



The Canadian Army Journal

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ARTICLES

*Observations on Contemporary Warfare –
Operation INHERENT RESOLVE – Iraq 2016*

The Road to Kenema

*Joint Targeting and Target Development in Iraq:
A Canadian Experience*

The Re-transformation of the Armoured Corps

*First Principles and the Generation
of Armoured Fighting Power*

*Roycean Loyalty in a Military Context
Part 1: The Logic of Decision
and Steadfastness*



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The Canadian
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Source: Combat Camera

EDITORIAL – LOOKING TO THE FUTURE



Lieutenant-Colonel Ron Bell, CD
Interim Editor-in-Chief

The release this year of *Strong. Secure. Engaged.* – *Canada's Defence Policy* has refocused Canadian Army efforts to continue to develop capabilities that will remain relevant into the foreseeable future—capabilities with better levels of responsiveness and more resilience. Much of the work done by the Canadian Army Land Warfare Centre over the past few years to help achieve the outcomes desired by the policy has also been presented with the publication of *Close Engagement: Land Power in an Age of Uncertainty*, the new Canadian Army operating concept and an evolution of *Adaptive Dispersed Operations*. Supporting that operating concept with a rigorous analytical foundation and context was the publication in its entire three volumes of *Canada's Future Army*, which discussed the methods used to inform capability-based planning, the findings concerning future capability requirements and the implications of those findings.

You may notice a subtle shift in the focus of the articles presented for you to read as we make a conscious effort to include more first-hand accounts of the operational experiences of members of the Canadian Army. Brigadier-General Greg Smith has written from a recent coalition headquarters perspective on the vigorous insurgency prosecuted by Daesh in Iraq, whereas Major George Jagger has described his multinational experience in Sierra Leone in the near postagreement phase—the second one—of its civil war, as a leader of a military advisory training team. Major David Holtz has provided an inside look at the Canadian National Intelligence Centre operations as part of Joint Task Force–Iraq as it stood up in support of the counterinsurgency.

You should also notice that military concepts, doctrine and lessons have garnered some increased attention in this issue. Lieutenant-Colonel Phillip Halton and Captain Mathew McInnes have each contributed thought-provoking articles on the paths they believe Canadian Armoured Corps transformation ought to follow. Included are a couple of

shorter pieces that also deal with doctrinal issues. Lieutenant-Colonel Alain Cohen and Major Julien Chaput-Lemay have considered the short-range anti-tank fight with some experimental findings (a follow-up to Major Chaput-Lemay's article in the last issue), and Sean Morris has demonstrated a means of injecting realistic cyber operations events into training exercises. We feel that this type of material is particularly relevant to the readership and encourages the professional discussion to which the *Journal* is dedicated. Of course, we cannot continue to sustain that course without the active participation of you, the readership.

The army biography has made its return to the *Journal* with an in-depth investigation by Ruth Ward into the reliability of the account by John Ronald Skirth in his book *The Reluctant Tommy*. Mrs. Ward's article, prompted by Colonel P. J. Williams' favourable book review of *The Reluctant Tommy* in issue 16.1 (Spring 2015) of the *Journal*, is a summary of a much more detailed study she has deposited with The Imperial War Museum. Without giving too much away, she also had a deeply personal interest in Skirth's portrayal of his fellow unit members and the historical events surrounding them. Military history is also open to academic investigation, and Dr. Marc Anderson has provided an examination of the role of, and relationship between, personal decisiveness and steadfastness in the success—or lack thereof—of certain military commanders. That evaluation is put in the context of the writings on loyalty by the American philosopher Josiah Royce.

I have had the welcome opportunity to fill in as the interim editor of the *Journal* for the past year while Major Chris Young was deployed on an operation abroad. Though I have been a member of the editorial board for a number of years, I have a newfound respect for the time and effort it takes to bring a publication of this sort to fruition. I extend my gratitude to all of those who contributed to the production of issues 17.1, 17.2 and 17.3—the contributors, the peer reviewers, the editorial, translation and support team, and the members of the Army Publishing Office. Major Andrew Godefroy has now relinquished his duties as the book review editor and Mr. Peter Gizewski, the Canadian Army's strategic analyst, has taken on that mantle. My thanks go out to both of these gentlemen for their diligence and commitment to the ongoing work of the *Journal*. Going forward, the intent is that the leading editorial duties will be spread across a larger team. In closing, I encourage you, the reader, to continue to provide your excellent submissions for consideration and to pass on your thoughts to us about specific articles or the *Canadian Army Journal* in general.

Lieutenant-Colonel Ron Bell, CD
Interim Editor-in-Chief



Source: Combat Camera

OBSERVATIONS ON CONTEMPORARY WARFARE – OPERATION INHERENT RESOLVE – IRAQ 2016

Brigadier-General Greg R. Smith, MSM, CD

INTRODUCTION

Like some medieval nightmare, masked fighters of the Islamic State of Iraq and the Levant (ISIL) stormed into northern and central Iraq in 2014 atop Toyota Land Cruisers and captured military vehicles. Brandishing the Black Standard and Seal of Mohammed, these religious soldiers represented the advance of violent jihadism in the Middle East. Surprising Iraq and the world with the rapidity of their advance, ISIL quickly seized vast areas of Iraq, including the large urban centres of Tikrit, Ramadi, Fallujah, and the major city of Mosul. Their battlefield success and the horrors of their population-control measures became daily viewing as they terrorized the Iraqi Security Forces and the citizens of Iraq, employing gruesome acts of violence and slick multi-media. On 29 June 2014, the ISIL leader, Abu Bakr al-Baghdadi, announced the re-birth of the caliphate in the Great Mosque of al-Nuri in Mosul, placing the world on notice of ISIL's rejection of the Westphalian world order.¹

Responding to the desperate situation in Iraq, then United States President Barak Obama authorized military actions against ISIL in August 2014 under Operation INHERENT RESOLVE. Shortly thereafter, in October 2014, Canada joined this coalition effort by launching Operation IMPACT and deploying air, land and special operations forces to Kuwait and Iraq. As part of this Canadian effort, the author joined these coalition operations in 2016 as an embedded officer in the land component and thus, in a very small way, helped the Iraqi Security Forces regain control of their country from ISIL. Being a Canadian officer in a United States Army-led coalition headquarters provided a unique vantage point and perspective to observe coalition operations, the Iraqi Security Forces, and the military actions of ISIL as a contemporary enemy. Further, serving proudly with numerous partner nations outside the Canadian Armed Forces offered a conceptual lens with which to look at the Canadian military's strengths and weaknesses.

What follows is a brief description of the country of Iraq, operations by and against ISIL, and a few observations of contemporary operations in Iraq that caused this observer to raise an eyebrow and take note. The background discussion is deliberately limited, but should provide the reader with an adequate perspective for subsequent discussions. Equally, readers will notice a limited discussion of Kurdish Security Forces, reflecting the pre-eminent role of the Iraqi Security Forces in defeating ISIL throughout 2016. It is hoped that these strategic, operational and tactical thoughts and observations will allow readers to take pause and reflect on modern warfare and the Canadian Armed Force's readiness to participate.

IRAQI GEOGRAPHY AND HISTORY

Iraq is a moderate-size country of 438,000 square kilometres and thus slightly larger than the Canadian province of Newfoundland and Labrador.² Although much of the country is quite flat and arid, the north-eastern region bordering Iran and Turkey is quite mountainous and more temperate.³ More important for military operations, Iraq is dominated by the Euphrates River Valley in the centre-west and the Tigris River Valley in central Iraq.

These two large rivers flow from Syria and Turkey, respectively, to the Arabian Gulf, and through lands that are particularly fertile compared to much of the rest of the country. For this reason, the Euphrates River Valley and the Tigris River Valley are home to many of the country's major population centres, including Baghdad, Mosul and Fallujah, and so are also the geographic focus of the military campaigns of ISIL and the 2016 coalition.⁴



Figure 1: Geography of Iraq and Region.

The Iraqi population consists of three major groups, although there are numerous ethnic and religious minorities scattered throughout the ancient land. Arab Shia Muslims account for 60 to 65 percent of the population and are mostly concentrated in central and southern Iraq.⁵ Arab Sunni Muslims are the second largest group, accounting for 15 to 20 percent of the country's population and living in central and northern Iraq.⁶ The Kurds, living in northern and eastern Iraq, constitute about 20 percent of the population.⁷ More broadly, these ethno-religious groups are largely contiguous with majority groups outside of Iraq, such as Shia Persians to the east in Iran, Sunni Arabs to the west in Saudi Arabia, Jordan and Syria, and significant Kurdish populations in Turkey, Syria, Iran and Transcaucasia.

Iraq's mixed population has endured a sadly violent fate in its recent history. The Shia and the Kurds suffered particularly under the dictator Saddam Hussein who, as a member of the country's minority Sunni Muslims, formally became president in July 1979. Originally from the central Iraqi city of Tikrit, President Hussein harshly repressed these two ethno-religious groups, as well as his own, to maintain his grip on power. Hussein also launched attacks on surrounding countries, such as the long, bloody war that Iraq instigated with neighbouring Iran and which raged from 1980 to 1988, resulting in heavy casualties and costing billions of dollars.⁸ A few short years later, Hussein oversaw the invasion of Kuwait that resulted in a United States-led coalition crushing Iraqi army divisions in 1991 under Operation DESERT STORM, an act completed during 2003's Operation IRAQI FREEDOM, which also resulted in the coalition's complete occupation of Iraq. In addition to the repression endured under President Hussein, Iraq's population suffered extensive casualties during the 2003 to 2008 insurgency, including significant Shia-Sunni sectarian violence before the complete withdrawal of United States forces in 2011. The Iraqi Prime Minister at the time, Nouri al Maliki, further aggravated these sectarian problems by implementing his pro-Shia policies, which disenfranchised many Iraqi Sunnis during the period leading up to 2014.

It is vitally important to understand Iraq's recent history in order to properly contextualize the subsequent discussion of 2016 operations against ISIL. First, Iraq's years of war and Saddam Hussein's actions to retain power contributed significantly to Iraq's saga of troubled internal ethnic relations. Second, Iraq and the United States have a tense, respectful, but storied relationship based on years of support, conflict, tension, and ultimately, cooperation.⁹ The clash between the American military and Iranian-supported Iraqi Shia militias during the 2004 to 2008 insurgency was particularly vicious and left a legacy of jaded antagonism not forgotten by either group or its members.¹⁰ This difficult relationship became more complicated with ISIL's invasion of Iraq in 2014, forced the newly returned American military and these armed Shia groups into a distrustful collaboration against a common foe.¹¹ Third, the Iraqi Army field force suffered extensive institutional damage as a result of its functional destruction in 1991 and 2003, and ultimate disbandment in 2004. Last of all, following the Iraqi Army's dissolution, the United States spent more than \$22.6 billion to train and equip in excess of 761,000 Iraqi Security Forces from 2003 to 2011, only to see some of these forces collapse and flee in the face of ISIL's invasion.¹² In 2014, American forces, having only been absent from Iraq for three years, grudgingly returned to this troubled country whose suffering population had a long and weary shared history still very fresh in individual and institutional memories.¹³

A product of the Syrian Civil War and Iraq's continuing sectarian frictions, the extremist Sunni ISIL took advantage of Iraq's fragile security institutions and stormed into the western and northern areas of this unfortunate country. Fast-moving ISIL forces initially seized areas in Sunni-majority Anbar Province, including the city of Al Qaim on the border with Syria, and the Euphrates River Valley urban centres of Ramadi and Fallujah, and subsequently captured vast sections of northern and central Iraq, including the cities of Mosul and Tal Afar in June 2014. Employing highly mobile forces, suicide bombers, improvised explosive devices, information operations and terror tactics, ISIL captured 40 percent of Iraqi territory, including areas south of Baghdad.¹⁴ Indeed, the threat was seen as so dire to the Iraqi capital

and the Shia-majority areas in the south that Grand Ayatollah Ali al-Sistani, religious leader of Iraqi Shias, declared a *fatwah* to raise, mainly Shia, Popular Mobilization Forces to protect the country.¹⁵ Spreading genocidal terror, ISIL attacked non-Sunni populations, inflicted forced religious conversions, committed massacres, and enslaved particular ethnic and religious minorities.¹⁶ ISIL forces, though tactically competent, increasingly well-equipped, and skilled in information operations, also carefully exploited the ever-present Iraqi sectarian fault line and the minority Sunni population's political disenfranchisement.¹⁷

OP INHERENT RESOLVE

In response to the ISIL invasion and the resulting humanitarian crisis in Iraq, United States President Obama authorized Operation INHERENT RESOLVE (OIR).

Tasked to the United States Central Command (CENTCOM),

the 52 nations of the anti-ISIL coalition initially conducted operations under the direction of Commander 3rd Army (Army Forces CENTCOM or ARCENT).¹⁸ Entitled the Combined Joint Task Force (CJTF) or CJTF-OIR, this command node was subsequently structured on a United States Army corps headquarters as the operational-level command for military actions in Iraq and Syria.¹⁹ Subordinate to this three-star headquarters, the United States established the 19-nation coalition headquarters for Iraq, entitled the Combined Joint Forces Land Component Command – OIR (CJFLCC-OIR) with bases in many locations in Iraq to provide: lethal and non-lethal targeting; advise-and-assist capability; building-partnership capacity; and civilian-military coordination.²⁰

A three-star Combined Forces Air Component Command (CFACC) provided precision lethal and non-lethal targeting support for the entire CJTF-OIR and CENTCOM area of operations.



Source: Wikipedia

Operations from August 2014 saw the ISIL advance halted and the gradual compression of ISIL territory, particularly in the northern Kurdish region. In addition, with the re-training and re-equipping of the Iraqi Security Forces at building partner capacity sites, Iraqi forces began to recapture extensive areas of the Euphrates River Valley and Tigris River Valley by employing conventional, combined arms tactics. As a result, Iraqi Army mechanized and armoured brigades, along with the Counter Terrorism Services, Federal Police and Popular Mobilization Forces, began to take back their country. The Iraqi Security Forces were thus able to regain control of the major cities of Ramadi, Fallujah and Hit along the Euphrates River Valley, while concurrently advancing north up the Tigris River Valley, capturing Makhmur, Qayyarah and the Qayyarah West Airfield, and seizing Mosul in the north. Finally, Iraqi Security Forces were able to push into the western part of the country, across Anbar Province to the city of Rutbah, and re-established loose control over the Jordan-Iraq border.²¹

OBSERVATIONS – STRATEGIC

Iraqi territory was lost to, and re-captured from, ISIL by the Iraqi Security Forces. The bulk of the fighting, killing and human costs of this war in Iraq were borne by Iraqi Security Forces, including the Iraqi Army, the Counter Terrorism Services, the Federal Police, and to a more limited extent, the Popular Mobilization Forces and Kurdistan Security Forces. Coalition forces provided decisive kinetic strikes through air power and precision indirect fire. However, Western forces were very restricted in their ability to put 'boots on the ground', providing rather, lethal and non-lethal targeting coordination, and building-partner capacity tasks, inside protected Iraqi Security Forces bases throughout Iraq. Although a limited number of coalition soldiers, particularly, although not exclusively, special operations forces, went outside the wire to conduct advise-and-assist tasks, these activities were deliberately limited in scope and greatly constrained by force protection policies.²² The majority of advise-and-assist tasks were carried out on Iraqi Security Forces-protected bases, which resulted in an usually high demand for unmanned aerial vehicles to track advancing Iraqi Security Forces formations.²³

This cooperation warfare is perhaps becoming increasingly the norm rather than the exception for contemporary operations.²⁴ Coalition forces provide training assistance, material, mentoring and fire support to friendly forces fighting mutual enemies. This enablement gives legitimate local forces the necessary tools to carry out their mutually agreed-upon missions. In that respect, the coalition's build-partner capacity activities in Iraq were reminiscent of Canada's participation in training the Afghan National Security Forces under Operation ATTENTION from 2011 to 2014 as part of the NATO Training Mission-Afghanistan. If the Canadian Armed Forces are to participate and excel in cooperation warfare, we must continue to generate joint military forces that are competent, experienced, credible and culturally relevant in providing instruction in, and advice on, all aspects of full-spectrum warfare. Although some countries see the requirement to create standing security force assistance units, the soldiers, sailors, airmen, airwomen and special forces operators of the Canadian Armed Forces have proven that, with the right theatre and mission-specific training, they are highly capable of these missions.²⁵

For indigenous security forces to receive and maintain support from Western militaries, they must be aware of, and scrupulously adhere to, the law of armed conflict and high ethical standards. As was true in Afghanistan, training and material support was quickly suspended in Iraq if local forces were suspected of human rights violations or corruption.²⁶ In that regard, international humanitarian law applies equally to Western and non-Western security forces. In the case of Iraq, the incumbent Iraqi Prime Minister, Haider Al-Abadi, was particularly intolerant of accusations of atrocities. Although aware that such acts would jeopardize Western support for his forces, the Prime Minister was also sensitive to the post-war peace that would invariably follow the defeat of ISIL's conventional forces. Indeed, in this respect he subscribed to the thoughts of British officer J. F. C. Fuller during the Boer War who stated "Do not let us forget that chivalry in war is as important as killing, because on the cleanness with which a war is fought will depend the cleanness of the peace which must one day follow it."²⁷ The Iraqi Prime Minister's vocal enforcement of the laws of war served, strategically, to maintain coalition support, but also, critically, to prevent the exacerbation of sectarian frictions that would jeopardize Iraq's peace and sully the country's reputation.²⁸ For these reasons, instruction in the tactical rules of the law of armed conflict

remains critically important for both supported and supporting participants in cooperation warfare. By extension, all ranks must understand that that instruction is critically and strategically important to ensure continued domestic, host nation and international support for the prevention, detection and investigation of law of armed conflict violations.

OPERATIONAL OBSERVATIONS

Precision lethal and non-lethal targeting was one of the key enablers that allowed the Iraqi Security Forces to slow, halt and reverse ISIL's forces in Iraq. In this respect, the CJFLCC-OIR headquarters, based on a United States Army division headquarters, was particularly successful in executing a highly structured and disciplined targeting methodology. Serving as the principal coordinator of coalition targeting support, the division headquarters shaped the deep fight well ahead of Iraqi Security Forces or Kurdistan Security Forces elements engaging operational targets both kinetically and non-kinetically. Concurrently, the division headquarters followed a highly disciplined battle rhythm in order to carefully synchronize fire support coordination measures across delineated corps, division and regional strike cell battle space, vet and approve deliberate target packages, and coordinate resources with the CFACC, the Iraqi War Media Cell, and others.



French Truck Mounted with an Artillery System (CAESAR) – 155 MM Self-Propelled Gun

Meanwhile, the subordinate strike cells based in Baghdad and Erbil conducted the close fight in order to provide immediate, planned and reactive tactical fire support to Iraqi Forces in contact. Reflecting the modern targeting enterprise, these strike cells wove together legal advice, collateral damage estimates, intelligence, national red card holders, joint terminal attack coordinators and the target engagement authority to enable Iraqi Security Forces manoeuvre. Tactically synchronizing lethal targeting with non-lethal pamphlet drops, social media, radio broadcasts, texting and other means, the strike cells focused the coalition's efforts to enable Iraqi Security Forces to defeat ISIL in Iraq.

These coalition non-lethal activities were at the forefront of the battle for the narrative in Iraq. Narrative—the collective image or understanding of, in this case, the reasons for, and success of, ISIL's actions in Iraq and Syria—are a key component in maintaining international and domestic support for the coalition.²⁹ In early 2016, the average North American observer could be easily excused for believing that ISIL was winning, even unstoppable, in Iraq and that Iraqi Security Forces were a cowardly and incompetent force incapable of resisting the Islamic State's advance. Yet for those participating in operations against ISIL in 2016, it was clear that the coalition's efforts, and the sacrifices and successes of Iraqi Security Forces, had stopped ISIL's murderous advance and rapidly reversed its momentum. In fact, the 2016 Iraqi Security Forces and coalition physical campaign was almost exclusively one of battlefield success and the operational dismantling of ISIL. The cognitive dissonance between the international narrative and events on the ground are reflective of ISIL's excellent public affairs machine and Western news organizations' out-of-date understanding of the operational situation.³⁰

This battle for regional and international opinion takes place at the strategic level through international news, political announcements, social media and other distribution methods. Local engagements and events occur and are broadcast concurrently via Facebook and Twitter, in local news and by more traditional communication methods, including key leader engagements, that contribute to the tactical narrative. This tactical battle for information contributes to and is enabled by the strategic, international narrative. As ISIL, the coalition and other actors communicate stories and opposing interpretations, they are ultimately fighting for the simplistic answer to the question, "Who's winning?"

Particularly in Iraq, where false claims of ISIL battlefield success were very powerful, the fight for the narrative was as important as the physical combat. In fact, some have suggested that, whereas Western armies are accustomed to achieving battlefield success and then communicating it, the engagements in Iraq saw forces first looking at what needed to be communicated, and then taking actions on the ground to reflect it.³¹ Similarly, ISIL's broadcasting of the mass execution of Iraqi Security Forces soldiers and horrific punishment of the captured population had an enormous effect on its tactical battlefield successes and local population control, as well as an impact on international opinion.

The coalition in Iraq under CJFLCC-OIR waged a daily battle against ISIL for the hearts and minds of Iraqis, but also for the international narrative. The Commanding General, in particular, was a very media-savvy and public affairs-experienced officer who did a masterful job fighting the strategic narrative by relentlessly managing and engaging with Iraqi and Western news agencies. Concurrently, the Iraq Army war media cell, in collaboration with the non-lethal targeting cell in CJFLCC-OIR, fought tirelessly to win over Iraqi public opinion by challenging ISIL's tactical narrative through social media, articles, pamphlet drops, radio broadcasts and other communications methods.³² Symbiotic strategic and tactical narrative engagements took place daily as speaking points were delivered, accusations were countered, and key messages were reinforced in the attacks and counter-attacks of the battle for the international, regional and local narratives.

With varying degrees of experience and capability in non-lethal targeting and other war fighting functions across the coalition, the participation of a large number of countries was essential. CJTF-OIR was composed of 52 nations, while CJFLCC-OIR included the participation of 19 countries. With each country possessing their own national interests, strategic cultures and reasons for participating, the coalition in Iraq had a wide range of capabilities and limitations. Although framed on a United States division headquarters, other countries, such as Australia, the United Kingdom and France, made large, significant contributions of personnel and equipment. Consequently, each country sought to secure important headquarters positions for their own force generation and career development reasons.³³ Like any coalition, the aggregation of various nationalities, languages and cultures brought its own challenges. Because the CJFLCC-OIR had a primarily United States Army service culture, language and regulations, senior non-American coalition leaders translated and interpreted command direction and carefully managed coalition relationships to ensure tactical frictions did not spiral into nationally significant problems. That being said, and although the American leadership did not always understand the cultural differences across the coalition, it had a deep appreciation for the importance of the multilateral effort and the tactical benefit of each nation's contribution, while making exorbitant efforts to embrace their partners.³⁴

As a member of this coalition, observing a United States corps and division headquarters from within provided a unique viewpoint into the institutional cultures of the United States and Canadian Armies. With the continuum of operations as a reference, the capabilities and the culture of the Canadian Army can be viewed as occupying a band in the lower and middle portion of the spectrum: the institution of the Canadian Army and its personnel are readily able to participate in humanitarian assistance, peace support, counter-insurgency activities, and mid-level warfighting. The Canadian Army's wide scope of operations is reflected in its equipment and its soldiers' cultural flexibility, which enables it to excel, whether providing domestic or foreign humanitarian assistance and disaster response, carrying out a counter-insurgency in Afghanistan from 2006 to 2011, or occasionally engaging in medium-intensity combat.

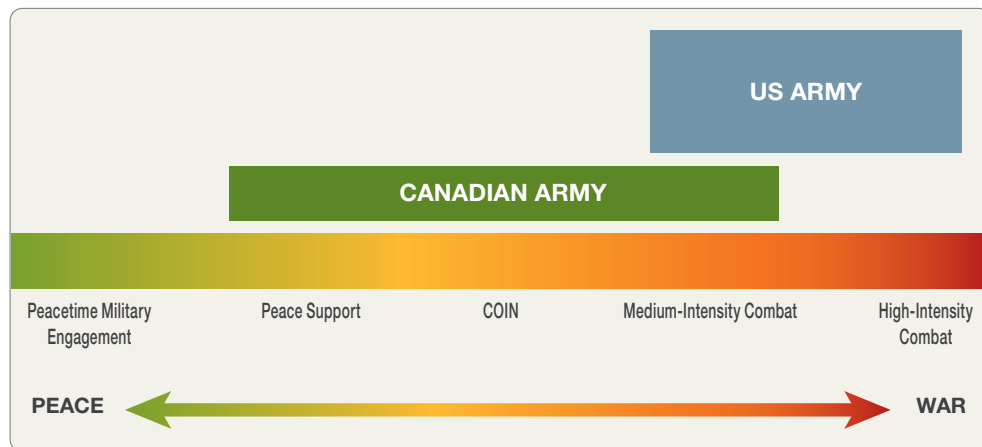


Figure 2 : The continuum of operations³⁵

By comparison, the United States Army is culturally farther to the right on the spectrum, and has a strong capability centred on high-end conventional combat and counter-insurgency operations. As an indication of this high-end combat focus, the United States Army is generously equipped with attack helicopters, multiple-launch rocket systems, artillery brigades, abundant close air support assets, and other highly lethal capabilities. This institutional culture is reinforced by soldier and author John Nagl, who wrote that because of the United States' military history "the strategy of annihilation became characteristically the American way in war."³⁶ He also explains that the United States Army organizational culture has a "...focus on large wars, fought with the American advantages of high technology and almost unlimited firepower..."³⁷ This cultural focus on high-end warfighting manifested itself in the CJFLCC-OIR's almost visceral aversion to providing humanitarian support as operations closed in around Mosul. In the United States Army service culture, which is focused on leveraging its massive resource and firepower overmatch, humanitarian support was seen as a United Nations task.³⁸ In contrast to this intense conventional combat focus, the Canadian Army has a service culture and capabilities that favour general-purpose breadth and flexibility.

TACTICAL OBSERVATIONS

Put simply, unmanned aerial vehicles are everywhere in the contemporary battlefield in Iraq. ISIL deployed, *ad hoc*, unmanned aerial vehicles throughout the country to observe coalition forces, adjust indirect fire, possibly guide mobile improvised explosive devices, drop munitions on opposition forces, produce social media content and, in at least one case, create a flying booby trap.³⁹ The coalition in Iraq, despite considerable money and effort, found it extremely challenging to intercept, disrupt, and defeat these devices. So ubiquitous were these observation platforms that I would surmise that in the Canadian Armed Forces' next operational deployment, our adversaries will possess more and potentially better unmanned aerial vehicles and thus have tactical situational awareness superior to our own. Commanders must seriously contemplate the implications of an unmanned aerial vehicle and situational awareness overmatch against our tactical land, air, maritime and special operations forces. Particularly for land tactical forces, this ubiquitous threat should encourage commanders to re-emphasize tactical dispersion, full-spectrum camouflage, emissions control, all arms air defence and deception. We must resist the hubris that Western technological superiority is a panacea to our adversaries' 'do-it-themselves' ingenuity.

Improvised explosive devices (IED), which are perhaps more familiar to Afghanistan veterans, are even more widespread than unmanned aerial vehicles in the ISIL inventory. Produced on an industrial scale inside Iraq and Syria, these insidious weapons were a ubiquitous threat to Iraqi Forces. During conventional offensive operations, Iraqi Security Forces sustained heavy casualties from IEDs buried conventionally on roads or woven into complex defensive positions, either as the centre-piece or as a tertiary threat. These ISIL defensive positions were therefore characterized by improvised explosive device belts coordinated with ambush positions, covered by direct and indirect fire, and with unmanned aerial vehicles or other observation devices employed to record casualties for subsequent social media exploitation. Due to their complexity, Iraqi forces were compelled to clear these prepared defensive positions with well-coordinated covering fire and protection that provided IED technicians the support of the entire combined arms team to complete their dangerous work.

Once Iraqi Security Forces broke through these defensive barriers, fighting took place in urban areas, resulting in an additional nefarious threat: the house-borne improvised explosive device. ISIL occasionally booby-trapped entire structures with massive bombs that often killed everyone in the building. This tactic created a dilemma for the Iraqi Security Forces, which had to clear out ISIL fighters in house-to-house fighting, while also facing the threat of buildings and their occupants disappearing in massive explosions as they deliberately cleared Iraqi urban areas.



Massive ISIL vehicle-borne improvised explosive device (VBIED)

ISIL forces demonstrated similar deadly creativity in their fabrication of enormous vehicle-borne improvised explosive devices. By up-armouring construction vehicles and other large vehicles, ISIL was able to create explosive battering rams that provided their suicide drivers with protection and achieved a greater fragmentation effect during detonation.⁴⁰ The welded-on armour of these juggernauts proved so effective that often they could only be stopped by tank main gun rounds, close air support weapons or dismounted anti-tank missiles. Some of these huge vehicle-borne IEDs contained more than ten tons of explosive, and caused massive damage when targeted against buildings or Iraqi Security Forces' armoured vehicles, including main battle tanks. Moreover, these mobile weapons were so deadly that they sponsored a new style of combat called 'berm warfare.' Iraqi Forces learned to bring along bulldozers and front-end loaders in their advances in order to be able to quickly build earthen berm palisades. As soon as Iraqi Security Forces achieved a day's limit of advance, engineers quickly established a berm perimeter to prevent penetration by these vehicle-borne IEDs into their inner defences. Entire battles were waged over these berms as ISIL counter-attacks attempted to penetrate protective berm perimeters using echeloned large vehicle-borne IEDs or up-armoured construction vehicles. Again, these battles required well-coordinated defensive positions and the proficient use of combined arms tactics to prevent these massive bombs from reaching the defence's interior and causing catastrophic casualties.

ISIL's ingenuity was not limited to unmanned aerial vehicles and improvised explosive devices; they also developed and employed chemical weapons. Largely, although not exclusively, limited to indirect fire weapons, chlorine and crude sulphur mustard chemical agents were placed in artillery and mortar rounds and fired at Iraqi Security Forces, frequently effecting civilian populations.⁴¹ Fortunately, the weaponization of these chemicals is quite challenging and dependent on amenable local weather conditions. As a result, the limited number of casualties sustained by the security forces and non-combatants often occurred when curious persons handled ordnance fragments. Although not causing heavy casualties, the return to the battlefield of chemical weapons encourages the continued emphasis on individual and collective combat skills in a chemical, biological, radiological, nuclear and explosive defence environment.

The battles in the cities of Fallujah, Ramadi and, specifically, Mosul, brought together all of the aforementioned tactical threats and emphasized the challenge of three-dimensional urban combat. The Iraqi Army, Counter Terrorism Services and Federal Police were ground down by casualties as they fought through sniper, machine gun and recoilless rifle fire supported by copious indirect fire from multi-storey buildings still heavily populated by non-combatants. Concurrently, ISIL fighters, frequently moving between buildings and prepared firing positions, protected themselves with defensive improvised explosive devices, booby-trapped house-borne improvised explosive devices and civilians as human shields. Every defensive position had a local counter-attack plan that included fast-moving vehicle-borne IEDs and re-infiltration through a spider web of tunnels. The insurgents, understanding the Iraqi Security Forces' and Western forces' adherence to the law of armed conflict and rules of engagement, frequently set up firing positions in mosques, churches and other protected structures. In addition to the challenges of the immediate tactical fight, combat in Mosul reminded us of the increased demand for ammunition, vehicles and certain specialty items characterizing protracted urban combat. Similarly, with operations in large urban centres rapidly consuming equipment, vehicles and personnel, operational-level resupply and personnel replacement is needed to maintain and sustain operational tempo. The contemporary trend towards mega-cities and the attrition of urban combat witnessed in Iraqi cities compels us to examine whether the Canadian Armed Forces' capabilities, structures and force generation are optimized for this challenge.⁴²

CONCLUSION

These observations of contemporary conflict in Iraq must be reviewed and potentially internalized as lessons learned from the proper perspective. Although operations within Iraq against ISIS were certainly not the counter-insurgency activities some remember from the Canadian Armed Forces' years in Afghanistan, it was also something less than warfighting with a peer competitor. Nevertheless, the Canadian Armed Forces remains well-postured to participate in and contribute to cooperation warfare, whether providing highly competent, ethical warriors for capacity-building and providing advice, or joint assets for fire support. Meanwhile, the Canadian military continues to expand its capacity, capability and experience in the lethal and non-lethal targeting enterprise, an area in which large United States land formations and the supporting CFACC have considerable experience.

Tactically, all joint commanders must ensure that they are providing adequate doctrine, training, equipment and resources for the grinding, three-dimensional urban combat anticipated in the mega-cities of tomorrow. As we saw in Mosul, this demanding form of combat, with its diabolic mixture of booby traps, re-infiltration tunnels, chemical weapons and massive up-armoured vehicle-borne improvised explosive devices, requires appropriately trained and equipped joint forces that can be seamlessly resupplied and sustained.

Beyond these observations for Western forces, what is next for ISIL? Iraqi forces enabled by the coalition will undoubtedly physically defeat ISIL within Iraq. However, just as Al Qaeda transformed, ISIL will undoubtedly evolve and return in an altered physical form, or expand its already robust virtual caliphate. The solution to the continued existence and growth of radical Sunni terrorism in Iraq is not in the hands of the military, of course. This movement must be starved of recruits and its *raison d'être* through the political engagement and inclusion of Iraqi Sunnis. Although ISIL 'invaded' Iraq, and there was a significant foreign fighter presence, the majority of ISIL fighters were Iraqi Sunnis, disenchanted and disenfranchised by Prime Minister al-Maliki's favouritism towards his fellow Shias. As the French-American journalist of the Vietnam War era, Bernard Fall, reminds us, insurgencies exist and win due to political, not military, shortcomings in stating "...a government that is losing to an insurgency is not being outfought, it's being out-governed."⁴³

Iraq remains a fragile state and effectively tackling its political, economic and security challenges will require sustained international assistance. Despite Iraq's impact on many of its neighbours' national interests, their ability to provide the scope and depth of unbiased assistance that Iraq needs is unlikely. In particular, Baghdad will require external support for economic development, domestic political reform and military capacity-building in order to reduce internal sectarian frictions and prevent the emergence of ISIL 2.0. Although a diplomatic compromise to allow such assistance proved impossible in 2011, perhaps the memory of ISIL in the period 2014 to 2017 will make a diplomatic compromise possible in the future. 🍁

ABOUT THE AUTHOR...

Brigadier-General Greg Smith was born in Oshawa, Ontario, and graduated from the Collège militaire royal de St-Jean in 1993. He has served in each of the battalions of the Royal Canadian Regiment, was Commanding Officer of the Canadian Special Operations Regiment, Commandant of the Canadian Army Command and Staff College, and Director of the Royal Canadian Infantry Corps. His staff appointments include serving at the Infantry School, numerous positions at Canadian Army Headquarters, the Canadian Special Operations Forces Command, and as Chief of Staff of the Defence Renewal Team. Brigadier-General Smith's deployments include Croatia, Afghanistan, and Iraq. He has graduate degrees in war studies, defence studies and public administration from the Royal Military College of Canada. This article was written while he was a Visiting Fellow at Queen's Centre for International and Defence Policy.

ENDNOTES

1. Based on the 1648 Treaty of Westphalia following the Thirty Years War, this international framework sees the sovereign secular state as the building block of the international system. ISIL believes in religious purity over geo-political stability. See Henry Kissinger, *World Order* (New York: Penguin Press, 2014), 121–122.
2. CIA World Fact Book, "Iraq," last accessed on 1 March 2017, <https://www.cia.gov/library/publications/the-world-factbook/geos/iz.html>. The land area of Newfoundland and Labrador is just over 405,000 square kilometres.
3. Encyclopedia Britannica, "Iraq," last accessed on 01 March 2016, <https://www.britannica.com/place/Iraq>. Plateaus average 2400 metres in height.
4. Baghdad has a population of 7.2 million people, quite close in size to Metropolitan Toronto. This very large urban area has relatively modern infrastructure and is the second largest city in the Arab world. Mosul's population pre-2014 war was 1.7 million. See World Population Review, "Population of Cities in 2017," last accessed on 1 March 2017, <http://worldpopulationreview.com/countries/iraq-population/cities/>.
5. Wikipedia, "Demographics of Iraq," last accessed on 1 March 2017, https://en.wikipedia.org/wiki/Demographics_of_Iraq. Iraq's overall population is 37 million people, slightly larger than Canada's. See Worldometers, "Countries in the world by population (2017)," last accessed on 1 March 2017, <http://www.worldometers.info/world-population/population-by-country/>.
6. Wikipedia, "Religion in Iraq," last accessed on 1 March 2017, https://en.wikipedia.org/wiki/Religion_in_Iraq. ISIL also practises Sunni Islam.
7. Wikipedia, "Demographics of Iraq,"
8. Although casualty estimates vary widely, Iraq may have lost between 105,000 and 200,000 soldiers during this eight-year conflict. Similarly, the war may have cost Iraq in excess of \$500 billion. Wikipedia, "Iran-Iraq War," last accessed on 13 March 2017, https://en.wikipedia.org/wiki/Iran%E2%80%93Iraq_War.
9. Readers should remember the extensive Western support given to Iraq during its war with Iran from 1980 to 1988. Gulf War One saw the death of 3664 Iraqi civilians and approximately 26,000 soldiers. See Project on Defence Alternatives, "The Wages of War: Iraqi Combatant and Non-combatant Fatalities in the 2003 Conflict: Appendix 2: Iraqi Combatant and Non-combatant Fatalities in the 1991 Gulf War," last accessed on 1 March 2017, <http://www.comw.org/pda/0310rm8ap2.html>. Readers are reminded of the numerous Western strikes on Iraq between 1993 and 2003, including Operation DESERT STRIKE and DESERT FOX. Iraqi casualties from the conflict and violence from 2003 to 2011 vary from 151,000 to 1 million, although 174,000 deaths, including upwards of 126,000 civilian deaths, appears to be a reliable figure. See Wikipedia, "Casualties of the Iraq War," last accessed on 1 March 2017, https://en.wikipedia.org/wiki/Casualties_of_the_Iraq_War. Western forces lost 4809 soldiers from 2003 to 2011, of which 4491 were American service men and women. Wikipedia, "Casualties of the Iraq War," last accessed on 1 March 2017, https://en.wikipedia.org/wiki/Casualties_of_the_Iraq_War.
10. For one view of the battles between US SOF and Iranian-sponsored Shia forces, see Sean Naylor, *Relentless Strike: The Secret History of Joint Special Operations Command* (New York: St. Martin's Press, 2015), 299–308.
11. The friction in the US-based coalition headquarters was tangible regarding the possibility of largely US material and kinetic support being channeled to the newly branded Popular Mobilization Forces (PMF). Some of these Shia groups had coalition and US blood on their hands from the insurgency.
12. Special Inspector General for Iraq Reconstruction, "Securing Iraq – April 2011," last accessed on 2 March 2017, https://cybercemetery.unt.edu/archive/sigir/20131001113410/http://www.sigir.mil/files/quarterlyreports/April2011/Graphic_-_April_2011.pdf#view=fit.
13. As a tangible example of the US Army's experience in Iraq, both of the author's Commanding Generals (CG) were deploying for the fifth time to Iraq. For one, his previous time in Iraq was spent commanding a brigade for one year, in Mosul.
14. Wikipedia, "Islamic State in Iraq and the Levant," last accessed on 2 March 2017, https://en.wikipedia.org/wiki/Islamic_State_of_Iraq_and_the_Levant.
15. There are some 60,000 fighters in 40 separate Hash'd al Shaabi or PMF units, many with extensive history in Iraq and ties to Iran. Units include the Badr Organization, Kata'ib Hezbollah (KH) and Asa'ib Ahl al-Haq (AAH). See EA World View, "Iraq Feature: What are the Popular Mobilization Forces?" last accessed on 2 March 2017, <http://eaworldview.com/2016/12/iraq-feature-popular-mobilization-forces/>.
16. The Yazidis are perhaps the most well-known such group, particularly in Canada.

17. ISIL also practises Sunni Islam, although the more extreme form, i.e. Wahhabi interpretation. The Iraqi Sunni disenfranchisement, fighting against co-religionists, and the ISF primarily postured for internal defence are all factors in the rapid advance of Islamic State forces through the Sunni-majority areas of northern and central Iraq. See Juan Cole, Informed Comment: Thoughts on the Middle East, History and Religion, "Top 10 Mistakes of former Iraqi PM Nouri al-Malaki (That Ruined his Country)," last accessed on 9 March 2017, <https://www.juancole.com/2014/08/mistakes-maliki-country.html>.
18. CJTF-OIR, "About CJTF-OIR," last accessed on 02 March 2017, <http://www.inherentresolve.mil/About-Us/>. Some Canadian military readers will be familiar with then Commanding General 3rd Army/ARCENT, Lieutenant General James Terry, a former Commander Regional Command (South) and ISAF Joint Command in Afghanistan.
19. Initially based on US III Corps transitioned to XVIII Airborne Corps in August 2016.
20. CFLCC-OIR was formed by Headquarters US 1st Infantry Division (1ID) (The Big Red One) and later the 82nd Airborne Division (The All Americans), and the 101st Airborne Division (The Screaming Eagles) before returning to 1ID in November 2016. Advise-and-assist refers to the provision of leadership advisory teams to Iraqi Army Division and Brigade headquarters. Building-partner-capacity (BPC) took place at a number of training bases across Iraq and included advising Iraqi Army instructors and divesting equipment, ammunition, and resources.
21. Wikipedia, "American-led Intervention in Iraq (2014–present)," last accessed on 8 March 2017, https://en.wikipedia.org/wiki/American-led_intervention_in_Iraq_%282014%E2%80%93present%29. Operation EAGLE STRIKE (Iraqi QADIMUN YA NYNAWA - "We are coming Ninewa") to recapture Mosul began on 17 October 2016.
22. Clearly there was great sensitivity to Western casualties on OIR. Equally, however, this restriction on coalition forces outside Iraqi-controlled bases was indicative of Iraq's domestic and regional need to limit foreign involvement and visibility.
23. The need to track 'front line trace' is beyond the usual high UAV demand for deliberate target development and on-call kinetic strikes. Fortunately, US army divisions have considerable UAV assets and CJFLCC-OIR had further access to theatre, Government Owned / Contractor Operated (GOCO), and Contractor Owned (GOCO) assets.
24. I have used the term 'cooperation' over 'proxy war.' The Iraqis certainly did not see themselves as anyone's proxy, but rather were being supported and paying the highest cost. I am indebted to my colleague Major General Roger Noble, Australian Army, for this concept. Taken from Lowry Institution for International Policy, "Fighting Islamic State in Iraq – An Update with Major General Roger Noble – 07 Feb 2017," last accessed on 10 March 2017, <https://myaccount.lowryinstitute.org/events/FIGHTING-ISLAMIC-STATE> (audio not available).
25. See War on the Rocks, "Replaced? Security Forces Assistance Brigades vs. Special Forces," last accessed on 14 March 2017, <https://warontherocks.com/2017/02/replaced-security-force-assistance-brigades-vs-special-forces/>. The ISF was much better educated, trained and equipped than the ANSF. Nevertheless, they were also challenged in regard to conducting operational-level logistics, campaign planning, and synchronizing Iraqi Army, CTS and Federal Police formations. In addition, they unsurprisingly contracted out most air traffic control, aircraft maintenance and other air power-related tasks. Although a contentious article with which this author does not completely agree, De Atkine lists numerous broad conclusions on cultural challenges of Arab Armies. See Norvell B. De Atkine, "Why Arab Armies Lose Wars," *Middle East Quarterly*, Vol. 6, No. 4 (December 1999).
26. Indeed the US as the main supplier of weapons, equipment, and ammunition to the ISF had specific legislative restrictions if supported forces were accused of corruption or gross human rights violations.
27. Mark Urban, *Generals: Ten British Commanders Who Shaped the World* (London: Faber and Faber, 2005), 203.
28. There were numerous accusations of atrocities against the Shia PMF, particularly during their involvement in the seizure of Fallujah in June 2016. With the PMF subsequently subsumed by the ISF, such accusations were institutionally and politically very problematic.
29. "The battle of the narrative is a full-blown battle in the cognitive dimension of the information environment, just as traditional warfare is fought in the physical domains (air, land, sea, space and cyberspace) ... a key component of the "Battle of the Narrative" is to succeed in establishing the reasons for and potential outcomes of the conflict, on terms favorable to your efforts." See *Commander's Handbook for Strategic Communication and Communication Strategy*, Version 3 (Suffolk, VA: US Joint Forces Command - Joint Warfighting Center, 24 June 2010), xiii, http://www.dtic.mil/doctrine/doctrine/jwfc/sc_hbk10.pdf. For another view, see Cheryl Phillips, "Countering the Daesh Narrative," *The Small Wars Journal*, last accessed on 20 March 2017, <http://smallwarsjournal.com/jrn/art/countering-the-daesh-narrative>.
30. The initial 2016 narrative more closely matched the 2014 battlefield successes of ISIL, the retreat of some ISF formations, and the stubborn resistance of the KSF. These organizational brands had considerable durability and inertia.
31. Although there were still grinding battles of attrition, the Iraqi Army, the CTS, and Federal Police divisions frequently raced to capture and place an Iraqi flag on the tallest building in isolated cities. This occurred during the retaking of Fallujah in June 2016. Although readers may not agree with some of his conclusions, see De Atkine. Andrew Bacevich alludes to this as well; see Andrew Bacevich, "The Islamic Way of War," *American Conservative*, 11 September 2006, accessed on 7 March 2017, <http://www.theamericanconservative.com/articles/the-islamic-way-of-war/>.
32. Jim Ledes paraphrases a much more famous statement by British Prime Minister Churchill during World War Two in stating "We shall defend our liberal democracy, whatever the cost may be, we shall fight on Facebook, we shall fight on the chatrooms, we shall fight in Facebook and on Twitter, we shall fight in the 4Chan and Reddit; we shall never surrender." Chris Zappone, *The Cold War Daily*, After Trump, a global online war to save democracy, last accessed on 28 Feb 2017, <https://coldwardaily.com/2016/12/22/after-trump-a-global-online-war-to-save-democracy/>.
33. The author was particularly impressed with the Australian Defence Force, which occupied numerous key, high-visibility division headquarters positions with high-quality and experienced personnel.
34. For an explanation of US difficulty in understanding other cultures, see Steven Metz, *Iraq and the Evolution of American Strategy* (Washington, D.C.: Potomac Books, 2008), xxiv.
35. Diagram adapted from National Defence, *Land Operations 2021, Adaptive Dispersed Operations: The Force Employment Concept for Canada's Army of Tomorrow* (Kingston: Army Publishing Office, 2007), 7.
36. John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons from Malaya and Vietnam* (Chicago: The University of Chicago Press, 2005), 43. This US Army institutional culture was reflected on multiple occasions in the CJFLCC-OIR Commanding General's statements "Our mission is to kill Daesh [ISIL]."
37. Ibid., 49. It is worthwhile to read Nagl's entire section on the US Army's organizational culture. See Ibid., 43–51. Steven Metz equally addresses this and the US Army's anti-peacekeeping, pro-warfighting institutional culture; see Metz, 63.
38. And, indeed, the United Nations High Commission for Refugees and other international organizations did heroic and admirable work with the Iraqi government to help internally displaced persons from Mosul and other cities. See reliefweb, "Iraq – UNHCR Fact Sheet – September 2016," last accessed on 17 March 2017, <http://reliefweb.int/report/iraq/iraq-unhcr-factsheet-september-2016>.
39. *The Telegraph*, "Isil use rigged surveillance drones to kill Kurdish soldiers," last accessed on 9 March 2017, <http://www.telegraph.co.uk/news/2016/10/12/isil-use-rigged-surveillance-drones-to-kill-french-and-kurdish-s/>.
40. The "lay-behind" massive VBIED became an emergent tactic where these giant bombs were backed into a building, camouflaged, and detonated when proximate to massed soldiers or vehicles during an ISF clearance.
41. For a brief summary of potential attacks, see *The New York Times*, "ISIS Used Chemical Arms at least 52 times in Iraq and Syria, report say," last accessed on 9 March 2017, https://www.nytimes.com/2016/11/21/world/middleeast/isis-chemical-weapons-syria-iraq-mosul.html?_r=0.
42. Although cities and urban areas are defined differently, there are approximately 500 cities with a population of one million people or more, 75 with a population of five million people or more, 34 with a population of 10 million or more, and 12 with a population of 20 million or more. See Wikipedia, "List of urban areas by population," last accessed on 10 March 2017, https://en.wikipedia.org/wiki/List_of_urban_areas_by_population. Some in the US military advocate for urban units specialized in this form of combat. See Michelle Tan, *Defense News*, "Army Chief: Soldiers Must be Ready to Fight in 'Megacities,'" last accessed on 10 March 2017, <http://www.defensenews.com/articles/army-chief-soldiers-must-be-ready-to-fight-in-megacities>.
43. Bernard B. Fall, "The Theory and Practice of Insurgency and Counterinsurgency," *Naval War College Review* 51, 1 (Winter 1998) quoted in David Kilcullen, *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One* (Oxford: Oxford University Press, 2009), 60.



THE ROAD TO KENEMA

Major George A. Jager

Sofli sofli kech monki (softly softly catch monkey) – Patience is a virtue in the pursuit of goals
—Krio proverb

I hate monkeys.
—Jager

I served in Sierra Leone with Operation SCULPTURE from November 2000 to June 2001, first as the second-in-command of the Republic of Sierra Leone Armed Forces (RSLAF) Transport Squadron and then, from late December, as the Officer Commanding. During that time, the Canadian contingent consisted of eight people embedded in the International Military Advisory Training Team (IMATT). At that point, Canada was the international part of the mission, as the remainder were British. This is my recollection of the first operational mission in which we were involved here, and any errors or omissions can be attributed to the passage of time, poor memory or my interpretations of events. Any embellishments, tall tales or exciting passages may be the result of my attempt to keep the reader interested.

Portuguese sailors sailing past West Africa noted that the mountains reminded them of lions, hence the name Sierra Leone (Lion Mountain). Populated by numerous tribes and freed African slaves, Sierra Leone was for many years a colony, first under the Sierra Leone Company from 1792 until 1808, and thereafter, by Great Britain. In 1961, it formally became a republic, independent from Great Britain. Since then, there have been more coups than free elections, and the country has suffered from political and economic corruption, which has slowly drained away its wealth and eroded its democratic principles.

Surrounded by Guinea and Liberia, Sierra Leone also has substantial mineral wealth, particularly diamonds and bauxite. It was diamonds, as well as greed both inside and outside the country, that pushed Sierra Leone into a state of lawlessness by 1998. In the early 1990s, the Revolutionary United Front launched a campaign from its bases in eastern Sierra Leone to overthrow the government. The leader of Liberia, Charles Taylor, became instrumental in supporting this rebellion in exchange for diamonds. The Revolutionary United Front, under the leadership of Foday Sankoh, used brutal means to control the population, including murder, child soldiers and the cutting off of limbs, regardless of the age or gender of the victims. That was the particular brand of terror that the Revolutionary United Front brought to Sierra Leone. The United Nations took action in 1999¹ and sent troops into Sierra Leone as it had become a failed state.² The United Nations was not effective in bringing peace to the country and, in fact, its troops were driven back by the Revolutionary United Front toward Freetown. In May of 2000, the British government ordered the British military to mount an operation to help evacuate non-combatant nationals. The commander of the mission, Brigadier Richards, decided that he would expand the mission, and so Operation PALLISER became instrumental in stopping the Revolutionary United Front and bringing enough stability to the country to allow a reconstruction plan to be implemented. The British then moved forward and set up the International Military Training and Advisory Team Sierra Leone (IMATT) as well as a short-term training team that was assigned the task of re-training the Sierra Leone military. In November 2000, the first Canadian contingent arrived to begin its work in the IMATT.

March, 2011 – Freetown, Sierra Leone Officers of the Republic of Sierra Leone Armed Forces (RSLAF) descend a rough hill in military trucks en route to a field exercise simulating the planning required for a pre-deployment reconnaissance.



I was in theatre for two weeks, barely able to figure out the way from work to our quarters, when the Officer Commanding burst excitedly into what we called the office, a bombed-out section of the Defence Headquarters. “Gather round lads,” Simon motioned to us, “we are going up country in a few days!” The area to where we were going was the town of Kenema in the furthest east territory held by the Sierra Leone government. Here the United Nations notionally held sway, while the governor and the soldiers at a small Republic of Sierra Leone Armed Forces (RSLAF) brigade headquarters worked to regain legitimacy in the eyes of the local population.

Kenema, located in the eastern hills of Sierra Leone, is a town that was important to the country’s diamond trade. The legitimate diamond trade was toppled during the years of revolution and war. Slowly, with the United Nations mission and the support of British forces, the area was becoming more stable, and there were signs that business was returning and that another attempt was under way to establish a diamond resource-based economy. The objective at the time was to show that the legitimate government of Sierra Leone, far away in Freetown, controlled the area, and not the United Nations, which was viewed as weak, ineffective and corrupt.

However, the arrival of a robust force in an area where many rebels still moved about freely had to be swift and unexpected. Too often in the past, the movements of RSLAF forces had been uncoordinated, poorly executed and unsuccessful because of enemy interdictions. The British, who had a lot at stake with their intervention, now needed a success to show their own people and the world that they were not there as re-colonizers, but rather as supporters of a free and democratically elected Sierra Leone government, well-prepared to take back the country from the rebels. There was also a need for the British commander in theatre and the British staff working there to show the British Ministry of Defence and the British government that its investment was paying off and would lead to a comprehensive peace treaty in Sierra Leone.

The British mandate, with support provided by Canada in Operation SCULPTURE, was to pull the deployed poorly equipped and trained infantry battalions from their positions and to reorganize, retrain and re-equip them over an 18-week period, and then re-deploy them in the line. The issue was that the battalions held defensive positions along a line separating the Revolutionary United Front from the Sierra Leone forces, with a United Nations buffer between them.

The problem with the United Nations forces was that some of them had already been captured and held hostage by the Revolutionary United Front, and there was no guarantee that the Revolutionary United Front would not launch another attack, sweeping aside the United Nations troops in the process.

The legitimacy of the RSLAF, which had already been reduced through a number of losses, annihilations and other disasters, was tenuous at best. Many RSLAF members had participated in the Armed Forces Revolutionary Council, led by Major Johnny Paul Koroma, and with the Revolutionary United Front in the sacking of Freetown and the killing of many innocent civilians. Following the United Nations intervention, the infantry battalions had not been tested, and were therefore looked upon as a rabble at best, and as a potential threat to the government at worst. The 7th Infantry Battalion, led by Johnny Paul Koroma, had been instrumental in the overthrow of the government, which led to the formation of the Armed Forces Revolutionary Council. Needless to say, there was no 7th Battalion listed in the new order of battle, and thus the army was not seen as a trustworthy ally of the President. It was telling that the President's body guards and military escorts were either foreigners or from the Nigerian Army, notionally under the leadership of the United Nations.

In addition to the IMATT, the British set up a short-term training team, a 600-person infantry battalion responsible for providing the troops with basic training. The United Kingdom also sent in a British brigade headquarters (7th Armoured Brigade, the 'Desert Rats') to take overall command and serve as the point of contact with the British Ministry of Defence. The short-term training team was set up in the Benguema Army Training Camp, just outside Freetown, and worked with the RSLAF to train infantry battalions from the ground up. The battalion, consisting of a mix of new recruits and veterans, was brought to the site and began to provide basic training, physical fitness training, team work training, basic weapons handling, drill, and so on. Upon completion of this training, the troops had a basic knowledge up to, and including, section level tactics.

The next step was to move the unit up the road to the Newton Battle Camp. Unlike Benguema, which was a purpose-built military base (albeit in poor shape owing to a lack of infrastructure investment), Newton was a former livestock farm and abattoir. It was converted into a training site that included some accommodation. The office space for the British and Canadian trainers was the abattoir, while the troops stayed in the stables. The training at the camp was for eight weeks and focused on platoon and company battle drills.

The standard procedure for rotating troops was fairly straightforward, in theory. The battalion that had completed training in Benguema would be picked up by the RSLAF Transport Squadron and transported to Newton. There, the squadron would stay overnight, and in the early morning would pick up the battalion that had completed their training at Newton and then move them up country to their new operational location. Once there, a relief in place³ would occur. The relieved unit would load up all of its gear (including live animals of various types) and be moved to Benguema, where it would begin retraining. In the case of Kenema, there was no battalion to be relieved, making the return journey of some interest.



March, 2011 – Freetown, Sierra Leone Captain Patrick Woods, a Canadian Forces member deployed on Operation SCULPTURE, instructs officers of the Republic of Sierra Leone Armed Forces (RSLAF) prior to departing for a field exercise simulating the planning required for a pre-deployment reconnaissance.

"The up-country mission is a key troop movement designed to shake things up and show them we mean business," Simon said. With this comment, we pored over the map and orders in order to begin defining what we were going to do and how it was to be coordinated. Not only did we have to bring a battalion to Kenema, but we also still had to do a relief in place in another location before we trekked out east. At the conclusion of all of this activity, Simon's tour was ending and he was being repatriated to the United Kingdom, and I would become the new squadron commander. I suppose if you are going to do a handover in an operational theatre, this is probably a good way to do it.

We needed to plan this operation with a certain amount of secrecy, but we still needed to bring in our Sierra Leone transport squadron team. While we were not sure of everyone's loyalty, we still had to act as one team with one goal. The squadron leadership consisted of Simon as the Officer Commanding, me as the second-in-command, a British warrant officer 2, one Sierra Leone Army captain, Mohamed Bengura (who had been training in China and Germany for four years, and had missed most of the drama), and a Sierra Leone Army lieutenant, Kimo Sesay (who had served in the infantry and been wounded during a firefight in 1998, had sustained a bullet wound in one leg and two bullet wounds in the other, and had spent 18 hours crawling back to a unit aid station). The rest of the squadron was staffed by a large number of senior non-commissioned officers and warrant officers, many of whom bore the scars of battle. The total strength of the squadron when I arrived was about 352 all ranks.

When I arrived in Freetown on 28 November 2000, the squadron had 17 British-built four-ton Bedford trucks that had served for many years in Canada at the Suffield training area,⁴ were still painted in desert colours, and had recently been donated to Sierra Leone. The squadron also had three older Bedfords and four DAF (*Van Doorne's Aanhangwagen Fabriek*) civilian pattern ten-ton trucks.

The first thing to understand about the RSLAF troops is that they had been badly battered during the various rebel assaults, coups and counter-coups. They were originally equipped with Tata military trucks from India, wheeled armoured vehicles and some other equipment. By the time we arrived, all of this equipment had been destroyed or abandoned, or had run out of spare parts and were unusable.⁵ The supplied vehicles did not come with tarps or seats, so any movement of troops had to be done with passengers standing or sitting on the sides. While not particularly comfortable, and perhaps dangerous, the practice of riding on vehicle roofs, sides of vehicles or on top of cargo was a standard practice in Sierra Leone. The troops never complained and happily jumped on board the vehicles, smiling and laughing. The fact that they now had 'new' trucks that came with British spare parts and British mechanics raised the hopes of the Sierra Leone soldiers. For them, this was a sign that the country was becoming more stable.

Whereas I had seen people sitting on the tops of vehicles, buses and the like, heavily overloaded with cargo, the first time I got an opportunity to see the soldiers load up on a Bedford in that manner was a few days before Christmas when we were getting ready to move the first contingent of troops from Newton to Port Loko for the first relief in place. What appeared to be disorganized madness was, in fact, disorganized madness, and it took several minutes



Canadian Forces Lieutenant Commander Mike Fitzpatrick of Winnipeg, Manitoba, bargains for fresh mangoes at a roadside stand in Freetown, Sierra Leone.

of shouting and pushing to get a grip on the battalion. Once the battalion officers and non-commissioned officers had the right people on the right vehicles,⁶ we were able to proceed to Port Loko.

The IMATT travelled in Land Rover 110 Defenders that had been brought to Sierra Leone as support vehicles. The vehicles were intentionally painted white so that they would not stand out from the numerous United Nations vehicles deployed throughout the country. This was done for force protection reasons, and prevented the vehicles and occupants from being identified as IMATT. For anyone who has never been in a Defender, it is not ergonomically the best vehicle for city driving, but it has excellent off-road capabilities, is easy to repair and can carry a lot of cargo in the rear. If necessary, it can also carry up to ten people (uncomfortably, mind you). We usually had three to four people in each vehicle, in addition to a week's supply of food and water as well as personal kit. Any smaller vehicle would not have been as flexible.

The road from Newton to Port Loko was a well-travelled route, although the area around Port Loko had only recently become more stable. Most Revolutionary United Front elements had moved further north and security was improving. As we approached the rendezvous point, we met with the British liaison officers who served with the RSLAF 4th Brigade,⁷ two Royal Marines and an Irish Guards officer. We quickly reviewed where the companies were to deploy and I handed over my troop-loaded trucks to the in-place escorts who carried on with moving troops to and fro. At that point it was time to get out of the way and let the troops sort themselves out.

While this was going on, Simon and I, and the two Royal Electrical and Mechanical Engineers (REME) non-commissioned officers traveling with us, decided to have some lunch. We had driven our vehicle under a mango tree that provided a great deal of shade and reduced the heat by several degrees. This was my first, and certainly not last, experience with British rations. Interestingly, British ration pack one-day meals come in a fairly small box containing two hot meal pouches—breakfast and supper—and a cold meal for lunch, plus crackers and a spread. The meals were boil-in-foil pouches and, except for the fact that there was more lamb than I would have liked, they were very tasty (throughout my six-month tour, I was up country every month and had more than my fair share of lamb). The meals were heated on the good old mountain stove that each Defender carried. In addition, we would bring some dry goods ourselves. We also tended to buy goods from the local village merchants and street sellers whenever we stopped for a break: boiled eggs, freshly picked fruit, fresh baked buns and breads, and sardines, usually from Portugal. And yes, the bread throughout Sierra Leone was very good, while the fruit was simply spectacular.⁸

While we were waiting for the troop rotation to be completed, and having lunch, we noticed a rather odd-looking crown, apparently made of fiberglass, sitting on the ground some 15 metres from our position. Because the area had been under the control of friendly forces for some time, we took a cursory look around it and did not see any evidence of recent tampering. We asked the soldier sitting close by in his trench if he knew anything about the crown, but he simply shrugged his shoulders and looked rather bored. We took a long stick, lay on the ground and poked the crown, rolling it over. Once we were sure



Source: Combat Camera

Canadian Forces Lieutenant Commander Drew McNeil of London, Ontario, watches a soldier of the Republic of Sierra Leone Armed Forces as she cooks a meal of rice and groundnut soup outside the former Agricultural College near Mabang, Sierra Leone. The college was burnt down by rebel forces during Sierra Leone's civil war in the 1990s

that it was safe, we picked up the crown and examined it, wondering how it had managed to get out here in the middle of Africa. Since it was very close to Christmas, one of the REME non-commissioned officers had attached a small piece of sparkly green ribbon to the roof antenna, and so, in the spirit of having fun, we mounted the crown on the hood-mounted spare wheel and tied it down with bungee cords. I had brought a Canadian flag with me, and we put that on a wooden stick and attached it on the back of the Defender. We were now ready to 'conquer' the land for king and country.

As the new troops were deployed to their new locations, the relieved troops were coming back to the rendezvous point. Although they were going back to a training camp rather than their home garrison, they were happy to be on their way to a new adventure. They smiled and waved at the 'white man' sitting under a tree with a British-crowned Defender flying a Canadian flag. Once we completed the relief in place, we moved to drop off the troops in Benguema and pick up the newly minted battalion and move it to Newton.

The Newton Battle Camp is an old farm and meat-processing plant. The plant had been owned by a former minister in the government, but early on during the rebellion, the owner was murdered and, like most things that the Revolutionary United Front came across, it was ransacked and mostly destroyed, and only things that could not be carried off were left behind. Only a few buildings that had not been torched still had roofs, but there were no doors or windows, or running water of any kind. While called a battle camp, it was basic camping in all respects.

Food services as provided in Sierra Leone are not the least bit similar to those in Canada. There were no trained cooks, and meals were very similar every day. Breakfast consisted of a rice gruel sweetened with sugar; basically, the rice was cooked down to a porridge-like consistency. I liked to add mango and banana slices with a bit of cinnamon, which the troops found rather humorous. Lunch and supper consisted of boiled rice with a mixture of cassava leaves (finely chopped), hot peppers, some chicken or smoked fish, maggi and palm oil. The meals were an 'acquired taste' as the quality of the rice could at times make the meal less than palatable. As well, palm oil is a red viscous liquid with a taste all its own, which when mixed in the wrong proportions, as in too much, could overwhelm the taste of the meal. Depending on who was doing the cooking (usually men, as there were very few women in the units), it could be tasty and in general was very nourishing. By the end of my stay, although I usually ate British rations while on operations, and fresh western-style meals while in garrison, I went increasingly local in my diet.

The IMATT short-term training team members were provided with sleeping areas separate from the Sierra Leone troops. We slept in palm leaf-covered rooms, usually five in a row, which had been constructed for us. The room was large enough for a cot and had a small area where you could stand and change before going to ground for the night. Each of us had a cot, and a mosquito net to keep the bugs at bay. The mosquitos carried deadly malaria, and there were also various critters living in the palm leaves that tended to drop on top of the mosquito nets during the night. To keep creepy crawlers out of our clothes and boots, we put them in mosquito mesh bags or slept with them in our cots. Most of our kit was stored in the Defender. The IMATT members who worked in Newton on a daily basis had to contend with a 'friendly' cobra that occasionally visited the abattoir offices, coming in through the window. There was a menagerie of life that seemed to co-exist with the members living in the camp. However, it should be noted that of all of the things that worried the troops, nothing scared them more than snakes!

Upon arrival in Newton late that afternoon, we made contact with the short-term training team representatives who were preparing the 3rd Battalion for deployment with us the following morning. We agreed to the staging and deployment time, and noted what had occurred the previous day with the Port Loko deployment, and ensured that the battalion officers organized the unit according to grouping and vehicle assignment. Once that was sorted out, we settled ourselves in for the evening. Sierra Leone is located some eight degrees north of the equator and therefore has a continuous twelve-hour cycle of day and night. In December, at around 1830 hours, it gets dark, seemingly without warning! The Newton camp did not have any artificial light, so flashlights, vehicle lights and lanterns were the only source of illumination. Our team grabbed some food, made tea, chatted for a bit, got to know one another better, and then headed off to our palm leaf-covered quarters. Very quickly it became clear to us that the troops moving out the next day were keen to get going, and thus, were quite rowdy and loud for most of the evening. There is nothing more unreal than being awakened to the sound of a Shania Twain song played very loudly on a very cheap stereo in the middle of Africa, and yet so it was. The world truly felt like a small place that morning.

Once we had shaved, had breakfast and were ready to go, we reviewed our plans for loading up the troops and shook ourselves out. The trucks were quickly lined up, while Simon and I and the IMATT G3, Lieutenant Colonel Johnny Rogers, Queen's Dragoon Guards, reviewed the plans for the route. Halts points were noted, and safe and danger areas were discussed. Our aim was to slip by the main centre of Mile 91 to the south, thus reducing the chances of the Revolutionary United Front interdicting our movement.

Mile 91 is a crossroads, 91 miles from Freetown, which had developed into a fairly bustling trading site and town. It was at this point that the dividing line between the Revolutionary United Front and the friendly forces was closest, and thus a bottleneck for traffic moving through the area. It was necessary to avoid the area, given that secrecy was required. The route that we were to take had been reconnoitered by the Assistant Chief of Staff Operations and the IMATT G3 a week before by helicopter, in a Soviet-era Hind flown by a South African pilot and an Ethiopian co-pilot. There were two bridges noted on that recce that were of concern, but they were deemed passable. However, because the recce had been conducted at some 200 feet above ground, rather than within feet of the ground, some details were missed. However, for operational security reasons, sending a vehicle on a second reconnaissance was out of the question. Two vehicles moved ahead of the troop convoy to prove the route on the move and to ensure that there were no new obstructions or issues. The squadron commander and I were in one of the vehicles, while the two REME non-commissioned officers followed in the other. The G3 and escort would follow later, but eventually catch up to us. The first portion of the trip was uneventful, moving through friendly territory and following our main supply route. We then took a cut-off some 30 miles west of Mile 91 and headed south to follow the parallel route. Once we moved further along that route, we noted that some things had been missed by the air reconnaissance. There were a number of log bridges in poor condition, but the area was dry enough that vehicles would be able to bypass them. The first problem we encountered was a wooden bridge with a very steep approach and departure angle, something that would not affect the Bedfords, but could wreak havoc on the undercarriages of the lower-bodied DAFs. After some discussion, the REME non-commissioned officers thought that the DAFs should be able to make the grade and, if necessary, the five-ton wrecker could be used to assist them.

The next major obstacle we encountered was a bridge that had originally been a railway bridge over a wide river. Before the British left in 1961, they had developed a fairly extensive rail network that traversed the country from both north to south and from east to west. Used primarily to transport bauxite and other raw materials and goods across the country, the system had been heavily used and had good infrastructure, including many steel bridges crossing the various rivers of Sierra Leone. By the late 1970s, trucks had replaced trains as the primary means of transporting goods around the country, so the rail system was shut down, and most of the steel rails were torn up and used in Freetown. Some railway routes became part of the road network, including a portion of the road on which we were traveling. The railway bridge we approached had been refurbished by the United Nations Indian Army contingent. They had rehabilitated the structure as well as the road bed approaching it, and it was now used as a secondary road to get goods into and out of Freetown.

One problem with truck transportation was that the drivers would pile as much as they could onto their trucks, usually well past the load volume capacity. The Indian engineers chose to preserve the weight limits on the bridge by installing a frame at one end of the bridge that would limit the height and width of any vehicle trying to cross the bridge. Our question was "Would the DAF fit?"

Before we had a chance to think the problem through, we were greeted by an odd sight. We noted two British soldiers jogging across the bridge, one was the G3 and the other was his Royal Marine close protection party. On the side of the bridge where we were standing was a small village, the people of which gathered around to watch what we were doing. We had to measure the height of the frame, and the only tools we had were a Leatherman with six-inch markings and a long stick. As we attempted to sort out the height, a local village elder ran back to one of the houses and returned with a 50-metre measuring tape! After measuring the height and width, we were agreed that the DAF 'should' fit, and in the worst case scenario, we would have the wrecker tear the frame down, not something we were very keen to do. We then moved forward after informing our convoy that the bridge should be passable. They were some 15 minutes behind us at this point, and they were steadily on their way.

We then mounted up and carried on, secure in the knowledge that the convoy would be able to carry on past this point.⁹ It must be said that, up to this point, the roads had been in reasonable shape without too many potholes or washouts. As we ventured further inland, however, the conditions began to deteriorate, and this would be a problem at times. The roads on which we were travelling had been under Revolutionary United Front control a number of times, and they had intentionally ruined them as part of their campaign of intimidation. For reasons that sometimes were never clear or militarily sound, the Revolutionary United Front destroyed



Kayima, Sierra Leone, street scene

Source: Flickr Creative Commons/Kerry Lynch

things that not only hampered their enemies, but also put a strain on their own campaign. From our perspective, this damage was such that, although it did not stop us, it slowed the convoy and put a great deal of strain on the vehicles, equipment and troops. In a few locations, the roads were so rough that it was more like driving cross-country or on an old trail than on what had once been a decent road network. Our role as advance and reconnaissance party was to ensure that the way was fairly secure and that the route, if necessary, could be modified. Speed was an important factor and the route would have to be completely blocked in order to force a change.

From the bridge we continued east on the road bypassing Mile 91, well to the south. The route at this point was more-or-less within friendly territory; however, it was much less densely populated between major villages. There were always people in evidence as we approached villages, which was a positive sign. It was noted by the intelligence staff that a lack of vehicle and human traffic usually meant that something was amiss in a village and that caution was required.

We also noted that, while the maps we had been issued were accurate as far as geographic features were concerned, the grid system was completely out of whack when it came to the continuation of the grid from one map to the next. We used a GPS and set up the latitude and longitude as our guides to confirm our locations. We found that this was a very accurate way to track our location if we ran into problems and had to call for assistance from Freetown. One problem with our GPS was that, although it was small and could easily be hand-held, it was easily affected by trees and clouds, which hindered its signal reception abilities. It also did not come with an accessory for attaching it to the windshield, so in order to track our path, I had to hold it outside the passenger window, strapped tightly around my wrist, for most of our trip.

Our next major decision point was at the town of Moyamba. Here we had to decide to either detour left and get back onto the main supply route, which was faster but slightly less secure, or follow the parallel route further south. While we reviewed the maps and waited for the main body to arrive, I had a look around the centre of town. It was clear that, although there had not been any battles here, the place was rundown and tired. Evidence of the British colonial past was everywhere; the layout of the streets in neat rows and the colonial-era buildings, especially the local school, were prime examples of early 20th century colonial architecture. It seemed somewhat reminiscent of old photographs from South Africa. The people in the town were out and about, and were curious and friendly. Outside of Freetown, most people spoke either their own tribal language or Krio. While some words in Krio sounded very familiar, it was many months before I was able to understand most of what was being said, though I never managed to learn how to speak it.

Sierra Leone's tribal population is a mix of two major tribes, the Mende and the Temene, with a smattering of many other small tribes as well as ancestors of freed American slaves. The religious breakdown is about 60-30-10 (Muslim, Christian, Animist). While the conflict between tribes was not noticeable, there were some issues between them. However, there was never any conflict in the squadron, which was staffed by members of all tribes and religions, with each platoon being an amalgam of many faces. In fact, in my experience, the common enemy had reduced any inter-tribal conflict to a distant memory.



In places like Sierra Leone's capital Freetown, where access to water is less problematic, street vendors fill bags of drinking water oblivious of the health risks involved.

Once the convoy arrived we allowed the troops to take a break, and like a swarm of locusts, they got out of the trucks and seemed to scatter to the four winds. The first step, at least for the men, was to find a convenient wall against which to relieve themselves. In this case, the wall around the school grounds became the unfortunate victim. However, the troops made up for this indiscretion by going to the local market stalls and paying cash for beverages, cigarettes and food.

In Sierra Leone, recycling is big business, but not as we know it in North America. Empty water bottles are collected by the local people and reused to collect palm oil from palm trees, or store motor oil for cars or drinking water. Whenever we finished a bottle of water, we made sure that it went to one of the local people rather than into the trash. The 'entrepreneurs' would also fill plastic bags with water, tie them shut and sell them on street corners. Because electricity was at a premium in Freetown, and rarer still in the country, refrigeration was not an option; so beverages would be kept in the shade, but were never cold. And it was never advisable to drink the local water, which is why our vehicles were always stacked up with cases of bottled water.

The grand British tradition of drinking tea was practised at each and every long halt. Boiled water (as opposed to even bottled water, as we discovered many months later) was safer, and tea made you sweat, which in turn cooled you down. It became a ritual at each halt to brew up tea; it was a soothing physical and mental refresher, a tonic for the soul.

We met up with the police chief of Moyamba and discussed the options as to which route was the safest and fastest, and settled on moving back to the main route. Having passed Mile 91, the next major city on the way to Kenema was Bo, and it was a pro-government stronghold. Bo was considered the second city of Sierra Leone, second only to Freetown. It had managed to avoid being plundered by the Revolutionary United Front, and the provincial leaders had managed to maintain the infrastructure of the city and surrounding area in fairly decent condition. We were greeted warmly by the local population as we pulled into our waiting area south of the city centre. Once again the troops were allowed off the vehicles, and they scattered to find comfort and provisions. On the way out of town, we noticed a bar with a large sign out front featuring the Guinness Toucan and the words “Have one for the road.”

From this point forward, we would be skirting Revolutionary United Front-held territory and entering an area that had only recently been regained by the Sierra Leone government. The only military presence were elements of 3rd Brigade Headquarters and some garrison troops. Not long after passing the sign, we transitioned from territory under the administration of Bo to that of Kenema. The roads deteriorated drastically and evidence of many years of fighting was visible at various places along the route. Traffic was sparse and our convoy had to make its way along long sections of road that had been torn up by explosions creating craters deep enough to swallow up a Bedford, as well as sections of the road that had been expanded into the bush to avoid the craters, but which were just as rough and difficult to drive on. Another thing we noted was that it would be very difficult to defend ourselves against an ambush, especially if no preparation in the form of anti-ambush drills had been practised by the convoy. There was elephant grass close to the edge of the road (as the name suggests, the grass is literally as tall as an elephant).¹⁰ It was like driving through a tunnel; so you had to actively seek out signs of anything out of the ordinary. Our trek now became much slower because of the road conditions and the need for additional vigilance. Although we were perhaps a soft target, we were not clearly identified as IMATT, and we also had some 600 armed troops not far behind us; so there was a small degree of comfort.

As we got closer to Kenema and entered the eastern foothills, the geography began to change. This was the area over which all the fighting was about. It was an area where diamonds could easily be found because they were alluvial diamonds that had been washed out of the kimberlite in which they were embedded in the mountains and which were now deposited near the surface. There was no need for heavy equipment or time-consuming methods. Instead, a few people with pans, shovels and some running water were all that was necessary. The Revolutionary United Front had enslaved many people to find those diamonds. I discovered later that a number of the transport squadron soldiers had been prisoners and had worked in the area, later escaping when they had the opportunity. Their stories were harrowing, to say the least, yet they re-enlisted in the RSLAF to claim back their country. My operations sergeant, Sergeant Kamara, known by his nickname ‘Stone’¹¹ said it simply: *“Indeed Sah, it is the correct thing to do.”*

As we approached the outskirts of Kenema, we began to see signs of open-field mining, albeit under better conditions than those imposed on the Revolutionary United Front slave labourers. We also began to see cattle being moved to other fields to graze, something that up till now, we had not witnessed. There were also large numbers of people moving about, compared with the scant few people we had seen only some ten kilometres farther back. The streets were wide and dusty, and the volume of traffic increased dramatically as we approached the centre of town, most of the traffic being either local vehicles or non-governmental organization vehicles. Although we were only one of a group of many Westerners who were moving about, our military uniforms attracted a great deal of attention and cries of “British, British” from waving and smiling children and adults. I looked at Simon and said, “and Canadians,” and he countered with a grin, saying “shut up, you’re British.”

Around 1900 or so, a ship sailed from the port of Beirut, ostensibly heading to the new world, or so the ‘travel brochure’ proposed. However, once the ship passed through the Straits of Gibraltar, it turned south and landed in Freetown. Thus began the influx of Lebanese immigrants into Sierra Leone. During the following decades, the Lebanese developed businesses that supplied them and others with goods imported from Europe or the Middle East. They became the entrepreneurs of Sierra Leone because most Sierra Leonians were not interested in this type of trade. When diamonds were discovered, the Lebanese quickly became the diamond traders, processing uncut diamonds obtained from local miners and selling them to buyers in Europe and around the world. By the time of the rebellions in the 1990s, most trading was completely controlled by the Lebanese traders through their shops on street after street in the eastern parts of the country. Viewed by the local people as exploiters, they quickly left Sierra Leone before the Revolutionary United Front could attack and kill them. However, they returned just as quickly when things had stabilized. Because the provenance of diamonds from Sierra Leone was difficult to prove, trade still continued, except that the diamonds were smuggled through Liberia and passed through various hands before reaching the open market.

As we entered the centre of Kenema, there was an amazing number of diamond-trading shops on the main street, with signs, some in English and Arabic, proclaiming that they paid the best price. However, the storefronts seemed tired and run down, given that business had been severely disrupted by the constant fighting. Nonetheless, the traders had come back once the territory had returned to government and United Nations control. With the arrival of the newly trained Sierra Leone Army, the traders also began to hope and believe that business would take a turn for the better.

As we reached the eastern end of the city, we were greeted by representatives of the 3rd Brigade Headquarters, as well as the IMATT brigade advisor, who led us to the temporary camp. All of the former RSLAF holdings were currently occupied by United Nations forces, who were in no hurry or particularly interested in returning these properties to their rightful owners. So we pulled into the local soccer stadium where the 3rd Brigade had made its home. The troops in the location, those on the backs of the trucks, as well as my squadron and other IMATT members were very happy to finally reach our destination. ‘Relief’ would not have been too strong a word!



Source: Film/Creative Commons/Jocaina

When the original mandate for Operation SCULPTURE was established, we were restricted to the Freetown peninsula, including Benguema and Newton, as long as our higher-level headquarters in Ottawa was informed. Any movement outside this area of operations was to be kept strictly to a minimum and required at least seven days' notice, with as much relevant information as possible as to 'why' provided, as well as a threat assessment, before permission would be considered, let alone granted. As we were Roto 0, we had only British experience to depend on for our intelligence information in order to ensure that any risks were mitigated and worth the outcome. To some degree, the British were also under tight control and needed Ministry of Defence approval for certain up-country moves. In September of 2000, a small British and Sierra Leone Army patrol had been ambushed and taken prisoner very near the Newton Battle Camp by a breakaway faction of the Armed Forces Revolutionary Council. That faction was known as the West Side Boys, and they had a rather unclear agenda. However, when they came across that patrol, they decided to take it prisoner. After a period of negotiations, with demands becoming increasingly more outrageous, the British launched Operation BARAS to free the hostages and eliminate the West Side Boys altogether. In the end, one Special Air Service member was killed in the assault, but the hostages were freed and the West Side Boys were no longer a threat. Sensibilities were still somewhat raw, and there was no desire for this type of event to be repeated.

In order for members of Operation SCULPTURE to move forward to Kenema, our headquarters in Ottawa required assurances that the British had been given permission to carry out this mission, which we were told had been given. Later it became clear that the granting of permission was similar to asking mom whether you could go to the movies and telling her that dad had said okay, when you had already told dad that mom had said it was okay. The British sent a request for permission to carry out the operation to Kenema with IMATT personnel involved, based on the fact that the Canadians had already given permission for their members to go. "If the Canadians can go to Kenema, then, of course, the British will be given permission!"

In addition to the long drive from Newton it was also Ramadan, a period of reflection and worship for Muslims. During the day, from dawn until dusk, the faithful are prohibited from eating or drinking as a sign of respect for Allah. In several cases, this caused some problems for the squadron because some members who were fasting became unable to safely drive the vehicles and had to be replaced by others. Captain Bangura, the squadron operations officer and later my second-in-command, who was Muslim, spoke with a number of the drivers who were fasting and explained to them that they were exempt from the prohibition on eating and drinking, and that they would not suffer punishment from Allah. I overheard him talking to a number of the senior drivers, "You will suffer a greater wrath if you have an accident and destroy the equipment." It was an educational experience for me and reinforced the need for cultural awareness and using the members of your team to work through these types of situations.

Once we had settled into the soccer stadium bleachers, night had fallen, and after meals and further chat we went to ground. With so many soldiers suddenly congregating in one area, and especially after a long hot drive, there was bound to be some event creating a bit of panic. Sometime, just as we were going to ground, the expected panic occurred; apparently one of my drivers had fallen asleep while sitting in his cab smoking a cigarette, which had started a fire, fortunately causing him to awaken and start shouting. One of the quicker members of the squadron grabbed a fire extinguisher and put out the fire and ended the panic. By this point, I had already been summoned to examine the damage. I called the squadron leaders together and gave them a quick lecture on the dangers of smoking, and told them to make sure that the troops were informed that Major Simon and the Canadian were very unhappy with their thoughtlessness. I then returned to the bleachers and told Simon what had happened.

Unlike Freetown, which is hot and humid for most of the day and night, Kenema was in the foothills and less humid during the day, although still hot. At night, the temperature cooled to about 10 to 15 degrees Celsius from a daytime high of 30 to 35 degrees Celsius. Sometimes during the night, a cool breeze came down from the hills and caused peoples' mosquito nets and light blankets to flap. There was a flurry of activity as people pulled out their sleeping bags to stay warm. The jungle was just beyond the soccer stadium and led into Kamajor-held territory.

The Kamajors were the Sierra Leone militia who had supported the legitimate Sierra Leone government during the rebellion. They were irregular soldiers who believed in voodoo and Ju-Ju Man¹² blessings to embolden themselves during the fighting. Members came from all walks of life, ranging from poor farmers to university-educated individuals who had returned from overseas to fight the rebels. The Kamajors believed in the Ju-Ju Man's magic powers; a soldier who believed in the powers could face bullets because they would turn into water before they struck him. However, if the bullets did strike him, it was because he did not believe strongly enough. They were fearless fighters and had a simple belief in what was right and wrong. The shotgun was their weapon of choice for jungle fighting and I, for one, was very happy that they were on our side.



Source: Wikimedia/Creative Commons/Lindsay Stark

The jungles of Eastern Sierra Leone are a 'type one' jungle with original growth that has not been cut down, unlike the forests closer to Freetown. A 'type one' jungle was what one used to see in the Tarzan movies of the 1930s: high canopies and very little vegetation near the ground because the sunlight could not reach it, and thus fewer plants could grow. 'Type two' jungle consisted of secondary growth that was lower to the ground, as well as denser undergrowth with smaller trees. In the western part of the country, most of the wildlife had been killed and eaten, while in the eastern part, one could see and hear a greater quantity and variety of wildlife.

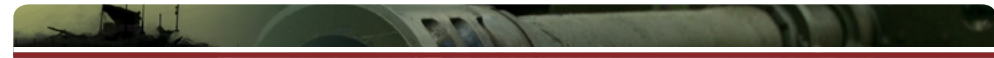
We had brought our own fuel along for the trip to Kenema because there were few gas stations along the way, and because the squadron did not have any funds available to purchase fuel even if there were fuel stations. Our 'fuel truck' was one of the older Bedfords loaded with about ten 45-gallon drums filled with diesel fuel. The method of refueling at this time was for the drivers to carry a plastic five-gallon pail with them. To refuel, they siphoned the fuel from the drum into the pail, and when it was full, they carried it back to their vehicle and fuelled up. This procedure finally ended when we received four fuel bowsers some three months later, but until that time, refueling was a dirty business.

The return trip to Freetown had to be as unobtrusive as the trip to Kenema had been, partly because we no longer had infantry travelling in our vehicles, unlike previous troop rotations. Our protection consisted of just us, and the drivers and co-drivers, plus the Sierra Leone trail party. We also had to make good speed because of a midnight curfew in Freetown, and the following day was Christmas Day. At first light, the squadron shook itself out and got organized for the return trip. Drivers were briefed on the route and what was expected of them.

The return trip would follow the main supply route we had taken to get to Kenema, except that we would take a detour five kilometres south of Mile 91. Our return trip up to Bo was slow, and we suffered again as we did on the way in, bouncing over potholes and craters. After two and a half hours of bumping and bouncing at 10–30 kilometres per hour, our sense of humour tended to disappear and it was easy for people to get testy with each other if they were not careful. As soldiers typically do, we told tall tales and war stories, and managed to get through the never-ending stretch of potholes that confronted us. If nothing else, it taught me that there are no bad roads in Canada, no matter how bad they may seem.

As we approached Mile 91, we kept looking out for the bypass road. On our map, it was marked as a fairly obvious road; however, since the civil war, the road, like many others, was no longer well-maintained, and had it not been for the GPS and our map, we would have merrily driven past it, ending up at Mile 91. The convoy was some distance behind us, so we left one IMATT vehicle by the side of the road to signal them, while the other two went ahead to 'recce' the route. Our vehicle and the REME Defender were moving slowly down the road, but because of the dense underbrush, we decided at this point that two of us would get down from the vehicle (we were carrying more IMATT members from Kenema than we had going in, because they had travelled in by air a day earlier) and prove the route on foot, while the two vehicles followed closely behind. The emotions I felt at this moment were a mix of adrenaline and excitement, with a good bit of caution thrown in for good measure, and an underlying feeling of fear. It was not a sensation that one normally feels back in Canada, but one that I would become familiar with a number of times during my tour. After we advanced some 200–300 metres down the trail, there was no longer any brush along the sides of the road, which opened out onto farmers' fields. We then felt confident that we would be able to see any activity in the distance, and so we called the remainder of the convoy forward and proceeded down the trail at a fairly robust speed, given that there was no evidence of any villages or civilians. At one point, as we came around a corner and into a copse, we startled the crew of some United Nations vehicles who were not expecting to see any traffic, let alone three white Defenders and some two dozen trucks dashing madly along the road. With quick smiles and waves we drove past them, long before they had a chance to figure out what to do.

The rest of the trip proved to be non-eventful because once we were past Mile 91, we were in secure territory. We arrived in Freetown after sundown and the roads were jammed with people celebrating Christmas Eve. The next day being Christmas, I played a round of golf, during which I marvelled at the sight of the Nigerian checkpoint set up on the beach road at the 9th hole turnaround, and watched them hang out their laundry right beside the green. On Boxing Day, Simon wished me luck, shook my hand and left for the United Kingdom, while I was now the new RSLAF Transport Squadron Commander. 🍀



ABOUT THE AUTHOR...

Major Jager has served since 1980, first joining the Toronto Scottish Regiment as an infantryman and taking his commission in 1981. After taking a break between 1985 and 1986, he rejoined his regiment as a supply officer and in 1987 transferred to the Regular Force. He has served in 1 Service Battalion as a platoon commander, training officer, acting company commander and operation officer; in SQFT HQ as the G4 Operations; as logistics representative in Chief of Force Development; and as an exchange officer with the Hungarian Armed Forces—in addition to his various other logistics jobs. He served a six-month tour in Sierra Leone on Operation SCULPTURE as the Squadron Commander of the 1st Republic of Sierra Leone Transport Squadron and 20 months on Operation PROTEUS in the United States Security Coordinator organization as the logistics advisor to the Palestinian Security Forces. He is currently serving as the J1 Operations in 1st Canadian Division Headquarters.

ENDNOTES

1. There were a number of coups and counter-coups that overthrew the elected governments during this period, and the United Nations was brought in to re-establish the elected government of Ahmad Tejan Kabbah.
2. A state is considered failed if the government no longer has the ability to provide services, control its territory, or be able to interact with other nations. In the case of Sierra Leone, the government was in exile and the rebel forces were simply destroying everything in their path. In fact, there was no legitimate authority in place to govern.
3. From the United States Army Field Manual FM 3-9: A relief in place is a tactical enabling operation in which, by the direction of higher authority, all or part of a unit is replaced in an area by the incoming unit. The directing authority transfers the responsibilities for the mission and the assigned area of operations from the replaced elements to the incoming unit. A commander conducts a relief in place as part of a larger operation, primarily to maintain the combat effectiveness of committed units.
4. The British used Suffield for training because it provided enough space for combined arms training, which was unavailable in the United Kingdom. Units would arrive in May every year and go through a six-week training cycle. The British maintained a certain amount of equipment in Suffield year round.
5. There was a large pile of scrap vehicles outside the compound that we eventually took over, and it was finally cleared out by the Roto 3 team.
6. We realized that during the next troop rotation, we would ask the battalions to organize their troops by vehicle and to mark each vehicle to avoid the confusion we had seen. From that point onward, it became standard operating procedure and made deployment activities much easier.
7. The British IMATT had officers in each of the three infantry brigade headquarters who acted as advisors and lived and worked with them in the field during the week, returning to the base in Freetown on weekends. Our squadron was based in Freetown, so we would only move out to the field during troop rotations, living with the advisors.
8. Most fruit sold in Sierra Leone was picked wild, rather than from orchards or farms. Mango, coconut and papaya trees grow everywhere, as do banana bushes and pineapple plants. People in the villages would go into the bush and come back with whatever seasonal fruit was ripe and sell it at roadside stalls.
9. In fact, my convoy staff ended up letting air out of the tires of the DAF to allow it to pass under the frame unscathed. However, we had forgotten about the exhaust stack and air breather above the cab, and soon discovered that in Africa, almost any problem could be solved through ingenuity, even when the solutions had long-term negative implications.
10. The cap badge of the RSLAF has an elephant and a palm tree as part of its design; however, the West African elephants are believed to have all but disappeared from Sierra Leone.
11. 'Stone' hid out for nine months, avoiding capture and fighting a guerrilla war against the Revolutionary United Front. To fellow soldiers and to the IMATT members, he was an inspiration, both for his loyalty and his unpretentious demeanor. "If we had ten 'Stones,' we could win this war in no time" (*Captain Bangura, RSLAF Transport Squadron 2 IC*).
12. The Ju-Ju Man is basically the local witch doctor.



A young girl carrying a baby curiously watches Canadian Forces personnel as they visit the Wilburforce School. Members of the Canadian Forces deployed on Operation SCULPTURE refurbished this school as part of a Civil Military Cooperation project.

Source: Combat Camera

JOINT TARGETING AND TARGET DEVELOPMENT IN IRAQ: A CANADIAN EXPERIENCE

Major David Holtz, CD

Understanding and executing joint targeting will be the key to future successes in complex multinational operations.¹

INTRODUCTION

In 2014, when Canada deployed a task force to fight the war against the Islamic State of Iraq and Syria (ISIS), the Canadian Armed Forces became involved in the coalition targeting process. Intelligence enables targeting and works best when operations and intelligence are highly integrated. Collection planning to support target development is executed by operations staff, so the closer the link and understanding between intelligence and operations, the more coherent the results. Further to that, there is also a relationship between analytical investment and collection requirements. The Joint Task Force – Iraq National Intelligence Centre on Rotation 0 demonstrated that high quality intelligence preparation of the operational environment products and target intelligence packages can have significant impact in the battlespace to support both force protection and joint effects. The coalition used products from the Joint Task Force – Iraq National Intelligence Centre to service key targets in Iraq. A second order effect of the National Intelligence Centre's target production was the coalition asking Canada to lead missions with our CF-18 Hornets based on targets developed by the National Intelligence Centre. By leveraging relationships established through branding in the virtual and physical domain with other intelligence organizations and other government departments, the National Intelligence Centre was able to produce high quality intelligence products that received recognition from our own Chief of Defence Staff and the commander of the United States Central Command. Canadians should be proud of the work done by the Joint Task Force – Iraq National Intelligence Centre. As a Five Eyes nation, we belong to a unique club, and the National Intelligence Centre demonstrated why Canada brings value as a Five Eyes partner.

For most members of the Canadian Armed Forces, and certainly for the public, there was a lack of awareness about the work being done to find targets in Iraq. Most people perceived that the Canadian targeting effort was focused on our CF-18 Hornets or support to the CF-18 Hornets. Yet, Canada also deployed an intelligence organization, the National Intelligence Centre, with all-source intelligence capabilities. The Joint Task Force – Iraq National Intelligence Centre supported the deliberate targeting process by finding ISIS targets. Finding targets in joint targeting is the result of analysis, not collection, and is a focused effort aimed at shaping the operating environment towards conditions that reflect mission outcomes. Collection is an enabling operation that provides inputs to the analytical process. The National Intelligence Centre focused on supporting the joint targeting process to enable deliberate targeting. For context, most targets serviced in Iraq in 2014 and 2015 were combat engagements, with deliberate targeting being the exception.² The process of target development, which enables joint targeting, is distinct from targets deliberately engaged during offensive or defensive operations under an operation's rules of engagement. Targets engaged within the rules of engagement are typically referred to as combat engagement in targeting parlance.³

A member of the Canadian Armed Forces Mobile Air Movements Section (MAMS) manifest and unload armaments from a C-177 Globemaster aircraft in Kuwait during Operation IMPACT.

Combat engagement is the norm at the tactical level, including most targets engaged as part of the land targeting cycle. In the joint targeting process, collection inputs from the intelligence, surveillance and reconnaissance process are a contributing effort during target development. To discover targets, the analyst in an intelligence centre has inputs from multiple sources of intelligence. Intelligence centres use these multi-source inputs to determine possible target locations and characteristics. Target development collection requirements for intelligence, surveillance and reconnaissance compete with other collection requirements, including collection to support planning and situational awareness. That friction point often means that collection that supports target development is not satisfied. Not surprisingly, the work done by intelligence centres rarely makes it into the news or even professional journals. The public and even most military personnel do not typically see the intelligence effort in target development because the work is sensitive and the sources for target production need to be protected. However, it is important that military decision makers understand the work our intelligence centres perform. The work was critical in the war against ISIS.

MISSION LEADERSHIP AS A RESULT OF TARGET DEVELOPMENT

The National Intelligence Centre's work in developing targets resulted in opportunities for Canada to get mission lead for our CF-18 Hornets against deliberate targets in Iraq during the war against ISIS. There was a direct relationship between the production of target intelligence by the National Intelligence Centre and assignment of missions to Canada's CF-18 Hornets. The National Intelligence Centre started producing intelligence to support targeting in mid-December of 2014. Targeting training, followed by intelligence preparation of the operational environment production, preceded the National Intelligence Centre's effort to conduct target development.⁴ By the end of December 2014, the National Intelligence Centre was submitting target intelligence packages to the Combined Joint Task Force – Operation INHERENT RESOLVE headquarters, the coalition headquarters and Canadian Joint Operations Command. In mid-January of 2015, the coalition offered Canada mission lead for our CF-18s for the first time during the campaign. The target was one developed by the Joint Task Force – Iraq National Intelligence Centre. The Canadian task force decided not to take the mission, and the United States Marines serviced the target with great success. In February 2015, the coalition again offered Canada mission lead. And again, it was a target that the Canadian National Intelligence Centre had developed. This large and important target would directly affect ISIS operations. It was an improvised explosive device factory that was producing vehicle-borne improvised explosive devices and indirect fire materials to support ISIS operations against the Marines at Al-Asad Air Base. On 13 February 2015, Canada commanded its first mission package into Iraq and destroyed the target developed by the Joint Task Force – Iraq National Intelligence Centre.⁵ It should not be a surprise that Canada's third offer for mission lead was also based on a target developed by our National Intelligence Centre. While over 30 countries are contributing to the mission against ISIS, only Five Eyes nations have the capability to integrate intelligence seamlessly into the targeting process. Canada's decision to incorporate a target development capability into its mission set led to a more prestigious role for the Royal Canadian Air Force on operations and enhanced Canada's role in the coalition. More importantly, it gave Canada the opportunity to strike tangible blows on ISIS capabilities with the destruction of high payoff targets.

ANALYSIS AND INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE RELATIONSHIP TO SUPPORT TARGET DEVELOPMENT

During the second Gulf War, General Michael Flynn stated that, in today's war, intelligence is operations.⁶ Flynn said that intelligence is the primary combat multiplier in a fight against a low contrast enemy.⁷ A low contrast enemy hides in the complex terrain of population, leveraging an electronic sanctuary to coordinate a dispersed network. Flynn concluded that the work to find the enemy by intelligence centres was the essential element in the targeting process. Brigadier-General Dan Constable, Commander of Joint Task Force – Iraq, for Canada's initial mission in Iraq (Operation IMPACT), made a similar point when he stated that Canada's National Intelligence Centre was "a critical part of the weapons system to disrupt and degrade ISIS."⁸ In Flynn's 2006 article, he discussed the level of effort that goes into the development of a target. He stated that more than 400 hours of collection from full motion video was used to support the development of a single target. That level of effort is likely a surprise to most military professionals who do not see or deal with the intricacies of intelligence processes. Flynn's experience in Iraq was indicative of the requirements for target development in Afghanistan. During Flynn's time in Afghanistan as International Security Assistance Force J2, during the 2009 to 2010 timeframe, to service some targets required an investment of over a 1000 hours of airborne full motion video and other supporting collection. The trend has been, and continues to be, that a significant intelligence, surveillance and reconnaissance investment is required to discover high payoff targets.

What Flynn's article did not discuss was the level of effort within the intelligence centre to develop these targets and the direct relationship between the analysis and collection effort. Targets that take hundreds of hours of full motion video also typically take hundreds of additional hours to develop at the intelligence centre. The experience in the National Intelligence Centre for target development in Iraq during 2015 was that typical target analysts would be dealing with 150 to 250 possible adversary locations within an assigned geographic area. As a subset of that work, the target analyst would typically have eight to twenty points of interest that they would be further developing with support from a team of single-source analysts who specialized in areas like electronic warfare, imagery and geomatics. Of those points of interest, a typical analyst, working closely with the team, would be developing two to five of the points of interest as candidate targets to either the basic or intermediate level. The analytical investment in a typical basic target would be 50 to 200 hours for the all-source team. Targets developed to the intermediate-level targets would often take 100 to 1000 hours of analytical effort. The result is that, to produce a basic target in step two of the joint targeting cycle, the collection requirements are typically 50 hours to 200 hours and the analytical investments are another 50 hours to 250 hours. Intermediate targets typically would be double that amount of time and were often four times as much effort.

The second issue Flynn did not address was the relationship of the requirement for full motion video to analytical inputs. The number of hours required for following and tracking a target with persistent surveillance is inversely proportional to the analytical investment. Examination of existing data should be considered first, analyzed, and used to refine collection requirements. While the intelligence cycle, for the purpose of simplicity, states that collection occurs before processing, the reality is that analytical work based on existing collection often reduces the requirement for new collection.

For example, the Afghanistan target discussed earlier, developed in the fall of 2009 with over 1000 hours of full motion video that was tracked in Helmand Province in Afghanistan, would have had a significantly reduced requirement for persistent surveillance if an all-source analytical investment had been made up front. The challenge was that analytical resources were often more scarce than collection resources. There are a number of reasons for that. One of the most common reasons that intelligence centres cannot dedicate resources to target development is that most of the intelligence centre's effort tends to focus on direct support to the commander and key staff in a headquarters. When additional intelligence resources are apportioned to intelligence centres, the demand from commanders and staff increases and the intelligence resources are consumed. In the Canadian Armed Forces, that occurs because we do not teach commanders how to manage intelligence resources, only how to consume the products. A second part of that equation is that many of the analysts do not have the skills required to conduct target development. Weakness in the training system and the lack of effort put into the development of target analysts means that the CAF has very few people with the required job skills. The weakest link in the targeting and intelligence, surveillance and reconnaissance chain tends to be the availability of all-source analysts. That was the case in the National Intelligence Centre—only two all-source analysts were employed to develop targets, severely limiting target production.

THE COLLABORATIVE ENVIRONMENT IN TARGET DEVELOPMENT

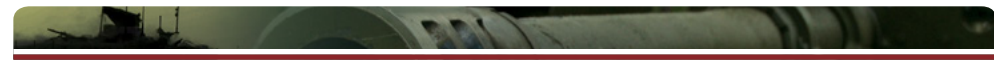
The relationship with other intelligence organizations was critical for the National Intelligence Centre to conduct target development. The target development process is a collaborative activity that spans strategic to tactical organizations. On top-secret systems, collaborative workspaces such as Jive provide an environment like Facebook for intelligence professionals. That analytical workspace allows for the sharing of ideas, products and information. Some of the key intelligence incorporated into targets the National Intelligence Centre developed came from other intelligence organizations, including American national-level intelligence organizations. Conversely, some United States Central Command targets primarily came from intelligence shared by the National Intelligence Centre in collaborative workspaces.

The National Intelligence Centre took a three phase approach to establishing a brand in the collaborate environment. The first phase of branding was the establishment of a presence with niche expertise and capabilities. During this phase, the National Intelligence Centre posted products and self-identified the areas in which they were working. That phase achieved very little but set conditions for the future by demonstrating a commitment to the combined effort, and it communicated to potential partners that the National Intelligence Centre intended to be both a producer and a consumer. The second phase was to direct the Canadian National Intelligence Centre brand toward key customers. During this phase, the National Intelligence Centre proactively identified potential partners that had indicated that they were working complimentary portfolios and pushed products that met the users' intelligence requirements. The third phase was focused on a higher level of integration by leveraging the established brand. The National Intelligence Centre, where appropriate, would disclose production priorities to achieve early integration with other intelligence organizations. That allowed some members of the community to understand intelligence priorities and provided opportunity to collaborate before final products were released. The branding process allowed the National Intelligence Centre to leverage scarce resources, exert influence to support Canadian objectives and achieve value beyond the organization's size.



Canadian Armed Forces Ammunition Technicians in Kuwait assemble 500-pound guided bombs that will be mounted on CF-188 Fighter jets flying combat missions over Iraq during Operation IMPACT.

Access to those collaborative virtual workspaces also provided access to terabytes of raw data and analyzed intelligence, including full motion video and other intelligence, surveillance and reconnaissance products. Sharing of intelligence also occurred at the tactical level through direct liaison and personal relationships. Working with the analysis and control element of the United States Army 1st Infantry Division (The Big Red One), the Marines, and the joint intelligence control element from Combined Joint Task Force – Operation INHERENT RESOLVE provided mutual benefits for all of the organizations involved. In January 2015, when Major General Paul Funk, Commander 1st Infantry Division, told his commanders and intelligence staff to support and visit the Canadian National Intelligence Centre, many more opportunities for intelligence became available. The National Intelligence Centre endorsement from Funk also had a direct impact on its branding, enhancing access to intelligence to support targeting and the National Intelligence Centre's force protection role. Similar endorsements from other general officers and key coalition staff had similar effects. The National Intelligence Centre's relationship with other Canadian government departments was also important. The Canadian Joint Operations Centre J2 staff enabled initial contact with a number of other government departments, which led to collaborative activities. Those relationships enabled the development of intelligence products and targets.



The National Intelligence Centre staff developed the Named Area of Interest Information Sheet to leverage these relationships.⁹ The Named Area of Interest Information Sheet was based on inputs from the Canadian Aurora crews and contained all of the information in a typical intelligence, surveillance and reconnaissance request, maps, imagery and detailed essential elements of information. The National Intelligence Centre posted those information sheets on websites, shared them on top-secret social media and emailed them to hundreds of organizations, including the carrier group in the Persian Gulf, with a request to collect on an opportunity basis. The National Intelligence Centre received positive feedback and intelligence based off the product. Just sending out the Named Area of Interest Information Sheets deepened the network, improved the brand and enabled additional collaboration.

INTELLIGENCE PRODUCTION

For the National Intelligence Centre, during Rotation 0, the outputs to support targeting consisted primarily of three products: intelligence preparation of the operational environment, target intelligence packages, and Named Area of Interest Information Sheets.¹⁰ All of the products are described in detail in both unclassified and classified Joint Task Force – Iraq National Intelligence Centre standard operating procedures.¹¹ The Named Area of Interest Information Sheet is a unique National Intelligence Centre product. The intelligence preparation of the operational environment products developed by the National Intelligence Centre added significant value for decision makers involved in the targeting process. Products derived from the intelligence preparation of the operational environment included written text organized in political, military, economic, social, information, infrastructure, physical environment and time (PMESII-PT) format, maps, imagery, order of battle analysis, GeoPDFs and enemy courses of action, with details on defensive positions, ISIS dispositions and key equipment.¹² These intelligence preparation of the operational environment products provided context to the targeting approach of Lieutenant General James Terry (United States Army Central Commanding General) and informed staff and decision makers at Canadian Joint Operations Command. For the staff at the coalition headquarters, the intelligence preparation of the operational environment products provided decision-makers with the information they needed to programme intelligence, surveillance and reconnaissance, and prioritize target prosecution. Brigadier General John Bansemer, the Combined Joint Task Force – Operation INHERENT RESOLVE J2, commented that the intelligence preparation of the operational environment products developed by the National Intelligence Centre were the most comprehensive studies that he had seen on Iraq since his arrival in theatre.

The results of operations in the Euphrates River Valley in mid-January 2015 demonstrate the value of the National Intelligence Centre's intelligence preparation of the operational environment products to targeting production, including effective combat engagements. As a result of a possible ISIS attack on Al-Asad Air Base, the coalition headquarters asked the Commander Joint Task Force – Iraq, Brigadier-General Constable, to direct the efforts of the National Intelligence Centre to support the Marines at Al-Asad Air Base. Over a 48-hour period, the National Intelligence Centre produced intelligence preparation of the operational environment products that detailed the most likely and most dangerous courses of action that ISIS would take in the Haditha Dam and Al-Asad Air Base area over the next seven to thirty days.



The crewmembers of a CP-140 Aurora control the mission from their workstations during Operation IMPACT in Kuwait.

Importantly, the intelligence preparation of the operational environment provided the disposition of ISIS assembly areas, fighting positions, defensive works, routes and crossing points on the river and the lake, along with a description of ISIS tactics, techniques and procedures in that area. The intelligence preparation of the operational environment provided tribal breakdowns and assessments on the amount of support that the tribes would likely provide to ISIS. To further support the offensive operations, the National Intelligence Centre provided the Marines with our intelligence preparation of the operational environment products, and members of the National Intelligence Centre briefed the aircrews for the Joint Special Operations Air Detachment missions. Collection managers at the coalition headquarters and the Combined Air Operations Center used the intelligence provided by the National Intelligence Centre to direct intelligence, surveillance and reconnaissance that cued both the Marine's A-10s and the Special Forces Specter gunships. After the attrition of ISIS forces in the area, ISIS no longer had the capability to conduct offensive operations against Iraqi troops in Haditha or against the Marines at Al-Asad Air Base. The operations, based on the National Intelligence Centre's intelligence preparation of the operational environment, spoiled the potential for an ISIS offensive. It was the opinion of the coalition headquarters that the task directed by Brigadier-General Constable provided the coalition with critical tactical intelligence and likely saved the lives of American, Australian, Danish and Iraqi forces.





Source: Combat Camera

Canadian Armed Forces members work in the Joint Task Force tents at the Canadian camp in Kuwait during Operation IMPACT.

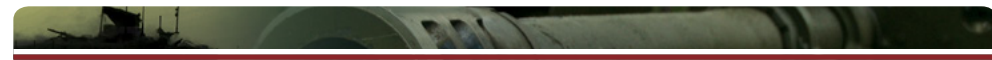
One of the foundations of the intelligence preparation of the operational environment development, and part of the reason the National Intelligence Centre enjoyed success, was the implementation of enemy modeling developed by Jon Cleaves, Dr. Donald Madill and the team at United States Army Training and Doctrine Command (TRADOC) Intelligence Support Activity – Contemporary Operating Environment Threat Integration Directorate (TRISA-CTID).¹³ The model described in TC 7-100.2 *Opposing Force Threat Tactics* provided the analysts in the National Intelligence Centre both a foundation from which to work and a lexicon to describe ISIS tactics.¹⁴ The format of the National Intelligence Centre intelligence preparation of the operational environment was also based on the model developed at TRISA-CTID. The approach provided credibility and readability of National Intelligence Centre products for the coalition headquarters. The Haditha intelligence preparation of the operational environment brief to the Combined Joint Task Force – Operation INHERENT RESOLVE staff by the National Intelligence Centre in January 2015 was the first brief by a non-American organization in General Terry's war room. At the end of the brief, the Chief of Operations made the comment that "it takes the Canadians to show us how to apply our doctrine." After that statement, he provided direction to the staff to use the intelligence supplied by the National Intelligence Centre. The overall result of detailed intelligence preparation of the operational environment products using a coherent and recognizable format led to a high level of credibility for the Joint Task Force – Iraq National Intelligence Centre, and Canada, among our coalition partners.

The targets developed by the Joint Task Force – Iraq National Intelligence Centre made a difference in the war against ISIS because they followed the operational target approach. However, most of the missions conducted in Iraq and Syria were not conducive to a deliberate targeting approach, nor did they achieve the effects desired by the operational commander. According to the *Washington Times*, between 1 January and 30 April 2015, 75% of the 7,319 sorties returned to base without dropping their ordinance.¹⁵ Of the 25% of the missions where ordinance was dropped, approximately 2% were in support of deliberate targeting. While the *Washington Times* suggested that that was because there was not enough boots on the ground, in the form of joint tactical air controllers and front line infantry to provide intelligence, they were wrong. Additional personnel investments into the fighting on the front line would have likely only resulted in more combat engagements. The real issue was the small number of analysts supporting the targeting effort in support of the achievement of operational level effects. There was plenty of collection in Iraq and Syria, just not enough trained personnel to process the information into intelligence. More targets needed to be developed by all-source intelligence centres such as the Joint Task Force – Iraq National Intelligence Centre.

The math indicates that a target analyst can produce, on average, two targets per month. Therefore, if the coalition required ten targets per day, then 150 analysts were needed. However, that number is not quite the end of it. That number is based on target analysts who are trained and productive, and who are dedicating nine hours per day, seven days per week, to production.¹⁶ If any of the production was being done through reach-back, then two to four times as many analysts might need to be required because of the hours that they are available to work. The analysts also require access to appropriate resources, such as the resources found in the National Intelligence Centre all-source capability. Currently, the Canadian Armed Forces has no reach-back resources to apply to that problem, and no facilities or all-source organizations that could do target development. The challenge was that the coalition needed more targets, and requirements for target analysts was clearly beyond the investment that anyone was willing to make. However, despite the lack of desire to make appropriate investments into intelligence organizations, the coalition is making significant investments elsewhere. Currently, the coalition invests thousands of people and millions of dollars to fly the 98% of missions that will not achieve the coalition commander's desired operational targeting effects against ISIS.

TRAINING THE TEAM

The approach to supporting targeting with target development in the Joint Task Force – Iraq National Intelligence Centre focused, first, on building the skills in the people conducting target analysis. The training consisted of a series of lectures and assigned reading on the theory of targeting. Online training was used to deliver lessons on the required software tools that support target development. On-the-job training, with supervision and mentorship, was the approach taken to master the job skills in target development processes. The programme for target development training used by the National Intelligence Centre is described in Annex T of the Joint Task Force – Iraq National Intelligence Centre standard operating procedures and is available on the Canadian Army Intelligence Regiment's Army Collaboration and Information Management System (ACIMS) page.¹⁷



ANALYTICAL APPROACH

The specific analytical methodology to support target development that was taught was based on a model described as activity-based intelligence. Chandler Atwood describes activity-based intelligence in a journal article entitled *Activity-Based Intelligence: Revolutionizing Military Intelligence Analysis*.¹⁸ In the National Intelligence Centre, analysts were assigned a specific and manageable area to work on. The production would start with a detailed intelligence preparation of the operational environment of the area and a more general intelligence preparation of the operational environment of the region. The development of the intelligence preparation of the operational environment allowed both the target analysts and the supporting single-source analysts time to understand the area and the unique characteristics of the environment. That initial development process typically takes four to eight weeks, in part to manage and redirect collection or influence other organizations to redirect collection. At the end of the process, the team will have an initial intelligence preparation of the operational environment product and will have determined information gaps for further collection. They will have verified most of the category one and two targets, nominated missing elements to the Modernized Integrated DataBase,¹⁹ and determined the ISIS laydown based on the United States Army's TRADOC opposing force model in order to focus on specifically named areas of interest and target areas of interest. The analyst would, typically, be able to track 20 to 30 quality targets.²⁰

At this point, the target analyst would be ready to start nominating candidate targets and conduct target development. The production relied on a multi-source intelligence approach that used thousands of data points to correlate relevant information to discover anomalies, patterns and links. Based on the existing intelligence preparation of the operational environment, which included an assessment of high value targets, the target analyst could then narrow down the specific locations, equipment and people that were enabling the enemy. The National Intelligence Centre production officer then directed the production based on the commander's operational targeting approach, which was derived from target systems analysis and the commander's desired effects. Specific guidance to refine the priorities came from the Officer Commanding the National Intelligence Centre. The determination of the areas for target development was just as important as the target development work. Lieutenant-Colonel Derek Adams and Major Roy van den Berg, the Joint Task Force – Iraq liaison officers at Combined Joint Task Force – Operation INHERENT RESOLVE headquarters, were critical to the process as they informed the Commander Joint Task Force – Iraq and the National Intelligence Centre on operational priorities and timelines for coalition operations. The two officers made the integration of operations and intelligence possible, ensuring the target development was relevant to the fight. Based on the inputs from the liaison officers and intelligence from the National Intelligence Centre, the Joint Task Force – Iraq Commander provided direction for where the National Intelligence Centre would focus. Later in the tour, that direction for areas of focus came directly from Lieutenant-General Jonathan Vance, Commander Canadian Joint Operations Command. Production decisions were a mix of what could be developed in the amount of time available based on the Commander Joint Task Force – Iraq direction, the campaign plan, and the importance of the target type to both the coalition headquarters and Canadian Joint Operations Command desired effects.



An Air Weapons Systems Technician and a pilot inspect a CF-18 Hornet fighter jet before the next mission at Camp Patrice Vincent during Operation IMPACT on 14 January 2015.

CONCLUSION

Target development is a critical and difficult part of the targeting process. To be a credible contributor to joint targeting, the Canadian Armed Forces will need to make a significant investment in people with targeting skills. As a member of the Five Eyes community, the Canadian Armed Forces should not underestimate its potential to both lead and contribute to the intelligence function to support targeting. Canadian intelligence contributions have the potential for a significant impact on relations with our allies and partners. The Joint Task Force – Iraq National Intelligence Centre demonstrated that Canada could effectively contribute in an area where our allies were looking for support. The intelligence preparation of the operational environment products and target intelligence packages from the National Intelligence Centre were of a higher quality than products coming from organizations with significantly more resources. That seems to be the usual Canadian way to fight a war, but if the Canadian Armed Forces is to make an investment into joint targeting, that investment should include the most difficult and onerous part of targeting—target development. 🍁

ABOUT THE AUTHOR...

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ENDNOTES

1. Thomas J. Murphy and Bernd L. Ingram, "Joint Targeting Doctrine," *Field Artillery*, No. 5 (September 2001): 38.
2. Canadian Joint Operations Command, *Operation IMPACT – Air Task Force – Iraq Airstrikes*, 11 November 2015. Retrieved from National Defence and the Canadian Armed Forces: <http://www.forces.gc.ca/en/operations-abroad-current/op-impact-airstrikes.page>.
3. Chief of Defence Staff, *Canadian Forces Joint Publication 3-9 Targeting* (Ottawa: Joint Doctrine Branch Canadian Forces Warfare Centre, 2014).
4. Intelligence preparation of the operational environment (also referred to as "intelligence preparation of the battlefield/battlespace") is a four-step process used by intelligence professions to support the operational planning process. Analytical outputs from the process reduce uncertainty concerning the enemy, terrain and weather for all types of operations.
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6. M. Flynn, R. Juergens & T. Cantrell, "Employing Intelligence, Surveillance and Reconnaissance. SOF Best Practices," *Joint Force Quarterly*, 50 (3rd quarter) (2006): 56–61.
7. Ibid.
8. D. Holtz, *The Role of Intelligence Centers in Military Dominance* (Maryland: American Military University, 2015).
9. Joint Task Force – Iraq National Intelligence Centre, *Standard Operating Procedures National Intelligence Centre Joint Task Force – Iraq Operation Impact* (Ali Al Salam AB: Department of National Defence, 2015).
10. Ibid.
11. Ibid.
12. PEMSII-PT. An acronym to describe the elements of the environment —Political, Economic, Military, Social, Information, Infrastructure, Physical Environment, Time. The use of the PEMSII-PT format is prescribed in ABCA Publication 379, *Intelligence Fusion Center Standard Operating Procedures*. PEMSII-PT is also prescribed in Canadian Army Doctrine, *Land Operations*. In *Land Operations*, the "military" is replaced with "threats" and "hazards." While all of the environmental elements are described in *Land Operations*, the PEMSII-PT acronym is not used.
13. TRISA-CTID TRADOC. TRISA: TRADOC G2 Intelligence Support Activity. CTID: Contemporary Operating Environment Threat Integration Directorate. TRADOC: United States Army Training and Doctrine Command. CTID, headed by Jon Cleaves, is a G2 training organization for the United States Army Training Command. CTID is responsible for documents such as the Decisive Action Training Environment (DATE), Threat Tactics to support training models and the World Wide Equipment Guide (WEG). The threat tactics model developed by CTID is based off studies of countries and organizations that the United States Army could likely encounter on future operations. The data that makes up the threat model is unclassified to top secret, but it has been put together in a releasable format. This model, Opposing Force Tactics, is about a 60% solution for how ISIS is currently conducting operations. The Joint Task Force – Iraq National Intelligence Centre applied the model to the areas being studied to cue collection and confirm dispositions and layout of enemy positions and tactics.
14. Contemporary Operational Environment and Threat Integration Directorate, *Training Circular No. 7-100.2 Opposing Force Tactics* (Washington, DC: Headquarters Department of the Army, 2011).
15. J. Kilmas, "United States Bombers Hold Fire on Islamic State Targets Amid Ground Intel Blackout," *Washington Times*, 31 May 2015.
16. Nine hours of dedicated target development production is based on an average of 82 hours of work per week. In an analyst's typical work day of 13 to 14 hours, 9 hours are usually dedicated to target development. The other three to four hours per day are used for eating, physical exercise, training and other intelligence work such as staying current on ISIS TTP and attending meetings and work groups.
17. Joint Task Force – Iraq National Intelligence Centre, *Standard Operating Procedures National Intelligence Centre Joint Task Force – Iraq Operation Impact* (Ali Al Salam AB: Department of National Defence, 2015).
18. C. P. Atwood, "Activity-Based Intelligence: Revolutionizing Military Intelligence Analysis," *Joint Force Quarterly* (77) (April 2015): 24–33.
19. MIDB. Modernized Integrated Database is a worldwide general military intelligence database. MIDB order-of-battle data contains all valid textual and graphical information about enemy sites, facilities and units.
20. Chairman of the Joint Chiefs of Staff, *Chairman of the Joint Chiefs of Staff Instruction 3160.01 No-Strike and the Collateral Damage Estimation Methodology* (Washington, DC: Joint Chiefs of Staff, 2009).

Armaments await to be loaded for the next Air Task Force-Iraq (ATF-I) CF-18 Hornet mission during Operation IMPACT.



Source: Combat Camera



Source: Combat Camera

THE RE-TRANSFORMATION OF THE ARMoured CORPS

Lieutenant-Colonel Phillip J. Halton, CD

The ability to live, train and fight as part of a Combined Arms Team (Level 5 training) effectively separates professional armies from all others. It is the foundation upon which the Army's ability to force generate is built. This training is the Army's "vital ground."

—*Advancing with Purpose: The Army Strategy, 3rd Edition, 2014*¹

INTRODUCTION

The Royal Canadian Armoured Corps (hereafter, simply the "Armoured Corps") is suffering from an identity crisis brought on by a number of factors, many of which are under its own control. The death of the tank as a viable tool of war has been prophesied many times, but has yet to come true. Eventually, the tank will be surpassed by new weapon systems that do a better job of combining direct firepower, protection and mobility in a single package, but such a system does not yet exist. Regardless of what platform is or will be used to achieve that synergy, the Armoured Corps must be at the forefront of its employment. Beyond the employment of the tank, the Armoured Corps must stay true to its core competency.

The Armoured Corps has suffered from cyclical periods of neglect and mismanagement since its inception, despite having been a necessary component in every conflict in which the Canadian Army has been involved since the First World War. The current state of the Armoured Corps has been reached after more than a decade of Army-wide transformation efforts that were simultaneously ambitious and forward-looking as well as unfunded, impractical and out of touch with the current capabilities and operations of the day. One of the major results of those initiatives is that, today, the Armoured Corps, both in the Regular Force and Reserve Force, is overwhelmingly composed of reconnaissance squadrons in the medium role that have few mechanized formations to serve, as is their doctrinal purpose. Incredibly, most of the Armoured Corps' personnel have neither formal training nor experience with the offensive employment of armoured vehicles.



Source: Combat Camera

That gives it limited ability to lay claim to being the Canadian Army's centre of excellence for mounted or armoured warfare. A lack of a viable Armoured Corps also means that the Canadian Army, by its own definition quoted above, is no longer a professional army. By failing to remain the masters of mounted warfare and a key part of the combined arms team, the Armoured Corps has become largely irrelevant to the Canadian Army. To its credit, the Armoured Corps has worked hard to stay relevant throughout this period, embracing existential change with a positive spirit and considerable loyalty to the institution. However, as soon as the Armoured Corps was no longer centred on a direct-fire-focused force, which uniquely combines mobility, protection and firepower, it had lost its way.

This article argues that the Armoured Corps as a whole is poorly prepared to fight as the master of mounted warfare in the contemporary operating environment. It will briefly review the history of the Armoured Corps, what its core competency should be, the ill effects of Canadian Army transformation and the current state of the Corps. It will then argue that both structure and equipment need to be reconsidered, and it will suggest some immediate corrective steps that can be taken.

HISTORY REPEATS ITSELF

While this article does not intend to use a nostalgic recounting of history to justify the current need for the transformation of the Armoured Corps, it is important to understand the cyclical nature of the Army's perceived need for armoured forces. The current state of the Armoured Corps must be seen in this context, as it is not dissimilar to the state in which it has found itself several times in its short history.

For a very brief moment at the inception of mechanized warfare, Canada was at its forefront. The organization of the Canadian Independent Force in 1918, based on the Canadian Motor Machine Gun Brigades, marked the creation of the first independent, wholly mechanized military formation that the world had seen. It proved its worth during the fluid battles of the Hundred Days Offensive but was disbanded at the end of hostilities.² That was the first of two times that the Canadian Army was a leader in mechanized warfare and then relinquished the position for fiscal reasons and perhaps a lack of imagination and foresight.

A Canadian Tank Corps was created days after the Armistice, but neither the armoured units within it nor the Tank Corps itself had the political backing to survive the reorganization of the Army by the Otter Committee in 1919. The Permanent Force Machine Gun Brigade, successor to the units of the Independent Force, was similarly disbanded in 1921, while the Army retained 34 horse-mounted cavalry regiments, Regular Force and Reserve Force, including six still armed with sword and lance.³ It was not until 1938 that the first tank training course was run by the Canadian Army. The first three serials were taught without any armoured vehicles present, as it was only by the fourth that the Canadian Armoured Fighting Vehicle School had received two Vickers Mk VIB 'tankettes'.⁴ From that humble beginning, the Canadian Army built an impressive armoured force to prosecute the Second World War.

During the Second World War, the Canadian Army again found itself at the forefront of mechanized warfare, this time through the ad-hoc creation of armoured personnel carriers from the hulls of Priest self-propelled guns and Ram training tanks.⁵ Despite the operational success of those armoured personnel carriers, the Canadian Army wrote them off as a wartime expedient, unworthy of continuation, and the post-war infantry establishment placed its doctrinal focus on the light role.⁶ This was the second time that Canada found itself at the forefront of mechanized warfare, though once again it failed to perpetuate its success. Canada has never again been a leader, in thought or in fact, in mechanized warfare.

From a height of thirty-two armoured regiments in service in the Second World War, the Armoured Corps again suffered from post-war neglect. With the bulk of its vehicles left behind in Europe, replacements were not provided for training in Canada until 1947.⁷ The tank squadron sent to Korea in 1951 was deployed to theatre without vehicles, expecting to be equipped with Centurions from the British Army. When those proved to be in short supply, they scrounged surplus Shermans from the United States Marine Corps instead.⁸ Modern tanks, in the form of Centurions, were purchased by the Canadian Army in 1952, though in fewer numbers than the existing fleet of Shermans.⁹ By 1964, it was clear that a replacement for the Centurion was needed, as the fleet would be obsolete by 1971. Joint research with the United States into the MBT-70 prototype was ceased as a result of budget cuts, and in 1967 negotiations to purchase the Leopard tank were ended for the same reasons. With Regular Force units struggling to keep the Centurion fleet running, and the decision in 1967 to withdraw the Sherman from service in Reserve units, the Armoured Corps was faced with a bleak, tankless future.¹⁰



In the early 1970s, without broad public support for the Canadian Armed Forces, the likelihood of there being a Centurion replacement seemed low. The 1971 White Paper, *Defence in the 1970s*, stated that “[t]he Centurion medium tank will be retired, since this vehicle is not compatible with Canada-based forces and does not possess adequate [strategic] mobility. In its place, a light, tracked, direct-fire support vehicle will be acquired...” In response, all of the armoured regiments in the Canadian Army, less the one deployed in Germany, were converted to the light armour role, though they received neither new equipment nor doctrine.¹¹ The last of the Shermans was withdrawn from Reserve Force service in 1972, and all Reserve Force armoured units were re-designated as reconnaissance units and equipped with jeeps. The Armoured Corps, as a whole, struggled throughout this period until the decision in 1977 to purchase 144 Leopard I tanks (as the German Army prepared to field the Leopard II), as well as the Cougar (armoured vehicle general purpose) for both Regular Force and Reserve Force units, reversing their conversion to reconnaissance ordered five years earlier. Despite discussion of a modern tank replacement in 1987 following the Mulroney government’s White Paper, *Challenge and Commitment*, the Leopard tank and Cougar were the vehicles with which the Armoured Corps was still equipped at the turn of the 20th century.¹²

As its history shows, the Armoured Corps is no stranger to cycles of feast and famine, nor to regenerating itself to face operational challenges. It is doubtful, however, that anyone in 1977 would have believed that the Cougar tank trainer would deploy on operations to Yugoslavia and Somalia in the 1990s, and the Leopard tank to Afghanistan in 2006.¹³ There are many fiscal and cultural reasons for those cycles that no doubt loomed large in their day but that, with hindsight, appear foolish or nearsighted. The major lesson to be drawn from that history is not that the Canadian Army should retain the tank. It is that the Armoured Corps must itself maintain a constant focus on its core competency, which remains a key part of modern military doctrine, and must not be swayed by the cyclical noise of changing platform availability, which can be all-pervasive.

WHAT IS THE CORE COMPETENCY OF THE ARMoured CORPS?

Inside the Delphic Temple of Apollo was inscribed the well-known maxim, “Know thyself.” That applies well to the Armoured Corps, which has lost sight of its core competency and therefore of its sense of self.

The Armoured Corps does not have an official core competency or vital ground, though either the maintenance of crew skills or crew commanding skills is regularly described as such. In either case, it is sophistry to conceal the fact that the loss of the tank as the primary platform of the Armoured Corps—and, with it, the accompanying role—was a near deathblow to the organization. Either crew skills or crew commanding could easily be restated as generic small group teamwork and, as such, would be just as vital to the artillery or mechanized infantry or to any number of other specialized groups who operate in small teams. To consider those things as the Armoured Corps’ vital ground confuses the means with the ends. The Armoured Corps’ key function on the battlefield is the delivery of rapid and overwhelming destruction—or, to twist the commonly used phrase, the application of “violence at speed.”¹⁴

The Armoured Corps does that through its core competency: the application of direct fire from a platform that uniquely combines firepower, mobility and protection. The best current means to achieve that is through the use of the tank, but the core competency of the Armoured Corps is not platform-specific; the Armoured Corps is not the Tank Corps. When a new direct-fire platform emerges whose capabilities compare to tanks in the same way that the capability of tanks compared to horsed cavalry, the Armoured Corps will have to change. Its core competency, however, will remain the same.

There are those who might argue that the Armoured Corps should abandon the tank platform and instead focus entirely on future technologies and capabilities. That is a doctrine of false hope. Given the struggle experienced by the Armoured Corps to maintain even a baseline direct-fire capability using mature and therefore affordable technology, it seems far-fetched to suggest that greater success would be had by focusing exclusively on the development and acquisition of future, mounted, direct-fire capabilities that do not yet exist. In order to stay true to its core competency and be a worthy partner in the combined arms team, the Armoured Corps must deploy the weapon systems available today that allow it to fulfil its core purpose.

The Canadian Army describes itself as a “medium weight force, reinforced with armour capabilities...” and its core competency as “the ability to engage and win in close combat across the full spectrum of operations.”¹⁵ In order for the Canadian Army to achieve that vision of itself, it must have an Armoured Corps that is itself competent. The current state of the Corps is such that it directly undermines the core competencies of the Army that it purports to serve.

THE FALSE PROMISES OF TRANSFORMATION

The Leopard tank, while a very capable system...is less relevant for what we do now than previously. The strong qualities of a Leopard parked in Valcartier or Edmonton are useless to the soldiers in Kabul, Eritrea, Bosnia or anywhere else we need direct fire. In some cases, we can’t get it there since it is too heavy for the C-130 to lift, in other places (such as the streets of Kabul), it cannot manoeuvre and in other situations (e.g. on peace support operations), it would be de-stabilizing to deploy or employ it.

—Lieutenant-General Hillier, *Chief of Land Staff*, 2003.¹⁶

The idea of transforming the military through technology into a force capable of being “overwhelmingly successful, no matter the mission given it, while reducing the risk to those soldiers actually executing the operation,” as described by Lieutenant-General Rick Hillier, is an intoxicating one.¹⁷ The idea suggests that all organizational ailments can be cured, and all obstacles overcome, if only the right transformation can be conjured up. The Army as a whole, and the Armoured Corps in particular, smarting from decades of neglect, were led astray by those senior officers who promised wondrous results through a dramatic leap forward in how the Canadian Army would fight, which was ultimately beyond their ability to deliver.



Source: Combat Camera

The concept of Army transformation during the last two decades is rooted in the long-held ideal that, in a post-Cold War environment, there needed to be a shift to lighter, information-enabled, strategically mobile forces.¹⁸ Similar ideas had been proposed for many years as a means of extricating the Canadian Army from its commitment to NATO's central front; however, no viable light force was ever developed.¹⁹ The modern iteration of that ideal was developed through successive Canadian Army plans, resulting in the decision to purchase the wheeled mobile gun system to replace the tank as well as in the decision to convert Cougar-equipped sub-units in the Regular Force and Reserve Force to the reconnaissance role with Coyotes and G-Wagons respectively.²⁰ The Army of Tomorrow was seen as a force whose 'sense' function was considerably larger than its 'act' function and so would be more precise, nimble and capable. Tanks, by comparison, were seen as blunt instruments of the past, unnecessary in future warfare. Adequate fires would be provided by vehicles and systems that either the Canadian Army did not yet possess (and had no real plans to acquire) or that did not yet exist outside of the imaginations of the force development writers.

Concurrent to this process of transformation, however, there were clear signs that the planned changes did not align with reality. While the Army decried the need for tanks given the new world order, it deployed them in peace support operations in Kosovo.²¹ While the Army planned the replacement of tanks with a wheeled gun system, the 1997 *Quarré de fer* field trial of wheeled guns systems demonstrated their significant limitations.²²

At the same time that the purchase of the lightly-armoured mobile gun system was announced, improvised explosive devices and mine strikes in Afghanistan were prompting calls for the deployment of better armoured vehicles. The year after the Cougar 'tank' squadrons in all Regular Force and Reserve Force armoured regiments were converted to the reconnaissance role, the need for greater firepower and protection in operations in Afghanistan caused the cancellation of the mobile gun system and the deployment of a squadron of tanks.²³ Regardless of the planned effects of transformation, there continued to be only one field-ready and effective direct-fire system that combined mobility, firepower and protection in balanced proportions—the tank.

Part of the allure of transformation, as it was espoused by its advocates, was that it aligned with how the United States Army professed to be preparing to fight in the future. Regardless of the obvious differences between the American and Canadian militaries—in terms of size, purpose, budget, research and development, and virtually any other metric that can be thought of—transformation was seen as a way of catapulting the neglected Canadian Army into the future. The great irony in that is that the United States Army has become significantly less enamoured with the idea of medium-weight forces than the Canadian Army continues to be. The mixed operational record of medium-weight forces in Iraq, specifically the United States Army Stryker Brigade Combat Teams, has been quite telling.²⁴ The formations have not proven their worth, so much so that the requirement for heavy forces has been called into question, as has been done in Canada.



Source: Combat Camera

Members of the Royal Canadian Dragoons work in muddy conditions with a Coyote light armoured vehicle.

In fact, it has been noted that the strategic utility of easily transportable, medium-weight forces is significantly greater than their tactical utility once deployed. In other words, while they are easier to get into theatre, they are not very useful once they get there. It is not clear that the United States Army will retain Stryker Brigade Combat Teams for the future, even though they are only considered a niche capability within their overall force structure. The idea that the Canadian Army as a whole should transform to fit within that niche and still be considered an effective operational force is clearly a questionable proposition.

The oft repeated mantra that the Canadian Army could (and should) transform effectively into an entirely wheeled, air-portable, information-enabled, medium-weight force is flawed. The contemporary operating environment has not cooperated by providing the medium threat environments suited for such a force. Information dominance has not yet proven to be a panacea that can substitute for mobility, protection or firepower. The Canadian Army's plans for transformation were superseded by the operational requirements of the war in Afghanistan, which revealed the essentially hollow nature of the utility of an exclusively medium-weight force, even in a counter-insurgency environment.

As has been stated earlier, the tank will likely not represent the future of the Armoured Corps, but it does represent the present. There is no system currently fielded that replaces the ability of the tank to deliver direct fire from a platform balancing firepower, mobility and protection. While it is undoubtedly important for the Canadian Army to continue envisioning the future force, it is equally important that the Canadian Army face reality. We are not currently funded to leap over a generation of technology to field (or even trial) whatever systems will come next. Concurrent to envisioning the future, the Armoured Corps must maintain the mindset and doctrinally required skills and knowledge to execute its core competency in the future through the use of existing, available systems.

THE CANADIAN ARMY'S VIEW OF THE FUTURE SECURITY ENVIRONMENT

The process of transformation must aim to shape the Canadian Army to remain relevant and capable of succeeding in future conflicts. To achieve that, forecasting must occur to divine what the future security environment may look like as the foundation for forecasting what the Army must look like.

The Canadian Army's most recently published description of the future security environment is in the 3rd edition of *Advancing with Purpose*, which identifies Russia and unnamed powers in the Asia-Pacific region as actors benefiting from, and driving, a global shift in the balance of power away from Europe. In relation to those state actors, and potential adversaries, it also states that "in the future, Canada and its allies could face adversaries with increasingly sophisticated military capabilities that may, in some cases, rival our own."²⁵ That assessment is perhaps even overly optimistic; it is more likely that the Canadian military could be at a disadvantage against future opponents who will field superior weapons.

Based on that view of the future, and in the absence of a decision that the Canadian Army will attempt to fight peer or superior adversaries asymmetrically, there should be no conventional weapon system that is part of modern combined arms battle that is deliberately excluded from the Canadian arsenal. While this paper looks specifically at the issues facing the Armoured Corps, a quick consideration of the Canadian Army's ability to prosecute modern warfare, simply in terms of weapons systems, identifies a number of key gaps, such as a lack of capability in air defence, close air support, attack aviation, and chemical, biological, nuclear and radiological defence. The Canadian Army is failing to adequately prepare for the future that it itself has envisioned.

THE RELATIONSHIP BETWEEN DOCTRINE, STRUCTURE, AND PLATFORMS

The Canadian Army publication *Designing Canada's Army of Tomorrow* takes great pains to describe the process by which concept development, capability design and doctrine drive structure and equipment requirements.²⁶ Despite that publication, the Canadian Army has recently done the opposite in regards to the Armoured Corps; it allowed platform availability to cause the Corps to abandon its core competency. As an example, the introduction of the Cougar in 1977 did not cause an existential crisis among the tank units equipped with it; it was seen as merely a platform and did not change the organization of the receiving units or change their perception of themselves as tankers.

The most recent decision to remove the tank as a platform within the Armoured Corps, however, has caused the doctrine-structure-platform process to cycle in reverse, much as occurred between 1972 and 1977. The decision to convert the vast majority of the Armoured Corps to the reconnaissance role, as well as to make reconnaissance operations the baseline skill set for trades training within the Corps, was driven primarily by the availability of platforms. No doctrine, workable or otherwise, was developed for a nearly unilaterally reconnaissance-focused Armoured Corps to drive that change. Plans for a 'sense-focused' force that could employ that number of reconnaissance platforms did not develop past the point of PowerPoint slides and promotional pamphlets. The Armoured Corps has become so

confused about its role that even the reintroduction of tanks to its fleet in 2007 has not caused it to rethink its overwhelming focus on reconnaissance. It is seemingly locked into its current state, unable to see that the employment of a direct-fire vehicle balancing firepower, mobility and protection, embodied today in the tank, must be central to the thinking of an Armoured Corps worthy of the name.

WHO ARE THE EXPERTS ON ARMoured WARFARE?

The impact of the current state of the Armoured Corps on the overall readiness and training of the remainder of the Canadian Army can only be described as negative. The Armoured Corps has failed the rest of the Army by not living up to its name as the undisputed expert in heavy mechanized warfare. That state of affairs stems from the loss of focus on the balanced application of direct firepower, mobility and protection. While not every soldier and officer within the Armoured Corps will necessarily serve in tanks, a fundamental understanding of the employment of armour must be the basis of training for every member of the Armoured Corps, both in the Regular Force and the Reserve Force.

It is hard to comprehend that, at the same time as the Armoured Corps was planning to remove tanks from its arsenal entirely, the infantry were writing in their *LAV Company Tactics* manual that “attacking with tanks is the rule.”²⁷ There should be no need at this point in history to argue for the efficacy of fighting in a combined arms team. But with the limited number of tanks and tank-organized forces available, the Canadian Army as a whole is unable to effectively train as a combined arms force, much less fight as one.

The Armoured Corps’ ability to fight as a primarily reconnaissance force should also be called into question, as it seems to have forgotten the notion that, particularly against a peer or near-peer enemy, tanks are a necessary part of a reconnaissance force. Like the hard-earned but forgotten knowledge of the employment of armoured personnel carriers gained during the Second World War, lessons on the composition of effective reconnaissance forces have been lost. The South Alberta Regiment, employed as the Divisional Reconnaissance Regiment for 4th Canadian Armoured Division during the war, was composed of two troops of armoured cars and three *squadrons* of tanks. That structure was adopted after armoured car heavy regiments were found to be ineffective in the reconnaissance role.²⁸ One wonders when that lesson will have to be learned again.

Even if it is assumed that there would be an influx of tanks to equip the Army when needed, years of valuable combined arms training opportunities and experience are being lost as a result of the imbalance of tank and infantry forces. That is particularly marked in the Reserve Force, which has no tank-trained, organized or equipped forces at all, resulting in generations of soldiers being trained in the context of single-arm actions. A minority of the Regular Force, and no Reserve Force soldier or officer, currently receives any formal training in the employment of tanks that is delivered by the Armoured Corps. Ironically, it is only through *common* army courses such as the Army Tactical Operations Course or the Army Operations Course that most receive their formal training in tank tactics.

Despite the absence of formal training in the employment of tanks, armoured officers and soldiers are regularly called upon in training to represent the tank point of view. The lack of formal education provided by the Corps to all its members on the employment of tanks does not serve the individual, their classmates from other arms, the Corps or the Army very well. It is important to underline as well that rectifying that gap in training does not require the acquisition of additional tanks but merely a refocus of the training, regardless of the actual platform used.

LEFT BEHIND: THE ARMoured RESERVES

The armoured units of the Reserve Force today are largely irrelevant to the Regular Force units of the Armoured Corps as well as to the remainder of the Reserve Force. The Army Reserve is based primarily around a core of dismounted infantry and is focused on the force generation of the nebulously defined Domestic Response Companies and Territorial Battalion Groups. Territorial Battalion Groups, composed primarily of dismounted infantry companies, have little use for a mounted, medium reconnaissance organization. In terms of their ‘sense’ needs, they are much better served by a doctrinally organized infantry reconnaissance platoon. Recognizing that disconnect, Reserve Force armoured reconnaissance units must either struggle to provide close reconnaissance services to the infantry, which they are neither trained nor equipped to provide, or face exclusion from collective training events as they do not fit into the exercise construct. Neither solution is suitable for the long term.

Recent deployments have shown that the Regular Force needs significant augmentation from the Reserve Force during sustained operations. Despite that, Reserve Force armoured reconnaissance regiments largely deploy their soldiers out of trade. The ability of the Reserve Force to force generate in support of a deployed tank squadron is limited to individual crewmen who require driver or gunnery training on the tank platform but who, more importantly, have no formal education or experience in the conduct or training of tank warfare. That second gap is much more significant and more difficult to bridge than the technical gap in the use of a specific platform. While the Reserves can provide limited numbers of those individual augmentees to fill holes in an organization, the lack of overall understanding of the employment of tanks prevents augmentation by formed bodies or in large numbers without considerable lead time for re-training, if at all.

The ability to generate forces in support of a deployed reconnaissance squadron is equally limited. Platform-specific driver or gunnery training is again required, as is retraining in the application of reconnaissance doctrine and tactics as employed with that particular platform. One might expect that, given a common doctrine and role, Regular Force and Reserve Force armoured reconnaissance soldiers would be largely interchangeable. That is not the case, as the employment of the Coyote as a primarily surveillance vehicle differs greatly from the employment of the Reserve Force’s Iltis or G-Wagon. The Reserve Force armoured reconnaissance regiment’s bread and butter skill of dismounted observation posts is practically quaint, particularly given the Army’s stated focus on development of modern command, control, communications, computer, intelligence, surveillance and reconnaissance as the near-term goal of *Waypoint 2018*, and does not translate well to modern warfare or a modern surveillance platform.²⁹



The true gap between Regular Force and Reserve Force armoured (reconnaissance) soldiers and officers is not due to differing platforms and so that gap will not be narrowed through the introduction of a common platform (the tactical armoured patrol vehicle). The lack of common and applicable doctrine, tactics and training is the issue, and it can only be solved through employment in common roles, be it as armoured forces (regardless of platform) or as surveillance-focused reconnaissance forces (again, without regard to platform).

CONCLUSIONS

Despite the dire situation depicted above, it is clear that the Armoured Corps can take great strides to fix the problems itself, at little risk or cost. Most importantly, it does not need the permission of the Army to take the necessary steps to regain relevance and effectiveness.

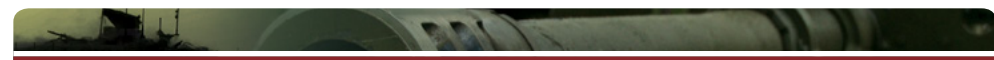
The Armoured Corps must do the following:

- Make the employment of tank tactics the basis for all Regular Force and Reserve Force armoured career courses, regardless of the platforms used, with reconnaissance taught as additional subject matter.
- Rebalance itself, considering both Regular Force and Reserve Force armoured units, into the right number of tank and reconnaissance sub-units to support meaningful combined arms training across the Regular and Reserve Army.
- Refrain from designating Reserve Force regiments as entirely tank or reconnaissance units. Include both types of sub-units in all regiments, with multiple mission elements.
- Change the occupation identifiers for Reserve Force armoured soldiers and officers from armoured reconnaissance back to armoured, which must be understood to include both tank and reconnaissance employment.
- Accept that the latest vehicle acquired to equip Reserve Force armoured units, the tactical armoured patrol vehicle, is functional as both a tank trainer and recce trainer vehicle.

- Make maximum use of simulation, fleet management and local creativity to overcome the lack of platforms currently available for training in order to rebuild the professional basis of knowledge in tank warfare within the Armoured Corps.
- Advocate as a Corps for the maintenance of a Reserve Force capability that easily and directly supports the Regular Force Army's force generation of both capabilities.
- Drive discussion within the Canadian Armed Forces regarding future doctrine, tactics and platforms for combined arms forces, establishing the Armoured Corps as the experts in this field.

Military doctrine, at its foundation, is a predominantly cultural construct. Part of the reason that a 'sense-focused' approach to operations has not developed beyond inclusion in future force documents is perhaps that it is unsuited to Canadian military culture. Writings aside, our military has demonstrated through actual operations that it is more comfortable with centrally controlled, command-push methods than the reconnaissance-pull approach that would be natural for a 'sense-driven' force. If that is the Canadian way of war, it requires the balanced aspects of direct fire, mobility and protection—currently embodied in the tank—to be prosecuted effectively.

It almost beggars belief that it took a counter-insurgency environment for the Canadian Army to decide to reverse its decision to discard modern battle tanks from its inventory. While transformation was meant to make the Canadian Army more relevant, the results of its abortive efforts have left the Armoured Corps in a situation where it must re-transform itself in order to become relevant again. A ten-to-one balance of reconnaissance-to-tank squadrons within the Army, both in the Regular Force and Reserve Force, is clearly no balance at all. While equipment issues must be a considerable factor in any major transformation, the availability of this or that platform cannot dictate the structure and function of the Armoured Corps. The lack of tanks in the Armoured Corps cannot be allowed to dictate its function.



There are many different ways that the Armoured Corps could choose to revitalize itself, but the overall solution must be one that entitles it to be the undisputed centre of excellence for mounted warfare, across the threat spectrum, and a worthy partner to the infantry in the combined arms team. The points outlined above are within the realm of the possible if there are leaders willing to make it so. The first steps that must be taken are a change of mindset and focus, and while those do not require equipment, funding or permission to enact, they may be the greatest hurdles that the Armoured Corps faces as it struggles to regain relevance. 🍂

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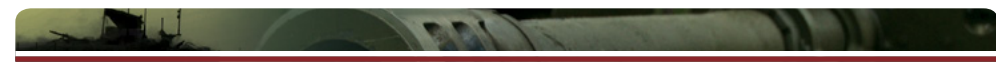
FIRST PRINCIPLES AND THE GENERATION OF ARMoured FIGHTING POWER

Captain Mathew McInnes, CD

INTRODUCTION

Although at the time of writing there is an ongoing defence review, the mandate that the Canadian Armed Forces “must remain general purpose and combat capable” with a core focus on combat readiness is unlikely to change from the current *Canada First Defence Strategy* in any forthcoming White Paper.¹ In fact, it has been widely noted that “every serious examination of Canadian defence policy—in 1964, 1971, 1987, 1994, 2005 and 2008—has concluded that our defence roles, which have remained virtually unchanged over the years, can only be met through the retention of a full range of combat capable forces.”² This is further supported by the fact that Parliament has continuously reinforced this mandate, having “unanimously concluded that our best interests are served by the maintenance of a readily deployable, balanced, multi-purpose combat capable force,”³ and that “it is essential to have a multi-purpose force that is trained and equipped to fight through the full spectrum of combat.”⁴ All of this, coupled with the fact that “every Canadian prime minister from Brian Mulroney to Justin Trudeau has, over a period stretching 26 years and counting, committed Canadian troops to combat operations,” leaves little doubt that combat readiness is the Canadian military’s chief priority.⁵ This, then, is the core mandate of Canada’s military, with the Chief of the Defence Staff stating in no uncertain terms that “operational credibility is our centre of gravity as an institution.”⁶

More specifically, in terms of land operations and how they support this core mandate, the “core competency of the Canadian Army is the ability to engage and win in close combat across the full spectrum of operations”; as a result, the combat team “is the Army’s ‘vital ground.’”⁷ For this reason, the Army is clear that its “*raison d’être* is the primary function of conducting combat or warfighting” and that therefore “training for war—the worst case—must always be the Canadian Army’s primary focus.”⁸ As the combat team and the battle group are the Army’s “source of greatest combat power,”⁹ the role of the Canadian Army’s only two *combat elements* (commonly known as manoeuvre arms), armour and infantry,¹⁰ are clearly central to the achievement of the Canadian Armed Forces’ core mandate.



As we will see, significant changes have taken place over the past several years within the armoured occupation. There has been a marked departure from the Corps' fighting doctrine, and thus a fundamental shift in the way armour is employed today. These changes have stemmed from a combination of pragmatic policy decisions in the face of everyday challenges, and changes based on concepts relating to the "revolution of military affairs" which have "proven problematic and elusive."¹¹ Additionally, the fact that equipment acquisition has been allowed to drive doctrine, rather than the reverse, has only exacerbated the process of institutional drift away from well-entrenched and combat-proven *first principles*. As a result, the majority of these alterations have not been underpinned by any holistic or rigorous doctrinal analysis with the aim of generating the maximum amount of fighting power. On the contrary, the assumptions underlying many of these deviations have been proven false, with the result that "the Army [has] lost significant elements of its fighting power and its ability to conduct operations."¹²

This paper will explore the foundations of armour and the important role of hard-won first principles in generating armoured fighting power. We will start by providing a brief historical overview of the evolution of armour in Canada, including its fundamental role within the full spectrum of operations, followed by an exploration of certain foundational principles and the situation of armour today. This will set the stage for a wider discussion of armoured tasks such as reconnaissance, and how armoured fighting power itself is generated. As a result, this paper will illustrate how armour, as one of the Canadian Army's two combat elements, generates fighting power, and the importance of enduring first principles in supporting the core mandate of the Canadian Armed Forces in the past, present and future.

THE BEGINNING, DOCTRINAL LINEAGES, AND THE EVOLUTION OF ARMOUR

The tank battalions created during the First World War, before the advent of modern armoured warfare, were equipped with heavy infantry tanks, such as the Mark IV, whose role was purely that of infantry close support, characterized by heavily armoured and relatively slow-moving tanks. Consequently, the tank battalions did not supplant the cavalry regiments; instead, the two continued to coexist within their respective roles.¹³ The cavalry regiments were mechanized in 1939 and came to be known as armoured or mechanized cavalry regiments.¹⁴ These units were equipped with cavalry (also known as Cruiser or medium) tanks and continued to be employed in the classic cavalry role, characterized by tasks such as penetrations, raids, counterattacks, and combat reconnaissance based on their inherent speed, mobility and shock action, although they were now mounted on armoured fighting vehicles rather than horses. Shortly thereafter, these regiments became known as armoured regiments or, at the armoured divisional level, as armoured reconnaissance regiments (both possessing the same basic organization and equipment).

Shortly after the beginning of the Second World War, the Tank Corps and the Cavalry Corps were amalgamated to form the new Armoured Corps. However, the tank role of infantry close support continued to be filled by the tank regiments, while the cavalry role remained with the armoured (formerly armoured cavalry) regiments.¹⁵ Tank units were still equipped with heavy infantry tanks and the armoured units with medium cruiser or cavalry tanks. As neither was designed nor equipped for tank-versus-tank combat, the anti-tank role was carried out



A patrol from the 3rd Canadian Armoured Reconnaissance Regiment, Arnhem, April 1945

by the anti-tank regiments within the Artillery Corps.¹⁶ Formation armoured and mounted reconnaissance units were held at the division level within both armoured and infantry divisions (armoured reconnaissance regiments equipped with tanks and infantry divisional reconnaissance battalions with armoured cars, respectively). Squadrons and companies from these units could be attached from the division to individual brigades as required.

From 1941 to 1945, the Armoured Corps was given responsibility for many roles previously assigned to the other Corps. The anti-tank role was taken over from the artillery anti-tank regiments, and consequently the armoured regiments were equipped with larger main guns and ammunition types capable of penetrating enemy armour, such as the Sherman and the Sherman Firefly. The divisional reconnaissance battalions were taken over from the Infantry Corps in 1941 and renamed as armoured car regiments. Shortly thereafter, the tank brigades began their transfer to armour; the last Canadian tank regiment was rerolled to become an armoured regiment in 1944, and thus the role of close infantry support was shifted from the tank regiment to the armoured regiment (Figure 1).¹⁷

Thus, the process of combining the cavalry and tank corps into a single armoured corps was complete, and subsequently the "roles traditionally assigned to the cavalry continued to be necessary and a former role [shock action] had been revived with the formation of another combat arm—Armor."¹⁸ As a result, the modern Royal Canadian Armoured Corps is a product of three doctrinal lineages: tank (the tank regiment equipped with heavy armour in the role of infantry close support), cavalry (the armoured regiment equipped with medium armour in the classic cavalry role), and scout (the armoured car regiment equipped with light armour in the role of formation mounted reconnaissance). Although these three lineages had coalesced into a single entity, the armoured regiment, they carry on today as the doctrinal lineages underlying the traditional *spectrum of armour* (Figure 2).

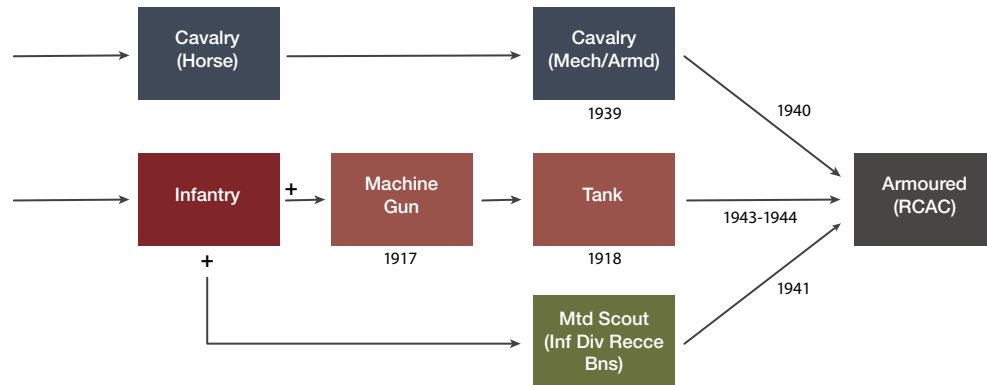


Figure 1: The three principal doctrinal lineages of the Armoured Corps



Figure 2: The three doctrinal lineages and their commensurate units along the spectrum of armour

CURRENT REALITY AND PLATFORM NEUTRALITY

The Armoured occupation as currently mandated by the Canadian Armed Forces consists of the full spectrum of armour included within the three doctrinal lineages (Figure 3). That is to say, it covers all the tasks expected of a combat element, from counter-moves to the attack, and from reconnaissance patrols to the pursuit.¹⁹ Accordingly, in the Regular Force there are no separate tank, armoured, or armoured car reconnaissance regiments or commensurately separate occupations, but rather a single occupation, armour, within a single organization, the armoured regiment.²⁰



Figure 3: The currently mandated spectrum of armour (doctrine)

Specific vehicles have never defined the armoured occupation. The Corps' current doctrinal publication, *The Armoured Regiment in Battle*, has clearly stated that the "doctrine presented is adaptable and applicable to a range of potential conflict situations, and to the different types of armoured vehicles that may be employed in a Canadian armoured regiment. It is the requirement for this universal applicability that has driven the retention of the name, *The Armoured Regiment in Battle*, for this manual" [emphasis added].²¹ Although the modern tank is the most effective vehicle for armoured operations, the authorizing memo for the current armoured publication states very clearly that the "doctrine in this manual is applicable to operations in low, middle and high levels [the full spectrum] of conflict by armoured regiments using generic equipment" [emphasis added].²² That basic principle, that armoured fighting vehicles can be put to intelligent use across all types of operations along the spectrum of conflict, is reflected in Army-level doctrine as well: *Brigade Tactics* outlines the fact that armoured forces manoeuvre from generic "armoured fighting vehicles" which include tanks as well as "lighter armoured vehicles" whose general purpose is to provide dedicated direct fire and shock action.²³ This principle is not confined to written manuals only, but is in fact the operational norm reflected in countless conflicts. It is important to remember that doctrine is a set of proven and enduring principles based on the nature of conflict itself, and not what is written or not written in any given publication.

When we look at the actions and experiences of other countries, the universal nature of armoured doctrine becomes much more apparent. Examples abound, including Germany's development of the Leopard Peace Support Operations tank,²⁴ the successful use of Danish Leopard tanks in Bosnia on United Nations peace support operations,²⁵ the deployment of various medium and heavy armoured platforms (such as the CV90, Leopard, and Abrams) in Iraq and Afghanistan, the operation of Bradley, Abrams, and Challenger in Kuwait, the use of light armoured vehicles (LAV II) during attacks against enemy tanks during the First Gulf War,²⁶ and just this year the move of hundreds of American heavy tanks back to Europe for major combat.²⁷ All clearly reflect the use of various light, medium, and heavy armoured fighting vehicles applied along the entire spectrum of conflict and to all types of operations.



Source: Combat Camera

On the Kosovo-Serbia border, Federal Republic of Yugoslavia, May 16, 2000. Soldiers of the Royal Canadian Dragoons use the surveillance equipment in their Coyote reconnaissance vehicles to overlook the Serbian border town of Prečovo from high ground in the American sector of Kosovo.



Source: Combat Camera

Soldiers receive a briefing before leaving Camp Nathan Smith on a patrol through Kandahar City with RG-31 armored patrol vehicles.

Specific to the Canadian context, the light armoured vehicle (LAV I) Cougar *tank trainer* used for nearly 30 years for full-spectrum training, Canadian tanks stationed in Germany for major combat, tanks deployed in Afghanistan for counter-insurgency, the Canadian tanks deployed to Kosovo for peace support operations,²⁸ and the light armoured vehicles (LAV II and LAV III) used on tasks ranging from patrolling to deliberate attacks in Afghanistan are all further evidence of the universal applicability of armoured doctrine along the entire spectrum of conflict, regardless of specific vehicle platform. Thus, the actual *role* of armour itself is independent of equipment weight or class, in the same way as the fundamental roles of the infantry or artillery remain unchanged regardless of the difference between a light or heavy machinegun, or between a 105 MM and a 155 MM howitzer.

THE ROLE OF ARMOUR

Although the role of armour has been defined as “to *find* and *defeat* the enemy through aggressive mounted manoeuvre and direct fire,”²⁹ and that of the infantry as “to close with and destroy the enemy,”³⁰ save for the term “mounted,” both definitions could be used interchangeably. This of course makes a great deal of sense; as the only two combat elements (manoeuvre arms), infantry and armour share the same core role to “engage the enemy directly” through close combat, namely the application of “direct fire weapons and manoeuvre.”³¹ For example, the British Army dictates that the “primary role of armour is close combat in conjunction with the infantry,”³² while the Australian Army states that the role of armour “is to close with and destroy the enemy using fire, manoeuvre and shock action” [emphasis added].³³ Furthermore, the United States Army states that the “fundamental mission of the tank platoon [armoured troop] is to close with and destroy the enemy” [emphasis added].³⁴ Functionally speaking, it is evident that the two occupations share a common role and commensurate tactics, and that the individual armoured fighting vehicle is the tactical equivalent to the individual infantry soldier. Accordingly, they are grouped into fire teams of two, with the smallest element capable of mutually supporting manoeuvre (the fire unit) being two fire teams: the four-vehicle troop for armour,³⁵ and the four-person assault group for infantry.³⁶ Thus, the armoured troops manoeuvre in the same way as an infantry section, and the armoured squadron in the same way as an infantry platoon.³⁷ Both occupations employ these “forces on the battlefield through movement in combination with fire, or fire potential, to achieve a position of advantage in respect to the enemy.”³⁸ As a result, both are functionally designed and organized to perform the same gamut of tactical tasks within operations, whether offensive (e.g. destroying, seizing, and attack or support by fire), defensive (e.g. blocking, reinforcing, and counter-attacking), stability (e.g. patrolling, traffic control, and observation posts) or enabling (e.g. advance to contact, reconnaissance, and surveillance) operations.³⁹

So, the biggest difference between the two occupations is not one of purpose but one of scale, with armoured forces manoeuvring over greater distances and more compressed timelines than the infantry, due to the inherent characteristics of armoured fighting vehicles,⁴⁰ the significantly longer weapons and observation ranges of higher-calibre direct fire weapons, and the way in which these systems are employed. Subsequently, when analyzing any differences between the two in terms of organization or limitations, such as the inherent strengths and weaknesses of each in open or close terrain or of their suitability for stealthy versus aggressive reconnaissance, they are attributed to the difference in scale rather than in fundamental role.

That is why infantry and armour together are the army's combat element and are the only means of delivering a multi-purpose, close combat-capable force. The corollary is the most enduring principle of modern land conflict; infantry and armour must work together in their common role, as each offsets the inherent weaknesses of the other in the face of a threat from a determined adversary.

THE FIRE-UNIT AND THE FOUNDATIONS OF ARMoured FIGHTING POWER

The tenet that the four-vehicle "troop in the armoured regiment is the smallest mutually supporting fire unit," that it "is basically wrong to split a troop and allot a task to a half troop," that the troop is the "basis of all armoured regimental tactics," and that "the basis of all successful fighting rests finally on the performance of the armoured troops" is such an enduring and foundational principle that it in some way forms a part of every Canadian armoured doctrine manual ever published.⁴¹ Although the armoured troop is the smallest mutually supporting fire unit, the armoured squadron is and always has been the smallest armoured manoeuvre element, as it is the lowest level at which aggressive and sustained armoured operations are possible.⁴² The armoured troop is the foundation of all armoured tactics and fighting power, and the armoured squadron is the manoeuvre element through which this fighting power is brought to bear. Thus, the armoured troop represents armour's institutional vital ground.⁴³

While fire team supporting fire team, through mutually supporting fire and movement, is the very essence of armoured (and infantry) fighting,⁴⁴ a minimum of three vehicles (or infantrymen) is required for mutually supporting manoeuvre, albeit in a degraded form (see Figure 4). It is degraded in the sense that an organization with three components is less flexible, as it has fewer manoeuvre options (i.e. successive as opposed to alternating movement), is unable to move using the foundational principle of fire team supporting fire team, the rear element is unsupported, and the loss of a single vehicle renders the troop combat-ineffective. Subsequently, the three-vehicle troop, although capable of manoeuvre, is operating with degraded capabilities. As a *robust* combat force necessitates the ability to manoeuvre with fire team supporting fire team with each element at all times both supporting and supported, and to take at least some casualties and still be an effective fighting organization, a minimum of four vehicles (or of four infantrymen) at the lowest tactical level is thus an enduring and universal doctrinal principle.⁴⁵ This is of course true regardless of task, for example, the "as small as possible" four-person infantry patrol⁴⁶ and the armoured patrol consisting of a minimum of four vehicles,⁴⁷ as we shall see in more detail later.

THE FIRE-UNIT AND PATROLLING

In a patrolling context, although squadrons can patrol, the smallest patrolling organization is the armoured troop. Hence the explicit recognition that "a reconnaissance troop is [the] armoured officer's patrol" in Canadian war-time doctrine,⁴⁸ a minimum from which the British, American, French and German armies have never strayed.⁴⁹ Another subject that bears clarification at this point is how the word "patrol" has come, in the Canadian armoured context, to rigidly denote a very specific organization. In fact, a patrol is not a specific type of organization at all; it is simply a term used to denote any type of grouping that is assigned to conduct some form of patrol. In this way, a "patrol is sent out by a larger unit to conduct

a combat, reconnaissance, or security mission," and "a patrol's organization is temporary and specifically matched to the immediate task."⁵⁰ Subsequently, a patrol is not fixed to organization but is instead based on task, and with the exception of low-spectrum peace support or unarmed domestic operations, the basic principles of conflict still apply whether an organization is patrolling or not.

- **Mutual Support:** "That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities". (NATO AAP-06 Glossary of Terms and Definitions)
- **"Manoeuvre"** is the employment of forces on the battlefield through movement in combination with fire, or fire potential, to achieve a position of advantage in respect to the enemy... This is to ensure that supporting AFVs can effectively engage enemy targets with a high first round hit probability." (AAP-06 in Tank Troop in Battle)
- **"the troop is the smallest mutually-supporting fire unit"**. "It is basically wrong to split a troop and allot a task to a half troop. The troop is the basis of all armoured regimental tactics" (expressed in some form in all iterations of Armoured Regiment in Battle, 1955 to present).
- The "reconnaissance troop is [the] armoured officer's patrol". (The Armoured Car Regiment, p. 21)
- The smallest possible infantry organization is the "as small as possible, usually 3 or 4 strong" assault group/patrol. (Infantry Battalion in Battle, 13-1-2).
- The U.S. Army employs four-vehicle armoured troops (tank platoons), and it is clearly established that "The tank platoon is the smallest maneuver element." (FM-71-1, Chap 1, Sect 1)
- The same principle is articulated in German armoured doctrine where "Employment as a patrol is generally the mission of a tank platoon [armoured]". (Panzer Tactics, p. 138)

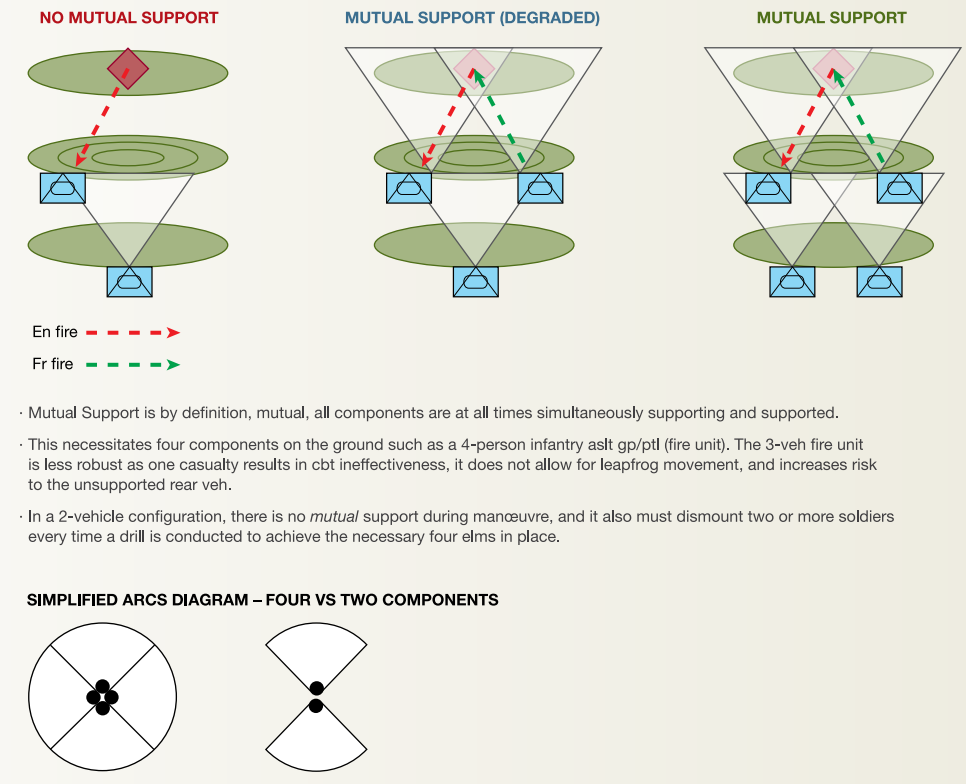


Figure 4: Mutually Supporting Manoeuvre

As a result, the smallest mutually supporting patrol capable of independent movement is the armoured troop or, in an infantry context, the “four-man fighting patrol,” which is in fact still the established Canadian doctrinal norm today for armoured reconnaissance.⁵¹ The same principle is clearly articulated within allied doctrine and practice as well. For example, in the United States Army the four-vehicle tank “platoon [armoured troop] conducts patrols” as it is “the smallest maneuver element,”⁵² in the British Army armoured “troops should normally patrol as a troop,”⁵³ and in the German Army “employment as a patrol is generally the mission of a tank platoon [armoured troop].”⁵⁴ Simply, the core principle of fire and movement, together with its commensurate tenet that the smallest mutually supporting fire-unit consists of four vehicles (or infantry), remains an enduring principle of conflict regardless of task.

The only exception to this universal rule within a conflict situation is the two-vehicle patrols employed within the regimental reconnaissance troop (“60”), which as a combat support element is not a fire-unit at all and “should seldom be asked to fight for information.... Patrols must, therefore, be supported by universal tanks moving as close up as possible.”⁵⁵ Thus, “as the battle proceeds close reconnaissance will be done by the fighting tanks themselves in co-operation with the infantry.”⁵⁶ This is also reflected in German doctrine, where, “in contrast with the reconnaissance elements of the *Aufklärungsabteilung* [formation reconnaissance regiment (combat)], armoured reconnaissance elements of the tank battalion [regimental close reconnaissance troop] are generally committed only a few kilometres forward.”⁵⁷ The only organizations based on a two-vehicle configuration were unit close reconnaissance troops which did not manoeuvre independently and were explicitly not organized for combat. Instead, they existed to provide integral combat support through the form of close *sneak and peek* reconnaissance and limited flank security, and they were able to operate more furtively through a smaller organization whose inherent risks were offset by the immediate support of their unit’s combat troops. It is therefore important to keep in mind the distinction between combat and combat support organizations,⁵⁸ particularly as the reconnaissance title is often applied to both of these fundamentally different types of organizations.

COMBAT VERSUS COMBAT SUPPORT

As we have seen, armoured reconnaissance was, and is, performed by armoured regiments equipped with armoured fighting vehicles (ideally tanks),⁵⁹ mounted (medium) reconnaissance was performed by armoured car regiments, and mounted (close) reconnaissance was performed by the regimental reconnaissance troop, typically equipped with 10 to 12 light tanks or armoured scout cars. Armoured, armoured reconnaissance, and medium mounted reconnaissance all consisted of combat troops of four vehicles. The close reconnaissance troop had two-vehicle patrols only because they are a combat support organization not organized for fighting, and manoeuvred with the support of the fighting tanks just one to two bounds behind. It is for this reason—combat versus combat support—that these two roles have normally been kept separate. For example, one military journal article remarked that it is normal for armoured and armoured reconnaissance units to have “elements which are equipped and trained to fight” (i.e. the combat squadrons) and to have scouts “trained and equipped to gain information by stealth” (i.e. the combat support close reconnaissance troop or platoon); however, these two “will be different people, and the two roles should not be confused.”⁶⁰

Subsequently, any confusion arising from “gaining information by stealth” in the mounted context is important, as this form of stealthy reconnaissance requires specialized training, equipment, and organization. Confusing the two, as we saw in Afghanistan, can have undesirable consequences.

Canadian and British doctrine states clearly that “close reconnaissance is the responsibility of every fighting unit, and is allied with the principle that every unit is responsible for its own protection,” whereas “medium reconnaissance is that which is outside the scope of such reconnaissance elements as there are in all fighting units.”⁶¹ Further, the United States Army is very explicit that stealthy reconnaissance is predicated on “reduced battlefield signatures associated with units that typically conduct stealthy reconnaissance, such as *dismounted* scouts,” whereas a “unit requires firepower, aggressive exploitation of actions on contact, operations security, and training to survive and accomplish its mission when conducting aggressive reconnaissance. *Mounted reconnaissance is normally characterized as aggressive*” [emphasis added].⁶² This is supported by current Canadian publications as well, in that the “movement and presence of... mounted recon forces, will be virtually impossible to disguise.”⁶³ Subsequently, furtive reconnaissance (information by stealth) is largely the domain of dismounted forces, while aggressive reconnaissance (fighting for information) is largely the domain of mounted forces. It is also important to note here that not only should these “two roles not be confused,” but that wartime lessons learned were additionally adamant that “it was inadvisable to combine mounted and dismounted roles,” as one would naturally detract from the other: for example, mounting infantry would “seriously reduce... the number of ‘bayonets on the ground,’”⁶⁴ a point which remains entirely relevant today.⁶⁵ These facts point to some of the reasons why, throughout history, armoured reconnaissance has been conducted almost exclusively by mounted multi-purpose combat forces. However, as we will explore further, this is no longer the case within the Canadian Army.

STREAMING AND THE CAVALRY GAP

Despite what officially constitutes the armoured occupation and how it operates, including the hard-fought doctrinal lessons underpinning it, a counter-productive division has slowly crept in, with an inadvertent and arbitrary demarcation between tank (a type of equipment), and reconnaissance (a type of tactical activity). This effectively divides the trade into combat and combat support streams. This is counter-productive in the same way as the arbitrary division of the infantry trade into a machine gun (equipment) and a reconnaissance (activity) stream would be, and is inadvertent in the sense that such streaming was a result of reactions to uncontrollable circumstance rather than cohesive planning.

This arbitrary streaming has pushed the occupation to the far right and far left of the spectrum of armour. The middle ground binding the trade together as one cohesive whole has been removed, leaving the trade with what we will label the *cavalry gap* (Figure 5).⁶⁶

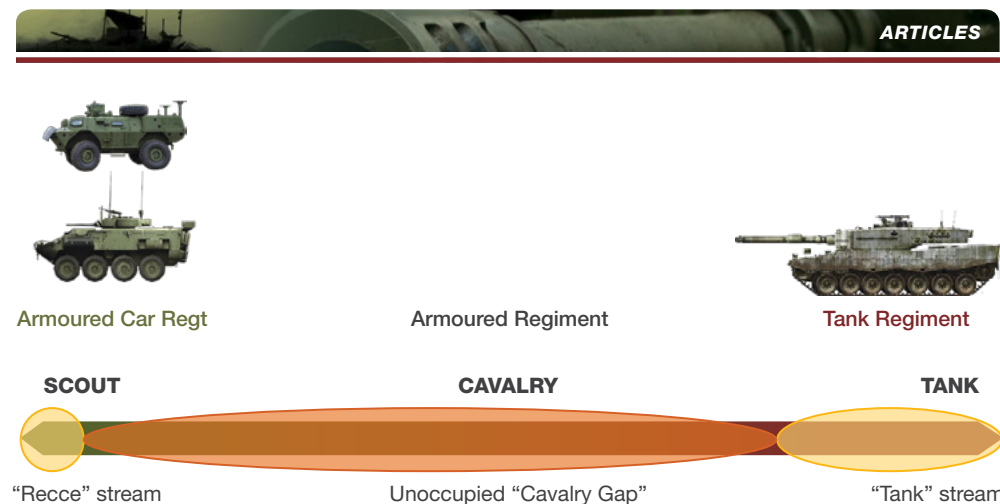


Figure 5: The current reality, showing the unoccupied cavalry gap (orange) and the resulting recce and tank streams (yellow)

It is important to highlight the fact that the space the Royal Canadian Armoured Corps has vacated—the cavalry gap—is the very same space that was formerly the exclusive domain of our Second World War armoured regiments, which illustrates the gravity of the current situation. At this point it must be stressed that this gap is not the result—nor the fault—of any single individual or organization, but is instead the product of practical drifting; countless small, incremental, logical and pragmatic decisions have cumulatively resulted in a situation which no single entity could have foreseen or planned.⁶⁷ In this way, the gap within the role of armour today is a product of a slow drift over generations and is very difficult to discern. The gap represents not only the removal of the Corps' own institutional foundations—what effectively brings it all together into one cohesive manoeuvre arm—but also an unwarranted ossification of specific tasks tied to specific platforms, the reasoning and results of which can be discerned only by taking a step back to gain a necessarily long and holistic view.

While it may be tempting to suggest that the two extremes of the spectrum of armour may have expanded to such an extent that a cavalry gap simply does not exist, such a view is unsupported. The need for the intelligent application of resources to the full range of tactical tasks inherent in the spectrum of operations necessitates a great deal of adaptability and flexibility on the part of general-purpose combat forces (armour and infantry). The fact that starkly differentiated recce or tank streams exist at all, and that one must undergo conversion training from one extreme to the other, both clearly indicate a marked firewall right down the middle of the trade. Second, the fact that neither the recce nor the tank stream sees itself as responsible for the conduct of the traditional armoured cavalry tasks such as pursuit, raids, penetrations, aggressive (fighting) reconnaissance, and economy of force tasks⁶⁸ points not only to a division, but to the existence of a significant gap within the trade. Third, the existence of such institutional experimentation, malaise and drift would indicate a general realization that something is fundamentally amiss. Finally, the fact that roughly two-thirds of the Regular Force armoured trade is not qualified in the conduct of the attack or of the defence but instead only narrowly trained in the conduct of a confined number of combat support tasks is further evidence of a substantial gap within a trade mandated as a combat element (manoeuvre arm).

This inadvertent cutting away of the trade's institutional, doctrinal, and cultural anchor makes the underlying institutional drift, doctrinal malaise and cultural ennui that has plagued the trade over the past several years suddenly clear. It is like a ship adrift at sea. Simply, what tactically constitutes the traditional conception of the Canadian armoured regiment no longer exists. What explains such a marked divergence? The two main forces underlying the start of the gradual creation of the cavalry gap, and the resulting division between tank and reconnaissance streams, were the divestment of Canada's medium armour fleet and the general conflation of armour as a combat element (role) and armour as a technical platform (equipment),⁶⁹ coupled with the entrenchment of the 56th Reconnaissance Squadron model due to 50 years of peacekeeping. We shall now explore both in greater detail.

WHY THE CAVALRY GAP? DIVESTMENT OF CANADA'S MEDIUM ARMOUR FLEET

In 1971, a new White Paper mandated the divestment of Canada's medium armour fleet (Centurion).⁷⁰ Upon hearing this, however, German and other NATO officials made it clear to Prime Minister Pierre Elliott Trudeau that if Canada desired trade with Europe it would have to support its defence, and that support should include modern Canadian tanks stationed in Germany.⁷¹ In response to those pressures, Prime Minister Trudeau reluctantly agreed to the acquisition of only enough Leopard tanks to equip a single armoured regiment for service in Germany, and a small training cadre in Canada located at CFB Gagetown.⁷² Subsequently, with the loss of the Armoured Corps' last remaining Sherman tanks in 1972 for the Reserve Force, and the retirement of the Centurion tank for the Regular Force regiments in Canada, a substantial capability gap was created.⁷³ Although National Defence Headquarters was still adamant that the "ideal programme to ensure a combat-ready armed force is to buy tanks," what would become the LAV I programme was begrudgingly considered "the next best solution." It resulted in the LAV I Cougar to allow for continued armoured training and skills maintenance within Canada.⁷⁴ Although the Leopard–Cougar fleet mix solution was only intended to buy enough time to get a real tank replacement under way, that temporary stop-gap lasted nearly 30 years.⁷⁵ Although purchased specifically as a replacement for the Lynx, the LAV II Coyote was in practice also initially employed as a LAV I Cougar replacement during the late 1990s within A squadron of each regiment, and carried on the same role as the Cougar within these squadrons, with the standard armoured configuration of four troops of four vehicles each.⁷⁶ However, by the year 2000 the Coyote had come to be used nearly exclusively for combat support (reconnaissance and security tasks) as opposed to the full gamut of tasks expected of a combat element (manoeuvre arm). Thus, the Corps was left with a large fleet of so-called reconnaissance vehicles and less than a single unit's worth of aging and technically obsolete Leopard I tanks awaiting replacement by the soon-to-be-defunct Armoured Combat Vehicle project.

In 2003, the Government of Canada and the Canadian Army jointly announced the demise of the country's few remaining Leopard medium tanks without replacement,⁷⁷ based largely on assumptions which have since been proven false.⁷⁸ As traditional armour was labelled a "relic of the past" and a Cold War "anachronism,"⁷⁹ the tank trainer stop-gap was simply not an available option as it had been in the 1970s with the Cougar. The subsequent exclusive focus of the armoured occupation on one extreme of the spectrum of armour, that of furtive mounted reconnaissance or scouting (as opposed to armoured reconnaissance), led to a rapid



A Canadian Forces Coyote, a light armoured reconnaissance vehicle, is positioned near the perimeter of Toronto Pearson International Airport to provide surveillance and security during the G8/G20 Summits, June 23, 2010.

and fundamental shift of the armoured trade from that of combat to combat support, with both the Armoured School and the Canadian Forces School of Military Engineering quickly dropping their traditional armoured training capabilities.⁸⁰ Even with the reintroduction of tanks into the Canadian Army, starting with a handful of leased German Leopard II heavy tanks in 2007 for use in Afghanistan, and with the arrival of Canada's own Leopard II tanks starting in 2010,⁸¹ the total number acquired remains insufficient for corps-wide training and employment, and due to their weight class, the natural trend has been towards their near-exclusive use in the traditional tank role of heavy infantry close support.⁸² The Corps' focus on the far left side of the armoured spectrum, coupled with a minority on the far right, has resulted in an Armoured occupation that is no longer armour in the traditional Canadian and British sense, but has instead been arbitrarily and unofficially cleaved into two specialty sub-trades—heavy infantry close support (combat) and light mounted reconnaissance (combat support)—with nothing in between. As we can see, this path has resulted in a sharp reduction in one of the Canadian Army's two combat elements' ability to generate fighting power, with only roughly one-third of the armoured trade trained and qualified in the conduct of offensive and defensive combat operations. The result is a significant and arbitrary reduction in the Army's ability to generate "multi-purpose combat capable" forces, and thus an overall reduction in the institution's ability to pursue "the army's first purpose of... fighting and winning in war."⁸³

WHY THE CAVALRY GAP? THE 56TH RECONNAISSANCE SQUADRON AND PEACEKEEPING

It was not until a mounted reconnaissance squadron was deployed to Egypt after Nasser's refusal to accept an infantry battalion as part of the United Nations Emergency Force in 1956 that Canada first used an independently manoeuvring two-car "fire unit" operationally.⁸⁴ As "scout cars were obviously more satisfactory—and air-transportable—than tanks," and in the absence of a concrete adversary threat necessitating a mutually supporting combat organization, the decision to divide the troops in half was made on the basis of a low-spectrum peace support operation. In this context, the reasoning behind this pragmatic decision makes sense, as the result was a force that could then generate twice as many patrols during peacekeeping and observation missions. Consequently, "a squadron was cobbled together from every regular and militia armoured unit in the country, and, in March 1957, the 56th Reconnaissance Squadron... numbered for the year it was formed, was airlifted to Egypt" with a two-car patrol configuration.⁸⁵ The 56th's model itself was essentially based on the regimental reconnaissance troop: an explicitly non-fighting configuration that consisted of eight or more vehicles divided into two-car patrols, and simply combined three of them to form the new squadron. Although some peacekeeping missions deployed with reconnaissance squadrons organized along the traditional lines of an armoured car regiment with four-vehicle troops (patrols) such as United Nations Peacekeeping Force in Cyprus during the 1960s,⁸⁶ the norm for peace support operations became the 56th two-car patrol model.

With Canada's exclusive operational focus on these types of operations from the 1950s onwards, "all the armoured regiments' establishments were changed to include a reconnaissance squadron" based on the 56th Reconnaissance model.⁸⁷ Thus, each armoured regiment was mandated to convert and maintain its fourth armoured squadron based on the 56th's model to meet the force generation needs of continued peacekeeping operations. Over decades of these types of missions, this pragmatic force generation model became entrenched within each regiment's organization, thus explaining today's deviation between current doctrine (four armoured squadrons per regiment) and practice (three armoured squadrons, since reduced to two, and one reconnaissance squadron per regiment). Ever since, as a result of these policy choices, part of the Canadian Army's organization continues to be based on choices relating to the practical needs of peace support operations, and over time these policy choices have inadvertently made their way into doctrinal publications.⁸⁸

Although the armoured regiment maintains a reconnaissance squadron by policy, as noted, the replacement of the fourth armoured squadron with a "56 Recce"-type squadron has never actually been incorporated into armoured doctrine. Current armoured doctrine instead correctly continues to mandate four armoured (combat or sabre) squadrons per regiment,⁸⁹ an organization that is firmly based on solid doctrinal principles—what the British Army refers to as the "principle of four."⁹⁰ Canadian Army brigade doctrine continues to proscribe the maintenance of a divisional reconnaissance unit (manoeuvre arm) which can detach squadrons to one or more of its brigades as necessary.⁹¹ However, since the closing of the First Canadian Division at the end of the Cold War, along with the First Canadian Division Armoured Reconnaissance Regiment, doctrinal formation reconnaissance in the form of the divisional armoured regiment has ceased to exist due to resource constraints. In the armoured



Just after unloading at Port Said, Egypt, the 56th Reconnaissance Squadron gets ready to begin its role in the United Nations Emergency Force (UNEF).

context, this latter point has been a source of much confusion as each regiment, as a matter of policy, was already maintaining a reconnaissance squadron based on the 56th Reconnaissance Squadron model for the purposes of peacekeeping operations. However, an armoured reconnaissance squadron is nothing like this squadron. For example, the 29th Canadian Armoured Reconnaissance Regiment had exactly the same configuration of Sherman tanks as any other armoured regiment, with armoured reconnaissance squadrons consisting of four troops of four tanks each.⁹²

The fact that armoured reconnaissance and armoured regiments were essentially one and the same continued to at least 1992 with the First Canadian Division Armoured Reconnaissance Regiment, under the command of Lieutenant-Colonel Smith, having been slated to receive Leopard tanks prior to the division's closure at the end of the Cold War.⁹³ The loss of armoured reconnaissance in 1992, coupled with the maintenance of the 56th-model mounted reconnaissance squadron in each regiment, led to a natural conceptual shift from one type of reconnaissance squadron to the other, with the battle-proven combat organization of four four-vehicle troops shifting to a combat support organization based on the regimental close reconnaissance troop ("60"). As a result, the 56th Reconnaissance Squadron legacy inherited over 50 years of peacekeeping, combined with the stand-down of Canada's armoured reconnaissance capability, has contributed to our present policy state of armoured regiments maintaining non-combat-capable manoeuvre squadrons despite the institution's core mandate of providing multi-purpose combat forces organized, trained, and equipped "to fight through the full spectrum of combat."⁹⁴

ARMoured OPERATIONS IN AFGHANISTAN

Although the reasoning underlying the policy decisions leading to the current reconnaissance squadron model make sense given the lack of resources for a divisional armoured regiment and the lack of a persistent adversary threat characteristic of generations of peacekeeping missions, which negated the need for mutually supporting four-vehicle patrols, the principle that “it is basically wrong to split a troop” exists for a reason.⁹⁵ The splitting of a troop in half may allow for twice the amount of presence and patrolling to take place during domestic or low-intensity peace support operations, but unfortunately the logic behind this pragmatic policy choice to abrogate doctrine was gradually forgotten over 50 years of continuous peace support operations, and the deployment of the two-car combat support organization inadvertently made its way into a counter-insurgency operation in Afghanistan.

This counter-insurgency operation was characterized by close combat, and the deployed 56th Reconnaissance-type squadrons based on an organization of troops of eight vehicles were immediately found to be ineffective due to the innate lack of mutual support, resources and depth inherent in the two-vehicle patrol construct. As a result, commanders issued direction that three-vehicle patrols (i.e. the minimum for a fire-unit prescribed by doctrine since the inception of mechanized warfare) were thenceforth the minimum allowable for tactical movement in theatre.⁹⁶ In effect, since the deployed troops consisted of eight vehicles, this necessitated manoeuvre with four-vehicle patrols (i.e. the battle-proven armoured troop configuration), reduced to three when a quarter of the troop was away on home leave travel. This was a prime example of having to relearn foundational doctrinal principles due to the conflation of policy and doctrine, and it further reinforced the importance of the Canadian Army’s recent direction that policy must not be allowed to drive doctrine and that the two “must remain distinct.”⁹⁷ As a result, the current combat support organization for the mounted reconnaissance squadron prescribed in *Ground Manoeuvre Reconnaissance*, seriously degrades the ability to generate any actual armoured fighting power, as opposed to the universally applicable Canadian and British doctrinal armoured organization where each four-vehicle troop or patrol is capable of “hard hitting action” and “producing a considerable volume of fire” when necessary.⁹⁸

Even *Ground Manoeuvre Reconnaissance* itself highlights the shortcomings of the two-vehicle combat support model, stating, for example, that the “effectiveness of the armoured recon squadron... is dependent upon appropriate augmentation of the patrol” [emphasis added]. Further, as mounted “recon is extremely difficult to conduct in a concealed manner,” the conduct of such tasks “increases force protection concerns” and “will require crew augmentation if patrol bases are to be properly secured and protected.”⁹⁹ Finally, the manual points out that the two-vehicle patrol “can only be expected to operate for a maximum of 72 hours” in an observation post without augmentation.¹⁰⁰ In effect, such a prescription is a clear admission that the two-vehicle fire-unit cannot adequately perform its baseline tasks of basic manoeuvre, as we rediscovered in Afghanistan, or security and surveillance tasks. To be effective, they had to be regrouped into three- to four-vehicle fire-units (i.e. the traditional and battle-proven armoured troop of four vehicles).

It should also be noted that the adaptations necessary to deal with the increased tactical complexity inherent in quadrupling the number of fire-units within a squadron (four fire-units within an armoured squadron versus 16 in the current mounted reconnaissance squadron) have had corrosive effects. First, each troop leader managing four separate tactical elements instead of one has resulted in a shift towards managing the battle one bound behind as opposed to leading it from the front, resulting in decreased situational awareness, confidence, aggressiveness and speed of decision making, in addition to a lack of ability to communicate rapidly through hand signals. Second, the squadron now having to manage 16 tactical elements as opposed to four (the same number as an armoured regiment) has led to the adoption of a regimental command post structure of two static command posts run by an operations officer and a warrant officer respectively, rather than from the officer commanding’s and battle captain’s turrets. This has once again created greatly increased complexity, degraded situational awareness, complete reliance on radio transmissions, slower decision making, and an increasingly static command post culture antithetical to the needs of fast-paced and aggressive armoured manoeuvre.

As a result of these policy deviations over generations of peace support and counter-insurgency operations, we have continued to see “a reduction in basic and conventional armoured skill and competency” that has resulted in “a generation of armoured leaders [who are] missing the fundamentals of concentration, firepower, aggressiveness, shock action, and manoeuvre during all-arms operations.”¹⁰¹ In this way, *the principle of four* combat configuration which has proven itself as the most effective combat organization within both the Armoured and Infantry Corps based on the experiences of a large number of countries, including our own, over the past century has been replaced by an organization consisting of four combat-ineffective troops under the command of a second lieutenant.¹⁰² Simply put, a specialist peace support organization which is known through experience to be unable to survive the demands of a counter-insurgency campaign,¹⁰³ let alone general war, due to an inherent lack of fighting power, has no place in Canada’s warfighting doctrine.

RECONNAISSANCE AS A TACTICAL TASK

As close reconnaissance is the responsibility of every fighting unit, and mounted formation reconnaissance has almost exclusively been conducted by fighting units in times of conflict, reconnaissance is simply one tactical task among many, and the sense function is in fact an inherent part of all tactical activities (and an established and important step in all battle procedure), be it an advance to contact, a patrol, or an attack. As such, the labelling of an organization as reconnaissance does not eliminate the continued need for mutually supporting manoeuvre. Except for specialist close reconnaissance combat support, such as the regimental or battalion reconnaissance troop or platoon (which is explicitly not a manoeuvre element nor a fire-unit), there is no greater need for a reconnaissance-specific manoeuvre organization than there is for an attack-specific manoeuvre organization, as multi-purpose combat forces are by their very nature equipped and trained for the full range of tactical activities within the spectrum of operations.

For instance, armoured troops in the British and American armies, as was the case in Canadian practice in the past, are mandated to conduct not only offensive and defensive tasks, but enabling and security ones as well. For example, United States Army doctrine notes that the “M1A2 [Abrams tank] is especially valuable in the mounted [observation post]” role and is well suited for route, area and zone reconnaissance, in addition to conducting screen lines and patrols.¹⁰⁴ The British Army echoes this, stating that the Challenger II tank provides an excellent surveillance platform, and outlines its use in mounted observation posts, convoy escort, vehicle control points, reconnaissance, and patrolling.¹⁰⁵ This is reinforced by Canadian experiences with Leopard tanks conducting reconnaissance, framework patrolling and other security tasks, such as vehicle checkpoints and cordons in Kosovo in 1999, as well as tanks employed in surveillance tasks and light armoured vehicles in the assault in Afghanistan. So, reconnaissance, security and surveillance are tasks to be assigned to various organizations based on a variety of factors such as risk, open or complex terrain and the need for aggressiveness versus stealth, to name just a few, and do not represent organizations in and of themselves.

Some countries have divided their armoured forces into separate unit types, however, largely based on equipment weights and capabilities with a corollary natural focus on different points along the spectrum of conflict. For example, the United States and the United Kingdom maintain explicit labels for combat organizations that, while still able to conduct “offensive, defensive, security, and peace keeping and support operations,”¹⁰⁶ have a non-exclusive focus on reconnaissance and security tasks. For instance, the British “Light Cavalry”¹⁰⁷ and the United States “Cavalry Scout,”¹⁰⁸ focus on one or more of the three doctrinal lineages of armour and have been separated into different types of fighting units (although still a single manoeuvre arm). However, having multiple types of combat units focused on different areas along the spectrum of operations is likely unsustainable in tightly constrained resource environments.



A Canadian Leopard C1 with the MEXAS armour upgrade package, Kosovo, August 1999

Smaller armies such as Canada's and Australia's have a single type of armour common regiment within the Corps (the armoured regiment),¹⁰⁹ and even the British Army, during the tightly constrained Second World War and post-war environments, did away with its tank and armoured cavalry units in favour of the common armoured regiment. Given the highly constrained resource environment within the Canadian Army, particularly an acute shortage of operational armoured combat vehicles (i.e. modern tanks of any weight), restoration of three different weights of armoured regiments within the Royal Canadian Armoured Corps is neither feasible nor desirable.

At the same time we must also acknowledge the fact that all British armoured units, whether light, medium or heavy, do not operate using the same *Ground Manoeuvre Reconnaissance* (combat support) construct as Canada. Therefore, even though the British maintain three different weights of armoured unit, it must be remembered that the fundamental role and tactical doctrine of all three are the same. For example, even though “The BRR [Brigade Reconnaissance Regiment] uses small AFVs... the BRR is a Mounted Close Combat (MCC) specialist unit... It delivers direct fire from both tracked and wheeled vehicles in close cooperation with the infantry. On recent operations the utility of CVR(T) [an eight-tonne tracked AFV with a 30-mm cannon] in the light armour role, notwithstanding its limitations, has proven to be a battle winning strike asset.”¹¹⁰ As a point of comparison, the Canadian LAV II Coyote is twice as heavy as the CVR(T) at 16 tons instead of eight, and has nearly the same-size armament with a 25-mm cannon compared to the CVR(T)'s 30-mm. It is also interesting to note that the United States military employs its version of the LAV II Coyote, the LAV-25, in the mounted close combat role as well, successfully employing it against Iraqi Forces including against T-62 tanks during the First Gulf War.¹¹¹ This once again underscores the universal applicability of armoured doctrine to all of the different types of armoured vehicles that may be employed within an armoured unit.

RECONNAISSANCE AS A BASIC COMBAT FUNCTION OF ALL MANOEUVRE FORCES

A study conducted following the Second World War on British and Canadian mounted reconnaissance (armoured car) units “concluded that, on average, they had been engaged on mounted reconnaissance for only two percent of the time spent in contact with the enemy in Italy, the figure rising to nine percent in north-west Europe,” and more specifically in the case of the 1st Armoured Car Regiment (Royal Canadian Dragoons), “no more than five percent of operational time had been spent in mounted ‘reconnaissance.’”¹¹² Thus, General Sir Bernard Paget's criticisms during pre-deployment training in England that “there was a tendency to use [mounted reconnaissance] units for purposes other than reconnaissance”¹¹³ were in fact not a result of poor performance but simply an operationally driven reality.

On the American side, the movement at the beginning of the Second World War to turn “the mechanized cavalry into a mere reconnaissance force” was detrimental, with post-war lessons learned pointing to the fact that at no time did the reconnaissance forces operate without tanks and tank destroyers and that therefore “a self-sufficient grouping of forces” (i.e. a general-purpose combat force) was required to face the full spectrum of tasks.¹¹⁴

Subsequent American experiences during the Korean War led to the conclusion that “information of the enemy, his strength and dispositions, has not been gained by reconnaissance patrols using stealth and observation as commonly contemplated by accepted doctrine,”¹¹⁵ but instead “friendly armor was employed in direct support of infantry attacks, on reconnaissance and patrol missions, and as tank-infantry task forces which penetrated into enemy held areas to seek out his dispositions and cause maximum casualties.”¹¹⁶ Germany’s experiences were clearly articulated in its post-war publications. “[A]lthough reconnaissance is accomplished in various ways... in the final analysis, however, it must be carried out by the combat unit.” A “misleading conception was widespread until the end of the war that reconnaissance did not really belong to the tasks within the tank company [armoured squadron].... Combat experience, of course, soon forced a rethinking.”¹¹⁷ Colonel Wolfgang Schneider of the German Army, who literally wrote the book on German panzer tactics, states that “the vital mission of reconnaissance—whether area, zone or route... is generally the mission of the tank platoon [armoured troop].”¹¹⁸ These observations have been borne out by multiple other studies as well. For example, one analysis conducted by the United States Army Combat Studies Institute concludes that

... the nature of reconnaissance has changed since the days of the horse from a specialized function done by units with unique capabilities to merely one of several functions any combat unit is expected to be able to accomplish. The retention of units designed and organized to perform such missions no longer reflects operational realities.... In all recent US Army conventional operations, the most common type of action was movement [advance] to contact, a type of operation in which the lead unit, whether cavalry [reconnaissance] or not, was effectively the reconnaissance element. Similarly in nonconventional operations such as counterinsurgency, where there are no actual front lines, all combat (and even most combat support and some combat service support units) units become de facto reconnaissance units by the nature of the conflict.¹¹⁹

A separate study conducted by Dr. Robert Cameron analyzing the use of specialized reconnaissance forces from 1914 to the present day by British, American, German, French and Russian forces similarly concludes that “units optimized for a single function invariably are thrust into additional roles for which they are not configured.”¹²⁰ Multiple examples abound: the Second World War (“Pure reconnaissance operations became exceptional.... [U]nits performed the full range of activities once associated with the cavalry mission. Information collection proved inherent to these other roles”); Lebanon (“In all trials the reconnaissance squadron was forced to fight its way into the enemy’s ‘Disruption Zone’”); Vietnam (“Reconnaissance units found themselves employed as maneuver units by formations”); Operation Desert Storm (“Survivability concerns led battalion commanders to marginalize their [recce units]’ employment to preserve the lives of their scouts... effectively nullifying their primary role.... [C]ombined arms teams resulted in some cases to perform the type of aggressive reconnaissance desired”); and Iraq (“The model of building situational understanding without actually engaging the enemy did not survive combat operations”).¹²¹ Lastly, a separate study published by the Institute of Land Warfare noted of counter-insurgency operations that if “the enemy looks just like the population he is hiding among, then observing

him from a distance reveals little information of use to a maneuver commander,” and that armies have “a historical tendency to accept force design changes that appear feasible so long as they meet a preestablished budgetary and fiscal constraint,” such as the replacement of combat units with lighter (and cheaper) so-called reconnaissance units.¹²²

In Canada, the idea which emerged in the late 1990s that “Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) be brought under the command of a new, single unit or sub-unit within a formation [i.e. the current concept of the “brigade reconnaissance squadron”]... reflected a poor understanding of the very opaque information operations doctrine and a failure to realise ISTAR is simply a list of related functions that need to be coordinated to support a commander’s decision making process, rather than specific capabilities that must be grouped together under a single command. Furthermore it predicted a flow of information and precision regarding the enemy that proved utterly false once operations were begun in southern Afghanistan.”¹²³ Other Canadian experiences in Afghanistan further reinforce this, where “recce sub-units were under-employed in traditional recce tasks” and instead made an “ideal economy of force asset [a traditional cavalry role] and provided commanders with a vital capability that could rapidly react to a myriad of tactical tasks across the AO” (i.e. were naturally called upon to provide a general-purpose combat force).¹²⁴ This is not a uniquely Canadian point of view, with British armoured doctrine stating that “every military grouping, however small, has ISTAR capability; whether weapons sights, sentry positions, or patrols.... Amongst the older soldiers there was a feeling that this was a lesson that had been lost and was one which we were only now regaining; in contact”—one which the armoured “troops will eventually have to ‘find’... using their own surveillance and target acquisition (STA) sensors, sights and vision aids. The ability to do this [reconnaissance] effectively, whilst remaining in a position of advantage over the enemy, is vital.”¹²⁵

Thus, the weight of academic and professional military analysis, together with historical evidence such as the use of the lead Canadian armoured units during the Normandy invasion as de facto “reconnaissance units,” the use of armoured regiments as divisional “armoured reconnaissance regiments” during the Second World War and the Cold War, and other more recent events such as the overtaking of British mounted reconnaissance units by the lead armoured squadrons during Operation DESERT STORM, all overwhelmingly point to the fact that reconnaissance is simply a tactical task inherent to all combat units and in fact activities,¹²⁶ which during times of major combat will naturally be conducted by multi-purpose combat forces whether there are dedicated specialist reconnaissance units present or not.

Therefore, given this overwhelming evidence coupled with the “universal applicability” of Canadian armoured doctrine and its standard application to all of “the different types of armoured vehicles that may be employed,” the use of specialized combat support reconnaissance-only units and sub-units in an independent manoeuvre role (as opposed to combat forces employed on reconnaissance tasks) has time and time again been proven to fail, particularly with the use of two-vehicle “fire-units.” The maintenance of this policy-based concept, which no country in the history of mechanized warfare has successfully employed (including Canada’s failed attempts within a counter-insurgency campaign) only continues to inhibit the generation of armoured fighting power within the Canadian Army.



Clarifications in recently published manuals, such as the fact that formation reconnaissance is the responsibility of the divisional reconnaissance regiment (a combat unit), that armoured reconnaissance forces must have “the ability to fight for information” and to “operate... as a manoeuvre force,” where “manoeuvre forces [are defined as] armoured and infantry forces, and may be light, medium or heavy,” are all a step in the right direction.¹²⁷ However, sharp deviations between proven armoured doctrine and actual practice reflected in current policy still lag far behind. Therefore, the current practice of combining what amounts to three regimental close reconnaissance troops to form a “brigade reconnaissance squadron” embodied in current policy needs to be brought back into line with the operational realities rooted in the enduring first principles of conflict, and outlined within universal armoured doctrine.

Thus, a restoration in practice of the *first principles* clearly articulated in enduring Canadian armoured doctrine, such as the currently mandated four armoured squadrons per armoured regiment (a likely policy of three armoured squadrons, given current resource realities) would instead provide for significantly greater fighting power and flexibility over the current policy of maintaining one to three “56-recce”-type mounted reconnaissance (combat support) squadrons per regiment. As for the provision of reconnaissance at the brigade or division level, an armoured unit or subunit is inherently a multipurpose combat force which, based on its enduring four four-vehicle fire-unit configuration and “armour common” tactical doctrine, is able to accomplish the full range of tasks along the spectrum of operations, including reconnaissance, as opposed to being narrowly and arbitrarily limited to just one specific type of enabling operation.¹²⁸ The current division of specific activities and tasks into three separate “streams” (one being the currently unoccupied cavalry gap) is an unnecessary hindrance to the generation of armoured fighting power, which by its very nature necessitates a cohesive and all-encompassing combat trade suitable for employment across the full range of tasks inherent within a true manoeuvre arm.

CONCLUSION

The goal of this paper was to provide a brief analysis of the generation of armoured fighting power and how it serves the wider institutional interests of the Canadian Armed Forces. Through the examination of the Armoured Corps’ history and doctrinal evolution, we explored the reasons for the “universal applicability” of armoured doctrine to the full spectrum of operations and to the entire range of armoured fighting vehicles, and how and why this came to be. We touched on the role of armour as a combat element, and were able to drill down to some of its most basic components, including the shared nature of the core role of both infantry and armour. A brief overview of armoured organizations provided us with some insight into the basic building blocks of armoured fighting power and some of the foundational doctrinal principles behind why these organizations came to be, in addition to how some of the policy decisions leading to certain organizational structures has resulted in an unplanned reduction of the armoured regiments’ ability to generate fighting power. Finally, we touched on how tasks and the assumptions surrounding them have had a direct impact on our current organizations, employment, and fighting power.

The role of armour in Canada, however it is officially defined, is critical to the achievement of the Canadian Armed Forces and the Canadian Army’s core mandate. It is hoped that some of the points, principles, and discussions included here will help to provide a deeper understanding of the role, equipment, and tasks inherent in the armoured trade, and more importantly to illuminate some of the enduring principles underlying why this is the case, and thereby serve as a common point of understanding in conversations regarding the past, present, and future of armour in Canada. 🍁

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6. Office of the CDS, *Chief of the Defence Staff Guidance to the Canadian Armed Forces* (Ottawa: Canadian Armed Forces, 2013), 5.
7. Canadian Army, *Advancing with Purpose: The Army Strategy*, ed. Director Army Staff, 3rd ed. (Ottawa: Canadian Armed Forces, 2014), 10–11.
8. B-GL-300-000/FP-000 *Canada's Army* (Kingston: Army Publishing Office, 1998), 89.
9. Andrew B. Godefroy, ed., *Land Operations 2021: Adaptive Dispersed Operations*, B-GL-310-001/AG-001 (Kingston: Army Publishing Office, 2007), 7, 14.
10. Directorate of Army Doctrine, *Land Operations*, B-GL-300-001/FP-001 (Kingston: Army Publishing Office, 2008), 1–4; Directorate of Army Doctrine, *Battle Group in Operations*, B-GL-321-005/FP-001 (Kingston: Army Publishing Office, 2012), 2–1.
11. Carl Osgood, "Revolution in Military Affairs Suffers Setback," *Executive Intelligence Review* 35, no. 37 (19 September 2008), 43.
12. David Lambert, "Adapting the Canadian Army Organisation: 'Transformation' and the Enduring Nature of Warfare," *Security Challenges* 6, no. 1 (2010), 59.
13. R. B. Oglesby, *A Summary of Major Changes in Army Organization, 1939-1945*, ed. C.P. Stacey, Historical Report No. 57 (Ottawa: Historical Section Army Headquarters, 1952), 16.
14. Ibid., 27.
15. Martin Brayley, *The British Army 1939-45 (1): North-West Europe* (London: Bloomsbury, 2013), 21.
16. *Military Training Pamphlet No. 19: Tactical Handling of Anti-Tank Regiments* (Ottawa: Printer to the King's Most Excellent Majesty, 1940), 1.
17. This can be a point of some confusion, as both tank and armoured regiments were equipped with tanks. There is thus a distinction between tank as a technical platform and tank as a role.
18. Louis Rago, "Cavalry Transformation: Are We Shooting the Horse Too Soon?" (Monograph, School of Advanced Military Studies, United States Army Command and General Staff College, 2002), 18.
19. Director Personnel Planning, "Part 2: Occupational Specification for the Armour Occupation, MOC 21," in *Canadian Forces Manual of Military Occupational Structure*, vol. 2, A-PD-055-022/PP-001 (Ottawa: Canadian Armed Forces, 1998), 39–54; Director Personnel Generation Requirements, "Part 2: Occupational Specification for the Crewman Occupation, MOSID 00005," in *Canadian Forces Manual of Military Occupational Structure*, vol. 2, A-PD-055-022/PP-002 (Ottawa: Canadian Armed Forces, 2014), 35–77.
20. Director Personnel Planning, "Part 2: Occupational Specification for the Armour Occupation, MOC 21"; Director Personnel Generation Requirements, "Part 2: Occupational Specification for the Crewman Occupation, MOSID 00005."
21. *Armour Volume 1: The Armoured Regiment in Battle*, B-GL-305-001/FT-001 (St-Hubert, Quebec: Mobile Command, 1990), i.
22. R. E. Acreman, "Revision to B-GL-305-001/FT-001, Armour, Volume One, The Armoured Regiment in Battle," 5 April 1991.
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24. "Leopard PSO," *Defense Update*, 2006, <http://defense-update.com/products/l/Leopard-PSO.htm>.
25. Trevor Findlay, *The Use of Force in UN Peace Operations* (Solna, Sweden; Oxford; New York: SIPRI; Oxford University Press, 2002), 224, 230–31.
26. Paul W. Westermeyer, *The Battle of Al-Khafi* (CreateSpace, 2008), 18, http://www.marines.mil/Portals/59/Publications/U.S.%20Marines%20in%20Battle%20Al-Khafi%20%20PCN%20106000400_3.pdf?ver=2012-10-11-164151-183.
27. Paul McLeary and Adam Rawnsley, "SitRep: Thousands of U.S. Troops, Tanks Shipping to Eastern Europe," *Foreign Policy*, 30 March 2016, <http://foreignpolicy.com/2016/03/30/situation-report-tanks-eastern-europe-americans-evacuated-turkey-russian-airstrike-syria-south-china-sea/>.
28. Don Senft, "Leopards in Kosovo: The Solution for an Armoured Combat Vehicle," ed. John R. Grodzinski, *The Army Doctrine and Training Bulletin* 3, no. 1 (Spring 2000), 56–67.
29. Royal Canadian Armoured Corps School, "Canadian Army Doctrine Note – Armour in Operations (Draft Version 8)," January 2017, 6.
30. *Infantry Volume 1: The Infantry Battalion in Battle*, B-GL-309-001/FT-001 (St-Hubert, Quebec: Mobile Command Headquarters, 1992), 1–2–1.
31. Directorate of Army Doctrine, *Land Operations*, 1–4.
32. *Army Field Manual Volume 1 Part 2: Battlegroup Tactics*, AC 71648 (Warminster, UK: British Army Directorate of Land Warfare, 2014), 1–15.
33. "Armoured Corps Officer," *Australian Defence Force*, 2016, <http://www.defencejobs.gov.au/army/jobs/ArmouredCorpsOfficer/>.
34. United States Army and Maneuver Center of Excellence, *Tank Platoon*, FM 3-20.15 (Fort Benning, GA: Headquarters, Department of the Army, 2012), 27.
35. *Royal Canadian Armoured Corps Training Tactics – The Armoured Regiment*, CAMT 3-1 (Ottawa: Canadian Army, 1955), 17; *Royal Canadian Armoured Corps Training Tactics – The Armoured Car Regiment*, CAMT 3-2 (Ottawa: Canadian Army, 1948), 21; *Armour Volume 1: The Armoured Regiment in Battle*, CAMT 3-1 (Ottawa: Canadian Army, 1960); *Royal Armoured Corps Tactics Volume 2: The Formation Reconnaissance Regiment*, 71204(04) (United Kingdom: British Army, 2004).
36. Cole Petersen, "Organizing Canada's Infantry," *The Canadian Army Journal* 16, no. 2 (2016): 62, 66; *Infantry Volume 1: The Infantry Battalion in Battle*, 13–1–2.
37. With an armoured squadron consisting of four fire-units (four armoured troops), and an infantry platoon consisting of four fire-units (three rifle sections and a weapons section). This is equally true in U.S. Army infantry doctrine, see *The Infantry Rifle Platoon and Squad*, FM 3-21.8 (Washington, D.C.: Headquarters Department of the Army, 2007), 24.
38. *Armour Volume 3: The Tank Troop in Battle*, B-GL-305-003/FT-001 (St-Hubert, Quebec: Mobile Command, 1991).
39. ADC SSO Doctrine, *Canadian Army Doctrine Note (CADN) 16-01 Land Operations Doctrine – An Updated Summary* (Kingston: Army Doctrine Centre, 2016), 33; *Infantry Volume 1: The Infantry Battalion in Battle*; *Armour Volume 1: The Armoured Regiment in Battle*, 1990; *Armour Volume 1: The Armoured Regiment in Battle*, 1960.
40. Although these differences may be thought to be nullified with the advent of armoured or mechanized infantry, it must be remembered that infantry by definition fight dismounted, and thus may move to the battle via vehicles, aircraft, parachute, or other means, but manoeuvre dismounted. Soldiers fighting directly from armoured fighting vehicles are by definition an armoured as opposed to an infantry force, regardless of actual trade affiliation.

41. *Royal Canadian Armoured Corps Training Tactics – The Armoured Regiment*, 17; *Armour Volume 1: The Armoured Regiment in Battle*, 1960; *Armour Volume 1: The Armoured Regiment in Battle*, 1990; *Armour Volume 3: The Tank Troop in Battle*; *Armour Volume 3: The Tank Troop Leader's Manual*, CFP 305 (3) (St-Hubert, Quebec: Mobile Command, 1980).
42. Lowest level in the sense that the armoured squadron is the smallest organization with the ability to manoeuvre in the face of determined adversary resistance (entire troops supporting troops), has tactical depth (in terms of battlefield geometry and the ability to absorb casualties and continue operations), command and control (with a squadron headquarters element for planning and C2), and is self-sustaining (having an administrative troop to provide for continuous battlefield sustainment).
43. RCAC Tactical Doctrine Historical Analysis presentation, 2015. As a point of note, the “vital ground” of the RCAC School is armoured crew commanding, as this is the level within the individual training system that armoured tactics begins. However, in terms of generating fighting power (collective training), the four best crew commanders in the Corps do not represent any armoured fighting capability until formed into a cohesive and well-trained fighting troop. Thus, from an institutional perspective the fighting troop is the Corps’ vital ground whether officially designated or not.
44. *Royal Canadian Armoured Corps Training Tactics – The Armoured Regiment*, 59.
45. Petersen, “Organizing Canada’s Infantry,” 62, 66; *Royal Canadian Armoured Corps Training Tactics – The Armoured Regiment*, 17; *Armour Volume 1: The Armoured Regiment in Battle*, 1960.
46. *Infantry Volume 1: The Infantry Battalion in Battle*, 14–1–2.
47. *Royal Canadian Armoured Corps Training Tactics – The Armoured Car Regiment*, 21.
48. Ibid.
49. *Royal Armoured Corps Tactics Volume 2: The Formation Reconnaissance Regiment*, 2–13; École de cavalerie, *Manual D’emploi Du Peloton de Cavalerie Blindée*, ABC 36.101 (Saumur, France: Armée de terre, 2012), 8–9; *Reconnaissance and Cavalry Troop*, FM 3-20.971 (Washington, D.C.: Department of the Army, 2009), 1–8 – 1–15; Wolfgang Schneider, *Panzer Tactics: German Small-Unit Armor Tactics in World War II*, 1st ed (Mechanicsburg, Pa: Stackpole Books, 2005), 138.
50. United States Army and Maneuver Center of Excellence, *Tank Platoon*, paras 6–23.
51. *Armour Volume 3: The Tank Troop in Battle*, iii.
52. United States Army and Maneuver Center of Excellence, *Tank Platoon*, paras 6–24; *Tank and Mechanized Infantry Company Team*, Field Manual 71–1 (Washington, D.C.: Headquarters Department of the Army, 1998), chaps 1–1.
53. Combat Capability Directorate Royal Armoured Corps, *Mounted Close Combat Doctrine – Volume 1 – Royal Armoured Corps Tactics: The Armoured Squadron*, Army Code No. 70590 (United Kingdom: Ministry of Defence, 2011), para. 1222.
54. Schneider, *Panzer Tactics*, 138.
55. *Royal Canadian Armoured Corps Training Tactics – The Armoured Regiment*, 17.
56. Ibid., 16.
57. Schneider, *Panzer Tactics*, 139.
58. Directorate of Army Doctrine, *Land Operations*, 1–4.: “Combat (cbt) elements consist of those elements that engage the enemy directly... and include armour.... Reconnaissance (recce) forces have the primary purpose of gaining information. As such, they are normally classified as cbt sp forces.” Further, Directorate of Army Doctrine, *Battle Group in Operations*, 2–1 states, “Combat elements are those elements that have an integrated ability to employ manoeuvre to engage the enemy directly.... Combat support (CS) elements are those elements that provide fire support, operational assistance and enablers to tactical activities conducted by manoeuvre elements. They include... reconnaissance....”
59. Donald E. Graves, *South Albertas: A Canadian Regiment at War* (Toronto: Robin Brass Studio, 1998).
60. Jim Storr, “Manned, Armoured, Reconnaissance: Why and How?” *The Journal of Military Operations* 2, no. 2 (Spring 2014): 19.
61. *Royal Canadian Armoured Corps Training Tactics – The Armoured Car Regiment*, 6–7; *Army Field Manual Volume 1 Part 2: Battlegroup Tactics*, 1–18; The War Office, *The Tactical Handling of the Armoured Division and Its Components Part 2: The Armoured Regiment*, Military Training Pamphlet 41 (London, 1943), 15.
62. *Reconnaissance, Security, and Tactical Enabling Tasks Volume 2*, FM 3-90-2 (Washington, DC: Department of the Army, 2013), 1–14.
63. *Ground Manoeuvre Reconnaissance*, B-GL-394-002/FP-001 (Kingston: Army Publishing Office, 2015), 3–4–7.
64. Brereton Greenhous, *Dragoon: The Centennial History of the Royal Canadian Dragoons, 1883-1983* (Ottawa: Guild of the Royal Canadian Dragoons, 1983), 366.
65. Petersen, “Organizing Canada’s Infantry,” 58. “With up to 26% of the Corps’ F echelon focused on crewing a vehicle, we lose the soldiers required to fight on foot—the corps raison d’être—and the infantry risks becoming Canada’s second-best armoured corps.”
66. As a point of clarification, what we have labelled as the “cavalry gap” is not a matter of equipment or structure but of the role of the armoured trade. In this way, the role of our wartime armoured regiments has effectively been abandoned, with various squadrons occupying the de facto roles of the defunct tank and armoured car regiments of the past.
67. For a more in-depth review of the concept of “practical drifting,” see Scott A. Snook, *Friendly Fire: The Accidental Shootdown of U.S. Black Hawks Over Northern Iraq* (Princeton and Oxford: Princeton University Press, 2000).
68. Notable economy of force tasks are the advance to contact, the attack, and the delay. For a more definitive look at the role of Cavalry, see U.S. Army Armor Centre, “Chapter 1 – Overview,” in *Reconnaissance and Cavalry Troop*, FM 3-20.971 (Washington, DC: Department of the Army, 2009), 22; and R. R. Battreal, *Cavalry Roles and Missions* (Fort Knox: 1979).
69. “Medium” here refers to the Leopard I medium tank (equipment), and the traditional concept of the Armoured / Armoured Cavalry Regiment (role). Also medium in this case is specific to the armoured trade only, as light, medium and heavy armour all fall within the “heavy forces” category outlined in Chapter 1 of Land Operations.
70. Donald S. Macdonald, “Defence in the 70s: White Paper on Defence” (Ottawa: Government of Canada, 1971), 35, http://publications.gc.ca/collections/collection_2012/dn-nd/D3-6-1971-eng.pdf.
71. J.K. Marteinson and Michael R. McNorgan, “Regeneration, 1971-1989,” in *The Royal Canadian Armoured Corps: An Illustrated History* (Toronto: Royal Canadian Armoured Corps Association, 2000), 386; Frank Maas, “From a Beetle to a Porsche: The Purchase of the Leopard C1 Tank for the Canadian Army,” *Canadian Military Journal* 16, no. 4 (Autumn 2016), 17.
72. Laurier Centre for Military Strategic and Disarmament Studies, “From Centurion to Leopard 1A2,” *Wilfred Laurier University*, 10 April 2014, <http://canadianmilitaryhistory.ca/last-minute-cancellation-canada-and-the-scorpion-by-frank-maas/>; Maas, “From a Beetle to a Porsche: The Purchase of the Leopard C1 Tank for the Canadian Army,” 17.
73. Sean Maloney, “A Proportion of Their Cavalry Might Be Converted: Light Armoured Force Development in Canada’s Army, 1952–1976,” ed. John R. Grodzinski, *The Army Doctrine and Training Bulletin* 2, no. 4 (Winter 1999), 99.
74. Marteinson and McNorgan, “Regeneration, 1971–1989,” 390.
75. Maloney, “A Proportion of Their Cavalry Might Be Converted: Light Armoured Force Development in Canada’s Army, 1952–1976,” 98.
76. J.K. Marteinson, Michael R. McNorgan, and Sean M. Maloney, *The Royal Canadian Armoured Corps: An Illustrated History* (Toronto: Royal Canadian Armoured Corps Association, 2000), 413.
77. Although the Leopard I was to be retired without a tank replacement, the “direct fire system” capability was slated to be replaced by the Mobile Gun System (a LAV III mounted with a lower-velocity 105-mm auto-loading cannon housed within a remote weapons station). This platform was to equip the “DFS troops” and act as a “system of systems” along with the MMEV and the TUA. This idea effectively came to an end with the emergency halt to Leopard I divestment, and the follow-on acquisition of leased Leopard II from Germany.
78. Many of the “Revolution in Military Affairs” assumptions underpinning this “Transformation,” such as the death of the Russian bear and traditional conflict, and information and firepower dominance, proved hollow in Afghanistan. See Lambert, “Adapting the Canadian Army Organisation: ‘Transformation’ and the Enduring Nature of Warfare,” 59.
79. Ibid., 53; Michael Byers and Stewart Webb, “Putting Politics before Soldiers,” *National Post*, 23 September 2013; Ottawa Citizen, “The Return of the Leopard,” *CanWest MediaWorks Publications*, 8 July 2006, <http://www.canada.com/ottawacitizen/news/observer/story.html?id=95b4c9e5-de13-4425-bc87-218c1031583c>.
80. Assistant Deputy Minister (Review Services), “Evaluation of Land Force Readiness and Training” (Ottawa: Department of National Defence, March 2011), <http://www.crs.forces.gc.ca/reports-rapports/2011/167P0861-eng.aspx#desc>; Royal Canadian Armoured Corps School, “Briefing Note for Commander CTC: DP1 Armoured Officer Classification Training,” Memorandum (30 January 2015); Land Force Doctrine and Training System, *National Defence Training Plan: DP 1 Armour Reconnaissance Troop Leader*, A-P1-002-D2A/PH-B01 (Kingston: Land Force Doctrine and Training System, 2008).
81. “KMW Delivers 20 Upgraded LEOPARD 2 to Canada,” *Canadian Defence Review*, 8 October 2010, <http://www.canadiandefencereview.com/news.php/news/591>.

82. One would reason that with level 5 (combat team) live training being the Commander of the Canadian Army's vital ground, a sufficient number of armoured fighting vehicles, whether tanks or "tank trainers," (such as the LAV I Cougar in the past) would be implicit key terrain.
83. *Canada's Army*, 85.
84. J. L. Granatstein, *Canada's Army: Waging War and Keeping the Peace* (Toronto: University of Toronto Press, 2011), 346.
85. Greenhous, *Dragoon: The Centennial History of the Royal Canadian Dragoons, 1883-1983*, 424-28.
86. J. K. Marteinson, Michael R. McNorgan, and Sean M. Maloney, Chapter 17 in *The Royal Canadian Armoured Corps: An Illustrated History* (Toronto: Royal Canadian Armoured Corps Association, 2000), 1.
87. Greenhous, *Dragoon: The Centennial History of the Royal Canadian Dragoons, 1883-1983*, 424-28.
88. *Armour Volume 2: The Reconnaissance Squadron in Battle*, B-GL-305-002/FT-001 (St-Hubert, Quebec: Mobile Command Headquarters, 1979).
89. *Armour Volume 1: The Armoured Regiment in Battle*, 1990, 25-26.
90. Combat Capability Directorate Royal Armoured Corps, *Mounted Close Combat Doctrine - Volume 1 - Royal Armoured Corps Tactics: The Armoured Squadron*, para. 0154.
91. Army Doctrine Centre, *Brigade Tactics*, 1-6.
92. Graves, *South Albertas*.
93. J. K. Marteinson, Michael R. McNorgan, and Sean M. Maloney, Chapter 18 in *The Royal Canadian Armoured Corps: An Illustrated History* (Toronto: Royal Canadian Armoured Corps Association, 2000).
94. "The State of Readiness of the Canadian Forces," 2.
95. *Royal Canadian Armoured Corps Training Tactics - The Armoured Regiment*, 17.
96. Army Lessons Learned Centre, *Dispatches: The Royal Canadian Armoured Corps in Afghanistan*, B-GL-050-000/FT-003 (Kingston: Army Publishing Office, n.d.), 7.
97. ADC SSO Doctrine, *Canadian Army Doctrine Note (CADN) 16-01 Land Operations Doctrine - An Updated Summary*. Doctrine tells us "how things should be done, based on enduring principles, proven practices and empirical evidence"; policy, however, "dictates how things will be done, often based on temporal direction, the availability of resources or the availability of time. **The two must remain distinct and doctrine cannot follow temporal or convenient policies, for it provides the standard of measurement for both force generation and force employment.**"
98. *Royal Canadian Armoured Corps Training Tactics - The Armoured Car Regiment*, 21.
99. *Ground Manoeuvre Reconnaissance*, 2-1-8.
100. Ibid.
101. Army Lessons Learned Centre, *Dispatches: The Royal Canadian Armoured Corps in Afghanistan*, 19.
102. The GMR 8-car recce troop consists of four 2-car patrols managed by a troop leader. As an armoured squadron represents four tactical fire units under the command of a major, and the GMR model sees four tactical "fire units" (half troops) under the command of a second-lieutenant, this has effectively seen a four-fold increase in tactical complexity. In this way under the GMR model, each armoured crew commander (a sergeant) has effectively become the tactical equivalent of a troop leader, the troop leader a squadron commander, and the squadron commander a regimental commander. This explains why the SHQ (OC and fireteam partner) configuration has been downloaded to the troop level (troop leader and "G" fireteam), and the copying of the RHQ CP structure down to the squadron level (the operations officer and warrant with two separate semi-static command posts).
103. "Specialist peace support organization" is used here to illustrate the point that this two-vehicle organization has never been used in conflict with the sole exception of Afghanistan, where it immediately failed and was replaced by a three- to four-vehicle organization. The smallest reconnaissance organization during the Second World War was the four-car armoured car troop, the smallest armoured reconnaissance organization was the four-tank troop, and during the Korean War only four-vehicle troops of Sherman tanks were used.
104. United States Army and Maneuver Center of Excellence, *Tank Platoon*, chap. 6.
105. Combat Capability Directorate Royal Armoured Corps, *Mounted Close Combat Doctrine - Volume 1 - Royal Armoured Corps Tactics: The Armoured Squadron*, paras 0131, 1222, 1228, 1229, 1252.
106. "Light Cavalry Scout," *Australian Defence Force*, 2016, <http://www.defencejobs.gov.au/army/jobs/LightCavalryScout/>.
107. "The Royal Armoured Corps - Light Cavalry," *British Army*, 2016, <http://www.army.mod.uk/armoured/35383.aspx>.
108. "Cavalry Scout (19D)," *U.S. Army*, 2016, <http://www.goarmy.com/careers-and-jobs/browse-career-and-job-categories/combat/cavalry-scout.html>.
109. "Armoured Corps Officer," "Armoured Cavalry Trooper," *Australian Defence Force*, 2016, <http://www.defencejobs.gov.au/army/jobs/ArmouredCavalry/>.
110. Headquarters Royal Armoured Corps, *Mounted Close Combat Doctrine - Volume 2 - Royal Armoured Corps Tactics: The Brigade Reconnaissance Regiment*, Army Code No. 71207 (United Kingdom: Ministry of Defence, 2011), 2-4.
111. Westermeyer, *The Battle of Al-Khafji*, 16-17.
112. Greenhous, *Dragoon: The Centennial History of the Royal Canadian Dragoons, 1883-1983*, 371-72.
113. Ibid., 317.
114. Rago, "Cavalry Transformation: Are We Shooting the Horse Too Soon?" 18-19.
115. U.S. Army, *Command Report - 14th Infantry Regiment*, 1951, https://archive.org/stream/KoreanWarAfterAction/Combat%20Information%20Bulletins_djvu.txt.
116. E. D. Strong, "Appendix L: Report on Armor for the Period 21 January to 8 April, 1951," in *The Employment of Armor in Korea Volume I* (Carlisle Barracks, Pennsylvania: Operations Research Office, 1952), https://archive.org/stream/KoreanWarAfterAction/Employment%20of%20Armor%20in%20Korea,%20Vol%201,%20Operations%20Research%20Study_djvu.txt.
117. Schneider, *Panzer Tactics*, 137.
118. Ibid., 138.
119. John J. McGrath, *Scouts Out! The Development of Reconnaissance Units in Modern Armies* (Fort Leavenworth, KS: Combat Studies Institute Press, 2008), 203.
120. Robert S. Cameron, *To Fight or Not to Fight? Organizational and Doctrinal Trends in Mounted Maneuver Reconnaissance from the Interwar Years to Operation IRAQI FREEDOM* (Fort Leavenworth, KS: US Army Combat Studies Institute, 2009), 575.
121. Ibid., 544-75.
122. Curtis D. Taylor, "Trading the Saber for Stealth: Can Surveillance Technology Replace Traditional Aggressive Reconnaissance?" *The Land Warfare Papers* (Arlington, Virginia: The Institute of Land Warfare, 2005), 21-22.
123. Lambert, "Adapting the Canadian Army Organisation: Transformation and the Enduring Nature of Warfare," 48.
124. Army Lessons Learned Centre, *Dispatches - The Royal Canadian Armoured Corps in Afghanistan*, 11.
125. Combat Capability Directorate Royal Armoured Corps, *Mounted Close Combat Doctrine - Volume 1 - Royal Armoured Corps Tactics: The Armoured Squadron*, 1-7.
126. The fact that reconnaissance is a critical part of all activities is evident in its place as a step in battle procedure, see Army Doctrine Centre, "Chapter 2 - Battle Procedure," in *Decision Making and Planning at the Tactical Level*, B-GL-335-001/FP-001 (Kingston: Army Publishing Office, 2017), 11.
127. Army Doctrine Centre, *Brigade Tactics*, 6A-1, 1-6, 1-9.
128. For a more detailed overview of how an armoured squadron, regardless of specific platform, drastically increases its fighting power and flexibility, see *The Armoured Squadron: Seeking relevance for the Royal Canadian Armour Corps through the application of doctrine* by Maj P. C. Chevalier.

ROYCEAN LOYALTY IN A MILITARY CONTEXT PART 1: THE LOGIC OF DECISION AND STEADFASTNESS

Dr. Marc Anderson

The philosophy of loyalty of American philosopher Josiah Royce appears out of place among his larger and more sustained interests. The work is restrained compared to many of Royce's other efforts. It combines considerable generality with some very exact exemplifications of his insights. It is difficult at first reading to know what to make of it. Is Royce's prescription to "be loyal to loyalty," rather than being at the root of human conduct, simply a weak *catch all* into which Royce merely reads other virtues, as one of Royce's early critics suggested,¹ or does more lurk beneath its surface than is usually realized?

I have taken the latter view. To my mind, Royce offered some of his best and clearest writing on the topic of loyalty, and with sufficient reflection, the doctrine of loyalty to loyalty can be shown to have been deeply intertwined with Royce's other writings, so much so that the metaphysical principle offered was the high point of Royce's work. In support, I want to reflect here upon several aspects of loyalty that become prominent when the principle is regarded in relation to one of the most pragmatic of human endeavours: war.

Royce unambiguously stated early on in *The Philosophy of Loyalty* that he wanted to separate the idea of loyalty from its "disastrous association" with military action.² Royce was right in this. Yet at the same time he was ready to point out that military experience has always furnished striking cases of loyalty. That the principle was readily apparent in military experience may well have been true, as Royce noted, even though it was sometimes ill-used there.

Now if we were to merely play up the thought that, in general, the military encouraged loyalty, we would be working against Royce's effort. That we must not do. We would be wiser to examine the obverse of the issue. The question is not whether the military ethos engendered loyalty—*de facto* it did—but rather how certain aspects, or component modes of action, of loyalty contribute a large part of what *is* of value in military experience, and whether they contribute this precisely because they are key requisites of a manifestation of loyalty, which, being *ultimately* self-contradictory, needs them to survive. If that could be answered affirmatively, then we would have made a first step toward a consistent military ethic—the issue of where to direct loyalty.

In other words, if we can show that loyalty plays a prominent and necessary part in the military community—a community that is, so far, inconsistent according to its ultimate aim—then we can vindicate Royce's claim that loyalty is central to an ethical life. Consider, if loyalty can *correct*, to whatever extent, the internal contradictions of certain perennial types of contradictory human action, then it is strong indeed, and even stronger when joined with consistent actions. *It is not that the military is a breeding ground for loyalty, but rather that loyalty saves military action from its fundamental inconsistency and gives it what value it has.* If that holds, then consistently viewed and applied loyalty has the potential to transform military action into something better than it now is.

Only two aspects of loyalty will concern us: *decision* and *steadfastness*, and only in a military context, though they obviously apply to other contexts. We will begin with a brief overview of loyalty to loyalty, up to the central role that decisiveness and steadfastness played in Royce's account. With a preliminary sense of the logic behind these aspects, we will move on to exemplify them in their pragmatic aspect in some historical military contexts. *Our goal will be to gain a sense of how decision and steadfastness support the military manifestation of loyalty relative to its goal and of how they begin to lead military endeavour to value beyond its inconsistencies.*

THE ROLE OF DECISION AND STEADFASTNESS IN LOYALTY

Royce founded his philosophy of loyalty on a working definition of loyalty, which he took to capture its essence in practical attempts to act toward the good throughout history: "*the willing and practical and thoroughgoing devotion of a person to a cause.*"³ There were three elements at play: the free will to choose a cause; a devotion to the whole of the cause; and the taking of practical action that supported the cause. To begin, Royce left aside whether the cause was good or bad. He asked us to view the issue abstractly at first, and to suspend our judgment regarding the ethical status of any particular cause.

To this beginning, Royce then added two additional strictures. First, the cause had to be personal in some sense; we had to value it personally as an individual, and yet it must not have been *merely* personal or private—it had to go beyond us. Second, it must not have been impersonal, but have potentially involved other men.⁴ The cause that loyalty engaged thus united together in action the individual person with other persons. In uniting people it accomplished something worthwhile, Royce suggested—something that lay in a more abstract realm than the question, "what is a worthy cause?" but yet something lower that can be worthwhile as a guide. Thus, "what is a worthy cause?" gave way to "what does a man gain by being loyal?"⁵ and the latter, once expanded, inspired our own variant of it, namely "what does military action gain by loyalty activated through decision and steadfastness?"

Two aspects of our moral perplexity haunt us from birth, insisted Royce. On the one hand, our own will acted as the ultimate arbiter of what was good for each of us. A duty became a duty for us because we ourselves willed it, and a clear insight into what our will desired furnished us with the only ground to which we could appeal in disclosing what was good for us. On the other hand, finding out what we *really wanted in life* constituted at least half of our life's struggle. The great mass of life's experiences and temptations constantly jostled one another for precedence so that, left to ourselves, we were drawn this way and that.⁶ A plan of life uniting our warring desires would have saved each of us, but we never got it by looking inward alone. We looked outward to society, which presented us with various plans of life, various models, which we imitated for a while. Yet soon we grew tired of them, for imitative social training soon gave us the tools of non-conformity and rebellion against the very society that trained us.⁷

A cycle was set up then, of individual versus society. Looking inward, the individual felt lost; looking outward, that individual imitated, for a time, then grew weary of merely copying and turned inward again, trying to find some unique unifying thread. This cycle continued until something further happened, namely, until the troubled individual came upon a *cause*.

The cause offered that which united the two aspects of individuation: *it offered the outward plan of life beyond the private individual conjoined with that through which the individual felt inwardly fulfilled in self-assertion.*⁸ It provided the opportunity to say, "I will it, even though and because it is beyond me as I now am." The unity of purpose that this discovery engendered could begin to guide one's active life. Yet the difficulty remained: *what cause could do this?*

First, noted Royce, loyalty and opportunities for loyalty were to be found in all levels and circumstances of society. However, the more opportunities there were for loyalty, the more there were for the clash of loyalties. Loyalties clashed because scattered throughout the realm of life were various predatory loyalties whose action was directed at some enemy, and resulted in the diminishment or destruction of that enemy's loyalty. Now if loyalty was defined as uniting many into the service of one cause, then it involved others acting loyally, just like the subject. If so, then loyal action promoted and increased loyalty. At once, then, there was a standard by which to measure a cause: did it increase loyalty, or did it decrease loyalty? If it did the former, it was a good and right cause; if it did the latter, it was a relatively bad and wrong cause.

Applying this more formally, we would posit: loyalty to loyalty (i.e. to the general increase of loyalty among humanity) is the ultimate good cause; disloyalty to loyalty (i.e. to the general decrease of loyalty among humanity) is the hallmark of an evil cause.⁹ From this insight several practical principles arise. First, since loyal action is freely chosen, then in choosing and serving your cause you should choose a cause that increases loyalty—*be loyal to loyalty*. To be loyal to loyalty, however, one must enlist the support of those causes that most harmonize with one another according to our situation. A winnowing and evolution of loyalties through uncovering and accepting new forms of loyalty is, therefore, demanded.¹⁰

Royce contended that all of the common virtues and fundamental duties of civilized society derived their foundation from loyalty. Honest social dealings and fidelity in the business world, for example, had consequences for a far greater range of social interaction than the mere private dealings that exemplify them in furthering or diminishing the cause of loyalty.¹¹ We depended upon something we called our conscience to answer doubtful questions about life, said Royce. But the nature of our conscience led us back to the question of who we were, like when someone asked, "What do you do in life?" Our purpose depended, meanwhile, on having a plan of life, often very vague, sometimes even as vague as the constant *search for a purpose*.¹²

Yet the purpose that loyalty provided, was it ever so vague, brought us unity of life, harmonizing our actions and individualizing us as moral selves. In appealing to our conscience, then, we really appealed to some ideal plan of life that our cause furnished for us. Thus our chosen cause, expressed through our own unique ideal, *was our conscience*, and we constantly measured our actions by it.¹³ Hence we could have been wrong in our conscience, but only insofar as our choice of a cause was wrong.

Is conscience, as here understood to rest upon a foundation of loyalty, able to help navigate the conflict between the loyalties of a complex world? In answer, Royce invoked the logic of the assumptions already accepted and asserted that insofar as one has accepted the principle of loyalty to loyalty, then the logic of that acceptance provided an answer. To be loyal to loyalty, one had to serve some cause. Serving a cause required definite action. But if, when persons were faced with a conflict between potential causes, they could not choose according to the information at their disposal, and refused to decide, they would then have been inactive. But this inactivity—this doing nothing, this *not serving*—contradicted the very principle of service earlier accepted in being loyal to loyalty.¹⁴

This principle of loyalty to loyalty indicated, then, that one must serve something, must decide one way or the other. As a first practical principle was: decide upon a cause, and thus a course of action, according to the best information available; or again, since every cause must be both part and aggregate of a system of causes demanding loyalty at various levels of complexity, *be decisive*.¹⁵ The logic of decisiveness immediately invoked a further practical consequence, however. Being decisive committed the will to some action, but the action had to be sustained at the risk of inaction. Inaction, in this sense, meant inaction *simpliciter* as opposed to inaction due to indecision, but inaction *simpliciter* was just as contradictory to the principle of loyalty to loyalty as inaction due to indecision. In other words, from moment to moment, the decision had to be made anew to continue the action, at least until such time as enough new information became available to reassess the cause as one that actually worked against universal loyalty. Worse still, failure to sustain action in the service of a chosen cause set before the world an example of disloyalty, thus decreasing loyalty in the world. Royce called this sustaining of active service to some chosen cause *fidelity*. A term that has been used more commonly in the military context is *steadfastness*.

THE CAUSE AS THE STANDARD

Before examining decision and steadfastness further, we must briefly dwell on the nature of a loyal cause itself. Loyalty demands a cause and action according to that cause. Insofar as the action taken centres around the cause, then the cause becomes the standard of action for the one acting. The cause is judged as valuable, or valued, by the loyal member, and being so valued, it becomes the measure of the action, so to speak.

This valuation could be taken very literally indeed. Let the cause be running the four-minute mile, for example, and let someone be devoted to that cause in the sense that he or she would take it as a personal challenge to build up to running a mile in four minutes, as Roger Bannister did in 1954. Then, the mile-long track distance across the earth's surface, combined with the four minutes of time—a combination of time and space—literally would become the measure of the action undertaken to overcome the challenge, which was considered the cause. The cause's value was here, literally, the quantitative approach toward the four-minute mile goal on the various attempts made. Or again, the challenge could be raising a million dollars for cancer research. Then the event itself, including the approach over time, and also over space if the dollars were in physical currency, to the million-dollar quantity would be the cause, which in turn would define the value standard.

Now, consider the military cause. We could define the military cause in all cases as either the elimination of an enemy, or some lesser state of affairs where the enemy would be rendered *as if* eliminated according to some practical criteria (for example, the enemy being made to submit to some viewpoint of the aggressor, a state of affairs practically equivalent to being eliminated). But if the military cause would ultimately be an elimination, then it would be finite. And if it were finite, then once achieved, it would mark the end of loyalty with regard to it. Military communities would therefore be in an ultimately inconsistent position with regard to loyalty. To have achieved their cause would have been to have lost loyalty; to have built loyalty by active service to the cause would inevitably be to later lose that loyalty with regard to the same cause, if they won. Hence, insofar as military action destroyed the causes of others—exemplifying a more general disloyalty—it also destroyed its own cause and hence doubly exemplified disloyalty when considered in the long view.

Moreover, since the *action* in the service of a cause was measured with regard to the cause, it was also measured with regard to an inconsistent cause, such as a military cause. Accordingly, our assertion here is—and it can be no more than hinted at in this paper—that all types of military action find their value according to those criteria and derive their relative effectiveness according to the same. Further, as a subordinate consequence of that assertion, *it is precisely this measuring of the action in warfare according to its cause that decisiveness and steadfastness influence in a very simple and logical way, so as to manifest themselves prominently and often as factors of conflict.*

DECISION

Decisiveness in the military context has long been lauded as essential to leadership. Bernard Montgomery wrote that the leader “must be a man of decision and action; calmness in the crisis and decision in action must be his watchwords . . .”¹⁶ Decision is an attitude toward action, the capacity to choose among the various available courses of action. But why is it that the power of decision-making becomes most visible in the military context? An example of military *indecision* may help to answer that question.

On the morning of 13 September 1861, early in the American Civil War, General George McClellan faced a moment of decision. After days of fumbling blindly in pursuit of the Confederate Army of Northern Virginia, which had invaded Maryland, McClellan had fortuitously discovered a map of General Lee's planned movements over the next several days, and thus had an opportunity to defeat the separated parts of his opponent's army one by one. His initial joy did not give way to decision, however. Three hours passed before McClellan sent orders to his cavalry commander to conduct a reconnaissance to confirm the enemy's movements. A further three hours whiled away before McClellan made his corps commanders aware of the discovery. The day of 13 September had thus passed without a significant move from McClellan.



Source: Public Domain

American Civil War, General George McClellan

The day of 14 September was little better. McClellan's army moved to divide the Confederates, but the orders came raggedly and indecisively. Indeed, McClellan's more decisive subordinates sometimes received orders to do what they were already in process of doing.¹⁷ McClellan's focus on the army's organization, and the consequent delays this provoked, caused him to lose the advantage of time he still possessed on the morning of 14 September and, practically speaking, wasted the day, giving the Confederate Army time to concentrate.¹⁸

By the end of 14 September, McClellan was optimistic—he had met the enemy. Yet he was also in doubt, as Armstrong noted, with respect to the coming actions of the enemy.¹⁹ In basing his actions upon the action of the enemy, he was reacting, rather than acting. His orders at that time had the air of being tendentious, of attempting to guess and to make allowance for every possibility.²⁰ In short, he had not, as Montgomery put it, “mastered the events which encompassed him,” but rather let himself be swayed by them.²¹ All in all, it took McClellan until the evening of 15 September to come to a definite plan of action,²² and even then, that action never fully materialized until 17 September in what became known as the Battle of Antietam.

By all accounts, McClellan remained as cautious when he *did* know the relative dispositions of the enemy as when he did not. Thus, even after having finally made his decision, McClellan only made a half decision; rather than attacking, he partially attacked, committing only a portion of his army, and preferring thereafter to leave the decision to God.²³ “The discovery of Lee's lost order on the thirteenth was like the discovery of an open door into the enemy's house, but a door that would not remain open long under any circumstances . . . Therefore, time became a critical factor in McClellan's next move.”²⁴ But time is just what McClellan forfeited in being indecisive. Two months later, he was relieved of command of the Union Army by an exasperated Lincoln.

What moral can we draw from McClellan's indecision? The first thing to note is that, in one of its aspects, the conflict involved a narrowing of time. The opponent had some predatory goal with regard to the friendly cause—as the Confederate Army did—which was either part, or the whole, of its cause. As it acted toward that goal it tended to narrow the time for action toward the friendly cause. Temporal opportunity for loyal action was thus diminished. But just so, the more that opportunity was diminished, the more was lost by friendly indecision, for every indecisive moment allowed was a further waste of an already diminishing time span for action. In this case, McClellan, knowing the enemy's plan of action, was doubly remiss with regard to the enemy's cause. He failed to use the surplus time he was given to overcome the enemy's narrowing of time committed to action by defeating the enemy in detail, which he could have done because the enemy had to *pay back* that time in re-concentrating its force. Yet in the Battle of Antietam proper, he also allowed the enemy to diminish his temporal opportunity for loyal action by reacting to the enemy's moves rather than *filling in* his own time with decisive action.

These insights apply in everyday life. Any human lifetime, in the course of being lived, is indefinite and yet fixed with regard to its span of time. But if living that life morally is to adopt a cause and actively serve it, then the less decisive one is, the less action there can be in that finite time span. In everyday life, however, the time span is at its maximum relative to all other endeavours, for our lives seem open-ended to us even though we know they are finite. And so the time aspect is not very clearly set before us.

In conflict—in battle—the time span is far more definite. Failure to take action is, in general, failure to act toward the goal of the eliminatory cause—the defeat of the enemy—inconsistent though that cause may ultimately be. The consequence of that failure, when faced with an enemy whose actions contract time, is death (i.e. a loss of service to one's own cause). The ability to decide has been very important throughout the history of conflict, and examples of military decision abound. Here is one of them.

During the Norway campaign of 1940, German forces, similarly to Lee's Maryland campaign, carried out a rapid and covert invasion of Norway through the port of Narvik, narrowing the time for British counter-action. On the morning of 9 April, the Germans were busy repairing and refuelling the destroyer flotilla that had undertaken the invasion. Bernard Warburton-Lee, captain of a British destroyer flotilla outside of Ofotfjord and nearest to the Germans, "began receiving a stream of contradictory orders and directives from his superiors . . . [which] gave him an opportunity to use his initiative and to follow his own instincts."²⁵ Learning shortly that his foes, the German destroyers, were both larger and more numerous than his own force, he balanced on the point between rashness and duty, pondering the issue for some thirty minutes. Then, having dawn and high tide on his side, he acted, leading an attack into Narvik harbour.²⁶ Achieving complete surprise, the attack killed the German commodore, sank two German destroyers and six German transports, and damaged a further three destroyers. As Warburton-Lee's flotilla exited the fjord, it came under attack from five unengaged German destroyers. In a running battle that saw the end of two of the British captain's destroyers, including his own ship *HMS Hardy*, the German destroyers were damaged and exhausted of fuel and ammunition. Warburton-Lee's last command before a German shell struck *Hardy*'s bridge was to "keep on engaging the enemy."²⁷ The result, for which the mortally wounded Warburton-Lee received the Victoria Cross, set up the British to complete the destruction of the German naval forces at Narvik four days later.



A pre-war picture of *HMS Hardy*

Thus does the will to decide regain time for loyal action, and thus does the repossession of that time, well encapsulated in Warburton-Lee's injunction to "keep on engaging," lead us into the next of our characteristics of military loyalty: *steadfastness*.

STEADFASTNESS

We have characterized conflict as, among other things, involving a narrowing of time, but such a tendency is only half of the truth. Conflict also involves expansions of time, which tend to overcome tendencies to diminish time, all else being equal. The full logical reasons for this are too complex for us to treat here, but insofar as we remain within the simplified logical framework of Royce's theory of loyalty, then we can say that decisiveness, as suggested above, tends both to *fill* a given time with action²⁸ (i.e. active interpretation of experience) and to expand the time of a particular experience through action.

Loyal action by a military community—a predatory loyalty—was thus ultimately inconsistent in destroying its cause, but viewed *locally*, in time and space, that loyalty supported the aim of the conflict (i.e. the enemy's destruction). So, expanding time in a conflict through taking *locally* loyal action tended to *win* the conflict, all else being equal between two combatants, for the simple reason that the predatory aim of all conflict, according to which the elimination or submission of an enemy was attempted, was ultimately to have had a given time and space of experience *all to oneself*. In other words, *whichever of the two predatory loyalties took more action in support of its cause won the war*, even though, within the given span of time of the conflict, the side that narrowed time—for example, by acting secretly, swiftly or treacherously—always tended to first *win* some *even more localized* time and space by its action.²⁹

The second of our characteristics under consideration, *steadfastness*, can thus be defined as *the tendency to sustain an already decided-upon type of action within a conflict so that time is either 'filled in' or is expanded, more properly speaking*. The *filling in* of some narrowed time in which to act is what McClellan *would* have achieved had he promptly decided upon a course of action to defeat the scattered Confederate forces one after another and then continued to act on that decision. He would have *filled in* such time as the circumstances had provided him in his fortuitous discovery of the Confederate plans. This we may characterize as the lesser, more localized type of steadfastness demonstrated throughout history wherever the old saying "snatching victory from the jaws of defeat" may be used. Napoleon's campaigns of 1805–1807 could provide examples of this type of *localized steadfastness*.

The expansion of time is exemplified not only in a far less glamorous way, but tends, according to the above logic, to give rise to more long-lasting, though still localized, results. Moreover, relative simplicity of action is the hallmark of this second type of steadfastness, which we may call *broad steadfastness*, simply because the more complex an action is, the more difficult it is to repeatedly reproduce, and thus the sustainment of a simpler type of action is more achievable than that of a complex type of action. Our first example of this stolid steadfastness can be found in Quintus Fabius Maximus.

In the spring of 217 BC, Hannibal, having crossed the Alps some months earlier and diminished the Romans' time for action, was causing panic in Roman Italy, both by his crossing and his victory in several subsequent battles. No Roman commander had yet been found capable of displaying that type of localized steadfastness—of successfully rushing to respond to each of Hannibal's moves. Into this turmoil the Romans elected the consul Fabius Maximus as dictator. Interestingly, but unsurprisingly, Plutarch told us that Fabius had the characteristics of being mild-tempered and slow, both in speech and action.

Fabius was no sooner elected than he decided upon a course of action. Rather than take on Hannibal's army directly, he shadowed the Carthaginian army with the forces that were left to the Romans, keeping close enough to discomfit Hannibal and deny his army resources, but not close enough to get drawn into more than minor skirmishes. He also initiated a scorched earth policy to deny Hannibal resources. The shadowing strategy worked well. But, after a time, the Romans clamoured for a definitive victory and elected Fabius' cavalry commander, Minucius, to attack Hannibal directly. This he did and was nearly overcome, but Fabius rescued him. Sometime after this, Fabius' dictatorship came to an end and the two Roman consuls who replaced him resolved to attack Hannibal directly again. The subsequent Battle of Cannae, an utter disaster for the Romans, gave rise to a second dictatorship for Fabius and a corresponding Roman assent to his strategy for the duration of the war, until the death of Fabius and the final defeat of Hannibal by Scipio Africanus.

Now, according to our earlier suggestions, we can note the following. Hannibal, having diminished time—stolen time—by his surprise crossing into the Alps, had to *pay back* that time in the logistical difficulties inherent to being a great distance from his home base. That paying back would have been delayed by an ongoing *full* success in pillaging Roman resources, but it was precisely this that Fabius' continuous shadowing action denied Hannibal. As long as the Romans did not make the mistake of giving Hannibal the opportunity for such a local victory as would have *completely* eliminated their own cause—though Fabius' colleagues did their best to oblige Hannibal—Hannibal was never able to use the diminishment of time he had started with to his advantage.

It was Fabius' deep insight that *the simplest way to deny Hannibal a more than local victory was to match Hannibal action for action*. Fabius filled time with as much action toward his own cause as Hannibal could take for his own cause. In so doing, he always remained one step ahead of Hannibal and denied him the chance of ever catching up that step so that the fuller use of time, the fuller interpretation of experience in loyal action, must win in the end. This finally occurred in a counter action, Scipio's Battle of Zama, which regained the full measure of lost time in the elimination of the Carthaginian military cause.³⁰

That capacity to sustain a decided-upon course of action, and to yoke various subordinate actions to it, was once again *steadfastness*, or fidelity, as Royce called it. Other terms have obliquely referred to it: steadiness, keeping cool, being stalwart, refusing to quit, etc., but every such term pointed ultimately to the ability to keep one's eye on the goal—the cause—and to keep on initiating a decided-upon course of action toward that goal.

We have found it predominantly in military leaders who could be characterized as *defensively offensive*. It has manifested as a tendency to win, not by clever manoeuvres in the main, but by a bull-headed and methodical pushing forward against the enemy, a steady taking up of time and space in ongoing action that continually meets and *thereby exceeds* any local constrictions of time and space that a more clever and dashing enemy can come up with. Wellington demonstrated this steadfastness throughout his military career, particularly in the Peninsular War, in that continual offence that, on the surface, appeared defensive. Montgomery demonstrated it in North Africa. But it was General Ulysses Grant, perhaps, who demonstrated it most clearly of all.

Grant, like Fabius, had what Montgomery called that “dogged perseverance” of the leader who “having decided on his policy, his objective, [is not to be] led off his target by the faint-hearted.”³¹

Only five months into the American Civil War, as a brigadier general, Grant had already demonstrated his tendency to act in taking the seemingly minor town of Paducah, Kentucky on the Ohio River, not by doing it secretly or treacherously, but simply by *doing it*, contrary to his Confederate opponents, who had waited too long. In this, as in later cases, he acted and accomplished his task even before receiving permission, the very opposite of McClellan's issuing of orders to do what had already been done.³² Grant decided, did things, and kept on doing them. Eventually, as happens on the winning side of every conflict, Grant rose to full command of his side's forces as that leader who most often demonstrated the capacity for continuous decisive action toward his cause, which is steadfastness.



General Ulysses S. Grant, Commanding General of the Army and President of the United States

Grant's demeanour manifested his steadfastness. His trusted adjutant, Ely Parker, described him in the battle at Chattanooga as heedless of bullets and shells. “Once astride his mount, the general was a dynamo, pressing forward impatiently, and often without stopping to eat or rest. ‘Roads are almost useless to him, for he takes short cuts through field and woods, and will swim his horse through almost any stream that obstructs his way.’”³³ Beyond carrying out the decided-upon action, Grant's habit was to keep silent, avoiding extraneous action.³⁴ The great sin in others, the only one that seems to have roused Grant's ire, was not mistaken action, but *inaction*, as General George Thomas found out when he was nearly relieved of command after repeatedly delaying an attack during the Nashville campaign. However, Thomas, after having attacked and destroyed Hood's army, got Grant's congratulations and his frame of mind: “push the enemy now,” urged Grant, “and give him no rest until he is entirely destroyed.”³⁵

As the Wilderness Campaign opened on 4 May 1864, Grant, whose steadfast action against the Confederates had made him the only man for the top job in Lincoln's eyes, was ready for his great moment. With the Army of Northern Virginia and General Lee, the enemy's loyal agent, before him, he was ready to destroy that opposing loyalty, to: “‘hold on mightily, and toil terribly’ in pursuit of his objective [knowing] exactly *what* he wanted, and *why* and *when* he wanted it,” as one military contemporary put it.³⁶ Lee's reputation seemed a formidable obstacle, but Grant would have none of it. To a subordinate who wailed about an imagined crisis early in the campaign, Grant was blunt: “I am heartily tired of hearing about what Lee is going to do... Go back to your command, and try to think what we are going to do ourselves,

instead of what Lee is going to do.”³⁷ Grant did not care *what* the enemy might be up to. He cared about what action he could take with his army in order to meet Lee’s army and take up time and space in action—time that Lee could not now afford, but that Grant could.

This he proceeded to do in the coming days. Grant offered the fight to Lee, goading him at every opportunity. Lee fought and his army weakened. Whenever Lee grew defensive, Grant moved south and east to flank him, and threatened the confederate capital. Grant dealt one direct blow after another to the Army of Northern Virginia, each time weakening it in ways from which it could not recover, and each time taking control of events through taking action over some span of time. Insofar as Grant did not worry what the enemy was doing, it was because, by his irresistible action, by his wilful decision continually sustained, by his *steadfastness*, he dictated to his enemy what the enemy’s action must be, enveloping the enemy’s loyal action with his own larger loyal action. Lee’s army, henceforth unable to do more than match Grant’s actions, and already behind temporally, withered, died and finally abandoned its cause at Appomattox ten months later.

CONCLUSION

A review of the logic driving the effect of decision and steadfastness in a military context will complete our effort. Loyalty adopts a cause as a standard that unites the actions of the individual with that of other individuals. The cause is something not yet accomplished in time or space, but that loyal action will accomplish. The standard by which partial accomplishment is measured meanwhile is the cause, broadly viewed. To answer how close an action brings one to accomplishing the cause is to indicate its relative value. Our suggestion is that we are aware of the value of actions, precisely because we have a sense of how they measure up according to what could be accomplished with regard to the cause.

In a military context, the cause is a dead end because, as the ultimate elimination of some enemy, the cause will disappear with the success of the action relative to it. All military actions, properly speaking, are ultimately logically inconsistent in their assumptions. Nonetheless, military action is *locally* consistent up to the point at which it attains its goal, a goal which can be defined in general as: *the sole ‘enjoyment,’ literally or practically, of some experience of time and space by means of the elimination (or practical suppression) of competing centres of such enjoyment (i.e. an enemy of some kind)*. Moreover, the goal, the cause, of military action usually tends to be clearer than more generally consistent causes, precisely because the goal is overtly finite, thus easier to envision, and thus easier to act toward in simple ways.

Hence, certain aspects, or subordinate modes of action, of loyalty, definable as *modes of action that unite individual actions toward a freely chosen cause*, can have a very definite effect on the accomplishment of a cause, even the localized causes of conflict. Decision is one of these, a mode of action that chooses and initiates an action within some time and space, rather than remaining inactive. Decision, as we have suggested, is most impressive in the military context in response to an action of warfare that aims to capture that time and space for its sole enjoyment by narrowing it. Decision meets the narrowing—the constriction—by filling all the time and space it has available. It thus supports its own cause as much as it can by initiating

the maximum of action that it can toward that cause. Our sense of the value engendered stems precisely from this ability to initiate this maximum of loyal action, *this doing all one can in the time available*. In short, though decisiveness is operative under any circumstances, it derives its greatest sense of value in circumstances where we do not have much time because it fills the time that we do have with value through action. We are more aware of that filling because the standard, the time that we do have for the cause, is constricted. Conversely, in circumstances where we have plenty of time, decision loses its lustre. Circumstances where we do not have much time occur frequently in conflict because they are deliberately and regularly brought about by the constrictive military actions of an enemy who intends to narrow the time for our response.

Steadfastness—fidelity—is another loyal mode of action: the sustained or recurrent taking of a decided-upon action and variant actions subordinate to it, in some time and space. Again, steadfastness stands out in the military context particularly because that context is always localized. Some group is at war with another group in some time and space bounded by the defeat and victory of one and the other of the combatants, and that localization—especially in hindsight, but also after what may be called the visible turning point of the conflict (if there is one yet)—makes prominent the cause as a localized standard.³⁸ With regard to a conflict, a more localized steadfastness fills the time and space it is given *reactively*. It sustains itself in that time and space, filling it up with its action, but only relatively to that given time and space; it only meets constrictive enemy action as it comes.

A broad steadfastness, which was our focus, is absolutely expansive. After decision, it acts and sustains that action, expanding the time and space of the conflict more absolutely. In this way, one opponent initiates *more total action* than another toward its cause, creates more value—albeit localized value—and tends to expand the conflict beyond local constrictions and even beyond the bounds of its initial cause, eventually even *expanding the cause as a standard*.³⁹ In this greater creation of value, broad steadfastness always *wins* the conflict *relative to the conflict’s localization*.

This, then, is the logic of loyalty in two of its aspects, which partly decide the outcomes of conflict. Despite focusing mainly upon high-ranking military leaders, this logic is no less at play at lower levels of complexity. Human recognition of localized value within the deep contradiction of warfare arises from the very simplicity of the logic at play in actions at all levels of complexity of warfare. Does a common soldier display decision at some crucial moment during a battle? Then, often unconsciously, that decisiveness appeals to us because we are aware that it has saved or recovered time for the service of a cause within some local region of conflict made tense by constrictive actions, some surprise situation, brought about by the soldier’s enemy. Does a common soldier display steadfastness through some long campaign, carrying on through horrible conditions? That steadfastness appeals to us because it expands action toward a cause, offering us a clear display of the gradual gain of value according to and beyond that cause.



Thure de Thulstrup's Battle of Gettysburg, showing Pickett's Charge

The very same logical relations in the cases offered above are at work in the service of *consistent* causes, such as Viktor Frankl's efforts to survive the concentration camps, and the service of consistent causes affects us for the same reason; *it displays a gain of value according to some standard*. When we watch a film or read of the exploits of some long-ago battle, it is these aspects of decision and steadfastness that Royce highlighted that enthrall us, insofar as we have any interest in the affair. A man fighting for the wrong side nonetheless displays value in our eyes precisely for having been decisive and steadfast. Watch a war film such as Ronald Maxwell's *Gettysburg*. Strip the aspects of loyalty from the film (and there are others besides those considered here) and you are left with only a collection of killing scenes. Indeed, you can

momentarily stand back psychologically from scenes such as Pickett's charge in *Gettysburg* and say to yourself, "what a bunch of foolishness, these men killing one another, men who sometimes even, as Generals Armistead and Hancock, were friends. What on earth were they thinking?" Asking this, you can then answer almost immediately, according to the dictates of Royce's foundation of loyalty, "foolishness indeed from a wider more knowing viewpoint, but foolishness brought on by a narrower view and mistaken choices of cause, errors only to be corrected by time and effort, and whose only redemption now is the hold which some true aspect of loyalty, such as decision or steadfastness, had upon them." 🍁



Source: www.politico.com

Confederate troop reenactors start their march across the Gettysburg Battlefield in Gettysburg, Pennsylvania, on July 3, 1963, 100 years after the pivotal battle.

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ENDNOTES

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6. *Ibid.*, 14.

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8. *Ibid.*, 20.
9. *Ibid.*, 56.
10. *Ibid.*, 61–62.
11. *Ibid.*, 61; 66–67.
12. *Ibid.*, 78–80.
13. *Ibid.*, 81.
14. *Ibid.*, 89.
15. *Ibid.*, 85. In other words, a given cause will require decision regarding conflicting courses of action at various levels of complexity (e.g. a decisive choice of career requires action toward bodily health, but bodily health in turn requires decisive choice between potential types of bodily exercise).
16. Bernard Law Montgomery, *The Path to Leadership* (London: Collins, 1961), 49–50.
17. Marion V. Armstrong, *Unfurl Those Colors! McClellan, Sumner, and the Second Army Corps in the Antietam Campaign* (Tuscaloosa: University of Alabama Press, 2008), 120.
18. *Ibid.*, 121, 142.
19. *Ibid.*, 126.
20. *Ibid.*, 127.
21. Montgomery, 17.
22. Armstrong, 138.
23. *Ibid.*, 293.
24. *Ibid.*, 113.
25. Henrik O. Lunde, *Hitler's Pre-Emptive War: The Battle for Norway, 1940* (Philadelphia: Casemate, 2008), 193–194.
26. *Ibid.*, 196.
27. *Ibid.*, 209.
28. Although, as A. N. Whitehead suggested, it may be action that really gives rise to time.
29. Even to the point of being considered as *winning* within that localized time, or has *having won* relative to some much larger time span (e.g. as Hitler's armies can be said to have won the battle for Europe if we restrict ourselves to the year 1940; or again, if you are living in 1940's France, Hitler *has* won... so far).
30. At least with respect to that manifestation of the conflict which we call the *Second Punic War*.
31. Montgomery, 250. Insertion is mine.
32. E. B. Long, "Ulysses S. Grant for Today," in *Ulysses S. Grant: Essays and Documents*, edited by David L. Wilson and John Y. Simon (Carbondale: Southern Illinois UP, 1981), 13–14.
33. Brooks D. Simpson, *Ulysses S. Grant, Triumph over Adversity: 1822–1865* (New York: Houghton, 2000), 244.
34. Samuel H. Beckwith, "Grant's Shadow" in *Ulysses S. Grant: Essays and Documents*, edited by David L. Wilson and John Y. Simon (Carbondale: Southern Illinois University Press, 1981), 117.
35. *Ibid.*, 118.
36. Simpson, 248. Insertion is mine.
37. *Ibid.*, 298.
38. A consequence of this is that during a long conflict in which no turning point is yet visible, actions are much less likely to appear as being steadfast to us (e.g. in the current broad and general conflict of the Middle East).
39. Such expansion is a further aspect of loyalty as *leadership*, whose elucidation must be reserved for a future paper.

THE SATIRICAL TOMMY

Ruth Ward

The spring 2015 issue of *The Canadian Army Journal* included a book review by Colonel P. J. Williams of *The Reluctant Tommy*,¹ a Great War memoir. The book is an edited version of John Ronald Skirth's original papers held at the Imperial War Museum,² London. Ronald Skirth had been a young non-commissioned officer, observer and battery commander's assistant with 293 Siege Battery, Royal Garrison Artillery, and saw action at Messines, Passchendaele, and the Asiago plateau, Italy.³ Some fifty years later, following his retirement from teaching, he began writing about his experiences. He described suffering from shell shock and how, after several months of treatment from Italian medics, he made a near complete recovery. He related how, on 15 June 1918, his battery, about to commence action in the Battle of Asiago, sustained a crest-clearance accident which killed several men, injured others and put a gun out of action. Skirth claimed that, because the battery was unable to take any further part in the battle, his commanding officer later conspired with Lord Cavan to cover up the accident by writing a fictitious report, an opportunity they exploited to promote themselves. However, what makes Skirth's story unique is his decision to become a conscientious objector while actively serving and the controversial action he took in support of it. Following an epiphany in an Italian church, he promised God that he would no longer help to kill people. In partial fulfilment of that promise, he claimed that he deliberately miscalculated firing data so the first shells fired missed their target, thereby alerting the enemy to imminent attack, and so, saved lives.



Photograph of Ronald Skirth taken in 1916 by unknown UK photographer

A 13-pounder anti-aircraft gun of the Royal Field Artillery in action on Pilckem Ridge, during the Battle of Passchendaele

Since having achieved status as an item in the Imperial War Museum's collections, the memoir's authenticity has been given support by such publications as *The Cross and the Trenches*⁴ and *Casualty Figures*⁵ and the screening of the documentary *Not Forgotten: The Men Who Wouldn't Fight*.⁶ Publication of *The Reluctant Tommy* ensured that Ronald Skirth's extraordinary story reached an international audience. The plethora of reviews about this book were typically very positive, promoting the story as a genuine account, and Colonel P. J. Williams' review, which highlighted Skirth's "campaign of active pacifism," is no exception. In his opinion, the book was, "[o]ne of the most honest war memoirs I have ever read..." However, my opinion, based on rigorous examination of Skirth's original papers, is rather different. My research paper can be viewed in the Department of Collections Access Library at the Imperial War Museum.⁷ I am therefore delighted and grateful for the opportunity to share with readers of this respected military journal how my research came about, the methods and resources I used, and my study's main findings.

BACKGROUND TO MY STUDY

In 2010, I decided to research my family history, starting with my paternal grandfather, Bernard Bromley, who was born in Longton, Staffordshire, in 1889. After leaving school, he worked as a shop assistant in a tea store⁸ and eventually became area manager with the Home and Colonial Stores.⁹ By 1939, he was married with three children and running his own independent grocery and provisions business in Bolton, Lancashire, which he continued to do until his retirement.¹⁰ Although I saw Granddad Bromley infrequently, I have fond childhood memories of “helping” in the shop and recall him being a very kind, attentive man. Among the family photos are two of him in Great War army uniform. Records show he served as a gunner, lance-bombardier and bombardier with 293 Siege Battery, Royal Garrison Artillery,¹¹ and I was amazed to discover that, in June 1918 in Italy, he had been awarded the Military Medal.¹² Feeling incredibly proud of him, I resolved to learn more about his military service and the circumstances surrounding his award for bravery.

During those early enquiries, a contact told me about *The Reluctant Tommy* and warned that it contained some damaging claims about a Bombardier R. Bromley who had received the Military Medal in Italy in June 1918 and who was therefore likely to be my relative. The portrayal of Bromley was, nevertheless, a shock. Skirth described him, among other things, as a foul-mouthed coward thoroughly undeserving of his Military Medal and blamed him for causing a fatal crest-clearance accident. That description was entirely at odds with the man I and other relatives remembered, yet here it was to be found in a fellow soldier’s published memoir, advanced as an essentially true account to which academic and other sources had given credence. Consequently, I began to question my grandfather’s hitherto good character.

I commissioned a professional researcher to investigate Bernard’s military service and, if possible, to establish the likelihood that he and Bombardier R. Bromley were the same person.¹³ The report stated the following:

[T]he evidence neither confirms nor provides a firm denial that Bernard was R. Bromley. Given the unreliability of the account frankly I doubt whether Bernard was the man being referred to or even whether a Bombardier/Sergeant who behaved in the way portrayed even existed.

About this same time, I found Phil Tomaselli’s¹⁴ review of *The Reluctant Tommy* on Amazon’s website. He described Skirth’s story as “an elaborate fantasy” and challenged its authenticity. His critical review together with Mr. Baker’s report led me to believe that Skirth had fictionalized his memoir to an extent, and my doubts about my grandfather’s character subsided. However, those feelings were replaced with anger about the way he had been characterized, which seemed both undeserving and vindictive.

The introduction to the hardback edition of *The Reluctant Tommy* contained little to suggest that Bromley, or any other character, was fictional. My initial research into Skirth’s memoir identified what I thought were some significant discrepancies, which I made known to the publishers, hoping that the forthcoming paperback would clearly acknowledge that the Bromley character was fictional. The revised introduction did address some of the criticisms

that I and others had made, but it did so in a superficial way. However, regarding Skirth’s comrades, the editor stated, “[r]eal figures may have been amalgamated, or transposed from one situation to another and...it is not impossible that individuals may have been unintentionally confused.”¹⁵ That suggests that Skirth may have muddled up who did what, but that the events themselves were real. The personal details Skirth gave about Bromley, such as his age and rank, make it difficult to see who else he could have confused my grandfather with. The Bromley character’s name was changed in following editions, something I neither requested, nor wanted.

Personally, these outcomes were very unsatisfactory. My grandfather’s few military records were legitimizing Skirth’s character, Bromley, and that character’s negative portrayal was reflecting on Bernard. He had been publicly disgraced by that and would continue to be so indefinitely. His name continued to be evident in the original papers and the hardback edition of the book. Anyone researching Skirth’s journals in the future might easily assume that the character and the man were one and the same. I desperately wanted to set the record straight for posterity. Realizing that the only way to achieve that was by conducting thorough research into the original memoir’s authenticity, I committed myself to doing a study; after all, if I did not do it, who else would? Although daunting, it did offer the opportunity to learn more about my grandfather’s military service, which had come to fascinate me.

My personal reasons for undertaking the study do, quite rightly, subject it and me to criticism on the grounds of personal bias. However, I am and have always been open and honest about my reasons, so that people reading my study, and this article, can be alert to any bias that may have crept in. I have endeavoured to put my personal feelings aside to ensure that my research is professional, fair and thorough. It would have been a great disservice to my grandfather to do otherwise. An Imperial War Museum spokesperson, referring to the completed study, commented that, it is “extensive...clearly a well-researched and referenced secondary historical source” and that “[I] have gone to considerable lengths to be measured in [my] appraisal of Skirth’s text.”¹⁶ It has since been reviewed in detail by museum archivists and subsequently accepted into the Department of Collections Access Library.

METHODOLOGY

I began the study in the autumn of 2011, working on it part time, mainly at home, until its completion in March 2014.¹⁷ My purpose was to evaluate the memoir’s authenticity by examining, for example, the truthfulness, accuracy, consistency, plausibility and sincerity of its content. My study focused on Skirth’s World War I service, described mostly in his three main war stories and their associated storylines, two of which had been given credibility, purportedly, by reliable sources; the third concerned my grandfather.¹⁸ The memoirs’ provenance was not disputed, nor were the most basic facts of Skirth’s military service.

The research was document-based. As the study was self-funded and private, I did not have access to the support or resources of an academic institution such as a university. To find relevant and reliable information, I used references and bibliographies in respected, standard texts, specialist booksellers’ listings, book reviews, museum, archive and library catalogues, Internet searches, websites and recommendations from contacts.

Primary sources included a photocopy of Skirth's original work, obtained from the Imperial War Museum, which excluded the section retained by Jean Skirth. *The Reluctant Tommy* was consulted for information included in those papers. I read the document several times and, as the papers were mixed up, reorganized them after referencing each page first. I read it repeatedly throughout my research using coloured Post-it® notes to identify topics, statements, dates, diary entries and images, for example. The other main primary sources were copies of the two unit (battery) war diaries and one brigade war diary that, together, covered most of the battery's service history, although the latter gave less unit detail.¹⁹ Several contemporaneous texts held at the National Archives in the War Office files gave very specific and useful information about the battery²⁰ and several wartime photographs. Gunner James Bennett's pocket diary held at the Imperial War Museum was also consulted.²¹

Secondary sources used included the following: the Commonwealth War Graves Commission records online; *History of the Great War. Military Operations: Italy 1915–1919*;²² the *History of the Great War Based on Official Documents: Medical Services General History (Official Copy)*²³ provided comprehensive information regarding the setting up of British medical facilities in Italy and other useful details; *The British Army in Italy, 1917–1918*;²⁴ and *Battleground Europe. Asiago: 15/16 June 1918: Battle in the Woods and Clouds*²⁵ provided detailed information about the situation on the Asiago plateau and the Battle of Asiago. The *History of the Royal Regiment of Artillery: The Forgotten Fronts and the Home Base 1914–1918*,²⁶ a standard text, was used judiciously, as it contains a number of errors concerning the battery's movements. Those are explained in footnotes in my study. The *History of the Royal Regiment of Artillery: Western Front, 1914–18*²⁷ was used. Other sources include scholarly journal articles; contemporary newspaper articles and notices; the published memoirs of Norman Gladden²⁸ and Hugh Dalton,²⁹ who both served in Italy, the latter with the heavy artillery; the Peace Pledge Union³⁰ and British Broadcasting Corporation ethics³¹ websites for general information about pacifism; and the Long, Long Trail³² for information about the Derby Scheme and conscription. Although in its infancy when I began the study, the 293 Siege Battery Royal Garrison Artillery 1916–1919³³ website provided some useful information about the battery's movements and servicemen; Nigel Evans' website³⁴ provided useful technical information about British artillery fire control. Reference books included encyclopedia, the online edition of the *Oxford Dictionary of National Biography*,³⁵ and the *Dictionary of Literary Terms & Literary Theory*.³⁶

The following sources were critiqued in my study: the editor's introduction to *The Reluctant Tommy* (paperback edition); Skirth's biography in *Casualty Figures*³⁷ that, seemingly, gave credibility to his story—particularly his shell shock storyline; *The Cross and the Trenches*,³⁸ which gave some credence to Skirth's changing religious views and *Not Forgotten: The Men Who Wouldn't Fight*,³⁹ a documentary lending support to Skirth's active pacifism.

Fellow members of the Great War Forum,⁴⁰ a well-respected website dedicated to all manner of research relating to World War I, generally supported my efforts, suggested reliable sources, provided a wealth of information and invariably challenged my assumptions and thinking.⁴¹

Background reading was a necessary part of my study to improve my general knowledge of the war and, more specifically, my understanding of fire control and artillery spotting, the Italian front and Romanticism. The research consisted mostly of finding relevant and reliable information, ensuring that I understood it and then using it to assess and evaluate Skirth's text. For example, I compared Edmonds' description of the British sector's location on the Asiago plateau with Skirth's description of the battery's position and was able to make judgements about both texts. As the research developed, patterns emerged, such as his repeated use of contradiction to draw attention to British Army failings. Eventually, I was able to synthesize my findings into a coherent and robust evaluation of the memoir's authenticity.

THE OVERALL CONCLUSION⁴²

Despite the absence of his service record, there is little doubt that, as both bombardier and observer with 293 Siege Battery, Royal Garrison Artillery, Ronald Skirth had a genuine experience of the Great War that he could have recalled and about which he could have written. However, the evidence highlighted in my study shows that, for the most part, that authentic experience was not what he described in his war memoir. His main war stories and related storylines were not, as some have suggested, real events that were worked up for dramatic effect, nor were they simply unreliable because they were being written more than fifty years after the events; they were entirely fabricated. The war memoir was, in fact, a satirical account contrived to criticize and ridicule the British Army's weaknesses and failings implicitly, not just openly as one might have expected in a genuine memoir.⁴³ That satirical war memoir was interspersed with other autobiographical information, such as details about his childhood and his second honeymoon in Italy, creating the superficial impression that the whole text was a somewhat amateurish but nevertheless genuine attempt at writing a semi-fictional autobiography. However, Skirth maintained that he was not writing a novel, play or film script and steadfastly insisted that his intention was to be "sincere and truthful" in describing his experiences, although he did acknowledge a degree of unreliability and artistic license. The evidence, for its part, shows that he was neither sincere nor truthful and, therefore, in making that claim, he was actually attempting to hoodwink the reader into believing that the content of his work was authentic when it clearly was not. Consequently, my study concluded that Skirth's papers amounted to a literary forgery, a hoax, a fake, a satirical war memoir masquerading as a semi-fictional autobiography.

My study indicated that, had Skirth tried to publish the work in his lifetime, he ran the real risk of having it exposed as fictional and libellous by other war veterans and, if not by them, by his publishers who, in all probability, would have detected the satirical content too. It seems more likely that, after his death, Skirth hoped it would be accepted into the Imperial War Museum with whom he had been in contact and where the content was unlikely to be subjected to rigorous scrutiny. The museum had established the memoir's provenance, assessed its content during the acquisition process and summarized the content in a catalogue description but, at the time of writing, had not substantiated its content. The museum's policies indicate that that is the researcher's responsibility. It is difficult to disprove, in any case, as my personal experience to do so demonstrated. Once his journals were accepted, their content could deride the British Army in perpetuity.

THE ITALIAN WAR STORY: THE “PREMATURE” ACCIDENT AND OFFICIAL COVER-UP STORYLINE

One can only speculate about Skirth's reasons for writing a literary hoax, and my study did not offer a definitive answer. However, analysis of the Italian war story—the story at the heart of his satire—appeared to throw some light on his motives.

In that story, Skirth claimed that, as the Battle of Asiago began, a premature crest-clearance accident occurred at the battery's No. 1 gun site killing two men, injuring several others and putting the gun out of action. Allegedly, Sergeant Waller, the gun layer, queried the firing orders given to him by Bombardier Bromley, the new battery commander's assistant. Bromley then argued with Waller, insisting that the orders were Major Snow's and that he was to fire immediately, which Waller did. Skirth maintained that the accident prevented the battery from participating in the battle and that, later, Major Snow and Lord Cavan contrived a report to conceal that fact, using the opportunity to award themselves honors and promotions. According to Skirth, the official history of the Italian campaign singled out his battery for praise and gave an account of its action, which was “a tissue of lies.”

A search of Commonwealth War Graves Commission records showed only one battery casualty in June 1918—Gunner Walter Reginald Booker—who died on 15 June from wounds received in action. He was twenty years old and an original member of the battery with no previous military service. His details contradict the description of Sergeant Dick Waller, a key character, whom Skirth described as a forty-year-old gun layer, an “old sweat” and a newcomer to the battery. He maintained that Waller was awarded a Distinguished Conduct Medal posthumously, but records show that was incorrect; no Distinguished Conduct Medals were awarded to the battery in June 1918. My study found that Gunner Walter Booker was unlikely to be Sergeant Dick Waller, the gun layer with whom Bromley remonstrated over the firing orders and who was probably fictional.

The other key character was Bombardier R. Bromley, whom Skirth blamed for causing the accident; as battery commander's assistant, he made the calculations for the No. 1 gun. Skirth describes him as a thirty-year-old conscript who joined the battery on 8 June 1918. A newcomer, fresh from Blighty, and a newly qualified battery commander's assistant, Bromley was sent to take over Skirth's role as battery commander's assistant, leaving Skirth as the battery's only observer. Skirth stated that Bromley, whom he witnessed behaving in a cowardly way in the aftermath of the explosion and of whom he had a very low opinion, was given a Military Medal. He stated that he (Skirth) had been offered a Military Medal for getting help for the injured after the accident, but refused it and the medal passed to Bromley.

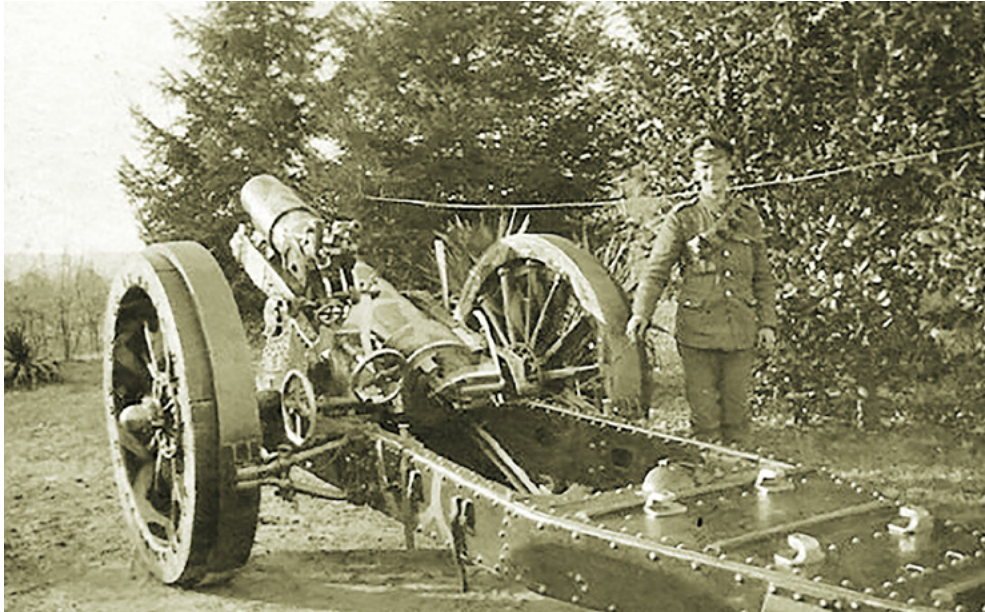
Records show that two of the battery's men received Military Medals for action on 15 June 1918: Lance-Bombardier Bernard Bromley and Gunner Arthur Wilbur. Skirth did not mention the latter. Bernard Bromley was 29 years old in 1918 and an original member of the battery who had joined as a gunner. A letter written by Captain Ewatt to Bernard's wife informing her of her husband's award referred to him as Bombardier. So, B. Bromley and R. Bromley shared the same surname, were of similar age and rank, and both received the Military Medal. However, Bernard Bromley was not a newcomer; a photograph of the battery taken at Ewshot camp in 1916 showed that Bernard

and Ronald were original members of the battery who undoubtedly knew each other long before 8 June 1918. Consequently, Bernard could not have been a newly qualified battery commander's assistant and, therefore, could not have been in a position to compute firing calculations. At the rank of bombardier, it is unlikely he would have argued with a sergeant, his superior, and given him orders. In any case, Sergeant Waller was a fictional character and my study found that R. Bromley was probably fictional too. Given that both key characters are fictional and underpin the account, it follows that their actions and hence the premature accident must also have been fictional. Consequently, Skirth's description of Bromley acting in a cowardly way in the aftermath of the explosion, of his own character getting help for the injured and being offered a Military Medal, and the alleged cover-up by Major Snow and Earl Cavan were also fabrications. My study went on to examine those and other aspects, but the conclusion remained unchanged.

It was also noted that Major H. S. K. Snowden's account of 94 Brigade's action in the battle given in the war diary seemed fair, accurate and objective, appearing neither exaggerated, nor self-important. None of 293 Siege Battery's four guns, nor any other guns belonging to 94 Brigade, were put out of action at that time and all targets were successfully engaged. Even if a gun had been damaged, there is no obvious reason why the other three would not have been deployed. The brigade war diary recorded separate incidents of an accident and a gun being out of action months before the alleged premature crest-clearance accident, suggesting that if one had occurred, it would have been unnecessary to conceal it. Hugh Dalton describes such an accident, but he does not mention any disciplinary action having been taken despite a fatality.



239 Siege Battery, Royal Garrison Artillery, Italy



Source: www.293siegebattery.webplus.net

In Italy, around November 1918, with Gnr Haigh and a 6-inch howitzer

My study revealed that the Italian war story was not just fictional, but satirical. Generally, satire is used to criticize or ridicule someone or something, and the object of Skirth's derision was the British Army. The Italian war story appeared to be deliberately constructed to criticize 293 Siege Battery's omission from the Order of Battle of the British forces in Italy for 15 June 1918 in Appendix II of the *History of the Great War. Military Operations: Italy, 1915–1919* (Official History, Italy) by J. E. Edmonds, together with other errors, ambiguities and acknowledgements in that volume.⁴⁴ Satire is often characterized by the use of irony, which Skirth used liberally throughout his war memoir in the form of contradictions that were particularly noticeable in that war story. For instance, he asserted that his battery contributed nothing to the Allied victory at Asiago, but his battery did contribute, as shown in the brigade war diary. He claims that a gun was put out of action, contradicting Major Snowden's comment in the same diary that "no gun was put out of action." Skirth stated that "the official history of the Italian campaign specifically praises the 'magnificent contribution' made by the officers and men of 239 Siege Battery, Royal Garrison Artillery," but there was no such comment; Edmonds praised the counter-battery groups collectively, not individually. Skirth claimed that the official account of his battery's action was completely false, but there was no account in the Official History, Italy, that the alleged concocted report was fictional, and the account in the brigade war diary appeared to be an honest one. He claimed not one enemy soldier crossed the Astico gorge and that there was no enemy assault to repel. Skirth repeatedly referred to the Val d'Assa as the Astico gorge and enemy soldiers did cross the Val d'Assa while carrying out an assault on the British-held section of line. Skirth even contradicted those ironic statements by stating toward the end of his memoir that he took part in three battles including the Battle of Asiago! Each of those ironic statements subtly drew attention to Edmonds' error, thereby criticizing it.

Also noted was Edmonds' acknowledgement that the British Artillery faced numerous problems on the Asiago plateau and had no experience of mountain warfare in Europe,⁴⁵ making the possibility of a premature accident seem quite plausible. Skirth was probably drawing attention to those acknowledged shortcomings in his story. The fact that a premature accident seemed not to have occurred in the battery is surely a reflection of the expertise and care taken by the officers and men firing the guns to have done so without harm to themselves or their fellow soldiers. Major Snowden had previously spent time in the Indian Ordnance and Mountain Artillery, which undoubtedly served the battery and brigade well at that time.

The context for the alleged accident was also investigated by an examination of Skirth's text, maps and drawings, which were found to be unreliable. Mostly, they depicted Skirth's fictional Cavrari sector on the western edge of the Asiago plateau—in reality held by the Italian 12 Division, X Corp—and enemy-held territory to the north, but they exclude most of the Allied sectors, particularly the British Carriola sub-sector where 293 Siege Battery was positioned on Mount Busibollo. Not only was the military situation misrepresented, but the plateau's geography was too. When Skirth's maps and descriptions were compared to those in the Official History, Italy, it became clear that Edmonds' text contained some ambiguities if read in isolation from the relevant official maps included in the book. Skirth appeared to have used those ambiguities as the basis for several of his own maps, constructing them in such a way that they supported Edmonds' ambiguous text, but contradicted the maps, thereby indirectly drawing attention to the lack of clarity in Edmonds' statements.

Given the scope of the Official History, Italy, such errors were perhaps inevitable, but one can appreciate that Skirth and his comrades may have felt insulted, even outraged, by their battery's omission from the Order of Battle, 15 June 1918: Walter Booker lost his life, other men were injured and Bernard Bromley and Arthur Wilbur were decorated for their bravery. Whether through error or incompetence, the personal and valuable contribution made by 293 Siege Battery's personnel to help secure a victory at the Battle of Asiago was excluded from the British official history of the Great War and the men were denied their share of the meagre praise given by Edmonds to the counter-battery groups collectively for their part in it. My study suggested it is Skirth's apparent strength of feeling about that omission that motivated him, in part, to construct his literary hoax. It was also noted that he began writing his memoir soon after being awarded a war disability pension. Apparently processing the claim subjected him to no less than three medical boards plus an investigation into his service record, an experience that may have served as the catalyst.

WAR STORY NUMBER ONE AND THE PACIFIST STORYLINE

The first war story took place on 8 June 1917, the second day of the Battle of Messines. Skirth and three others were ordered to locate the British infantry's new position and lay a telephone line to it from the battery command post. Two of the men were killed and a third was presumed to have been killed. Skirth suggests that they were between two-and-a-half to three miles away from the battery when the men died. During the mission, Skirth found the body of a young German soldier, Hans, whom he realized had possibly been killed from one of his battery's shells. That realization affected him profoundly and seemed to have been a contributing factor in his decision to become a conscientious objector. Skirth stated that he had a "detailed account" of the mission in his pocket diary.



Sappers digging a communication trench towards the Messines Ridge. Shells bursting in the distance, June 7, 1917

My study noted Farndale's acknowledgement that maintaining contact with the most forward infantry during the period from 7 to 14 June at Messines had been a problem for the army despite efforts to resolve it and, apparently, it was an ongoing problem.⁴⁶ That acknowledgement suggested that the purpose of the mission was plausible. However, examination of the unit war diary shows that, at the time in question, that particular communication problem was unlikely to have been an issue for Skirth's commanding officer who had, allegedly, ordered the mission. On 7 and 8 June, the battery was firing "according to its program," suggesting that the infantry's position was known. Gunner James Bennett wrote in his diary for 7 June that he "went over to lay out line to [the observation post]" and was "very heavily shelled," suggesting that communication between the battery's observation post and its guns, command post or telephone dugout, for example, had been cut. On 9 June, the battery was firing from a new position. On 10 June, attempts were made to fire a bombardment, but the forward observation officer could not register the guns because of "faulty communications" (i.e. he could not direct the guns' fire onto their targets). There is no evidence in the unit war diary to support the purpose of Skirth's mission on 8 June; on the contrary, the evidence suggests that the infantry's position was known on 7, 8, 9 and 10 June.

Records show that the two casualties died "because of a shell which fell a little way from the battery where the men were drawing water"; they were not attempting to lay a telephone line several miles away. Skirth described them as Tynesiders, but that was incorrect. Gunner Lewis Cardwell was from Lancashire and Gunner Albert Northover was from Dorset.

In the story, Skirth stated that the men had never laid a line in their lives, yet in the same story were "line testing" and "repairing the line fault." The evidence showed that that war story was very inaccurate, despite Skirth's alleged contemporaneous, detailed account, and most probably fictional. Examination of Skirth's diary extracts of that time suggest that the diary was fictional and that he, rather, consulted the unit war diary, among other sources, and used it creatively to criticize the army's acknowledged difficulty in maintaining contact with the foremost infantry as well as to highlight his commanding officer's, and the army's, difficulty in preventing the telephone lines from being cut by shelling. The fictional nature of that war story also called into question Skirth's encounter with Hans and its influence on his decision to become a conscientious objector.

In early January 1918, in an Italian church, Skirth made a solemn pact with God; in return for sparing his life at Passchendaele, he promised to take no further part in the killing. Shortly afterward, he had a nervous breakdown and was hospitalized. In May, fully recovered, apart from amnesia, he decided to inform his superiors that he had become a conscientious objector. He wrote a letter, ostensibly to his girlfriend Ella, but actually intended for the censoring officer. Skirth's confession was written in the form of a postscript. As it was essentially a private love letter, Skirth believed the content would not go beyond the officers' mess. He acknowledged the letter was a "reconstruction."



Wounded soldiers on stretchers under awnings near Messines, June 7, 1917

Holmes defined conscientious objection as “the refusal to undertake military service when legally required to do so.”⁴⁷ Thus, in order for Skirth to declare himself a conscientious objector and keep his promise to God, he would have had to have refused to obey orders, thereby breaking his enlistment oath. Unless he could have been transferred to a non-combatant corps or similar unit, which he ruled out, he would have had to have made an overt stand for his beliefs by refusing to obey orders. My study acknowledged that that would have required enormous courage, as the consequences of such action could be fatal. However, analysis of Skirth’s confession shows that it was insincere and ironic. While giving the impression that he was declaring himself a conscientious objector, he actually revealed that he was nothing of the sort. Rather than make an overt stand, he modified his promise, stating, for instance, that he would no longer help to take lives unless he was given orders that he could not “evade.” In that situation, it seemed he would continue to do his duty, which necessarily involved helping to kill the enemy! He went on to muddle the issue by stating that he did not have the right to take another man’s life, yet he had the courage to risk his life to save another’s. He was willing to risk his life to save another man but was not brave enough to stand up for his pacifist principles. He muddled the matter further by stating that he was faced with a terrible dilemma; his enlistment oath demanded one thing and his pact with God another, so there was a conflict between duty and conscience. Skirth had already decided to follow his conscience, so the real dilemma for him was whether to risk capital punishment by standing up for his principles and keeping his promise to God or to keep quiet and be a hypocrite. He stated that he constructed his letter in such a way as to avoid punishment, imprisonment and the death penalty, showing his reluctance to take a stand, and he reiterated that stance later. My study pointed out that Skirth’s confession is actually a confirmation that he would continue to obey orders if he could not evade them and that he was not brave enough to stand up for his principles. That hardly represented the thinking or actions of a sincere conscientious objector, and Skirth was being very mischievous in portraying himself as one. The idea that he actually wrote such a paradoxical confession for his superiors is nonsense. My study suggested Skirth may have devised such an account to parody Siegfried Sassoon, a renowned poet, novelist and officer in the Royal Welch Fusiliers during World War I. He famously made a protest statement “as an act in willful defiance of military authority” on behalf of those suffering because of the war. Sassoon believed that the war was being unnecessarily prolonged. Almost court-martialed, his friends intervened and he was sent to Craiglockhart suffering from shell shock. Despite his act of willful defiance, he returned to his army duties. Sassoon was noted for his acts of daring and bravery and was awarded the Military Cross. On at least one occasion, he disobeyed orders and rescued men who had been wounded or killed. Clearly a principled and brave man who was willing to risk his own life to save others, he was persuaded, or inclined, to return to the army despite those principles.

In partial fulfilment of his pact with God, Skirth decided that, from 10 June 1918, each time he took part in an action, he would deliberately mistarget the battery’s guns using his “preliminary miscalculations” to ensure that the first shells fired gave the enemy “adequate warning.” That action was not one that a genuine conscientious objector would have taken and it was disingenuous to suggest that it was. My study showed that Skirth had deliberately misrepresented the main disadvantage of artillery fire to create that supposed action.

Indirect fire, which required successive rounds to be brought onto the target, inadvertently alerted the enemy to imminent shelling. That disadvantage was well recognized at the time and was another of the army’s longstanding problems, to which Skirth was undoubtedly drawing attention. My study went on to examine predicted fire, artillery spotting, his refusal to accept the Military Medal and his views on patriotism, pacifism and war, but that discussion, which is academic in any case, only reinforced Skirth’s insincerity and fictionalizing.

My study concluded that section by critiquing the Channel 4 documentary *Not Forgotten: The Men Who Wouldn’t Fight*, which had seemingly given credibility to Skirth’s pacifist storyline. The presenter, Ian Hislop, was shown standing inside the Imperial War Museum, “one of the world’s leading military archives,” and he suggested that Skirth’s journals were “evidence” of a soldier who became a conscientious objector. That created the impression that the content of the journals was reliable, which, as already demonstrated, was not the case. Skirth’s mission, his encounter with Hans and his pact with God were presented as facts, and his paradoxical, insincere confession was not mentioned. His warning shots were discussed in ethical terms, not considering their plausibility or, more importantly, whether a sincere conscientious objector would take such action. Jean Skirth was interviewed and confirmed photos of her parents and one of her father’s poetry books mentioned in the memoir, but she did not confirm that she ever saw or read his wartime pocket diary, which he maintained that he used as an aide-memoir. Little, if any, evidence was presented that would have substantiated Skirth’s pacifist claims. My study concluded that those responsible for researching Skirth seemed to have been less than rigorous. Consequently, the documentary’s profile of him must be deemed to be unreliable and consequently misrepresented him to the programme’s viewers.

WAR STORY NUMBER TWO, PASSCHENDAELE NOVEMBER 1917 AND THE “SHELL SHOCK” STORYLINE

Skirth described how, in early November 1917, he sustained a head injury during shelling at Passchendaele. He was knocked unconscious and his best friend, Jock Shiels, was killed. The pair were said to have been deserting and, as the instigator of this action, Skirth felt guilty about Jock’s death. The head injury, guilt and growing disillusionment with the war contributed to his breakdown in Italy. He was first treated at Abbeville, France, then later by Italian medics at Schio, Hospital for Neurasthenics. After several weeks there, he was taken to Montegrotto Spa in an ambulance driven by the author Ernest Hemingway. By 1 April 1918, he was fully recovered, except for amnesia.

Casualty records show that Gunner George Sidney Burch was the only man with the battery to die in November 1917. He was a southerner, not a Scot, whose personal details bore little resemblance to Jock Shiels. The only Scottish casualty was Bombardier John Shiels, whose personal details were similar, but his date of death was given as 18 July 1917, nearly four months earlier. Skirth made much of his friendship with Jock and his being a Scot, making one wonder how he could have confused him with the southerner George Burch. He acknowledged he did not have a contemporaneous record of the events, which suggested that he was relying on his memory to write the story and therefore that it might have been unreliable. He also claimed to remember the events clearly, suggesting that he may not have checked his facts, although he insisted he did elsewhere. Even so, that does not explain such an error.



Source: www.iwm.org.uk

Shell bursting in the ruins of Boezinge Station. The remains of a train can be seen in the distance. In the foreground, a smashed-up trench in the revetting of which railway sleepers were used.

If Skirth had confused the dates of Messines and Passchendaele, it would have invalidated the alleged dates of his treatment. John (Jock) Shiels' existence from 19 July to early November 1917 can only be fictional and, as a fictional character, his actions and relationships with other characters, whether real or imagined, during that period must be fictional too. Consequently, Skirth's head injury, his friend's death, his guilt over it and their attempt to desert were all fabrications—the story was invented. It follows that his accounts of his breakdown and treatments were fabricated too. My study continued to investigate his alleged treatment but no evidence was found to suggest that it was anything other than fictional. It was also noted that the period of his supposed treatment in Italy served, among other things, to conceal the battery's three-month period of comparative quiet, a fact that, if revealed, might cause the reader to doubt the story's credibility.

Skirth added some superficial credibility to the story by including some independent information about the Passchendaele battles, but it was biased. Although mention of pillboxes, mud and demoralized men correlated with Skirth's account, they did not corroborate it. He also provided authentic-looking “before” and “after” aerial photographs of the Passchendaele battlefield, one of which showed the old and new command posts and his and Jock's escape route. Those annotations were false because the story was invented, showing that Skirth was prepared to deliberately misrepresent memorabilia for his own ends.

My study concluded that Skirth deliberately created the contradiction between the date of John Shiels' death and that of George Burch to implicitly underscore the duration of Passchendaele, a protracted battle that the British Army struggled to win and did so at the cost of an inordinate loss of life. Passchendaele also claimed the majority of the battery's total casualties: eight out of eleven men.⁴⁸ Skirth criticized the army openly in his commentary and through his “independent” sources, which provided an (arguably) unfair assessment of the army's leadership—about Haig in particular. To that, Skirth added an extremely negative portrayal of his commanding officer and an inaccurate description of the men's morale, and he exaggerated the losses sustained, all of which are at odds with official records. My study concluded that Skirth was not working up a real experience or simply creating a piece of fiction but was rather constructing the story as a means of deliberately criticizing the British Army both implicitly and explicitly over its handling of Passchendaele and the many lives that were lost, particularly those of his fellow soldiers.

Skirth's biography in Professor Michèle Barrett's *Casualty Figures* has, purportedly, given credibility to his shell shock storyline and was instrumental in bringing Skirth's memoir to her son Duncan Barrett's attention. According to her, the book:

describes the ways in which the psychological damage of their First World War experiences affected the lives of five particular men—these three soldiers and two military doctors either had shell shock or treated it (or both).⁴⁹

However, despite that supposed statement of fact, my study suggested that the author did not appear to have substantiated Skirth's story to any significant degree. The five men seem to have been selected, partly, because the Imperial War Museum holds their papers and the museum's reputation makes them credible sources but, regarding Skirth, that is not the case, as has been demonstrated. The catalogue description states that Skirth served with 239 Siege Battery, Royal Garrison Artillery, as Skirth maintains, but his real unit was 293 Siege Battery, Royal Garrison Artillery, a fact made clear by Duncan Barrett and corroborated by military records. However, Professor Barrett first stated that Skirth served as a corporal in the Royal Field Artillery⁵⁰ and then later with 239 Siege Battery, Royal Garrison Artillery.⁵¹ His real unit is never acknowledged, creating the impression that the research was not rigorous. 239 Siege Battery was a distinctly different unit that was not sent to Italy in 1918, which throws doubt on the storyline. Professor Barrett acknowledged that biographies of individuals do not necessarily guarantee authenticity and stated that she used various sources to contextualize the men's personal papers, yet it remains unclear how, or even if, she authenticated Skirth's “autobiography.” She believed that “[h]is autobiography is based on a factual record that has been worked up, almost turned into a novel,”⁵² which, of course, is true, as Skirth was probably referring to the unit and brigade war diaries and using them creatively to construct his journals, but Professor Barrett did not allude to that, only to his wartime pocket diary, which my study showed he fabricated. My study noted that Skirth was living in Ealing, London, at the time he was writing and ideally positioned to access information at the Imperial War Museum and other archives, museums and libraries in the city. Sufficient resources were available by the early 1970s for him to have written a fairly accurate and complete text had he wanted to.

Professor Barrett acknowledged that Skirth's work is fictional to an extent but she did not discuss the fictionalizing in any detail. She stated as fact much of what my study has shown is fictional. For example, referring to Skirth's accounts of Messines and Passchendaele, she stated, "[t]hese two exemplary short stories reveal to the reader the exact experiences that were to cause his subsequent breakdown."⁵³ The author discussed Skirth's treatment in Italy using informed speculation, but her scholarly discussion is irrelevant. The evidence clearly showed that Skirth did not suffer from shell shock in the way he described it and therefore his treatment and the storyline were fabricated. Her biography of him offered little, if any, evidence to suggest otherwise. My study concluded that Professor Barrett's biography of Skirth in *Casualty Figures* appeared to be very unreliable.

CRITIQUE OF THE INTRODUCTION TO *THE RELUCTANT TOMMY* (PAPERBACK EDITION)

In his introduction to *The Reluctant Tommy*, the editor, Duncan Barrett, presented a rather different view of Skirth's war memoir to that given in my study. He suggested that it was, essentially, a true story that Skirth chose to fictionalize or work up from his basic material for dramatic advantage. Of course, Skirth's basic material probably consisted of the brigade and unit war diaries, but Barrett did not mention this. The editor's view of the memoir was promoted throughout his discussion. For example, he stated, "[m]y own view is that the tenor of Ronald Skirth's memoir is one of honesty and truth-telling, and I would not dismiss what he says too lightly, even if he does deviate from specific facts in order to craft an engaging story," adding, "taken as an intensely personal account of one man's experiences at the most pivotal moment of his life, I believe it more than stands up to any criticism levelled against it."⁵⁴ He did acknowledge some light fictionalizing, artistic license, inaccuracy and unreliability but the satirical nature of the work was neither acknowledged nor discussed.

The editor's view seemed largely based on his having corroborated where and with whom Skirth served, although the sources used were not cited. While records confirm Skirth served with 293 Siege Battery, Royal Garrison Artillery, my study showed that his key characters, himself included, are fictional despite appearing to have been real men, and while it is also evident that Skirth served in Italy, for example, he did not receive medical treatment for a head injury at Abbeville, or treatment for shell shock at Schio and Montegrotto Spa. Other than corroborating Skirth's basic service details, my study found little other evidence to suggest that the editor had been rigorous in using independent, reliable sources to corroborate the memoir's substance, despite his acknowledgement that "[i]t is hard to be certain" of how truthful the story was and his having been aware of significant criticisms of the content. Although not cited as such, several sources were mentioned, including *Casualty Figures* and *Not Forgotten*. However, insofar as Skirth is concerned, both of those works have appeared to be very unreliable. The Imperial War Museum is mentioned, and it might be inferred that the memoir's status as an item in its collections gives the content credibility, but that is not the case, as explained earlier. Reference to Jean Skirth helped to confirm the journals' provenance but did not corroborate their substance. Referring to Skirth himself, Barrett stated, "Skirth undertook a lot of research at the time of writing, both scouring his own collection of war memorabilia and consulting with authorities such as the Imperial War Museum and the Italian Tourist Board." My study showed that, while Skirth's memorabilia may have appeared genuine, some items were falsified or misrepresented, and his maps and drawings were very unreliable.

His research at the Imperial War Museum probably included accessing the brigade war diary. Consequently, any credence given to the memoir's content by the editor mentioning those sources seems largely superficial and misleading.

His belief in the memoir's basic authenticity underpinned and shaped much of Barrett's discussion. For instance, discussing the pacifist storyline, the editor referred to Skirth's "remarkable conversion to conscientious objection" and "the ethics of his pacifist conversion," but there was little, if any, reliable evidence given in support of such statements; they were simply stated as fact. Referring to Skirth's terrible dilemma, Barrett stated, "[Skirth's] conscience forbade him from taking lives, and yet stuck out in the field he was in no position to declare himself a conscientious objector." That statement not only promoted the supposed authenticity of the storyline, but misled the reader about Skirth's terrible dilemma and what it meant to be a sincere conscientious objector. Discussing the confessional postscript, Barrett stated that Skirth reconstructed it from memory, implying that there was an original, and, despite referring to the letter as crucial and correcting a contradiction in it, he missed its deliberately paradoxical and insincere content. Skirth's mistargeting of the guns to alert the enemy was briefly discussed in terms of its morality, not its plausibility or whether it was a legitimate action that a sincere conscientious objector would take. By stating the storyline as fact in that way, Barrett gave it superficial credibility.

My study noted that there was much in the memoir that should have prompted further investigation by the editor. For instance, Barrett gave as an example of Skirth's fictionalizing some of his diary extracts. He explained that Skirth stated he did not write in that diary "between his knock-out at Passchendaele and his climbing of Mount Hippo a year later,"⁵⁵ but included diary extracts from that period. The editor suggested that those particular extracts—the eleven or so dated June 1918—were a narrative device and, in fact, fictional. As there were only two others that served to contradict those dated in June, one was led to question why the editor did not include them in his discussion or suggest that the diary itself was a narrative device, although in doing so it would have become clear that Skirth was likely consulting the brigade diary.

Another matter that should have been explored more fully was the discrepancy over John "Jock" Shields' date of death. Barrett stated that Jock Shields was a real person who died on the Western Front, and acknowledged that it was not on the date Skirth provides. Yet, despite being aware of this three-and-a-half-month difference, he did not seem to realize that John "Jock" Shields' existence during that period can only have been a fabrication and, therefore, logic dictates that "War Story Number 2" must also be a fabrication. The deliberate contradiction posed by Skirth's failure to underscore the majority of the battery's casualties at Passchendaele seems to have eluded Barrett, who ascribed it to artistic license.

Following publication of the hardback edition of *The Reluctant Tommy*, criticisms of it were made, some of which were addressed in the revised introduction to the paperback. Those relating to the Italian war story and alleged official cover-up together should have prompted more investigation by the editor than seems apparent. That the battery was not singled out specifically for praise, as Skirth claims, Barrett dismissed as a specific factual quibble.

That the precise medals and dates of promotions awarded to his colleagues did not always tally with those in official records was referred to as minor factual errors that did not affect the narrative overall when, for example, in the case of Major H. S. K. Snowdon, they very much did. Despite the editor's admission that there was only one death on 15 June 1918, not two, he did not seem to have been prompted to review the significance of the casualty's details in relation to the storyline's reliability. He dismissed the mistake as another factual error.

After careful examination of the editor's introduction to *The Reluctant Tommy*, my study concluded that it was partial because it did not reveal or discuss the full extent of Skirth's fictionalizing. It promoted the war memoir as an essentially true account based, apparently, on the verification of where and with whom Skirth served; little, if any, independent, reliable evidence was given to corroborate the memoir's substance.

SKIRTH'S LITERARY REFERENCES AND ROMANTIC STYLE

The last section in my study concerned Skirth's literary references and his allusions to Romanticism. His twenty-one literary references created the impression that he had read a variety of novels, autobiographies and semi-fictional autobiographies, many about World War I, which, in turn, influenced his writing, despite his claim to the contrary in that he admitted to having re-read several works. That contributed to the superficial impression that he was writing a semi-fictional autobiography.

Skirth also seemed to play with the notion of romance. Most obviously his story was, supposedly, a love story—a romance. His tongue-in-cheek Romantic style on one hand accorded with the Romantic view of the war prevalent at the time, giving it some superficial authenticity; on the other hand, and in view of the satirical nature of the work, it could be inferred that he was using it to subtly underscore the Romantic movement's central notions of the importance of the individual, the expression of emotion and feelings over reason, and the elevation of the imagination as the supreme faculty of mind, thereby hinting at the real nature of his work. There is another meaning of romantic, which is “to suggest an account or project which is fictitious, exaggerated, far-fetched, wild or fantastic ('a romantic version of events').”⁵⁶ My study has shown that Skirth's work was all of that despite his ironic claim to have been sincere and truthful in recounting his experiences.

SUMMARY

Through thorough analysis and the use of independent, reliable sources, my study has shown that Skirth's war memoir was not a genuine account, or a semi-fictional one, but a satire that subtly and implicitly ridiculed many of the British Army's shortcomings that in some way impinged on his World War I military service. This satirical war memoir was superficially disguised as a semi-fictional autobiography, arguably to facilitate its entry into the Imperial War Museum's collections, where it could deride the British Army in perpetuity. In fact, Skirth's papers amounted to a literary forgery. In trying to persuade the reader that he was, for the most part, honest and sincere in describing his experiences and, therefore, that they were authentic, he practised a deception, trying to deceive the reader into believing that the stories were something they were not. My study has also shown that, insofar as Skirth was concerned, publications such as *The Reluctant Tommy*, *Casualty Figures*, *The Cross and the Trenches*

and the documentary *Not Forgotten* appeared to be very unreliable, and therefore the credibility that they have apparently given to the memoir's authenticity is largely unfounded. My study's findings also call into question the memoir's status as an item worthy of a place in the Imperial War Museum's prestigious collections. At the very least, it should be reclassified as a work of fiction, if not withdrawn altogether. Hopefully, my study's acceptance into the museum's Department of Collections Access Library will go some way to ensuring that researchers using Skirth's papers in the future will do so in accordance with the museum's policies.

I began my study in the hope of one day being able to set the record straight about my grandfather, but, by the end, I found myself acting on behalf of the entire battery. Skirth's so-called memoir now stands as a ridiculous testimony of his own military service and an offensive one with respect to his comrades. He vilified and discredited certain characters and, in doing so, unfairly represented genuine figures, such as Bernard Bromley and Major H.S.K. Snowdon. He falsified personal details and rewrote the ways in which some men like John Shiels, Albert Northover and Lewis Cardwell died, none of whom deserved such abuse. While one may sympathize with Skirth's feelings about the British Army, particularly the battery's omission from the Order of Battle for 15 June 1918, it is nevertheless difficult to justify the way in which he expressed them. Out of respect for the genuine service given by all the officers and men who served with 293 Siege Battery, Royal Garrison Artillery, during the Great War, especially those who lost their lives, it is now time that Skirth's war memoir be publically acknowledged as a fake by the publishers and directors concerned and by the Imperial War Museum, otherwise it will stand forever as an irreverent memorial to them. 🍀

ABOUT THE AUTHOR...

Ruth A. Ward was born in Liverpool, UK, and is married with three grown daughters and four grandchildren. After successfully completing three years of training at a technical college in Liverpool, she spent several years in a variety of roles in the clothing industry and then nine years as a full-time lecturer in clothing technology at a college in Liverpool. When her youngest daughter started school, she decided to retrain and became a part-time lecturer in adult basic education at a local college in Warrington. She retired in 2006, by which time she had achieved high levels of certification in adult and English language education.

ENDNOTES

1. J. R. Skirth, and D. Barrett, *The Reluctant Tommy*, hardcover (London: Macmillan, 2010); paperback (London: Pan Books, 2011).
2. In 1999, Jean Skirth donated her father's journals to the Imperial War Museum, London, but retained the more personal sections. The journals are held by Documents under the title “Private papers of J. R. Skirth,” reference code Documents.9023.
3. Skirth's service record was unavailable and therefore could not be used to corroborate his rank, promotions, alleged demotion from corporal to bombardier, or whether or not he was a battery commander's assistant. However, the photograph on the cover of *The Reluctant Tommy* showed him wearing a single chevron and observer insignia. His Medal Index Card recorded him as “Bmdr”—bombardier. The *Casualty Form – Active Service* for Arthur Starr, who was also with 293 Siege Battery, noted (3/5/17) that Starr was “[a]ppointed a/corporal vice 'Skirth' reverted” (i.e. in place of Skirth, who, presumably, having been a corporal (or acting corporal) reverted to bombardier). Throughout his book, Skirth referred to his unit as “239” Siege Battery, although his actual unit was 293 Siege Battery. A contemporaneous postcard included in the memoir was addressed to him at 293 Siege Battery. See *The Reluctant Tommy*, xix.
4. R. Schweitzer, *The Cross and the Trenches: Religious Faith and Doubt among British and American Great War Soldiers* (Westport, USA: Praeger Publishers, an imprint of Greenwood Publishing Group Inc., 2003).

5. M. Barrett, *Casualty Figures: How Five Men Survived the First World War* (London: Verso, 2007).
6. Lucy Carter, Executive Producer, *Not Forgotten: The Men Who Wouldn't Fight; Series 3; Episode 1*, Wall to Wall Production for Channel 4, first aired in the UK on 10 November 2008.
7. Imperial War Museum reference: 14/695.
8. GBC_1911_RG14_16603_0065.jpg.
9. This is family knowledge.
10. TNA_R39_4274_4274D_023.jpg.
11. Gunner: The National Archives (TNA) Catalogue Reference: War Office /372/3, Image Reference 1925; L/Bdr—see endnote 12; Bombardier—letter dated 1/7/18 from Captain H. Evatt, MC, Royal Garrison Artillery (293 Siege Battery), to Mrs. Bromley.
12. TNA Catalogue Reference: War Office /372/23, Image Reference: 13076.
13. The research was conducted by Chris Baker of *fourteeneighteen/research*.
14. "Phil Tomaselli has written extensively on military and family history and made a special study of the Western Front, in particular the decisive campaign of 1918. He has published many articles on aspects of army and air force history" (Pen and Sword Books). He has also contributed to *Who Do You Think You Are?* magazine.
15. Skirth and Barrett, *The Reluctant Tommy* (2011 paperback), xxii.
16. The comments were made in several private emails between me and the Imperial War Museum during 2014.
17. Ruth Ward, *A Study Examining the Authenticity of John Ronald Skirth's Memoir* (2014).
18. *War Story No. 1: After the Battle, Messines, 1917*, and the pacifist storyline; *War Story No. 2, Passchendaele November 1917* and the shell shock storyline; The Italian war story—the "premature" accident and official cover-up storyline.
19. 293 Siege Battery, Royal Garrison Artillery, war diary for June 1917–January 1918 held at Firepower Royal Artillery Museum, Ref: RAHT 328; 293 Siege Battery, Royal Garrison Artillery, war diary for December 1917–May 1918 held at TNA, Ref: War Office 95/4206; 94 Heavy Artillery Group (Brigade), Royal Garrison Artillery, war diary for January 1918–December 1918 held at Firepower Royal Artillery Museum.
20. TNA War Office 95/4199 File—"General Headquarters," Commander Heavy Artillery, Italy; and War Office 95/5472 Italy 1917 Nov–1919 Mar. Locations of Army Units 1914–1919.
21. Imperial War Museum Catalogue Number: Documents 4162-2.
22. J. E. Edmonds and H. R. Davies, *History of the Great War based on Official Documents by Direction of the Historical Section of the Committee of Imperial Defence. Military Operations: Italy, 1915–1919* (London: Imperial War Museum; Nashville: Battery Press, 1991, c.1949).
23. Major-General Sir W. G. MacPherson, *History of the Great War based on Official Documents. Medical Services: General History (Official Copy)*, vol. 3 (Uckfield, UK: The Naval and Military Press Ltd., 2009, c.1924).
24. John and Eileen Wilks, *The British Army in Italy, 1917–1918*, (Barnsley: Leo Cooper, 1998).
25. Francis Mackay, *Battleground Europe. Asiago: 15/16 June 1918: Battle in the Woods and Clouds* (Barnsley: Pen and Sword Books, 2001).
26. General Sir Martin Farndale, *History of the Royal Regiment of Artillery: The Forgotten Fronts and the Home Base 1914–18* (London: The Royal Artillery Institution, 1988).
27. Ibid.
28. Norman Gladden, *Across the Piave: A Personal Account of the British Forces in Italy, 1917–1919* (London: Her Majesty's Stationery Office, 1971).
29. Hugh Dalton, *With British Guns in Italy: A Tribute to Italian Achievement* (Teddington: The Echo Library, 2007).
30. Peace Pledge Union website: www.ppu.org.uk/coproject/coww1a.html, *Conscientious Objection in Britain in World War One, Conscripton*, accessed 1 November 2013.
31. BBC Ethics Guide: Pacifism (website), http://www.bbc.co.uk/ethics/war/against/pacifism_1.shtml.
32. Long, Long Trail (website): <http://www.longlongtrail.co.uk>.
33. 293 Siege Battery Royal Garrison Artillery 1916–1919, (website) www.293siegebattery.webplus.net, p. S, accessed February 2013.
34. Nigel Evans' website www.nigelef.tripod.com/glossary.htm, accessed June 2012.
35. *Oxford Dictionary of National Biography* online www.oxforddnb.com, Oxford University Press, accessed 2013.
36. J. A. Cuddon and C. Preston, *Dictionary of Literary Terms and Literary Theory*, 4th ed. (London: Penguin Books, 1999).
37. M. Barrett, *Casualty Figures*.
38. Schweitzer, *The Cross and the Trenches*.
39. Carter, *Not Forgotten*.
40. Great War Forum, <http://1914-1918.invisionzone.com/forums/>.
41. My posts/threads can be found by searching "ruthw" on the forum website.
42. Please note: the terms "papers," "journals," "semi-fictional autobiography," "work," "text" and "memoir" are used interchangeably and refer to Skirth's original document held at the Imperial War Museum. His "war memoir" refers specifically to those stories and storylines in the memoir relating to World War I.
43. The study noted that British satire had enjoyed a revival in the 1960s; Skirth started writing in 1971.
44. The book was consulted to corroborate and clarify the battery's deployment to and around Italy. The battery is listed the Order of Battle Nov–Dec 1917, confirming its arrival in Italy but, surprisingly, it is not listed in the Order of Battle 15 June 1918, the date of the Battle of Asiago, seeming to confirm that the battery did not participate in the battle, as Skirth claims. Further investigation showed that it had been incorrectly listed as "294" Siege Battery, a unit not recorded in the *Index to Arms, Formations and Units*, or the Order of Battle Nov–Dec 1917.
45. Edmonds and Davies, *History of the Great War*, 217.
46. See Farndale, *History of the Royal Regiment of Artillery*, 186.
47. Richard Holmes, ed., *The Oxford Companion to Military History* (New York: Oxford University Press, 2001), 224.
48. Total Casualties for 293 Siege Battery, Royal Garrison Artillery: James Bennett died on 6 October 1917; Walter Reginald Booker died on 15 June 1918; George Sidney Burch died on 9 Nov 1917; Lewis Cardwell died on 12 June 1917; Robert David Hillier died on 24 October 1918; James Mollart died on 11 October 1917; Albert Northover died on 12 June 1917; Harold Betts Plowright died (at home) on 16 January 1917; John Shiels died on 18 July 1917; Cornelius Skipper died on 12 October 1917; Arthur Starr died on 21 August 1917. Information taken from Commonwealth War Graves Commission records using Geoff's Search Engine (www.hut-six.co.uk).
49. M. Barrett, *Casualty Figures*, xii.
50. Ibid. 3.
51. Ibid. 67.
52. Ibid. 68.
53. Ibid.
54. Skirth and D. Barrett, *The Reluctant Tommy*, xxiii.
55. Ibid.
56. Peter Widdowson, *The Palgrave Guide to English Literature and its Contexts 1500–2000* (Palgrave: MacMillan, 2004), 91.

UP THE CREEK WITHOUT A PADDLE

Lieutenant-Colonel Alain Cohen and Major Julien Chaput-Lemay

A tank is the best weapon against a tank.

What if you don't have any when enemy tanks show up?

That would never happen if we went to war.

This caricatured line of reasoning isn't far removed from reality in the Canadian Army. Our commonly held views on defeating armoured threats often rest on two fundamental assumptions: the first is that our deployed infantry forces will always be supported by main battle tanks; the second is that, in any event, nearly all enemy armour will be knocked out by aerial means in the opening phase of a campaign.

These assumptions were formed over the past three decades of unchallenged NATO supremacy. Today, however, they seem too bold for comfort, if not dangerous, warranting a challenge in the authors' view. So here we are interjecting a simple question at the end of the opening dialogue: "Really?"

PICTURE THE FOLLOWING

A Canadian light infantry battalion deploys to the mountainous border region of an allied nation as part of a hastily assembled stability force. The battalion's orders are to enter a border town at first light to ease tensions between belligerents, while contributing to a broader show of force that will deter incursions by well-trained and well-equipped proxy forces mustering in the neighboring country. Close air support assets are only expected to become available 24 hours following the battalion's arrival. As night begins to fall that first day, the battalion observation post reports four main battle tanks cresting at an 800-metre distance across the border, while machine gun fire erupts from an unknown location suppressing B Company soldiers, who report the contact.

This scenario is one of dozens that could be written credibly without expending much imagination. The probability of our infantry coming under contact against tanks or heavy infantry fighting vehicles without immediate combined arms or air support is not one to be discounted. There will be times and places where our infantry will be engaged in isolating manoeuvres by armoured threats (e.g. during the first few hours

Members of the Canadian contingent of the enhanced Forward Presence Battlegroup Latvia fire the tube-launched, optically-tracked, wire-guided (TOW) missile

of a stability operation when light forces are deployed to secure a bridgehead). The very notion of adaptive dispersed operations implies that such situations could indeed occur during established, mature operations too (e.g. as regional conditions shift unexpectedly requiring the battle group to physically regroup within its area of operations to head-off a rapidly emerging symmetric threat).

Our 'bottom line up front' is that no modern army can afford to downplay the need for organic anti-armour capabilities within its infantry forces. This holds true even for the most heavily mechanized armies in the world, such as Israel's, which, despite their abundance of main battle tanks and attack aviation assets, still choose to invest in their infantry's anti-armour capabilities as one that can *also* serve to engage enemy bunkers at standoff ranges during clearing operations.¹

We believe that beyond the current reintroduction of the tube-launched, optically-tracked, wire-guided (TOW) anti-tank missile in our mechanized battalions, our infantry's broader anti-armour capability—which includes doctrine, tactics, techniques and procedures, equipment and training—needs to be seriously reassessed and improved to maintain our relevance, survivability and effectiveness in the future security environment, where tanks, next-generation infantry fighting vehicles² and small unit bunkers should be expected to upset our aforementioned assumptions on the matter.

TESTING THE CURRENT STATE

Our views expressed here were not formed in theoretical isolation. Starting with a hypothesis about a widening gap in our anti-armour capabilities, we designed and conducted a week-long field tactical exercise that brought together some 300 participants, primarily from infantry and combat engineer regiments, both Regular Force and Reserve Force.³ We 'stress-tested' our infantry's ability to take on an armoured force conventionally. More precisely, we sought to ascertain whether a task-tailored, dismounted infantry company could defeat mechanized opposing forces through defensive operations with a one-to-three force ratio (friendly to enemy).

The exercise was split into three phases. The first phase consisted of multiple iterations of an infantry company group (three rifle platoons plus one 'light' TOW platoon equipped with all-terrain vehicles and open trailers) defending against a short-changed mechanized opposing forces regiment. The 1st Battalion, Royal Canadian Regiment provided the opposing forces—a reinforced platoon with seven light armoured vehicles (acting as T-80 main battle tanks and in some cases heavy infantry fighting vehicles, both of which were supported by dismounted infantry). The platoon was allowed to 'reset' itself in order to simulate the engagement of up to two opposing forces combat teams.⁴ Every iteration brought a change to a control variable to test for outcomes such as kill and survivability rates.⁵ Variables included: tank-hunting team configurations and weapons mix, use of terrain (urban vs. natural), open-fire policy distances (min-max), etc.

Building on lessons learned from the first phase, the second phase of the exercise consisted of a 36-hour field tactical exercise that pitted a reduced light infantry battalion⁶ against the same opposing forces mechanized regiment. The battalion fought a guard action followed by a main defensive battle in an urban area, and followed again by a battalion ambush against follow-on forces at night.



Source: Combat Camera

A sniper from the 1st Battalion, Royal 22^e Régiment fires a C14 Timberwolf rifle (.338 Lapua) in a night shoot on a firing range

The third and final phase of the exercise involved 84-mm live fire with live tank-hunting team demonstrations.

In our view, the exercise provided valuable training for those involved. However, the exercise also demonstrated that our light infantry was generally 'up the creek without a paddle' against armoured or mechanized opposing forces. Individual tank hunting teams did wonders, and progressed incredibly over a single week of rapid, iterative, closed-loop learning. They responded with creativity when incorporating complementary weapons, namely the C14 command-detonated, rocket-propelled anti-tank mine and ground laid mines. Teams made best use of the additional firepower, increasing both their survivability and kill rates. But no amount of tactical innovations, of which there were many at all levels, could compensate for the fact that our infantry lacked some of the critical weaponry and related tactics, techniques and procedures to credibly defeat a sizeable armoured threat and live to fight another day. Our observations and after-action reviews from that exercise form the basis of our opinions provided in this article.

THE ADAPTIVE DISPERSED OPERATIONS CONCEPT ASSUMES FREEDOM OF MOVEMENT, WHICH CANNOT EXIST WITHOUT THE ABILITY TO NEUTRALIZE ARMoured THREATS THAT DENY IT

Armoured opposing forces can quickly dominate open terrain, approaches and key terrain. In doing so, they can deny our infantry's ability to move across the battlefield and prevent us from rapidly massing or even withdrawing effectively. This is as much, if not more, a factor of an armoured platform's weapons range and target acquisition capability as it is a factor of mobility.



Source: Combat Camera

A Canadian soldier from the enhanced Forward Presence Battlegroup Latvia loads an 84 MM round into a Carl Gustaf recoilless rifle

Even in closed terrain, where doctrine attributes the advantage to infantry, we noted that some of the best-prepared kill zones, set by highly motivated tank hunting teams, could easily be neutralized when opposing forces units employed cautious clearing drills (defile drills, etc.). This is consequential to our assumptions about how armoured units always insisting on speed and shock action. These should not be taken at face value; the future security environment will likely include hybrid threats using localized, fragmented and cautious engagements repeated over months, and even years, as adversaries seek to preserve combat power over speed. This has been the case in Eastern Ukraine and in Syria where main battle tanks have been extensively employed, but not in sweeping armoured thrusts.

EVEN AT CLOSE RANGE, OUR TACTICAL EFFECTIVENESS IS MORE LIMITED THAN WE GENERALLY ASSUME

Throughout the exercise, but particularly in the beginning, we often saw engagements fail because of improper consideration for the minimum arming distance or blast radius of anti-tank weapons. These factors severely limited the availability of firing positions and egress routes for the infantry, forcing tactical commanders to engage the opposing forces at greater distances. This posed a particular challenge in urban terrain where uninterrupted line of sight, paired with sufficient range, could rarely be found. Tactics had to be adapted by increasing the depth of engagements to accommodate urban environments, or to achieve sufficient standoff in defiles. In many cases, dismounted infantry had to adapt by moving into terrain favourable to tanks, trading cover for standoff distance. In principle, we considered this to be tactically disadvantageous but unavoidable, given the characteristics of the weapons available to them.

WE CAN'T SEE THEM AT NIGHT!

In low-visibility conditions, the absence of thermal or light intensifying optics on the 84-mm Carl Gustaf severely hampers its effective range. It became obvious that defensive operations against armoured vehicles at night were difficult. Acquiring moving targets with precision in the dark at ranges greater than 100 metres was a near-impossible task. Also, the enemies' optics were outperforming our dismounted soldiers' ability to camouflage their defensive positions, especially after initial contact. Egress movements were tough to execute once the ambush had been revealed.

THE 1000-METRE GAP

The current arsenal of anti-tank weapons available to light and dismounted infantry is particularly inadequate for the 500- to 1500-metre range. While it can be argued that light forces are better at engaging at shorter ranges, it is important to offer them the freedom of manoeuvre and tactical flexibility that comes with medium-range anti-armour weapons. The standoff provided by those weapons will assuredly increase the survivability rate of our soldiers. Extending the range offers more options (engagement, egress, etc.). This is a mathematical fact.

Currently, the medium range capability gap is filled by the TOW weapon system. Considered an interim measure, the allotment of these weapons to infantry battalions in its dismounted version (tripod) fails the test of realism. It is too heavy and cumbersome, and offers an obvious target to the enemy once fired. Its few redeeming qualities are its sights, its ability to destroy strongpoints, and the fact that training with it forces the infantry corps to relearn how to win the anti-tank fight.

RECOMMENDATIONS

In short, our infantry must be capable of destroying armoured threats because these can surface across the spectrum of stability and combat operations.

We understand that selecting the next generation of anti-armour weapons for the infantry will mean having to make choices between lethality, range and portability.⁷

Currently, the greatest gap, in our view, is the absence of a portable medium-range weapon system (500 to 1500 metres) that would allow for the standoff destruction of tanks, infantry fighting vehicles and strongpoints. Such a weapon system is needed now in order to improve survivability and freedom of movement to acceptable levels for dismounted infantry companies and light infantry battalions.

Next, our short-range weapons systems (84 mm) should be upgraded to include uncooled thermal sights that would allow our infantry to engage enemy armour or strongpoints in low-visibility conditions at short range (75 to 500 metres).



An Explosive Ordnance Disposal Technician inspects the ground with a metal detector for simulated improvised explosive devices

Finally, in closed terrain, our infantry should be equipped with and specially trained on existing systems such as ground-laid and remote-detonated anti-tank mines that can neutralize or destroy armour at very close range (0 to 75 metres).⁸

Anti-armour warfare training should be incorporated as mandatory battle task standards for infantry soldiers deploying abroad. Future light infantry doctrine should certainly address the issue, too, and proactively include provisions for a portable medium-range anti-armour weapon.

In February 2002, Directorate Land Requirements 5 published an anti-armour master plan with a number of forward-looking recommendations. The plan, however, fell victim to the growing needs in other types of materiel and capabilities for our combat mission in Afghanistan. Now, some fifteen years later, as the world's geopolitical situation shifts towards multipolar competition and conflicts by proxy, it is more than time to move forward with a new anti-armour master plan. This will be needed to maintain the Army's effectiveness as a deterrent and as a generator of combat-capable task forces. With the looming deployment of a Canadian battle group to Latvia, we see no better time than the present to do so. 🍁

ABOUT THE AUTHORS...

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ENDNOTES

1. See "Lessons of the 2006 Israeli-Hezbollah War," Cordesman *et al.*, Center for Strategic and International Studies (2007) for the employment of reinforced, mutually supporting strongpoints by Hezbollah.
2. It is well to note that the new generation of heavy infantry fighting vehicles such as the T15 Armata or Kurganets-25 are not likely to be as defeatable (if at all in the case of the T15) by Bushmaster cannon as earlier generations were (e.g. BMP series).
3. The following units participated in the exercise held at CFB Petawawa in May 2016: A Company from 2 R22^eR, B Company (composite) from Les Fusiliers Mont-Royal (FMR), Canadian Grenadier Guards and Régiment de Maisonneuve, a weapons platoon from 1 R22^eR, a composite engineer field troop from 2 CER and 34^e Régiment du génie de combat (34 RGC), a battle group headquarters from FMR, 2 R22^eR and 34 Canadian Signal Regiment (Cdn Sig Regt). The opposing force was provided by 1 RCR in the form of a reinforced mechanized platoon.
4. Unfortunately, none of the armoured units approached were available to participate in this exercise. The officers, NCOs and soldiers of 1 RCR returning from Op UNIFIER did a great job of conveying lessons learned from their time in Ukraine, applying observations they had gleaned regarding the use of armour equipped with advanced countermeasures in disputed zones.
5. An operations researcher from Canadian Army Land Warfare Centre (CALWC) supported the exercise to this end, accompanying us in the field.
6. Two rifle companies, the TOW platoon, the engineer troop and headquarters platoon.
7. Shooter safety issues will also emerge at close range in the design and choice of anti-tank weapons powerful enough to destroy a modern main battle tank.
8. "Very close range" is defined here as that range under which shoulder-fire systems are ineffective due to minimum arming distance and blast effects.



Source: DAPA

MODELLING CYBERSPACE INJECTS FOR EXERCISES

Sean Morris

The cyber environment has become a critical enabler of military and non-military forces, and it represents a significant factor in the modern battlespace. Although this has been apparent for some time, modelling the cyber environment for military exercises remains a poorly understood task. It is through exercises that personnel learn and practise the skills they need to be successful; it is imperative that staff be exposed to an accurate representation of the cyber environment.¹ The aim of this document is to provide a methodology that can be used to model cyberspace actors, capabilities and events for wargames and exercises.

Contemporary military exercises provide an opportunity for staff to learn from scenario-based problems, developing their skills and experience in a risk-reduced and guided environment. While there are many types of exercises and methodologies for running them, there is a common requirement for scenarios and injects—interactions between the primary training audience and the exercise controllers—to be realistic and provide measurable results. Unrealistic injects and scenarios actually provide negative training value, as they tend to teach participants incorrect behaviours. Injects need to have associated metrics in order to ensure that they are providing a benefit to the participants and to confirm that the participants are managing the scenario appropriately. Exercises are also used to test and wargame plans, procedures and doctrine. Realism and metrics are critical to ensuring that staff work is robust enough to survive first contact with reality. Training, including exercises, is the key to the operational effectiveness of military forces. With its growing influence on the modern battlespace, the cyber environment needs to be accurately represented in training, including exercises.

While many other aspects of conflict are well integrated into the processes for wargames and exercises, cyberspace and other FRINGE (photographic-optical, robotic, informational, nano-, geno-, and electro-) technologies are often minimized or dismissed. This happens because integral subject-matter expertise is limited, contracted support is expensive, and there is a lack of historical examples available to trainers. In addition, there is the widespread impression that cyberspace events do not have a significant impact on the outcomes of conflicts. Finally, due to our critical dependence on our networks and their interrelationship with command and control, cyberspace injects are frequently minimized or avoided in order to prevent interference with the main objectives of exercises.

The following methodology aims to provide a simplified means of generating realistic, measurable and effective injects for exercises and wargames by using models and processes structured on the basis of real-life events and actors. It is intended to be used for developing ‘white card’ injects—injects that are provided and played in the cognitive domain, as opposed to injects that occur on the networks. There are currently a number of good tactical-level cyberspace defence exercises which can be used to train staff working ‘at the coal face.’ However, this methodology could be used to implement concurrent operational- and tactical-level cyberspace events to train both technical personnel and staff officers. The methodology starts with understanding the training objectives and the in-game environment, and then develops actors using a simple model based on real-world examples.

The scenario writers then develop adversary courses of action using a capability model and develop them further by rapidly wargaming each operation through the network intrusion kill chain² or targeting cycle. Each step of the cycle would be surveyed for injects that can be played for the primary training audience.

TRAINING OBJECTIVES

Development of the training scenario should be linked to the objectives of the training event. Whatever skills, processes or concepts are being tested or trained should provide the focus for the development of the exercise environment and injects. In addition, to ensure that the training audience's response to injects is truly measurable, scenario writers must determine metrics based on these objectives. Throughout the development process, scenario writers should determine how the injects and their effect on the primary training audience can be measured. For example, when an effect is generated in cyberspace by an adversary actor, how long does it take for staff to become aware of it? How long until the key staff are not only aware, but also knowledgeable about the event? Are commander's critical information requirements in place that take cyberspace events into consideration? Once staff are aware, how long until a response is developed, and in place? Are responses synchronized across the staff, or stovepiped?

Performance should be measured against organization baselines. Where these are not available, metrics should be created to understand them. At a minimum, organizations should enter into training to acquire an understanding of the resource costs for their cyberspace capabilities and, more important, what is expected from those capabilities. The more detail that can be provided regarding the expected effectiveness and performance levels of the capabilities of the training audience, the more relevant the metrics generated will be.

SCOPE AND SCALE

The depth of the scenario and the corresponding level of development effort should be balanced against the scope and scale of the exercise. A smaller event, such as wargaming a high-level process, will not need detailed technical information behind the injects, so long as they are realistic. A training exercise focused on the tactical response to a specific cyberspace event will not need a wide breadth of strategic actors with detailed political backgrounds. Again, although this methodology is not intended for the development of tactical cyberspace exercises, it could be used to build the surrounding scenario.

In practical terms, scenario developers should scope cyberspace actors and capabilities to those that will have an impact and can be mitigated no more than one level down from the primary training audience. For example, during a division-level wargame, the effects should be relevant to at least the brigade level. Similarly, the scale of the exercise provides the scale of the cyberspace effects that should be developed. This should be considered for both temporal and spatial aspects. If, for instance, a wargame is being played in turns of a week's length, then only cyber effects that are persistent for a week or more should be considered. Likewise, for wargaming at a country scale, effects and actors having an impact below the level of a city or district may not be of any planning value.

UNDERSTANDING THE ENVIRONMENT

The development of the cyberspace environment within an exercise scenario will, for the most part, rely on the real-world equivalent on which the scenario is based. Real-world cyber environments are well understood and, in many cases, thoroughly documented. The political landscape, physical and logistical infrastructure, legal frameworks, social implications and economic impacts of the cyber domain for the majority of nations and geographical areas have been explored and interpreted by academics and journalists for years. This research can, and should be, investigated by the developer in order to build the foundation of the scenario. Following that, working through the joint intelligence preparation of the operational environment or the cyberspace intelligence preparation of the environment process should provide enough insight into the scenario cyberspace environment to develop a baseline of information regarding infrastructure, political agendas and actors. If the exercise participants are to produce a joint intelligence preparation of the operational environment as part of the exercise, then the developers must produce enough background detail with the appropriate scope. Developers and exercise controllers should collect or build enough information to enable them to respond to any reasonable requests for information from the training audience.

DEVELOPING ACTORS

Once the supporting environment is understood, the actors who are relevant to the area of operations need to be developed. For the purposes of this paper, cyberspace actors are modelled based on two key factors: their strategic intent and their available resources (see Figure 1). This model includes only actors who are likely to produce significant effects within the environment. Individual citizens, Internet service providers and corporate interests are not included here, but should be considered as part of the environment as owners and controllers of cyberspace terrain and possible targets of cyber activities.

It is worthwhile for the exercise developer to research real-world examples of the actors existing in similar environments. For instance, the current situation in Eastern Ukraine provides an excellent opportunity for research, as the first protracted international conflict that has included significant levels of publicly disclosed activity within the cyber environment. A quick survey of available open-source material about this conflict reveals more than 20 distinct actors—individuals and groups—that fall across the entire model.³

Scenario writers should be careful to also consider actors who may create significant effects within or through cyberspace, albeit in a supporting function: for example, the use of cellular phones by demonstrators for command and control; the use of online tools and social media by terrorist and extremist organizations for recruiting, planning, training and financing; and the requirement that military forces may have for Internet access in order to interact with contracted logistics support.

ADVANCED STATE	Allied State Cyber Organizations	Neutral State Cyber Organizations	Adversary State Cyber Organizations
DEVELOPING STATE	Allied State Cyber Organizations	Neutral State Cyber Organizations	Adversary State Cyber Organizations
STATE SUPPORTER	Allied State Supported Cyber Security Organizations/ Corporations	Neutral State Supported Hactivist/Cyber Security Organizations/Corporations	Adversary State Supported Hactivist/Cyber Security Organizations/Corporations
RESOURCED NON-STATE	Cyber Security Researchers/ Organizations	Hactivist Organizations	Organized Criminal/Terrorist Organizations
UNRESOURCED NON-STATE	Independent Cyber Security Researchers	Individual Hactivists	Independent Cyber Criminals/ Terrorists
	ALLIED	NEUTRAL	ADVERSARY

Figure 1: Cyberspace Actor Model

The number of actors and the depth to which they are developed will be determined by the training requirements. However, it should be noted that, as seen in Ukraine, the cyber environment is an increasingly congested and contested space. Scenario writers should balance having enough actors with varying capabilities and intents in order to provide a diverse and accurate cyber environment with maintaining a simple enough system that the training audience is not overwhelmed. Exercise developers should develop and record the linkages between actors in order to assist exercise controllers with tracking second-order and third-order effects generated during the training event.

DETERMINING ACTOR CAPABILITIES

With the motivations and resources determined for the various actors, scenario writers will now need to determine how these translate into the capacities and capabilities that these actors will need to have in order to generate effects, along with which activities they would be most likely to use. Figure 2 provides a model for the capacity required to produce effects against some selected generic target sectors. The effects listed are grouped into the following generic categories: DISCLOSE – compromising the confidentiality of information, such as gaining unauthorized access to a database; DISTORT – compromising the integrity of information or an information system, such as changing the shipping manifest for a cargo container; DEGRADE – temporarily reducing the capacity of a system; DISRUPT – temporarily reducing the capacity of a system to the point that it is considered non-functional; and DESTROY – damaging a system to the point that it must be rebuilt or replaced.

TARGET SECTOR	DISCLOSURE	DEGRADATION	DISRUPTION	DISTORTION	DESTRUCTION
COMMUNICATION – CELLULAR	1	1	2	3	3
COMMUNICATION – INTERNET	1	1	2	2	3
COMMUNICATION – MICROWAVE	1	1	2	3	3
COMMUNICATION – PHONE	1	1	2	2	3
COMMUNICATION – RADIO	1	2	2	3	3
COMMUNICATION – SATELLITE	2	3	4	3	5
COMMUNICATION – TELEVISION	1	3	3	3	4
EDUCATION	1	2	2	2	3
ENERGY AND UTILITIES	1	2	2	3	3
FINANCE	2	3	4	3	5
FOOD	2	2	3	3	4
GOVERNANCE	3	3	4	4	5
HEALTH	3	3	4	4	5
LARGE BUSINESS	2	2	3	3	4
MANUFACTURING	1	3	4	3	4
MILITARY – C2	4	4	5	5	5
MILITARY – ISR	2	3	3	4	4
MILITARY – LOGISTICS	2	3	4	4	4
MILITARY – PLATFORMS	4	4	5	5	5
MILITARY – RESEARCH	3	4	4	4	4
NEWSPAPER	1	1	2	2	3
PERSONAL	1	1	1	2	2
POLICE	3	2	3	3	4
SAFETY	2	2	3	2	3
SMALL/MEDIUM BUSINESS	1	1	1	2	2
TRANSPORTATION – AIR	3	3	4	4	4
TRANSPORTATION – RAIL	2	2	3	3	4
TRANSPORTATION – ROAD	2	2	3	3	4
TRANSPORTATION – SEA	1	2	3	3	4
WATER AND SEWAGE	2	2	3	3	4
CAPABILITY LEVEL	COST	PERSONNEL	TRAINING	TIME	
1	< \$10,000	1	Self-taught	<1 Week	
2	\$10,000 – \$100,000	1 – 10	Self-taught, some formal	Weeks	
3	\$100,000 – \$1,000,000	10 – 100	Formal CS Education	Months	
4	\$1,000,000 – \$10,000,000	100 – 1000	Multiple Graduate-level CS	1 Year	
5	> \$10,000,000	> 1000	Multiple PhDs from specific fields	>1 Year	

Figure 2: Cyberspace Capability Model

The smaller chart at the bottom of Figure 2 provides a rough estimate of the resources, in terms of cost, personnel, training and time, required to generate capabilities of increasing difficulty. For example, a resourced non-state actor, such as a terrorist organization, with a moderately well-funded cyber capability (say \$500,000 per year) and roughly a dozen trained personnel would have access to capabilities listed as 1, 2 or 3. Based on the resources available to each actor, the exercise developer should choose an appropriate number of specific capabilities the actor will have prepared. Specific cyberspace operations are not quick or easy to develop, and actors will weaponize activities based on careful consideration. Every organization will have some form of rules of engagement, formalized or otherwise, that will influence the capabilities in which they choose to invest. Entities will not waste resources on developing costly capabilities they will not use, and the use of cyberspace capabilities is currently very much a strategic and political issue. For example, it has been noted that Hezbollah may have the capability to disrupt the Israeli power grid, but the use of such a capability would have extremely negative political consequences, far outweighing any benefits.

Once general capabilities are determined, they should be developed to a level of specificity appropriate to the scale and scope of the exercise, and to the strategic intentions and political motivations of the actor. For instance, a capability to disrupt rail transportation could be refined to the disruption of a specific railhead for the period of a week, caused by the derailment of freight cars resulting from manipulation of a networked rail-switching system.

INJECT DEVELOPMENT

Developing specific injects is a matter of wargaming the network intrusion cycle for each capability the actors will use during the exercise (see Figure 3). Each phase is likely to produce some amount of evidence that the primary training audience may become aware of through injects. Converting this evidence into reports or some other form of communication to the primary training audience provides the individual injects.

The example of an intrusion cycle detailed in Figure 3 is a composite of several models, including the network attack kill chain.⁴ Starting with the determination of requirements, scenario writers should wargame each cyberspace operation developed by the actors. At each phase, they should generate indications and warnings that the primary training audience would be able to collect. These are then transformed into chains of injects by creating the reports from higher, lower and flanking organizations that would be produced, as well as any information that would be obtained from outside sources such as news media. It is important for the exercise developer to tie each inject back to the training objectives of the exercise and provide some related metric or measure of performance. If an inject does not provide training value on its own, or is not critical to an inject chain that provides tangible benefit, the developer should consider cutting it or significantly altering it.

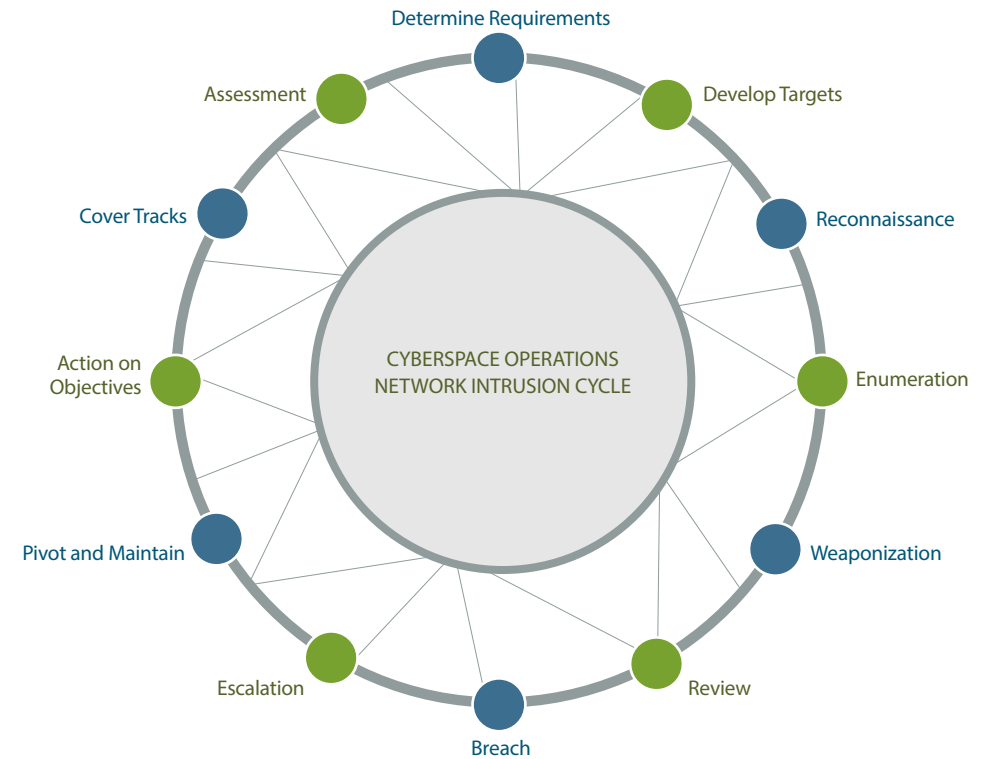


Figure 3: Cyberspace Operations Network Intrusion Cycle

Some phases will likely generate more possible injects than others. For example, reconnaissance will often include some kind of physical activity that could be detected, and the breach phase is where an operation is most likely to be discovered by cyberspace defence capabilities. However, each phase generates some kind of signal which may be noticeable. For instance, during the review phase, an actor may have a meeting between operators and commanders to finalize the details of an operation. This meeting may be mentioned by human intelligence assets, discovered through imagery intelligence or even noted in local media. Fully developing the entire cycle will provide exercise controllers with the ability to increase the amount of dynamic play during the exercise, selecting injects based on the past actions of the primary training audience. Scenario writers should consider how cyberspace effects generated both within and outside of the area of operations will affect the primary training audience, even when the primary training audience is not the intended target. One of the key aspects of cyberspace is its interconnectivity, and significant events will have ramifications that are not bounded by geography.

EXAMPLE OF AN INJECT CHAIN

The following example is intended as a scenario for a non-technical division-level staff exercise.

The neighbouring nations of ADALAND and HOPPERNIA are in a state of low-intensity conflict due to a dispute over water rights. Coalition forces are stationed in ADALAND, where they are attempting to maintain the current truce. HOPPERNIA is engaging in a campaign of hybrid warfare against ADALAND.

The Hoppertian Cyber Brigade is a state-supported actor used by HOPPERNIA to pursue its national agenda with a modicum of deniability. They are a small organization of five core experienced cyber-criminal members. They are provided with limited resources by the government of Hoppertia, primarily training and tools, and more importantly are given legal protection for the illegal activities which provide the primary source of their finances (~\$100,000.00 per year). The training audience will have some knowledge of the Hoppertian Cyber Brigade, its membership and its activities as part of the joint intelligence preparation of the operational environment. They will also have been informed that HOPPERNIA has used proxy forces in the past.⁵

Due to the nature of the conflict, HOPPERNIA is likely to use a proxy to engage its adversary. A hydroelectric dam that is a point of contention provides an obvious target, and is likely within the capabilities of the Hoppertian Cyber Brigade.⁶ Wargaming the intrusion cycle for this objective provides a series of injects for the exercise:

- **Determine Requirements.** The government of HOPPERNIA directs the leader of the Hoppertian Cyber Brigade, B4d Act0r, to attack the hydroelectric dam in the Adalandian city of Laceville. This direction occurs through a series of veiled telephone conversations and can be reported to the training audience through signals intelligence channels.⁷
- **Develop Targets.** As the target is specified to B4d Act0r, he will at this stage begin to determine the resources he will need, reaching out to contacts about the tools he will need to attack the Laceville dam's supervisory control and data acquisition (SCADA) system.
- **Reconnaissance.** B4d Act0r gathers as much information he can about the Laceville dam's specific infrastructure through a combination of online searching, physical reconnaissance and subtle questioning of staff working at the dam. Security at the dam reports on a number of incidents, including people being seen photographing the dam and workers. These reports eventually make their way to the military police forces.
- **Enumeration.** By examining online job postings and talking to staff, B4d Act0r now knows the specific systems and software being used at the dam. Masquerading as a potential buyer, he procures a copy of the correct SCADA software from the manufacturers. He then uses this to develop a model system and begins to look for

vulnerabilities he can exploit. The purchasing of the SCADA software by a business in HOPPERNIA is reported through political channels due to the fact that it may be in violation of current sanctions.

- **Weaponization.** B4d Act0r approaches his contacts in the Hoppertian government for a zero-day exploit he can use to infect the Laceville dam without triggering any antivirus or cyber-security software that may be in place. They provide this to him through a courier, and that meeting, though not its purpose, will be detected by human intelligence assets. He works with the other members of the Hoppertian Cyber Brigade to weaponize the exploit. They test the final product against an online virus scanner, which is flagged and reported through coalition signals intelligence channels.
- **Review.** The Hoppertian Cyber Brigade and the representatives of the Hoppertian government meet to discuss the plan, including the best timing for the attack. Human intelligence sources close to, but not part of, the Hoppertian Cyber Brigade report on an important meeting taking place.
- **Breach.** In order to get the malware onto the dam's air-gapped systems, B4d Act0r decides to use infected Universal Serial Bus (USB) drives.⁸ First, a few are left in the parking lot of the dam's main offices. Then, in order to ensure the success of the operation, B4d Act0r also bribes one of the staff at the dam to insert an infected drive into a computer controlling the dam's SCADA system. While the worker is caught by security forces, which is reported to local police and eventually to the military police, another worker picks up one of the USB drives from the parking lot and inserts it into the network.
- **Escalation – Pivot and Maintain – Action on Objectives.** As the malware is automated, B4d Act0r has no control over these steps and they occur relatively simultaneously, at least as far as exercise play is concerned. The malware is mostly successful, corrupting the dam's network and taking it offline. One to two weeks' time is required for reinstallation and repairs. The sudden disruption of power to a portion of the ADALAND population is reported to the training audience through a number of means.
- **Cover Tracks.** Technical exploitation of the dam's network and recovered USB drives provide some information about the nature of the infection, although technical intelligence sources definitively attribute it to HOPPERNIA.
- **Assessment.** HOPPERNIA is pleased with the success of B4d Act0r and the Hoppertian Cyber Brigade, so much so that they are publicly presented with a commendation, which is reported through the Hoppertian media, although not the specific reason why. HOPPERNIA and the Hoppertian Cyber Brigade begin to plan their next operation against ADALAND.

METRICS AND ASSESSMENT

For this inject chain, the training audience is being assessed on a number of issues that reach across staff branches. Results are measured based on the training audience's level of understanding (For example, are participants aware of the processes they need to follow?); level of effectiveness (For example, is a process applied successfully?); and level of efficiency (For example, how long does the process take?). Taken together across a number of injects and compared to measurements gathered from other exercises, these metrics will provide a means of tracking the organization's ability to manage cyberspace events and highlight deficiencies in the organization's procedures. Specific metrics being tracked here include the following:

- **Internal Communications.** Do procedures exist for inter-staff communication of cyberspace events? Are they being followed? How long does this take?
- **External Communications.** Do procedures exist for communications with higher, lower, and flanking organizations? Are these being followed? How long does this take?
- **Branch Planning.** Does a branch plan exist that covers a disruption to host-nation support caused by the power outage? If not, is one developed, and how? How long does it take for the plan to be developed and enacted?
- **Advisor Support.** Do legal and political advisors have enough knowledge to engage with questions regarding the implications of cyberspace events? Are they engaged by staff? How long do they take to respond?
- **Support to the Commander.** Are cyberspace events part of the Commander's Critical Information Requirements? Is the Commander being briefed regarding the effects this event has on the Area of Operations? How often is the Commander briefed?

CONCLUSION

The models included here provide a process which can develop training environments and which will provide training value to training audiences. Though simple, the process can be built upon, based on the experience of the scenario writers, to construct injects of any depth or breadth required. Cyberspace is, and will continue to be, a significant component of the modern battlespace. By including realistic cyberspace injects in all levels of exercise play, we can ensure that our staff are agile, versatile and ready for the challenges they will face in the future. 🍁

ABOUT THE AUTHOR...

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Source: Combat Camera

ENDNOTES

1. *The Canadian Armed Forces Cyber Operations Primer* (2014) defines the cyber environment as the interdependent networks of information technology structures, including the Internet, telecommunications networks, computer systems and embedded controllers, as well as the software and data that reside within them.
2. E. M. Hutchins et al., "Intelligence-Driven Computer Network Defense Informed by Analysis of Adversary Campaigns and Intrusion Kill Chains," Proc. 6th Annual Int'l Conf. Information Warfare and Security (ICIW 11), Academic Conferences Ltd., 2010, pp. 113–125.
3. See Coker and Sonne, "Ukraine: Cyberwar's Hottest Front," *The Wall Street Journal*, 9 November 2014, <http://www.wsj.com/articles/ukraine-cyberwars-hottest-front-1447121671>; Gertjan Boulet, "Cyber Operations by Private Actors in the Ukraine-Russia Conflict: From Cyber War to Cyber Security," ASIL Insights 19, <https://www.asil.org/insights/volume/19/issue/1/cyber-operations-private-actors-ukraine-russia-conflict-cyber-war-cyber>; and Kenneth Geers, ed., *Cyber War in Perspective: Russian Aggression against Ukraine*, NATO CCD COE Publications, Tallinn, 2015.
4. The network attack kill chain is taken from E. M. Hutchins et al., "Intelligence-Driven Computer Network Defense Informed by Analysis of Adversary Campaigns and Intrusion Kill Chains," Proc. 6th Annual Int'l Conf. Information Warfare and Security (ICIW 11), Academic Conferences Ltd., 2010, pp. 113–125; <http://papers.rohanamin.com/wp-content/uploads/papers.rohanamin.com/2011/08iciw2011.pdf>. Other models used in this composite include the joint targeting cycle (JP-360), Dell SecureWork's lifecycle of an advanced persistent threat (2012), Mandiant Consulting's attack lifecycle model (2013), and the Mile2 penetration testing process, among others. An alternative, and simpler, cyber-targeting cycle consists of the following phases: intelligence gathering; infecting the target; system exploitation; data exfiltration; and maintaining control and network access.
5. For examples of the use of cyber proxies, see Tim Maurer, "Cyber Proxies and the Crisis in Ukraine," in *Cyber War in Perspective: Russian Aggression against Ukraine*, NATO CCD COE Publications, Tallinn, 2015, Chapter 9.
6. For an example of an attack against a power plant, look for some of the reporting on the 2015 cyber-attack in Ukraine, such as Kim Zetter, "Inside the Cunning, Unprecedented Hack of Ukraine's Power Grid," <https://www.wired.com/2016/03/inside-cunning-unprecedented-hack-ukraines-power-grid/> (3 March 2016).
7. Kim Zetter, "A Google Site Meant to Protect You is Helping Hackers Attack You," <https://www.wired.com/2014/09/how-hackers-use-virustotal/> (2 September 2014).
8. Bruce Schneier, "Dropped USB Sticks in Parking Lot as Actual Attack Vector," https://www.schneier.com/blog/archives/2012/07/dropped_usb_sti.html (12 July 2012).

ALTERNATIVE FUTURES AND FORCE DEVELOPMENT: INSIGHTS FROM THE CANADIAN ARMY LAND WARFARE CENTRE'S FUTURE ARMY PROJECT

Mr. Peter Gizewski, Major Christopher Young and Lieutenant-Colonel Ron Bell

INTRODUCTION

Uncertainty is a predominant characteristic of the future security environment. Accurate prediction of what it will yield is impossible. Yet defence establishments must strive to understand and define how their national security policies will meet the challenges arising within such a context. Indeed, throughout history state militaries have routinely engaged in forward planning for a variety of reasons ranging from defence procurement to recruitment and retention of personnel and assessment of emerging forms of warfare. Preparation for future uncertainty remains difficult. While much information exists which can offer guidance for understanding the scope and magnitude of change, making sense of that information and its military application is challenging.

Employment of foresight methods, nevertheless, offers a means for ensuring more systematic and rigorous future military planning. In fact, the chief purpose of foresight is to systematically explore, create and test possible and desirable futures in order to improve decisions. It includes the analysis of key dimensions of the international environment, how conditions may change as a result of major trends and drivers at work in the international system, and the implications of such changes for the implementation of policies and actions. While not a science, the use of foresight can offer a framework to better understand the present and expand mental horizons.

The use of foresight methods lies at the heart of the Canadian Army Land Warfare Centre's efforts to investigate the concepts and capabilities needed to better ensure an effective Future Army. The process involves in-depth examination of the future security and operating environments within the context of four possible worlds, developed through the alternative futures methodology, and the identification of those missions, characteristics and capabilities required for the Canadian Army to operate effectively and successfully in each of the futures examined and those signposts, signals and trends that offer indications of when and if one of the four worlds posited and examined is emerging¹

This article notes the observations and findings of the Canadian Army Land Warfare Centre's examination of the requirements for Canada's Future Army. After briefly summarizing the methods used in developing alternative futures and the key characteristics of those futures, the article identifies those signals and signposts determined to indicate potential shifts toward the various worlds and the Future Army missions, tasks and capabilities determined as essential to each. It concludes with some observations on the utility of the foresight process as a tool for ensuring an effective Future Army.



Source: Getty

METHODOLOGY

The worlds employed in the Future Army project were the result of a method known as alternative futures development. This method involved an environmental scan which identified and assessed nine drivers of change in terms of their potential impact on the security environment and the degree of uncertainty each posed. Drivers were then plotted onto impact uncertainty axes with the two drivers assessed as having the highest level of uncertainty and greatest potential impact (i.e. energy sustainability and global environmental change) used to create an alternative futures framework. Potential futures were then brainstormed and elaborated by the project team. Such an approach allows planners to consider and prepare for a range of possible future outcomes, identifying the capabilities likely to be required to deal with those possibilities. In effect, alternative futures analysis embraces uncertainty and allows practitioners to map out the boundaries of uncertainty within the context of the alternate worlds developed.

FOUR WORLDS²

Utilization of the change drivers of energy sustainability and global environmental change yielded the four alternative futures found in Figure 1, each named based on the key message or central theme that characterized it.³

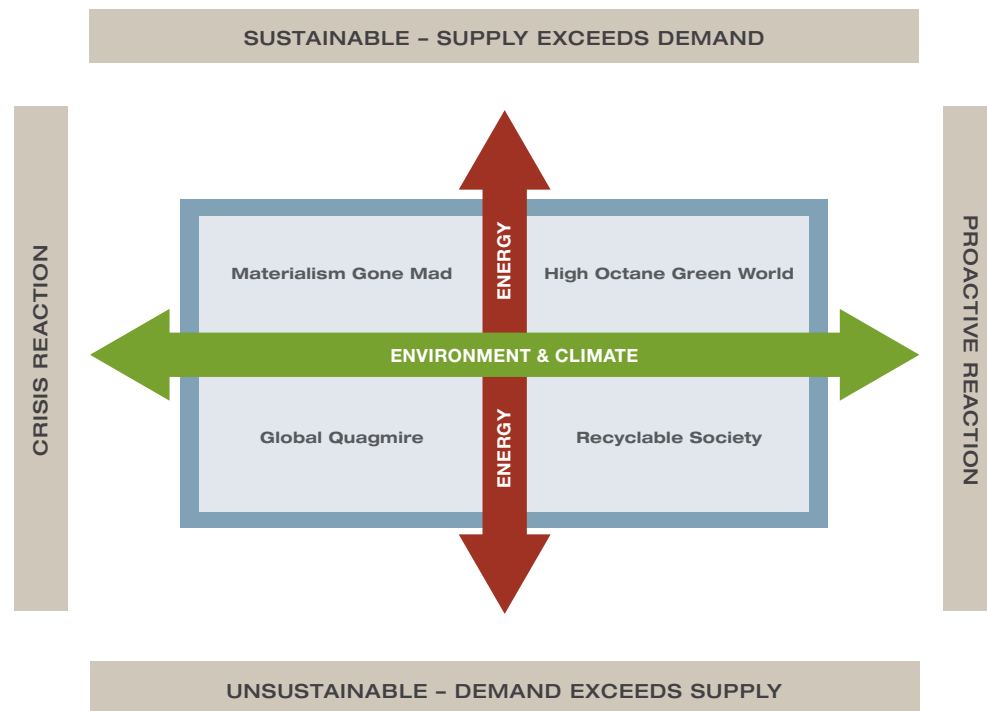


Figure 1: Alternative Futures

Materialism Gone Mad is a future in which energy supply exceeds demand (i.e. is sustainable), but the globe continues to take a reactive stance on the environment. It reflects a world abundant in energy, but in which states show little regard for the natural environment. Within *Materialism Gone Mad*, social responsibility is eclipsed by a drive for ever greater consumption and material comfort. Reliance on traditional, often 'dirty', sources of energy is high despite the capacity to develop more sustainable alternatives. While international cooperation continues to occur, state competition is intense and conflict increases, particularly on the north-south axis between 'have' and 'have not' nations. Ultimately, the world begins to experience a downward spiral as fossil fuel energy supply declines steadily and environmental damage increases. Meanwhile, hubris and the quest for ever more material comfort ensure that the will to change course is largely absent.

The key characteristics of *Materialism Gone Mad* are:

- fragmentation of international organizations
- increased protectionism
- deepening of the north-south divide and increasing fundamentalism
- increasing competition between, and within, states and societies for livable space and resources, largely in the developing world
- growing limitations on international legal regimes resulting in failed global regulation and enforcement
- increased militarization
- increased crime
- increased use of industrial espionage in pursuit of commercial advantage
- Canada as a destination of choice for immigrants resulting in an increased labour pool
- immigration backlashes in developed nations and a rise in illegal immigration
- unstable markets, higher commodity prices and gradually increasing economic stagnation
- environmental exploitation at the expense of long-term sustainability and economic growth
- accelerating global migration, urban squalor and a rise in the spread of disease regionally
- a rise in humanitarian crises and a consequent increase in issues involving state capacity and the Responsibility to Protect
- reliance on 'dirty' energy as a large part of global supply, particularly in developing countries

The *High-Octane 'Green' World* is a future in which global energy supply exceeds demand (i.e. is sustainable) and, at the same time, a proactive approach to the environment is being followed. That world features a plentiful and sustainable energy supply and the development of an increasingly proactive stance towards the environment (i.e. proactive conservation vice mere efforts at environmental clean-up) within societies and among states. Within the *High-Octane 'Green' World*, security concerns are ever more universal in nature and broader in terms of international support. In fact, state security is closely identified with global security. When others are safe and secure, everyone wins. Overall, the majority of societies experience greater prosperity, but not at the expense of the environment, as technological innovation and societal mindsets combine to work toward ensuring a more livable planet.

The key characteristics of the *High-Octane 'Green' World* are:

- stronger international organizations
- increased global awareness and consciousness
- stronger international laws and better regulation and enforcement, especially in the areas of energy sustainability and environmental protection
- an increase in nanotechnology and biotechnology solutions to energy and environmental challenges
- a strengthening and extension of international regimes (e.g. a Canadian northern enforcement regime)
- more responsible multinational corporations
- a market focus on 'green' solutions to societal problems
- a growth in renewable and sustainable energy sources and supplies
- accelerating, but deliberate and environmentally sustainable, urbanization
- science and technology offsets to projected labour shortages, despite immigration
- the rise of Canada as a leader in alternative energy development

The *Global Quagmire* is a future in which energy supply is increasingly scarce (i.e. is not sustainable) and the globe has a reactive approach to the environment. In the *Global Quagmire*, states and societies confront a dwindling energy supply, yet take a highly reactive approach to the environment. The world is experiencing an energy crisis and growing international competition for what is left. In the ensuing scramble for energy, the environment undergoes steady deterioration. An increasing lack of resources and declining economies make effective pursuit and implementation of technological solutions largely impossible. The result is a struggle for survival, with international affairs largely conducted as a zero-sum game (i.e. one society's gain is another's loss). Pessimistic, short-term views of security and how it is achieved predominate. Cooperation is muted and conflict, both armed and unarmed, is widespread.

The key characteristics of the *Global Quagmire* are:

- increasing fragmentation of international organizations and a rise in protectionism
- intense global competition for access to energy, often leading to conflict and chaos
- failure of international regulatory and enforcement regimes, particularly in the areas of energy and the environment
- increasing militarization of states and societies
- rise in societal crime
- increased fundamentalism
- state and industrial espionage aimed at gaining advantage in the international competition for survival
- rise in the strategic importance of Canada's oil sands
- strong emphasis in Canada on the protection of its north, primarily for resources
- unstable markets, higher commodity prices and economic stagnation
- intense exploitation of available resources
- accelerating global migration, urban squalor and the spread of disease
- increasing emphasis on human labour at the expense of automation

The *Recyclable Society* is a future in which energy is scarce (i.e. demand exceeds supply), but also in which global actors are taking proactive approaches to the environment. Widespread energy scarcity and a proactive stance on the environment (i.e. proactive conservation vice attempts to merely clean-up the environment) mark the key characteristics of the *Recyclable Society*. Within the *Recyclable Society*, there is recognition that changing behaviour and increasing cooperation represent the only means of solving global problems, as significant advances in technology are exceedingly unlikely. Accordingly, human labour and recycling and reuse of existing technologies become much more important. Both global migration and urban growth slow considerably, the pace of life is slower and armed conflict, while present, tends to be more muted as a result. Moreover, when conflict does occur, it is more likely to be localized and of relatively short duration.

The key characteristics of the *Recyclable Society* are:

- strong international organizations and legal regimes, especially in the areas of energy and the environment
- radicalized green focus
- dedication of energy surpluses to environmental correction and protection
- increased societal cooperation and an intentional abandonment of luxury living
- growing military emphasis on constabulary forces
- increases in localized crime and e-crime
- greater reliance on cyberspace
- reduced and slower resource extraction due to prohibitive economic costs (e.g. it is less economical to extract Canadian northern resources)
- unstable markets and higher commodity prices
- growing virtualization of national economies
- continuous recessions
- greater recycling and reuse of materials
- decreasing global migration
- continued urban growth

- more localized spread of disease
- increased emphasis on human labour vice automation

WHICH WORLD? SIGNPOSTS OF CHANGE

Whether, and how, movement from the present world to any of those outlined might occur is difficult, if not impossible, to determine precisely. That said, certain trends or 'signposts' can, at least, suggest both the likelihood and direction of change. Signposts can be understood as thresholds indicating that change is in the offing. Viewed as navigational waypoints, they offer opportunities for action and may be exploited as such, either through proactive measures that seek to influence the future's direction and impact or through reactive measures that seek to ensure that the organization concerned—in our case, Canada's Army—is sufficiently prepared to meet the future in question. Given the various characteristics associated with the alternate worlds outlined, it was possible to identify some of the signposts that, in the Future Army project team's best judgement, would indicate a potential movement toward any of the worlds.⁴

Signposts indicating movement toward the world of *Materialism Gone Mad* would in many respects amount to a continuation of many of the trends currently operating in the world today. Yet *certain* trends would eventually become more salient in their direction and intensity. Efforts to boost stagnant economies would see increasing deregulation of key industries, particularly in the energy and environment fields, and greater reliance on traditional energy sources instead of alternative energy sources in an effort to ensure quick gains. Economic improvements would see growing societal pursuit of individual comfort and status, primarily through the acquisition of material items, and a corresponding decrease in concern for the community as a whole. Additionally, there would be indications of environmental deterioration, with pollution levels gradually rising. Incidents of armed conflict, both inter- and intra-state, would increase, as would the occurrence of more humanitarian emergencies and disasters.

In general, signposts indicating movement toward the *High Octane Green World* would tend to reflect a growing belief in the importance of the environment for security, an ever widening belief within the international community that security must be increasingly global and indivisible. Support for, and evidence of, greater international cooperation and technological innovation would be present, particularly in the areas of energy and the environment, and rises in living standards and steady economic growth worldwide would occur. The world would also be marked by a decline in major and inter-state conflict and a corresponding rise in international efforts to address the challenges raised by humanitarian disasters and state instability.

Indicators of movement toward the *Global Quagmire* world stand in stark contrast to those associated with the *High Octane Green World*. The road to the *Global Quagmire* would see a rise in nationalist attitudes and rhetoric, declines in support for international cooperation, global economic decline, and growing societal protest and unrest. Declines in scientific and technological innovation, reduced interest and investment in environmental sustainability, increased international and domestic conflict, particularly over energy resources, and a rise in extreme weather events would also be evident.

Finally, indications of movement toward the *Recyclable Society* world would manifest through developments such as an increase in attitudes calling for conservation of limited energy supplies and for proactive approaches to the environment. Signs of weakening economies and declines in scientific and technological innovation would be increasingly evident. Environmental initiatives less dependent on high technology than on shifts in human attitudes, behaviour and social organization would become more predominant. Beyond this, the world of the *Recyclable Society* would see a localization of armed conflict (i.e. more intra-state as opposed to inter-state violence), declining state budgets, and a focus on conflict prevention, stability and constabulary-type operations.

To be sure, the degree to which movement from the present world to each alternate world actually occurs will undoubtedly vary depending on a range of factors, including the number of signposts present, the intensity with which trends indicated by those signposts identified actually manifest over time, and their interaction. To the extent that such signposts emerge, shifts in the international environment may well manifest in ways that could have significant, and even fundamental, implications for the future development and design of armed forces.

IMPLICATIONS FOR THE FUTURE ARMY: CAPABILITY DEVELOPMENT

A number of observations can be made about each world that can help guide the general direction of future capability development. Figure 2 depicts the fact that the character and potential intensity of conflict cover a broad spectrum, one ranging from peaceful interaction to general war. Certainly, it is possible that virtually all future worlds may experience incidents of violent political conflict, the character of which may fall almost anywhere along the spectrum. Given the nature and characteristics associated with each world, it is likely that certain campaign themes and types of activities will be more predominant in some worlds than in others. For example, while the *High Octane 'Green'* and *Recyclable Society* worlds may well experience occasional incidents of intense conflict, the trends associated with each suggest that the bulk of activity is likely to involve cooperative efforts aimed at both preventing and addressing humanitarian disasters and the instabilities they produce. In each of those alternative futures, both peacetime military engagement and peace support operations are more likely to occur than counterinsurgency or major combat operations. In contrast, while the alternate worlds of *Materialism Gone Mad* and the *Global Quagmire* may well feature some incidents of peacetime engagement, a more competitive international arena, and a higher degree of both inter-state and intra-state conflict within each, is likely to ensure that incidents of peace enforcement, counter-insurgency and major combat are more likely.

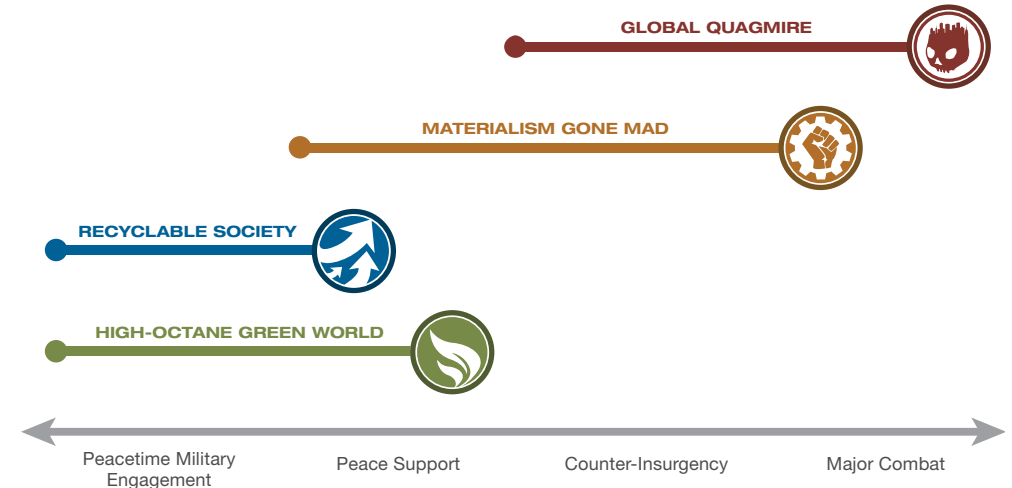


Figure 2: Mapping the Four Worlds on the Continuum of Campaign Themes

MISSIONS AND TASKS

The missions and tasks the Army would be expected to perform will undoubtedly vary as to their frequency and significance in each alternate world. The capabilities the Army will require to ensure that the missions and tasks which arise are performed effectively will also need to be adapted to the particular and actual futures.⁵ These are discussed for each world.

MATERIALISM GONE MAD

EXPEDITIONARY	DOMESTIC
Medium to Heavy Force	
Rapidly Deployable	
Counter or respond to terrorism	Domestic HADR
NEO	Homeland security tasks including:
Warfighting	» border security
SFCB	» resource & infrastructure security
	» Arctic sovereignty enforcement
	» ALEA/ACP

Missions and tasks in the *Materialism Gone Mad* world represent a somewhat more intense version of those arising from the threats and challenges confronted in the world of today. Threats of terrorism, challenges to Canadian sovereignty and prospects of cyber-attack all rank highly in terms of their onset, their potential impact on national security and defence, and the need for an effective Army response. Within the highly competitive *Materialism Gone Mad* world,

the defence of Canada's sovereignty, the conduct of counterterrorism operations and the capacity to effectively defend against cyber-attack rank most highly in terms of key missions and tasks. Because of the dangers which the prospects of terrorism and cyber-attack pose, as well as the growing possibilities in that world for a steady rise in extreme and high impact weather events, providing effective humanitarian assistance and disaster response domestically and conducting Army operations in close cooperation with government departments other than National Defence will also represent important priorities. So too will the capacity to conduct counterinsurgency operations, non-combatant evacuation operations and security force capacity-building efforts. By contrast, missions and tasks such as responding to the use of weapons of mass destruction, defending Canada's territorial integrity, engaging in major combat operations and responding to cases of internal domestic conflict, while still essential, will be less pressing in terms of key priorities. Although highly important in terms of the potential impact that a failure to effectively conduct such missions and tasks would produce, a far lower likelihood that the threats they address will in fact occur suggests that an excessive focus on them would be misplaced. Meanwhile, the conduct of expeditionary humanitarian assistance and disaster relief, peace support operations and responses to organized crime rank lowest, particularly in terms of their impact on defence and security. Indeed, while strongly in line with Canada's values and traditions, their significance in terms of affecting national security interests in *Materialism Gone Mad* suggest the capacity to engage in such operations would be a secondary priority. Overall, the threats and challenges posed in the *Materialism Gone Mad* world reinforce the need for a medium-to-heavy-weight land force that is adaptive, rapidly deployable, multipurpose and capable of full spectrum operations. The majority of threats and challenges likely to be confronted imply missions and tasks squarely within the middle range of the conflict spectrum.

HIGH OCTANE 'GREEN' WORLD

EXPEDITIONARY	DOMESTIC
Light to Medium Force	
Environmentally Conscious Force	
Rapidly deployable	ALEA & ACP
Global projection	
Nation building (humanitarian & reconstruction tasks)	Sovereignty protection (environment focus)

Key Army missions and tasks within the *High Octane 'Green' World* reflect the need for a land force less focused on traditional combat roles. Whereas a capacity to conduct combat-oriented missions and tasks will be required, the nature of the world itself, and the threats and challenges characterizing it, work to ensure that such missions and tasks are eclipsed by those aimed at maintaining domestic security and national sovereignty, and supporting growing global stability and a sustainable planet. The need for an Army capable of providing support for counter-terrorism operations, expeditionary missions and non-combatant

evacuation will continue to exist. The posit of steadily improving economic and social conditions worldwide suggests that each of these missions and tasks ranks relatively low in terms of frequency and impact. In the *High Octane 'Green' World*, a capacity to conduct humanitarian assistance and disaster relief may represent the most likely mission the Army will be called upon to perform. Far more important will be an ability to maintain security and stability on the domestic front. The key requirement is possession of a capacity to conduct sovereignty operations and provide assistance to civil authorities in cases of domestic crisis and emergency, particularly in view of the impact that failure to effectively perform such missions and tasks could have on national security and confidence in government. Overall, movement toward the *High Octane 'Green' World* offers the prospect of a more benign security environment, one in which the majority of threats and challenges encountered imply Army missions and tasks aimed at the lower range of the conflict spectrum. Combined with steadily improving economic and social conditions and growing support for sustainability, both on the energy and environmental fronts, this suggests the need for a force that is highly skilled, light-to-medium in terms of weight, rapidly deployable and environmentally conscious. Moreover, given growing interest in both domestic and international cooperation, it argues strongly for a force dedicated to ensuring interoperability with other military, governmental and non-governmental partners.

GLOBAL QUAGMIRE

EXPEDITIONARY	DOMESTIC
Medium to Heavy Force	
Warfighting	Deterrence
SFCB	Homeland security tasks including: » border security » resource & infrastructure security » Arctic sovereignty enforcement
Tactical missile defence	
Pre-emptive & punitive operations	
	Humanitarian assistance including ground search & rescue

Missions and tasks required to address the threats and challenges likely to arise in the *Global Quagmire* stand in sharp contrast to those most typical of the *High Octane 'Green' World*. In the *Global Quagmire*, the spectrum of potential threats is wider and the threats themselves are likely to be far more severe. In a world of declining resources and rampant competition for survival, prospects for territorial conquest will rise and chances of both inter-state and intra-state war are present. Not surprisingly, Army missions and tasks such as warfighting, protection of sovereignty (particularly in Canada's Arctic), border security and a capacity to provide for the protection of national resources and infrastructure rank highly, in terms of both likelihood and impact. The capacity to provide domestic humanitarian assistance and disaster relief and protection against cyber-attack ranks only moderately lower. Ability to protect the global commons, security force capacity building and expeditionary humanitarian assistance and disaster relief rank lowest in terms of both likelihood and impact.

While search and rescue and domestic influence and information activities are viewed as highly likely missions and tasks, the impact of the Army’s failure to effectively conduct them is seen as having only marginal impact on security. In an environment in which everyday life is increasingly viewed as a competitive struggle for survival, a capacity to generate kinetic effects is the main priority. Growing concerns over the prospect of armed attack against national territory will ensure that general mobilization and an ability to conduct tactical missile defence stand as relatively significant missions and tasks. Beyond this, a capacity to provide effective deterrence will be a constant requirement. Overall, the threats and challenges likely to characterize the *Global Quagmire* argue strongly for a medium-to-heavy-weight force that emphasizes missions and tasks focused on the more intense end of the conflict spectrum. Warfighting, pre-emptive and punitive operations, homeland security and security of domestic resources, and enforcement of sovereignty will all represent key missions. Missions and tasks requiring cooperation with other nations will be, by and large, of secondary importance.

RECYCLABLE SOCIETY

EXPEDITIONARY	DOMESTIC
Light to Medium Force	
Environmentally Conscious Force	
HADR & environmental disasters	ALEA & ACP in maintenance of order
	Sovereignty protection (environment focus)
Alliance &/or coalition based peace support operations	Environmental & humanitarian assistance
SFCB	

The realities associated with the *Recyclable Society* world work to ensure that key Army missions and tasks tend to fall primarily within the lowest range of the conflict spectrum. In a world of scarce energy, growing concern with the future of the environment, and an increasing realization that cooperation is essential for survival, domestic and international stability, energy security and environmental conservation overshadow armed conflict as the key drivers of Army missions and tasks. Energy scarcity and economic decline work to ensure that responses are limited. Key missions and tasks focus primarily on the home front. Whereas international humanitarian support will likely represent a key external mission, most missions will be geared towards the domestic realm, with the defence of Canada and Canadian sovereignty, responses to domestic environmental emergencies, assistance to law enforcement agencies, critical infrastructure protection and aid to the civil power all ranking highly in terms of both likelihood and impact. The likelihood of certain external missions and tasks arising, such as support to allies, major combat operations and influence activities, is evident.

The impact of the Army’s inability to address them in terms of security is less evident. Other foreign missions and tasks such as security force capacity building and contribution of standing forces to international bodies rank low on both likelihood and impact. The threats and challenges of the world of the *Recyclable Society*, and the constraints which that world imposes, indicate the need for a light-to-medium-weight force that is more domestically than externally oriented and is environmentally conscious. Beyond this, and notwithstanding the fact that armed conflict will continue to mark the operational environment, key Army missions and tasks will be more heavily focused on ensuring resource security and the maintenance of order and stability, both at home and abroad.

FUTURE ARMY CAPABILITIES

The capabilities required for effectiveness and success will also vary according to the world confronted. Graphics depicting the specific types of capabilities likely to be required within each world—differentiated on the basis of both impact and likelihood—are offered below.

Notably, most current Army capabilities will remain largely unchanged or have subtle nuances in terms of their development and employment for each of the four alternate worlds.⁶ That said, some capabilities that emerge from the analysis undertaken by the Future Army project team are specific to one or more worlds. While the nature of the *Materialism Gone Mad* world suggests the development and employment of capabilities that are slightly more advanced versions of those existing today, similar capabilities in other worlds will in turn be somewhat more reflective of the opportunities and constraints that will exist in each.

Both the *High Octane ‘Green’ World* and *Global Quagmire* are exemplary. Within the *Global Quagmire* world for instance, steadily declining resources, weakening economies and an ever more intense competition for survival are likely to coalesce to ensure a future force of slightly larger size than in other worlds examined but possessing capabilities of relatively modest technological sophistication. Indeed, with less money available for innovation, current warfighting technologies and deterrent capabilities may represent the norm. Meanwhile, soldier recruitment may see greater emphasis on physical vice intellectual prowess, and training may be more heavily focused on combat and traditional warfighting skills.

In contrast, an improving economic climate, growing sustainability and increasing international cooperation characteristic of the *High Octane ‘Green’ World* may ensure a force of somewhat smaller size, but one in which capabilities are in general more technologically sophisticated and soldier recruitment and training emphasize the development of a broader or less combat-focused range of skill sets. Moreover, in a world focused on environmental sustainability and blessed with a growing capacity to innovate, capabilities will likely be developed with greater fuel efficiency and minimal environmental impact in mind.

Meanwhile, the limited energy availability and growing concern with environmental conservation characteristic of the *Recyclable Society* may generate requirements for a force that is smaller, relatively constrained in terms of technological sophistication, but highly innovative in the manner in which it utilizes existing resources (both human and materiel) to meet key missions and tasks. Within that world, both financial and energy constraints would work to ensure a force with a more local or regional focus. Repair and upgrading of existing equipment should dominate over replacement. Greater emphasis may be accorded to the use of the reserves, perhaps in a constabulary role and as a vehicle for connecting with Canadians. Concerns over the environmental impact of operations undertaken may well result in new practices and procedures governing force employment.

SIGNPOSTS AS WARNING INDICATORS

Analysis and identification of key trends, signposts and signals provide the most value for capability development when they are part of an early warning system: that is, a framework which allows for warning signs or waypoints to be easily identified and tracked on a regular basis. An effective framework will allow for sufficient warning to be provided in advance so that action toward capability development can occur before the opportunity to address the threat has passed. Institutionalization of an early warning system will depend on reliable monitoring of the relevant indicators over the course of time. It will demand the dedication of resources to constant scanning for signals and the deliberate analysis of trends through collaborative experimentation and wargaming. The Canadian Army Land Warfare Centre is well positioned to do this on behalf of the Canadian Army in cooperation with our Centre for Operational Research and Analysis partners.

CONCLUSION

How the Canadian Army, and by extension the Canadian Armed Forces, evolves in future decades will be a key factor shaping future Canadian defence and security policy. The potential paths that the international community could take into the future are numerous. Given the analysis of a number of key trends and two main drivers—energy and environment—four alternative futures appear to present themselves as especially distinct possibilities. The analysis of these future worlds and the findings offer Army planners a wide spectrum of possibilities to contemplate as well as a framework that allows the Army to monitor the international and domestic security environment. Those tools ought to ensure that it is better prepared to address the requirements that may arise owing to the diverse challenges and opportunities which various possible worlds will present.

The analysis serves as a useful and necessary supplement to studies based on a consensus view of the future environment. Development and examination of such expected or ‘baseline’ futures can shape expectations of the future in a way that can be difficult to challenge. The use of the alternative futures methodology offers a solution to this propensity by exposing and sensitizing decision makers to a range of additional possibilities. It has the added benefit of suggesting the signposts which may indicate impending directions of change and the potential responses to such change. It encourages the flexibility and agility essential to effectively navigate the rapidly changing and ultimately unpredictable security environment. 🍁

ANNEX

MATERIALISM GONE MAD

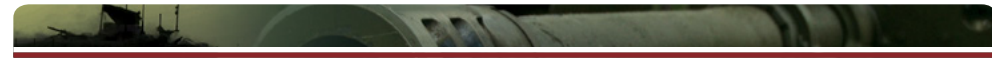
HIGH IMPACT, LOW LIKELIHOOD	HIGH IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - Independently initiate operations including permissive and non-permissive entry operations 	<ul style="list-style-type: none"> - Ability to convey Commander's intent - Ability to communicate with Canadians (Strat Comms/PA) - Ability to conduct rapid analytics and decision support, using massive amounts of data from diverse data feeds. - CBRNe (+ NANO) defence - Conduct HADR operations - GBAMD/CRAM capability - Sustain land ops from the sea
LOW IMPACT, LOW LIKELIHOOD	LOW IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Ability to conduct forward deployment (cultural awareness transfer) - Ability to defend against adversarial Influence activities - Cyber-sense capability - Conduct Red Teaming - Defend against adversarial influence activities - Pre-trauma, prevention and mitigation - Capability for prototyping while operationally deployed on operations (additive manufacturing)

HIGH OCTANE 'GREEN' WORLD

HIGH IMPACT, LOW LIKELIHOOD	HIGH IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Pervasive network internally and among all potential partners - Capability to inform and influence behaviour and opinion across domestic, international and adversarial audiences - Interoperability with traditional and non-traditional allies (international force) - Capability for rapid procurement of materiel requirements both during operations and in capability development - Capability to create tactical-level cyber effects - Capacity to create understanding using analytics, diagnostics and fusion
LOW IMPACT, LOW LIKELIHOOD	LOW IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - Capability to maintain persistent ISR linked to effects delivery (loitering) - Automated systems that reduce physical and cognitive loads on humans - Capability to force project globally (urban/littoral) (amphibious/airborne) - Capability to conduct focused close combat 	<ul style="list-style-type: none"> - Capability to create precision, scalable, "green" effects - Consistent, comprehensive interoperability (particularly OGD) - Capability to conduct complex environmental tasks (containment, remediation, etc.) - Capability to conduct constabulary tasks - Capability to conduct effective operations in urban conditions

GLOBAL QUAGMIRE

HIGH IMPACT, LOW LIKELIHOOD	HIGH IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - Information management - Responsive procurement system - Log system (moving toward self-sustainment, tapping into domestic infrastructure, water recovery/purification, alternative energy sources (to reduce vulnerability, resource consumption and size of tail)) - Direct fire - Indirect fire - Mobility - Capability development process - Counter-mobility - Surveillance - Accessible SMEs - Tactical lift - Influence activities (CIMIC, PSYOPS, etc.) - Intelligence - Computer network operations - Pre-/post-operations medical care - Electromagnetic spectrum operations
LOW IMPACT, LOW LIKELIHOOD	LOW IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - Search and rescue - Tactical offensive CBRNe capability - Ground-based air and munitions defence - In-field prototyping 	<ul style="list-style-type: none"> - CBRNe defence (including nano/genome/toxic industrial materials, collective protection/consequence management) - Special operations - Strategic lift - Engineering for domestic construction/re-construction - Non-lethal effects (e.g. for ALEA) - Detainee/refugee/IDP/handling etc - Distributed, simulation training



RECYCLABLE SOCIETY

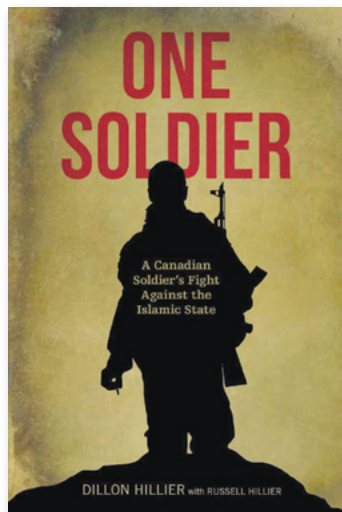
HIGH IMPACT, LOW LIKELIHOOD	HIGH IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - None 	<ul style="list-style-type: none"> - All-source info fusion to support decision-making (data processing enhancements for individual and organizationally) - Ability to operate in the JIMP environment to include interconnectivity and collaborative training with key OGDs at regional/provincial/federal levels - Network capable of supporting static and deployed ops to include secure communications - Influence activities - Flexible, decentralized and targeted training system - Ability to operate in a network-degraded environment - An adaptive and flexible procurement (COTS) strategy
LOW IMPACT, LOW LIKELIHOOD	LOW IMPACT, HIGH LIKELIHOOD
<ul style="list-style-type: none"> - Amphibious ops - Riverine/brown water ops - Operate with a minimal environmental impact and reliance on local resources and shared services - Conduct crowd confrontation - Smart munitions (multiple effects, scalable, precision insensitive, green, lethal/less than lethal) - Land-based strategic lift (integral/contracted) - Ability to conduct close combat 	<ul style="list-style-type: none"> - Robust physical and mental health tools / systems - Counter emerging technological threats - Vertical and horizontal construction and the provision of essential services - CBRNe Defence - Non-lethal counter-mobility - Protected light-medium mobile direct fire capability - Ground-based air and missile defence capability - Ability to provide basic social services to personnel and their families



Source: Nish Nalbandian

ENDNOTES

1. Indeed, such recognition is essential for ensuring that the process of concept and capability development is sensitive and attuned to changing conditions in the security environment. Moreover, it enables the Army to be proactive by providing the means to anticipate and adapt effectively when change occurs.
2. For a detailed discussion of the methodology underlying development of the alternative worlds and the findings gained from their examination see *Canada's Future Army, Volume 1: Methodology, Perspectives and Approaches* (Kingston: Canadian Army Land Warfare Centre, 2016).
3. Full elaboration of each world is available in *Canada's Future Army, Volume 1: Methodology, Perspectives and Approaches*.
4. The following section offers an overview of the signposts identified by the Future Army project team. For a full elaboration of all signposts identified, see *Canada's Future Army, Volume 3: Alternate Worlds and Implications* (Kingston: Canadian Army Land Warfare Centre, 2017).
5. The observations made in this section derive from data gained from participants in the Future Army seminar wargame series and its analysis. Participant discussion and identification of missions, tasks and capabilities for each alternate world were conducted in syndicates—with data collated by the core Army Futures team and presented in a plenary session at the conclusion of each Seminar War Game. Rankings of the relative importance of missions, tasks and capabilities were the conducted in seminar wargame plenary. Missions and tasks are ranked based on an assessment of the likelihood of missions and tasks arising (i.e. being required) and the impact of the Army's inability to effectively conduct the mission or task under consideration for national defence and security. Capabilities are ranked on a 7-point scale, with seminar wargame participants instructed to score items according to their judgement of the importance of each to the Army in the particular alternate world under examination.
6. Notably, the most dangerous or destructive capabilities are those that are considered to be high in impact but have a low likelihood of manifesting and are captured under the term 'wild cards.' Wild cards are those unexpected, unlikely and therefore highly unpredictable occurrences or events that would have enormous consequences or impact were they to arise. Wild cards are defined in the glossary but are understood to include those events known alternately as outliers, or grey or black swan events.



ONE SOLDIER: A CANADIAN SOLDIER'S FIGHT AGAINST THE ISLAMIC STATE

BIBLIOGRAPHICAL INFORMATION:

HILLIER, Dillon with Russell HILLIER. Toronto: HarperCollins, 2016, 288 pages. ISBN 978-1-44344-931-1

*Reviewed by Captain Michael Wickson,
3rd Battalion, Princess Patricia's Canadian Light Infantry*

The book *One Soldier* is an autobiographical account of a former Canadian soldier's fight against the Islamic State as a volunteer with various Kurdish forces. Although the author's time in Kurdistan was relatively limited (November 2014 to January 2015), various insights can be drawn from his experiences, particularly with respect to the physical and political geography and the complexity

of the warfare involved in fighting Islamic State of Iraq and Syria (ISIS). It is a quick and easy read—and timely in that it is one of the few monographs published about the current conflict with ISIS. It should serve as a solid introduction for any soldier preparing to deploy to northern Iraq.

Dillon Hillier took his release from the Canadian Army following a tour in Afghanistan, but always longed for more action. Not finding civilian life to be particularly rewarding, he volunteered to fight against ISIS despite his brother's best efforts to dissuade him. It was the author's hope that many more soldiers with operational experience would join in the fight against ISIS. Only a few are mentioned in the book and he expressed disappointment that more did not join him.

The book avoids excessive use of military jargon, making it accessible to a broad spectrum of readers, and the author's candid attitude is highly relatable. The conflict with ISIS is discussed in very black and white terms—good versus evil. He also does not hold back when discussing other groups, such as communists, humanitarian workers and those 'playing' soldier. Most soldiers will be able to readily identify with the author and the emotions portrayed in the book: the longing to fight for what one believes and the apprehension of stepping into the unknown.

Although the author was in Kurdistan for only a few months, the experiences portrayed in this short book demonstrate the diversity of soldier-skills required for the modern battlefield. His first engagement occurred when he was with the Kurdish guerilla group known as the Kurdistan Workers' Party (PKK) and involved an attack on a defensive position overlooking a small urban centre recently captured by ISIS. The PKK launched a counterattack in reaction that involved a dismounted assault with minimal fire support and a sweep of the urban area. He also provided tactical first aid to a wounded Kurdish soldier, ultimately saving the man's life.

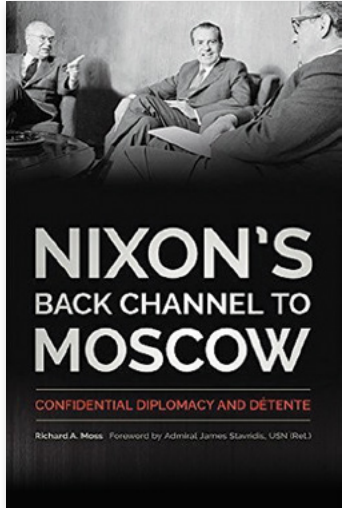
By the time of the second major engagement, the author had joined the *peshmerga* and was thrust into the frontlines to reinforce a defensive trench line that was under siege. The author drew upon his training in setting up a defence, applied counter-sniper protocol, and unsuccessfully attempted to teach machine gun theory to Kurdish gunners. He also notes that fire support through all-arms-call-for-fire would have been advantageous, as the ISIS positions could be clearly distinguished. The remainder of the tour was spent in the rear areas, providing security, conducting mounted patrols and inspection along the Kurdish defensive line, or relaxing out of the combat zone.

The author makes several observations throughout the book that are useful for all soldiers. He discusses a variety of topics, including the essential nature of night vision, the use of translation apps for communication, and the value of gloves and a toque in the desert. He also thoroughly describes the Kurdish geography, although the inclusion of maps and field sketches would have been helpful in describing the battlefield geography of the various engagements.

Diplomatic pressure on the Kurdistan government prevented the *peshmerga* from deploying the author in the forward areas. As a result, he decided, reluctantly, to return to Canada. Although the author's tour in Kurdistan was shorter than anticipated and the wave of experienced Western soldiers he expected never arrived, the lessons that can be drawn from the book are valuable and will be helpful to those preparing to deploy to the region. The author's experiences demonstrate the complexity of the modern battlefield and the diversity of skills that our soldiers will need to master. This book is recommended for soldiers of all ranks. 🍁



A Kurdish fighter stands somewhere in the Iran-Iraq region of Kurdistan



NIXON'S BACK CHANNEL TO MOSCOW: Confidential Diplomacy and Détente

BIBLIOGRAPHICAL INFORMATION:

MOSS, Richard A. Lexington: University Press of Kentucky, 2017, 418 pages.
ISBN 978-0813167879

*Reviewed by Peter Gizewski, Strategic Analyst, DRDC CORA
and the Canadian Army Land Warfare Centre*

The newly elected Trump administration's relationships with officials in Moscow continue to generate unease, both in Washington and abroad. A number of factors are raising the spectre of an incoming administration seemingly enamoured with Moscow despite past and ongoing evidence of Russian intrigue and aggression both in Eastern Europe and elsewhere: conversations between the now-ousted National Security Advisor, Lieutenant-General Michael Flynn, and officials in the

Kremlin, ostensibly about the lifting of United States sanctions against Moscow over its invasion of the Crimea; Secretary of State Rex Tillerson's history of multi-million dollar dealings with Russian President Vladimir Putin; President-elect Trump's own expressions of admiration for the Russian President; and admissions by Russian officials to having contacts with the Trump election campaign. The fact that a Central Intelligence Agency (CIA) investigation has confirmed Russian efforts to influence the American election—largely to Trump's benefit—has only heightened suspicions of what appears to be an unusually close and possibly inappropriate relationship between the White House and the Kremlin.

Yet examination of the actions of a previous administration could suggest an alternative interpretation of the Trump camp's behaviour. More precisely, such behaviour may well represent the initial stages of an effort to invoke the practice of secret, 'back-channel' diplomacy so popular during the Nixon-Kissinger years. Carefully employed, such an approach has often been credited with the capacity to produce substantial benefits for the parties involved. The virtues of back-channelling are in fact well documented by historian Richard Moss in his well-written and superbly researched study of the conduct of confidential diplomacy and détente during the Nixon-Kissinger years. Comprehensive in its coverage and based on a wealth of declassified material both from the U.S. State Department and the Russian Foreign Ministry, Moss has produced the first book to exhaustively and painstakingly examine and explain the back-channel approach, its origins, how it was used and to what ends.

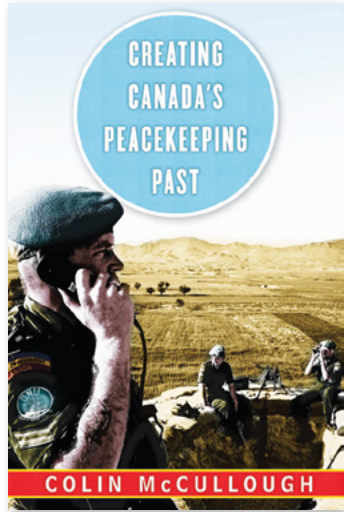
The author carefully details the behind-the-scenes deliberations of Nixon, his advisors and their Soviet counterparts, underlining the significance of the back channel in facilitating a range of American-Soviet achievements. Indeed, the approach was crucial in setting the stage for the Four-Power Agreement on access to Berlin (1971), the Moscow Summit (1972), the management and peaceful resolution of the Cienfuegos Crisis (1975), as well as

the de-escalation of tensions over the Vietnam War. Beyond this, it played an important part in facilitating and ensuring the success of American-Soviet arms control talks, as well as the effective management of the triangular relationship between Washington, Moscow and Beijing. In effect, the back channel helped streamline communication between parties, enabling the Nixon administration to sidestep the 'red tape' so common in the use of regular diplomatic channels. It undoubtedly reduced the prospect of sensitive information being leaked to the press, and it also lessened the risk of important issues in key negotiations being held hostage to the infighting and inevitable organizational interests of the large bureaucracies in the State Department and the Pentagon.

Perhaps most critical, however, was the role that such an approach may have played in creating a relationship of greater intimacy—if not increasing trust—between parties, and thus enabling key officials on both sides to gain a greater level of comfort and familiarity with one another, allowing them to engage in a more candid and in-depth exploration of their core interests and concerns when addressing issues under negotiation. In some cases, it may even have helped jumpstart cooperation, a fact clearly borne out by early efforts on the part of the administration to explore potential areas of common interest with the Soviet Union. Indeed, the most useful aspect of the secret back channel may well have been its ability to create an environment in which the possibilities for fruitful talks could be explored.

Still, such an approach can be dangerous if used in excess. As Moss notes, this was clearly the case in the Nixon White House. Circumventing the regularity and predictability inherent in more conventional bureaucratic or organizational approaches severely tested organizational morale. Highly dependent on personalities, the technique worked to create considerable tension and internal dissent, particularly between State Department head William Rogers and then National Security Advisor Henry Kissinger. Moreover, it provided a weak foundation for lasting policy, a fact which became increasingly evident following Nixon's departure and the gradual return of American-Soviet tensions during the Carter years. Perhaps most notably, the success of the back-channel approach abroad served to promote a culture of excessive secrecy and a growing tendency for prevarication at home, the results of which became abundantly clear in the tragedy of Watergate. It is indeed telling that Nixon's 'plumbers' (the members of the White House Special Investigative Unit involved in the Watergate break-in) were originally tasked with protecting the Nixon-Kissinger back channel.

To be sure, future attempts to employ back-channel efforts will not necessarily yield the same results. As this excellent study makes clear, the key is balance. When used to supplement rather than supplant traditional diplomacy, such an approach may well yield lasting dividends. In fact, in light of the current state of American-Russian relations, a case can be made that keeping back channels open may help prevent, or at least minimize, the chances for confrontation. That said, too heavy a use of secret back channels clearly carries risks, a prospect amply illustrated by the Watergate affair, and one which the current administration would do well to heed as it embarks on its own quest to steer the American ship of state in global affairs. 🍁



CREATING CANADA'S PEACEKEEPING PAST

BIBLIOGRAPHICAL INFORMATION

McCULLOUGH, Colin. Vancouver: University of British Columbia Press, 2016, 272 pages. ISBN 978-0-7748-3248-9

Reviewed by Jack L. Granatstein, historian

Peacekeeping is the favourite military role for Canadian politicians, media, and the public, and that has been so for more than sixty years. The creation of the United Nations Emergency Force in 1956 and the Nobel Peace Prize awarded to Lester Pearson the next year began enshrining the blue beret in the Canadian mind, and the process continued and solidified through a host of missions in the Middle East, Africa, Asia, and Europe. The Somalia Affair in the mid-1990s troubled Canadians, but most

seemed to treat it as an aberration. Even Canada's turn away from peacekeeping in the last decade or so has not diminished support for the concept as the Justin Trudeau Liberals' pledge to deploy 600 peacekeepers (somewhere) demonstrated. The 'Canada is back' mantra appealed to voters in 2015 and still does.

But how did peacekeeping assume such a place with Canadians? That is the subject of Colin McCullough's very good book, another in the fine series "Studies in Canadian Military History" from the Canadian War Museum. To McCullough, an adjunct professor at McMaster University, whose focus is on the 1956–1997 period, the meaning of peacekeeping was constructed from the persistence of political rhetoric, the exposure of students to a standard narrative in high school texts, the emphasis on the individual peacekeepers in fourteen National Film Board documentaries, the coverage in the media and editorial cartoons, and the symbolism of public commemorations. All that combined to create what some, but not McCullough, might call the 'peacekeeping myth.' Interestingly, the myth thrived in English-speaking Canada and became a key component of national identity. In Quebec, however, the peacekeepers' beret was seen affectionately as a useful role but one that took second (or perhaps tenth or twelfth) place to other markers of francophone *nationalisme*.

In effect, the book argues, as others have done, that Suez in 1956 marked a cultural shift for Canadians. The government's failure to back Britain and France's invasion of Egypt indicated that imperial Canada was no more. Now, it was continental Canada, permanently allied to the United States. Moreover, McCullough claims somewhat unconvincingly that Suez "represented a shift in the degree of dissent permitted in Canada and was indicative of a general thawing in the culture of the Cold War." Was there no dissent before 1956? Surely there was. Did the Cold War culture thaw in 1956? Surely not: it continued with only brief periods of détente until the collapse of the Soviet Union 35 years later, and it is now re-born in the new Cold War.

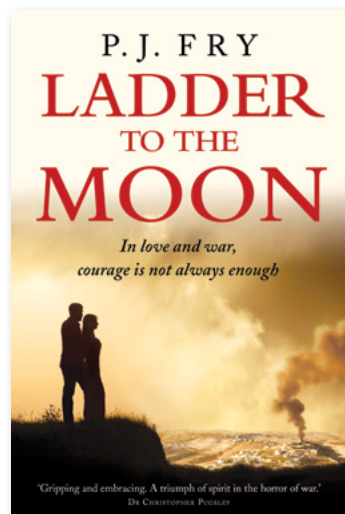


A CF-130 Hercules aircraft lands at Sarajevo Airport while a Canadian armoured personnel carrier (APC) secures the area.

Nonetheless, there was a cultural shift, with Canadians looking to peacekeeping as a way to differentiate themselves from their superpower American neighbours—as a way of highlighting what many saw as a somewhat more neutral attitude to the Cold War. Pierre Trudeau's repeated suggestions in the 1970s and early 1980s of the moral equivalence that he saw existing between the United States and the USSR fed into that attitude. His peace initiative in 1983–1984 was the Canadian peacekeeping ideal writ large on the global stage. Unfortunately, the initiative did not go very far, nor did Canada's peacekeeping efforts very often move warring factions closer to peace.

McCullough's book carefully traces the way that the peacekeeping concept embedded itself in the Canadian psyche. He covers his designated areas of study with thoroughness, and his commentary is shrewd and analytical. Just why he believes that textbooks shape students' attitudes, however, is not made clear; what teachers do and say in class (and who can know this?) likely is more important than the few pages on peacekeeping in a text. Strikingly, perhaps, he studies neither TV news nor academic writing on peacekeeping except on occasion in his footnotes, an omission that perhaps represents his historian's judgment.

McCullough concludes that peacekeeping and "a Norman Rockwellian vision of the past" share "an association with what is perceived to have been a less dangerous and simpler time in people's lives." Canadians wanted peace, and they believed that the blue beret offered one way that Canada could help achieve it. Opinion polls suggest that they still believe that. If only it were so. 🍁



LADDER TO THE MOON: IN LOVE AND WAR, COURAGE IS NOT ALWAYS ENOUGH

BIBLIOGRAPHICAL INFORMATION:

FRY, Peter. New Zealand: Peter Fry, 2016, 344 pages. Kindle edition available. ISBN: 9780473339302

Reviewed by Major (Retired) F. Roy Thomas, MSC, CD, MA (RMC)

Novels weaving historical fact with fiction can open windows on the past that might otherwise never be explored. My own introduction to the history of the United States Navy's submarine campaign against Japan was Commander Beach's novel, *Run Silent, Run Deep*. *Ladder to the Moon* is a novel that intertwines facts about the United Nations Truce Supervision Organization (UNTSO) and its multi-national contingent of unarmed United Nations

military observers with a fictitious story of an unlikely romance between a New Zealand observer and a Palestinian refugee woman in South Lebanon. It is set in a pivotal period for UNTSO and Lebanon.

In 1976, the Lebanese civil conflicts became an outright civil war.¹ In South Lebanon, bands of armed Christian, Sunni and Shiite militias roamed while the Palestine Liberation Organization, displaced from Jordan since 1970, carried on combat with the Israeli forces. UNTSO in observation posts provided the only UN presence as well as the only unbiased reporting on what was happening. Readers may not be aware that UNTSO remains Canada's longest-running overseas commitment,² although the Canadian contribution has been reduced at time of writing to only four officers. Two Canadian officers have died while serving with UNTSO, the most recent being in 2006 in South Lebanon at UNTSO's observation post Khiam.

The setting for the bulk of Fry's romance is Lebanon and adjacent Israeli territory during the crescendo of activity from the fall of 1977 until the early spring of 1978, which led to the Israeli invasion in March and the subsequent deployment of an armed United Nations military force, the United Nations Interim Force in Lebanon (UNIFIL). The author is well qualified to provide authentic anecdotal evidence for his novel, as he himself served in South Lebanon and was in Naqoura when the Israel Defense Forces bombed, shelled and then assaulted that location and the five United Nations observation posts. Fry provides a map that is excellent for determining the location of those observation posts in relation to each other and the wire strung along the border, the so-called 'Good Fence.'³ The observation posts are all still in place and are manned by United Nations military observers from UNTSO.



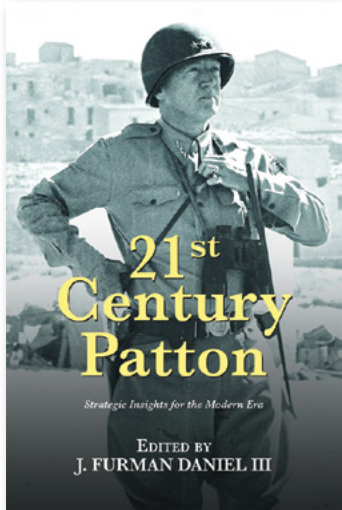
Source: UN Photo

Two short narratives in the prologue, one dated 1967, the other 2001, hint at motives and the novel's ending. To close out the romance, there is an epilogue and some additional chapters also set in 2001 that are unconnected with UNTSO. Perhaps lost in the details about UNTSO is the fact that the romance is made possible because the heroine speaks English, underlying the importance of interpreters on so many United Nations military observer missions.

The romantic tale that Fry tells is enough to keep the reader turning the page.⁴ The book also sheds light on what the life of a United Nations military observer is like. For readers wanting a taste of the challenges facing observers in UNTSO, Fry's *Ladder to the Moon* offers an absorbing introduction coupled with a touching tale. 🍁

ENDNOTES

1. John Bulloch, *Death of a Country: The Civil War in Lebanon* (London: Weidenfeld and Nicholson, 1977).
2. <http://www.forces.gc.ca/en/operations-abroad-current/op-jade.page>, accessed 13 April 2017.
3. Peter Fry and I were colleagues in UNTSO. For six months of my tour, I was serving in Government House in Jerusalem from October 1977 until mid-April 1978 as an operations officer with responsibility for radio traffic, including situation reports, from the observation posts in South Lebanon. As part of my preparation, I accompanied an observation post relief on separate occasions for the relief of each of the five observation posts. On one of those orientation trips, I was hijacked myself. I also drove the commander of UNTSO to observation post Khiam on one of his inspections. In fact, I was on duty the night that the Israel Defense Forces launched its attack on South Lebanon.
4. My spouse was so taken by the romance that she read Peter's book in one sitting. She had accompanied me on my UNTSO tour, albeit at my own expense, so was in fact familiar with UNTSO, United Nations military observer duties and the situation in Palestine.



21ST CENTURY PATTON: STRATEGIC INSIGHTS FOR THE MODERN ERA

BIBLIOGRAPHICAL INFORMATION

DANIEL, J. Furman III, editor. Annapolis: U.S. Naval Institute Press, 2016, 158 pages. ISBN: 978-1-68247-063-3

Reviewed by Lieutenant-Colonel James McKay, CD,
Deputy Commander 33 Canadian Brigade Group.

This book surprised me—it was not what I expected, but it was thought-provoking and informative nonetheless. George C. Scott's portrayal of George S. Patton Jr. in the 1970 film biopic looms large in my mind, as it does for many people. The book's editor, a visiting assistant professor of international affairs at George Washington University, has, as part of the United States Naval Institute's 21st Century Foundations series,

assembled and provided comments on a number of Patton's articles and papers written over the years. The aim of the series is to provide contemporary perspectives on military practitioners and philosophers from the past, with the subtle message that the debates of today and their antecedents have much in common.

The book is organized chronologically, and the editor provides succinct summaries of events surrounding Patton's works before each chapter. The first chapter needs to be read, as it contextualizes all of the works and puts the lie to some of the myths surrounding Patton. Daniel explains that Patton was dedicated to life-long learning, and he later reinforces that point with the last of the works. That last work is in fact written by Patton's wife, Beatrice. It is a rare and very incisive piece that reinforces the point that Patton was as much a scholar as he was a soldier. The papers included in the book touch on a variety of themes that, as the series intends, remain relevant today. They include the following: the centrality of human factors in military affairs, technological change, leadership, the importance of education and scholarship to the military profession, and the likely nature of the next war. The papers themselves are reprints of Patton's submissions to a number of American professional military journals, such as the *Cavalry Journal* and his War College thesis.

The book does present some challenges, much of which have to do with Patton and not the editor. First, Patton's florid writing style may put off some readers. And second, there are ideas that appear in Patton's works that are potentially attributable to other authors. In one passage, Patton observes that, "For the privilege of wearing a dime's worth of taffeta, a man will do deeds which all the treasure of the Incas were impotent to cause him to attempt."¹ That is similar to Napoleon Bonaparte's famous quote that, "A soldier will fight long and hard for a bit of coloured ribbon."² It remains unknown whether or not Patton knew about Napoleon's comment. In another series of passages, Patton describes the offensive-defensive balance and how the

introduction of new weapons changes that balance.³ That is consistent with the idea of the "Constant Tactical Factor" in J. F. C. Fuller's 1945 book *Armament and History*. Patton's works, however, predate the publication of Fuller's book, although Mrs. Patton wrote that her husband adored Fuller's writing.⁴

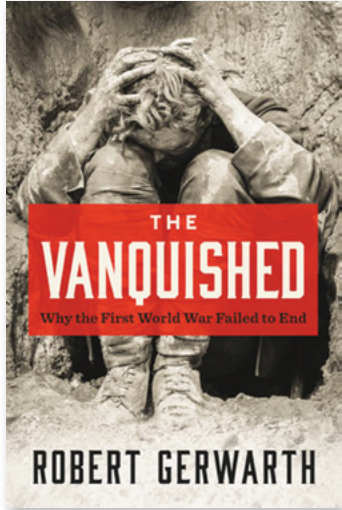
Some might ask if the book is worth reading if it is largely reprints. It is, mostly because the editor does an excellent job of putting Patton into context and showing how little the essence of the debates in military science have changed since the early 20th century. 🍁



General Patton statue is rededicated at West Point. Official party members, (from left) Brig. Gen. Michael S. Linnington, Commandant of Cadets; Cadet 1st Class Sally White, Deputy Brigade Commander; Lt. Gen. R. Steven Whitcomb, The Inspector General; Lt. Gen. Buster Hagenbeck, West Point Superintendent; Cadet 1st Class Ben Amsler, First Captain, and Col. Raymond Winkel, head of the Department of Physics, watch George Patton Waters and Benjamin Patton, two of Gen. George S. Patton Jr.'s grandchildren, unveil his statue at the corner of Jefferson Hall facing the Plain May 15. The statue will remain in this location until the construction on the old library is complete. Then it will move to its final location closer to Doubleday Field. The statue was in storage during the building of Jefferson Hall.

ENDNOTES

1. George S. Patton Jr., "Why Men Fight," in J. Furman Daniel III, ed., *21st Century Patton: Strategic Insights for the Modern Era* (Annapolis: U.S. Naval Institute Press, 2016), 46.
2. James Charlton, ed., *The Military Quotation Book* (New York: St Martin's Press, 2013), 74.
3. George S. Patton Jr., "The Effect of Weapons on War" in Daniel, ed., 53, and George S. Patton, Jr., "The Probable Characteristic of the Next War and the Organization, Tactics, and Equipment Necessary to Meet Them" in Daniel, ed., 115.
4. Beatrice Ayer Patton, "A Soldier's Reading" in Daniel, ed., 158. She noted that her husband's favourite book was *Generals, Their Diseases and Cures*, which he once gave to his superior, a major-general. She also noted that the gift was never acknowledged. Thereafter, only friends at the rank of colonel received such a gift as a preventive measure.



THE VANQUISHED: WHY THE FIRST WORLD WAR FAILED TO END

BIBLIOGRAPHICAL INFORMATION

GERWARTH, Robert. New York: Farrar, Strauss and Giroux, 2016, 464 pages. ISBN 9780374282455

Reviewed by Anthony J. Minna, lawyer living in Toronto, formerly the CEO of UBS Trustees (Cayman Islands) Ltd.

For the sake of convenience, historians assign a beginning to a war—typically the commencement of hostilities—and an end to a war—typically the cessation of hostilities or the signing of a peace treaty. Perhaps the most famous cessation of hostilities, indeed the only one that has given rise to a national holiday in both Canada and the United States, is the armistice with Germany that ended the fighting on the Western Front in World War I, signed on November 11, 1918. Germany

was the last of the four defeated Central Powers still fighting when it signed the armistice, so the Great War ended on that drizzly November day. Or did it?

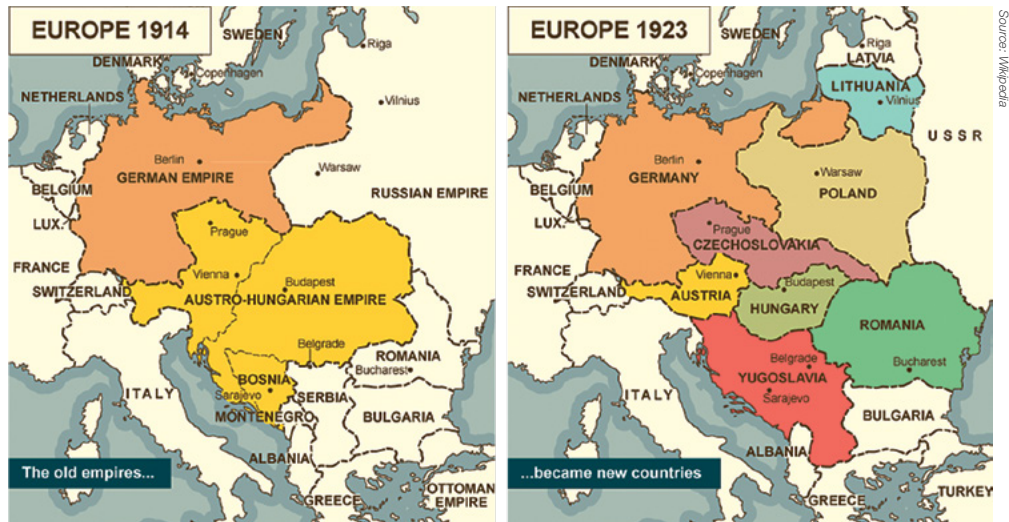
In *The Vanquished*, historian Robert Gerwarth emphatically answers that question in the negative. Subtitled *Why the First World War Failed to End*, Gerwarth's book describes the many bloody ways in which conflict and violence plagued Europe between 1918 and 1923, claiming millions of lives. Like William Hitchcock's *The Bitter Road to Freedom* and Keith Lowe's *Savage Continent: Europe in the Aftermath of World War II*, both of which showed that liberation and the German surrender hardly ended the violence in Europe at the end of World War II, *The Vanquished* is a conflict-by-conflict catalogue of international wars, civil wars, revolutions, counter-revolutions, coups, pogroms, expulsions, and the settling of scores on a whole range of levels. In each case, Gerwarth endeavors to explain how the conflict was a direct, or at least indirect, consequence of the global war that preceded it.

The book begins with an account of the Russian Revolutions, undoubtedly the most historically significant upheavals immediately caused or abetted by World War I. Miserable living and working conditions, food shortages, and a disastrous war all contributed first to the fall of the centuries-old Romanov dynasty in February 1917, and then to the even more momentous Bolshevik takeover in October 1917 (November 1917 in the Gregorian calendar). While the actual seizure of power by Lenin's party was relatively bloodless—there were only six deaths in the capital city of Petrograd (Saint Petersburg)—the civil wars that began shortly afterward and continued for four years were extremely violent. Those civil wars were fought on several different levels, for example, peasant resistance to Bolshevik rule, breakaway regions on Russia's periphery vs. the Russian heartland, and communist 'Reds' vs. counter-revolutionary 'Whites.' The fighting resulted in the deaths of at least three million people, well in excess of the 1.7 million Russian soldiers killed in the Great War itself. Anti-Semitism was particularly virulent during the Russian civil wars; there were over 1,000 recorded pogroms between 1918 and 1920. An estimated 100,000 Jews were murdered in western Russia and Ukraine between June and December 1918.

World War I was brought to a close (to the extent that Gerwarth is prepared to concede it ended in 1918) by a series of armistices between the victorious Allied powers on the one hand and the four defeated Central Powers, Germany, Austria-Hungary, Bulgaria, and the Ottoman Empire, on the other. Gerwarth acknowledges the promise of the moment. Seizing the opportunity offered by the support of the Allies and the military defeat of their Habsburg rulers, Poland, Czechoslovakia and the Kingdom of Serbs, Croats and Slovenes (renamed the Kingdom of Yugoslavia in 1929) proclaimed themselves independent states. Though unsuccessful on the battlefield, there was, at least initially, cause for optimism even among the defeated peoples. Germany, Austria, and Hungary all became democratic republics in November 1918. By that time, liberal governments had already come to power in Sofia and Constantinople (Istanbul). There was enthusiasm for newly acquired popular sovereignty and hope that the victorious Allies would offer these states, which were no longer hostile, autocratic regimes, what Woodrow Wilson called a "just and secure peace."

But peace of any kind, as Gerwarth shows in case after case, would prove to be elusive for several years. There were at least 27 violent transfers of power in Europe between 1917 and 1920. The newly-established Polish Republic was continually at war from November 1918 to March 1921, asserting its right to exist and defending its territory against Russians, Ukrainians, Belarusians, Lithuanians, Germans, and Czechs. Communist uprisings in Berlin, Munich, and Vienna in 1919 were suppressed with no small loss of life. A short-lived Hungarian Soviet Republic, toppled in the summer of 1919 during a successful Romanian invasion, was followed by a particularly sanguinary 'White Terror.' There too the counter-revolutionary reprisals often targeted Jews, who could be identified with capitalism on the one hand and communism on the other, and who were frequently blamed, as they were elsewhere, for the military collapse in 1918. A bloody coup d'état in 1923 ended what was left of Bulgaria's liberal experiment and ushered in years of periodically recurring violence.

The instability and violence were not restricted to the defeated powers. Finland was a non-combatant in World War I, but Finnish 'Reds' and 'Whites' fought a civil war in 1918 that claimed over 36,000 lives, or one percent of the population. Labour unrest and the fear of Bolshevik contagion were at the root of instability and turmoil in neutral Spain, where over 750 people were killed and thousands imprisoned between 1918 and 1920, and a conservative dictatorship was installed in 1923. Thirteen years later, the country would be plunged into a full-blown civil war. Italy was a victor in World War I, but peace was a relative term there too in the years following the armistice. Heavy wartime debt, runaway inflation, high unemployment, food shortages, and demands for land reform led to radicalization on both the right and the left and resulted in unrest and chaos in many parts of the country. Approximately 3,000 people were killed in politically-motivated violence between 1919 and 1922. Benito Mussolini and his Fascist Party came to represent the 'forces of order' in many people's eyes (even though they were deliberately causing much of the chaos), and in 1922 King Victor Emmanuel agreed to Mussolini's demand to be appointed Prime Minister. By 1925, Mussolini had dismantled parliamentary democracy and Italy was a dictatorship.



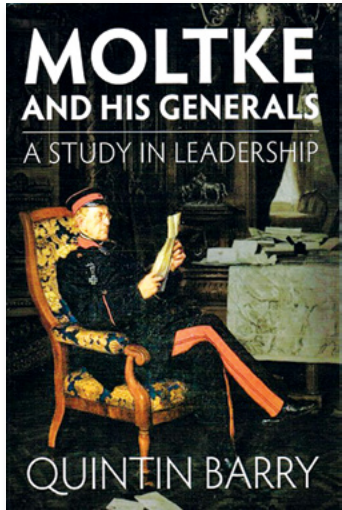
Gerwarth devotes a chapter of his book to the Turkish War of Independence. The Treaty of Sèvres concluded between the victorious Allies and the defeated Turks in 1920 was the harshest of the World War I peace treaties. The sultan's government did not merely lose possession of its Arab territories—it also lost control over much of Turkey proper. The Armenians were awarded a large expanse of eastern Anatolia, while the Greeks were given 'rights of sovereignty' over Smyrna and surrounding territory, with the possibility of a local vote on incorporation in the Kingdom of Greece after five years. The Bosphorus was placed under the control of a multinational Commission of the Straits, Kurdistan was to be given local autonomy and later possibly independence, French and Italian spheres of influence were established in Anatolia, and the Inter-Allied Financial Commission was given control over Turkish government finances. All of that was too much for Brigadier-General Mustafa Kemal, later known as Atatürk (Father of the Turks), who rallied opponents to the treaty, transferred the Parliament from occupied Constantinople to Ankara, expelled the foreign occupiers, and effectively compelled the Allies to conclude the much more favourable Treaty of Lausanne in 1923. When civilians are included, the death toll from the war runs well into the hundreds of thousands.

The Vanquished is both a chronicle and an explanation of the unrest and individual conflicts that rocked Europe between 1918 and 1923. Gerwarth identifies several more or less obvious factors that contributed to violence: the shock and humiliation of defeat among the vanquished, communist uprisings and their suppression, wrecked economies and famine, labour unrest, and the severe terms of the various peace treaties concluded in 1919–1920. He also sees a somewhat less obvious cause of violence in the dismemberment of the defeated European land empires. Gerwarth does not go so far as to say that it was wrong to dismantle those land empires, but he does identify the instantaneous emergence of a host of successor ethno-states and their inability to resolve territorial disputes as one of the causes of postwar conflict. His discussion here has particular relevance for our own age.

The defeated empires that were broken up at the end of World War I had been home to many nationalities and many faiths. Austria-Hungary, for example, counted no fewer than ten numerically significant ethno-linguistic groups and six numerically significant religions. There was no single majority ethnicity. It is perhaps not surprising that Jews were able to live in relative peace in such a multi-ethnic, multi-religious empire. The postwar states of Central and Eastern Europe, founded or subsisting on the basis of self-determination, were tailored to more narrowly defined ethnicities: Germans, Austrians, Hungarians, Bulgarians, Poles, Czechs and Slovaks, South Slavs, etc. (Whether the non-European peoples of the dismembered Ottoman Empire deserved the right to self-determination was another question.) Minorities in that postwar order—for example, Ukrainians in Poland, Hungarians in Slovakia and Romania, Bulgarians in Yugoslavia and Greece, Germans in Eastern Europe, and Jews in places where they had been living more or less peaceably for generations—were now branded with an otherness that had not been attached to them, or at least not to the same extent, in multi-ethnic, multi-religious empires. Minority Treaties concluded bilaterally between the Allies and each of the new states were meant to protect those peoples, and the treaties enjoyed some success, but the seed of nationalism born in 1918–1919, coupled with irredentism and a desire to avenge past defeats and perceived injustices, rendered a durable peace difficult.

An exchange of 1.2 million Orthodox Christians in Turkey and 400,000 Muslims in Greece took place as a result of the Turkish War of Independence. The population movements started during the war and were made compulsory by a 1923 convention signed by the Greek and Turkish governments. Adolf Hitler admired Atatürk's successful revisionist war and concluded that only an ethnically homogeneous nation state could rise from the ashes, obviate the possibility of internal treachery, and win Germany's inevitable revisionist war. But Hitler was not the only one to draw lessons from the population exchange. The sanction of the expulsions by the Treaty of Lausanne was in Gerwarth's view an abandonment of the defence of minorities by the West, and it was seen to be a tacit acknowledgement that ethnic homogeneity is a prerequisite to the peaceful co-existence of nation states. The mandatory expulsions of millions of people in Eastern Europe following World War II seemed to signal the final, now explicit, acceptance of that idea. Today, as many nations in Europe and elsewhere struggle to define themselves as ethnically and religiously pluralistic, and with the wounds of a brutal, decade-long civil war in multi-ethnic Yugoslavia still raw in many places, we realize that, in some respects, the First World War truly did fail to end. 🍁

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MOLTKE AND HIS GENERALS: A Study in Leadership

BIBLIOGRAPHICAL INFORMATION:

BARRY, Quintin. Solihull, UK: Helion and Company, 2015, 304 pages.
Photos/ Maps: 20/9, ISBN: 978-1-910294-41-3

*Reviewed by Major Chris Buckham, CD,
Air Logistics Transport Officer, A5, 1 Canadian Air Division.*

Helmut von Moltke was one of the most influential military commanders of the 19th century. During his tenure as Chief of the Prussian General Staff, then as Chief of the Great General Staff, Moltke oversaw the strategic success of the Prussian and German forces in three major conflicts: the war with Denmark (1864), the Austro-Prussian War (1866) and the Franco-Prussian War (1870-1871). His vision and drive created the Great General Staff,

a military command structure that was unparalleled in the European theatre. He was supported by a senior strategic and operational staff that was developed through this system and therefore had a common understanding of expectations.

This book is a detailed study of Moltke's and his senior officers' personalities and their influence on the period. Barry's analysis is balanced, critical and insightful. His observations on the challenges posed by personality upon the effective execution of the mission are instructive, emphasizing that despite a common training regime and mission, allowance for and encouragement of independent action must be grounded in solid discipline and command maturity.

The author dedicates a chapter to each of the major commanders who reported to Moltke. Not all are seen as effective; indeed, he is critical of many of them in his analysis of the impacts of personality and hubris. It is revealing, however, just how effective the Prussian and German command structures were in mitigating the shortcomings of individual commanders through the strengths of the chiefs of staff appointed to those commanders. The Prussian system, refined and enhanced by Moltke, deliberately assigned teams of commanders and chiefs of staff in which each offset the other's weaknesses. Strength was thus a product of the whole rather than of the individuals.

In addition, Barry reviews the development of the commander's intent as a foundation of the German command system. During a period of difficult and unreliable communications, the commander's intent provided army and unit commanders with the parameters within which they could exercise individual initiative to achieve Moltke's stated aim. Barry looks at the training and developmental requirements for successfully building the trust and understanding needed to ensure the effectiveness of this command style.

This book is an excellent analysis of the personality and impact that Moltke's initiatives brought to the German General staff. Beyond that, it discusses at length the methodologies needed to build and lead the command environment created by a decentralized style. Moltke's confidence in his subordinates and his innate ability to understand when not to intervene are traits modern commanders should strive to emulate. This book is an insightful and worthwhile read that avoids the pitfalls of an excessively academic style. The production quality of the book is high, reflecting Helion's careful attention to detail. Barry also provides an extensive bibliography on Moltke himself, as well as the three major conflicts during which he was overall commander. 🍁



Source: Wikipedia

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