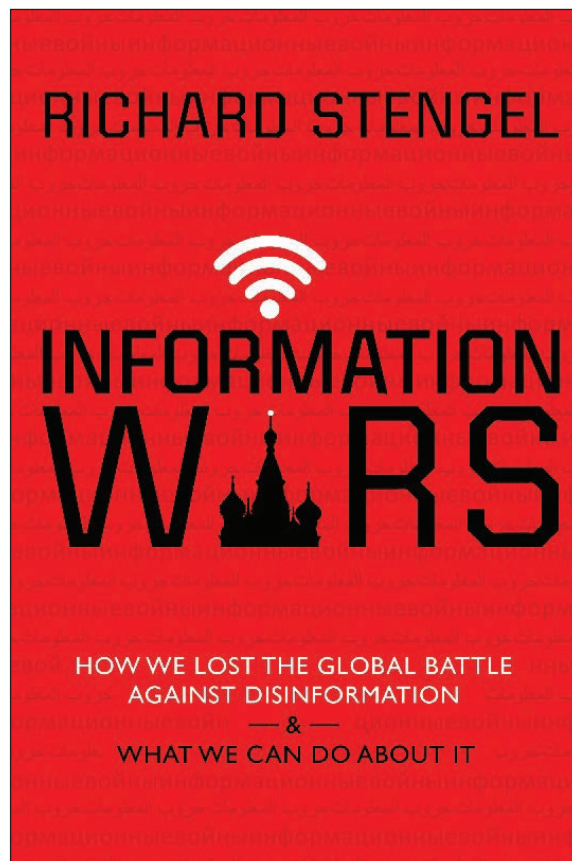
Information Wars... is neither scholarship, nor a practitioner's expert input, although it presents itself as the latter. It is perhaps more similar to an ethnographer's notes on the development of a phenomenon, recounting local perceptions and actions associated with it, but not creating a greater conceptual model. The book is a good introductory resource to understanding disinformation, and it is worth the read as a historical account from one of the leaders of the American response to the rise of the Islamic State and the Russian invasion of Ukraine. While political scientists or information operations practitioners will probably not benefit much from the book, anyone with a fundamental awareness of disinformation will find its contents informative, and its style engaging.

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Chroniques hu-militaires
Récits d'un officier canadien à l'étranger
Roman (Novel)

by Jean-François Lemoyne
Ottawa: Les Éditions L'Interligne, 2019
263 pages, $26.95
ISBN: 978-2-8969-9656-8

Reviewed by Brian Bertosa

I think it would be safe to say that memoirs written by francophone officers of the Canadian Armed Forces are 'pretty rare birds.' The only two that I had any awareness of previously were Steve Jourdain's *Mon Afghanistan,* and the much-older *Mémoires du général Jean V. Allard*—the latter probably due to how often its translation by UBC Press has been cited in English-language scholarship.[1] Falling somewhere between the time periods of these two books are the events recounted in Lieutenant-Colonel (retired) Jean-François Lemoyne's new memoir, describing three periods he spent overseas between 1986 and 2005. Moreover, as an officer of the (former) Logistics Branch with a specialization in explosive ordnance disposal (EOD), the courses and secondments the author participated in were far from the ordinary, making this particular 'bird' rarer still.
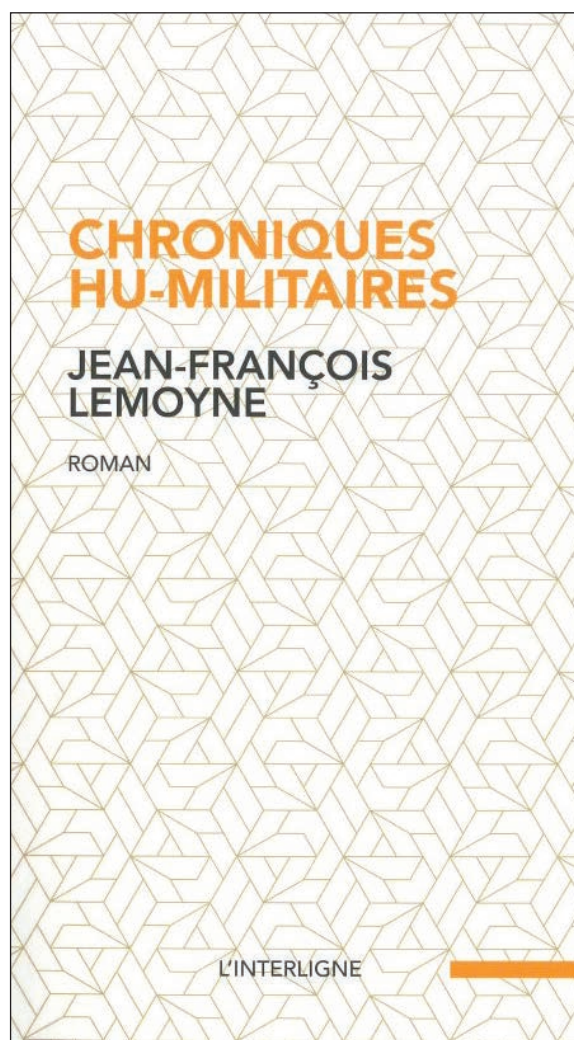
To begin, I would like to say a little about the book's somewhat-odd title, which could perhaps best be rendered in English as *Hu-military Memoirs*. The author himself addresses this 'right off the bat,' reminding us in the book's dedication that: "…the military profession is not only violence. It is also humane, humanitarian, and humility." (p. 7)

Flipping the page takes us straight to the United Kingdom in the mid-1980s, where the author is a candidate—and, arguably, a somewhat apprehensive one—on the British Army's eighteen-month Ammunition Technical Officer course. The author provides no introductory material here whatever; in strict keeping with the book's subtitle (*Stories of a Canadian Officer Overseas*), he focuses almost exclusively upon three care-fully-narrated episodes, each from a very different part of the Old World. Moreover, while he is by no means averse to providing satisfying detail when warranted, he nevertheless concentrates upon *impressions*, as opposed to an *exhaustive account* of *what* he did, *where* he did it, and *when* he did it. As such, his approach is quite different from that of more conventional memoirists, military or otherwise. So, by way of example, we are treated in this first chapter to a marvellous description of a cricket match in which he was persuaded (compelled?) to participate, regardless of the fact that he had no idea how to play the game. By turns hilarious and riveting, these sixteen pages are easily the equal of the best sports fiction writing.

The second chapter sees the author in the former Yugoslavia in 1998 and 1999, but rather than serving with Canadian forces, he is once again with the British, now in charge of a combat service support squadron. Beneath the purely operational matters discussed, as well as the author's observations about the residents of this part of the world, an unmistakable backdrop to much of this episode is sex. During pre-deployment training, Lemoyne, then a major, is propositioned by the interpreter "Lana Petrović" (undoubtedly a pseudonym), fifteen years his junior. Suspecting entrapment, the author politely declines, particularly *in light of* (and sensing *a possible link with*) his commanding general's harsh views on the subject of marital infidelity. Scarcely arrived in Croatia, he receives a visit from British investigators looking into a case of sexual impropriety among his subordinates—a matter, moreover, that was no longer punishable in the Canadian military. Another interpreter seeks to escape the clutches of an unpopular British officer, spurring Lemoyne to an unorthodox solution. And appended to the chapter is a twenty-page *Intermède* (interlude), consisting of letters written to his wife during this deployment, some of which are surprisingly explicit.

The third chapter recounts Lemoyne's service in Iraq over the winter of 2004-2005, where he is part of a NATO mission training Iraqi officers. A secondary task involves dealing with paperwork for shipments of military equipment from NATO countries. This results in unexpected difficulties with certain Americans, as well as frequent, adrenaline-filled trips in convoy *to* and *from* the Baghdad airport. Unexpectedly, the tour is cut short, but without employing the term "post-traumatic stress

disorder," the author assures us that the follow-on effects of the stress of this mission will be with him the rest of his days. For those who believed that no Canadian military personnel served in Iraq at the time in question, this chapter, although brief, should be of considerable interest.

It may have been noticed that the publisher is calling this work a *roman* (novel), but it most assuredly is not. Novelists do not cast themselves, by full name, as the main character. They will never include a real BFPO (British Forces Post Office) address, with the full name of both addressee and unit, as Lemoyne does in the letters section. More generally, there is nothing particularly novelistic about the book's content—Lana Petrović does not, for example, turn out to be working for the KGB[2]—or, even more so, its structure, where loose ends remain that way, exactly as in real life. It is scarcely believable that a retired senior officer is going to put his reputation at risk by dabbling in 'autofiction' (autobiography combined with varying degrees of fiction), so what is going on here? I suspect that calling the book a *roman* is simply a convenient shorthand for the disclaimers that precede so many English-language autobiographies, where we may be told, to take a particularly rich example, that names, dates, and events have been "obscured for literary cohesion."[3] I strongly doubt that even that much is going on here. Certainly, if this book were taken on by an English-language publisher—and I heartily recommend it—the editor would have to sort this question out, because the understanding of what constitutes a novel in the English-speaking world does not sit well with a book of this nature.[4]

Much *more*—and much *better*—is recounted in this book than what I have mentioned here. In fact, there could even have been more written: the author alludes to a secondment, his last, of *three years* with the Turkish army. But of this he prefers discretion, informing us, in the last line of the book, that: "…this will therefore be my last memoir" (p. 260), which is a shame, because Lemoyne is a gifted writer with an enjoyable and original style as a memoirist. I can only hope that the good colonel will someday feel comfortable enough to reconsider.

Brian Bertosa *is an independent scholar who resides in Cobourg, Ontario. His articles and reviews have appeared in the* Canadian Military Journal, *the* Journal of Military History, *and* War and Society.

NOTES

1   *Mémoires du général Jean V. Allard*, en collaboration avec Serge Bernier (Boucherville, QC: Éditions de Mortagne, 1985), English translation: *The Memoirs of General Jean V. Allard*, written in cooperation with Serge Bernier (Vancouver: University of British Columbia Press, 1988); Steve Jourdain, *Mon Afghanistan* (Outremont, QC: Athéna éditions, 2013). Athéna éditions has also published a number of memoirs, by both officers and other ranks, from the pre-unification era, with particular strength in the period of the First World War. They even have a memoir by Allard's wife: see Simone Piché Allard, *Une vie. Entre diplomatie et compromis (1909-1995)* (2003).
2   That being said, the author states that it was "well known" that interpreters were passing information on to Croatian intelligence (p. 120).
3   Judy Batalion, *White Walls: A Memoir About Motherhood, Daughterhood, and the Mess in Between* (New York: Penguin Random House, 2016).
4   Readers of Kim Thuy's short autobiographical miscellanies *Ru*, *Mãn*, and *Vi*, also labelled as novels, will probably have experienced a similar puzzlement.

Flying to Victory: Raymond Collishaw and the Western Desert Campaign 1940-1941

by Mike Bechthold

Norman, OK: University of Oklahoma Press, 2017

296 pages, $US 34.95

ISBN 978-0-8061-5596-8 (cloth)

Reviewed by David L. Bashow

The Canadian-born flying ace Raymond 'Collie' Collishaw (1893-1976) served in the British Royal Naval Air Service (RNAS), and subsequently, the Royal Air Force (RAF) for 28 years. During the First World War, Collishaw racked up a total of 61 confirmed air-to-air victories, which brought him into a second-place tie with the great Irish ace, Edward 'Mick' Mannock, VC, on the overall British Empire scoring list, behind only Canada's William Avery 'Billy' Bishop, VC, although two of these victories were earned during the Russian Intervention by Allied forces against the Bolsheviks in 1919. During his wartime service, he was awarded many honours, including two Distinguished Service Orders, appointment as an Officer in the Order of the British Empire, a Distinguished Service Cross, a Distinguished Flying Cross, and two Mentions in Dispatches, as well as French and Imperial Russian decorations. A superb fighter pilot and tactical commander during the war years, he was a charismatic leader and an inspiration to others. For example, Collishaw made a point of flying with new pilots, letting them "spray bullets at relatively-innocuous enemy two-seaters," and then, with little effort on his behalf, slipping into firing position and downing the enemy aircraft. He would then selflessly slap the newcomer on the back and congratulate him on his first victory.

All this being said, this excellent book by Canadian historian and educator, Dr. Mike Bechthold, is not primarily about Collishaw's highly-distinguished First World War career, but rather, it is about his exceptional leadership, greatly *unacknowledged*, or at the very least *minimalized* until now, during the opening innings of the Second World War in North Africa's Western Desert, 1940-1941.

After the First World War, 'Collie' elected to remain in the RAF, serving with distinction in many British Imperial adventures between the world wars as he steadily climbed the RAF ladder of rank and responsibility. During 1919, he fought bravely in south

Russia, assisting the White Russians (monarchists) in countering the Bolshevik revolution, bombing Bolshevik targets, and gunning down two Albatros scouts of the Red Air Force. Further adventures awaited him in Mesopotamia, and by 1939, Raymond was an air commodore (brigadier-general equivalent) serving as the Air Officer Commanding Egypt Group (No. 202 Group), in charge of RAF flying units in North Africa. In his ensuing narrative, author Bechthold skilfully weaves a fascinating tale of innovation and dogged determination against the far numerically-superior Italian enemy forces. In his words, "[Collishaw] was the first RAF commander to successfully conduct a campaign using air power to gain air superiority, interdict the enemy's lines of communication, and support the Army on the battlefield. These same ideas would later be endorsed by Churchill and enshrined as the pillars of Allied air support doctrine. Collishaw should be recognized for his role in their development and operational proofing. He was proud of his achievements in the desert, but the memory of his accomplishments has been tarnished by the view that it was a victory over a lesser enemy [Italian forces], and by the ruminations of a commander [Air Marshal Sir Arthur Tedder], who considered him the wrong person to fight the Germans. These views should not be allowed to detract from an appreciation of Collishaw's successful and important career in the Western Desert."

From the outset of hostilities, Collishaw made the best of his limited resources by virtue of innovative tactics and the frequent movement of his aviation resources to neutralize the Italian Air Force (*Regia Aeronautica*) and to gain air superiority in North Africa. Further, through attacks upon enemy harbours, troop concentrations and ships, designed to hold up Axis reinforcement of North Africa, and through innovative harassment attacks and close cooperation with the ground forces, the British were eventually able to capture Benghazi, after Collishaw's air campaign established a complete moral ascendancy over the Italian Air Force, allowing Allied ground forces to lay waste to ten Italian divisions, effect the capture of 130,000 enemy soldiers, and the destruction or capture of more than 1200 enemy aircraft. However, once German reinforcements arrived in theatre in force under a young 'up and coming' general named Rommel, who led a protracted series of successful advances, Collishaw tried *valiantly* and *innovatively* to stymy and delay German advances with his very limited resources. He led his command with great skill, enthusiasm and courage, but his under-resourced units suffered disappointments, as well as criticisms. "Although Tedder, as Commander-in-Chief, Desert Air Force, was a great admirer of Collishaw, he felt [with perhaps some anti-colonial bias] that the Canadian was 'a bull in a china shop,' too eager to attempt every task required in daily operations himself (a practice which left his staff officers 'frustrated and miserable'), and too often foolishly optimistic about what could be done with available resources in men and aircraft." After some rather heated disagreements with ground force commanders with respect to the most effective utilization of air support to the operational army's way of thinking, and although the army commanders eventually came around to *Collishaw's* way of thinking, he was recalled to Great Britain in July 1942, promoted to air vice-marshal (major-general equivalent), and given command of 14 Group, Fighter Command, responsible for the defence of Scotland and Scapa Flow. In spite of being made a Companion of the Order of the Bath for his distinguished services, within a year, he was unceremoniously retired from the RAF and disappeared into relative obscurity for the duration of the war, after which he returned to Canada.

In Collishaw's own words: "I felt that my days of command in North Africa, when we had to depend upon superior strategy, deception, and fighting spirit, against a numerically-superior enemy, represented by far my best effort. Yet if I am known at all to my fellow Canadians, it is through more carefree days, when, as a fighter pilot, with the limited responsibilities of a flight commander of a squadron in France, I had the good fortune to shoot down a number of the enemy without in turn being killed." Given his own laconic assessment of his Great War aerial combat contributions, no one will ever accuse Collishaw of being a master of the *overstatement*…

In summation, Mike Bechthold has written an outstanding tribute, thoroughly and meticulously sourced, to a truly formidable Canadian warrior hero. Highly recommended reading.

Lieutenant-Colonel (ret'd) David L. Bashow, OMM, CD, *is a very old fighter pilot, although now only in his dreams. He is currently an Associate Professor at the Royal Military College of Canada, and the Editor-in-Chief of the* Canadian Military Journal.