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CANADIAN FORCES COLLEGE / COLLÈGE DES FORCES CANADIENNES
CSC 28 / CCEM 28

EXERCISE/EXERCICE

Armoured Cavalry Squadron: A Canadian Ready Rapid Deployable Force

By /par Maj J.J. Schneiderbanger, CD1

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ABSTRACT

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To fulfill Canada's international security commitments, the Canadian Forces must have an expeditionary land force with elements that are ready and rapidly deployable that can respond quickly to sudden international conflicts. Thus, the Canadian Forces must ensure that combat land forces earmarked for rapid response duty are truly ready, rapidly deployable, and equipped appropriately for such duties. The Canadian Forces requires a deployable unit, which has the combat force of a battle group, but the deployability of a light infantry battalion. Furthermore, the unit must have significant operational mobility as the future battlespace will have a notably extended area of operation, requiring combat forces to operate over great distances. Moreover, the Canadian Forces strategic lift capability deficiency cannot be properly addressed without first identifying a rapid reaction land force.

The creation of an Armoured Cavalry Squadron can provide the Canadian Forces with a credible ready rapid deployable force so that it may fulfill its commitments as outlined in the 1994 Defence White Paper and subsequent defence documents. The need for a ready rapid deployable force is quite evident with today's changing security environment as future conflicts will require quicker response times from a UN or NATO led force. Consequently, if Canada is to take part in the response, it must have combat capable and self-sustaining land forces that are rapidly deployable on very short notice.

The world security environment is continually evolving and some dramatic changes have taken place with the end of the Cold War and the asymmetric threat that was brought to the forefront on September 11, 2001. Many militaries around the world have been trying to define the future security environment so that they may identify the various threats and ensure that they are ready to respond.¹ The Canadian Forces (CF) has been no different and has attempted to define the future security environment that it must operate in.² The Directorate of Land Strategic Concepts in the Future Army Capabilities Report, dated January 2001, states that “North Atlantic Treaty Organization (NATO) has adopted a vision of the future operational environment that posits two forms of conflict”: conventional and asymmetric.³ The CF has been structured to respond to a conventional threat as part of NATO and other defence alliances such as the North American Aerospace Defence treaty (NORAD) with the United States (US). Canada had forward deployed troops in Germany so that it could respond quickly to crisis, thereby meeting Canada’s commitments to its NATO partners.⁴ Unfortunately, 4 Canadian Mechanized Brigade Group (CMBG) was withdrawn from Germany in 1994 causing a number of Canada’s allies to question its commitment to NATO. Although the Canadian government withdrew the CF from Germany it has demonstrated its commitment to NATO through the active participation of the CF in such operations as the Stabilization Force (SFOR) in Bosnia and the Kosovo campaign. However, the physical deployment of CF land forces has not been without difficulties and controversy in terms of speed of deployment and strategic lift. Since the security environment drastically changed with the end of the Cold War period, the CF has undergone challenges, attempting to restructure

¹ “The role of ground forces is being transformed by changes in both the nature and uncertainties of conflict.” John Matsumura et al., Lightning over Water: Sharpening America’s Light Force for Rapid Reaction Missions (RAND Publications, 2000), 3.

² Directorate of Land Strategic Concepts, “Future Security Environment”, Report 99-2, (August 99).

³ Conventional conflicts have established forces engaged in high-tempo operations that involve the application of complex technologies. It is the least common form of conflict. The Gulf War is an example of a conventional conflict. An Asymmetric conflict, in essence, has a nation state opposed by armed bodies that are not necessarily armed forces; the people fighting are not necessarily soldiers. It is the most common form of conflict. Two examples of this form of conflict are Chechnya and Rwanda. Directorate of Land Strategic Concepts, “The Future Army Capabilities”, Report 01/01, (January 2001), 2.

⁴ “The uncertainty about where those – or military operations – can occur has also grown... When the potential for conflict is so global in nature, it becomes more difficult for military planners to rely on traditional prepositioned forces as a hedge against conflict breaking out.” Matsumura, 4.

itself to better meet its international security commitments in accordance with 1994 Defence White Paper, and subsequent government defence guidance.⁵

“As outlined in the 1994 Defence White Paper, the fundamental mission of the Department of National Defence (DND) and the CF is to defend Canada and Canadian interests and values while contributing to international peace and security. Canada’s defence policy calls for the maintenance of multi-purpose, combat-capable sea, land and air forces able to meet the challenges to Canada’s security both at home and abroad.”⁶ Specifically, the 1994 Defence White Paper and Canadian Defence Planning Document 2000 outlines Canada’s commitment for Land Force stand-by operations under UN auspices or NATO duties as one battle group and one infantry battalion group to be ready to deploy within 21 days.⁷ If required, this force would act as the vanguard for a larger force that would deploy within three months for sustained operations.⁸ Furthermore, these same combat organizations have been earmarked for either a stand-by force for the UN or to serve with NATO’s Immediate Reaction Force. In addition, Canada’s latest pledge is to provide a light infantry battalion group to the pool of forces for the UN Standing High Readiness Brigade (SHIRBRIG).⁹ All of these commitments infer global deployability and rapid response if these forces were to execute their tasks, as per the

⁵ The 1994 Defence White Paper was the resulting report of Canada’s defence review and outlines Canada’s defence policy.

⁶ Canadian Department of National Defence, Defence Planning Document 2000 (Ottawa, 2000), 1.

⁷ A Canadian battle group consists of an infantry battalion (three Infantry Companies and Support Company) and an armoured squadron consisting of either a Leopard tank squadron or reduced Coyotes reconnaissance squadron (three troops containing five Coyotes each). A Leopard Squadron has never been deployed on operations even when other Allied forces deployed tank squadrons as part of their contingents in operations in Bosnia, Somalia, and Kosovo. The Canadian Government has been very reluctant to deploy Leopard tanks, but did deploy Cougar armoured fighting vehicles that mount turreted 76mm guns. The Cougar is no longer in service with the Regular force and the government has commenced disposal of these vehicles.

⁸ “Currently, the US Army is developing an ability to deploy a brigade-sized ‘strike force’ in 96 hrs, a division in 120 hrs and five divisions in one month. If Canada is going to participate in meaningful multilateral combined/joint operations with US forces it will have to begin working to a similar standard. Currently, the CF is developing a capacity to deploy vanguard units to an offshore theatre of operations within 21 days and a larger main contingent within 90 days.” Andrew Latham, “The Revolution in Military Affairs: Implications for the Canadian Armed Forces”, CCS Research papers, <http://www.stratnet.ucalgary.ca/ccspapers/papers/latham-rma.htm>, (3 Nov 02), 8.

⁹ Canadian Defence Planning Document 2000, 5 and 13.

policy set forth in the Defence White Paper and Defence Planning 2000.¹⁰ However, the CF would be hard pressed to deploy any significant combat land force within 21 days, as it has neither the strategic air nor sealift.¹¹ Although strategic lift is of utmost relevance to this paper, the issue goes beyond its scope. Hence, no analysis will be made on the capability deficiency of strategic lift within the CF other than to acknowledge it.¹² Nevertheless, it is logical to assume that without a rapidly deployable land force there is little need for strategic lift within the CF.¹³ To fulfill Canada's international security commitments, the CF must have an expeditionary land force with elements that are ready and rapidly deployable, which can respond quickly to sudden conflicts that arise. Thus, the CF must ensure that combat land forces earmarked for rapid response duty are truly ready, rapidly deployable, and equipped appropriately for such duties. Moreover, the strategic lift capability deficiency cannot be properly addressed without first identifying a CF rapid reaction land force.¹⁴ In summary, future conflicts will require quicker response times from a UN or NATO led force. Consequently, if Canada is to take part in the response, it must have combat capable and self-sustaining land forces that are rapidly deployable on very short notice.

Although deployable combat capable forces, Canadian Battle Groups cannot deploy rapidly enough and light infantry battalions lack the combat power and self-sustainability required of a ready rapid deployable force (RRDF). Battle Groups are not cohesive units, thereby require personnel and combat force augmentation. They consist

¹⁰ "... Defence Planning Guidance 2000, positively drips with references to global deployability, rapid response, and enhanced airlift and sealift." Martin Shadwick, "The Strategic Mobility Conundrum", *Canadian Military Journal*, (Spring 2000), 81.

¹¹ Allen Sens, "From Peacekeeping to Intervention: Expeditionary Capabilities and the Canadian Force Structure Debate", CCS Research Papers, <http://www.stratnet.ucalgary.ca/ccspapers/papers/latham-rma.htm>, (3 Nov 02), 3.

¹² The air force has a strategic airlift project, which is investigating aircraft such as the Boeing C-17 and Airbus A400M. The navy is attempting to address the strategic sealift issue through the Afloat Logistic and Sealift Capability (ALCS) project. The project is investigating a dual-purpose ship, which would solve the strategic sealift issue and be the replacement ship for the aging auxiliary oil replenishment ships (AORs).

¹³ Shadwick, 81.

¹⁴ "The possession of strategic lift, in and of itself, does not provide a rapid deployable capability. The CF must match air and sealift assets with well-equipped, well-trained, high readiness combat, combat support and combat service support forces. Deployment of ill-prepared or poorly equipped ground combat forces is worse than taking no action at all." Canadian Department of National Defence, "Future Army Capabilities", *DLSC Report 01/01*, (January 2001), 41.

of approximately 1100 personnel and well over 110 vehicles, making this a very large organization to deploy via air and /or sea assets. As a result, battle groups are not ready rapid deployable forces as 90 days are required to complete the necessary training and integration of personnel and combat force augmentation. Conversely, light infantry battalions have considerably fewer personnel and vehicles making these units highly deployable, but significantly less combat capable, survivable and self-sustainable than battle groups since the battalions have very limited integral lift capability and have no armoured fighting vehicles.¹⁵ In other words, light infantry battalions are severely restricted in terms of operational and tactical mobility. This lack of mobility is a major disadvantage in consideration of the future extended battlespace that they are expected to operate in. Thus, light infantry battalions have very limited combat capability, survivability, sustainability and flexibility, which limit their employment in operations. Canada requires a deployable unit, which has the combat force of a battle group, but the deployability of a light infantry battalion. The creation of an Armoured Cavalry Squadron can provide the CF with a credible ready rapid deployable force so that it may fulfill its commitments as outlined in the 1994 Defence White Paper and subsequent defence documents. This paper will illustrate how the Armoured Cavalry Squadron can be created based upon the Armoured Direct Fire Support Squadron as the basic building block using current, and with soon to be purchased, armoured fighting and combat vehicles. Furthermore, this paper will expand upon the importance of the following characteristics of a Ready Rapid Deployable Force: combined armed force with offensive and defensive capabilities, operational and tactical mobility, unit cohesion, and self-sustainment.

The Armoured Cavalry Squadron concept must be placed into the appropriate context for ease of understanding; a number of issues must first be clarified. This paper will concentrate at the operational and tactical level within the strategic context of the global deployability of the Armoured Cavalry Squadron. In addition, three major

¹⁵ Light infantry battalions are cohesive units consisting of approximately 600 personnel. They require very few personnel and no combat force augmentation to prepare for deployment. The battalions are motorized units, which means that they have no armoured fighting vehicles. All of the battalions' vehicles are soft skinned transportation variants. As well, Canadian light infantry battalions have one company designated as a parachute company, which means that this company has no vehicles at all; Matsumura, 7.

assumptions are made in the development of the Armoured Cavalry Squadron concept. First, future conflicts will require forces to come as they are in terms of both training and equipment due to response times required to react to these conflicts.¹⁶ Furthermore, the RRDF should be an integrated combined-arms formed unit to ensure that it has the necessary cohesion, combat power and tactical mobility to ensure its survivability in both defensive and offensive operations. There will be little time to reorganize, re-equip, or integrate soldier augmentees; for that reason the Ready Rapid Deployable Force must be a cohesive formed unit that is appropriately organized, equipped and trained so that it is ready to deploy quickly in times of conflict.¹⁷ Second, high operational and tactical mobility and rapid deployment will be a vital necessity, as the area of operation of future conflicts will involve greater distances than past conflicts.¹⁸ Consequently, a mounted combat capable RRDF based on wheeled LAVs is required to meet the high operational mobility and rapid deployment requirement.¹⁹ Finally, this unit must be capable of operating independently for a minimum of 90 days; therefore it must have the appropriate integral logistic resources and require minimal national support.

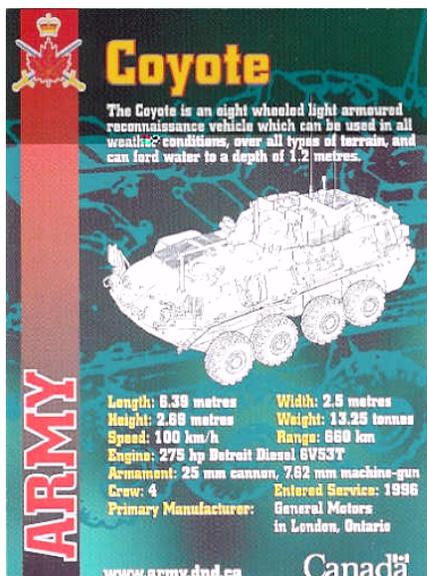


Figure 1 - Coyote Reconnaissance Vehicle

The CF has been significantly challenged over the last 15 years by the changing security environment, compounded by such issues as major down sizing, budget cuts, shortage of modern equipment, and lack of strategic air and sealift. Out of the three services – Army, Navy and Air Force – the Army has likely suffered the most over the years. Some of the Army’s problems have been addressed through the acquisition of the new armoured fighting

¹⁶ Richard Moreau, “Concept for the Employment of the Cavalry Squadron”, The Army Doctrine and Training Bulletin, (1999), 118.

¹⁷ Moreau, p.118; Riggs, 23-24; Matsumura, 5.

¹⁸ Directorate Land Strategic Concepts, “Future Security Environment”, Report 99/02, August 1999

¹⁹ Heavy armour vehicles do not move as quickly as wheeled vehicles over road networks. Road and bridge classifications hinder movement of heavy armour vehicles. The higher fuel consumption of heavy armoured vehicles is another major limitation. William Riggs, “Global Cavalry”, Armor Magazine, (March-April 1998), 5; Antonio Candil, “Spanish Cavalry will acquire Italian Centauro AFVs”, Armor Magazine, (November-December 2000), 42.

vehicles, small arms, and personal combat equipment (see Figures 1 and 2). Specifically, the Coyote Reconnaissance Vehicle and Light Armoured Vehicle III (LAV) have certainly boosted the Army's capabilities,²⁰ however, shortages in personnel continue to plague the Army and new equipment alone cannot solve this problem.²¹ The overall issue of personnel shortages within army units has been exacerbated for two main reasons: low recruitment and units staffed below the authorized peacetime manning level. In addition, the operational tempo increased over this time period and continues to escalate, while the CF is asked to do more with less.²² For example, the CF participation

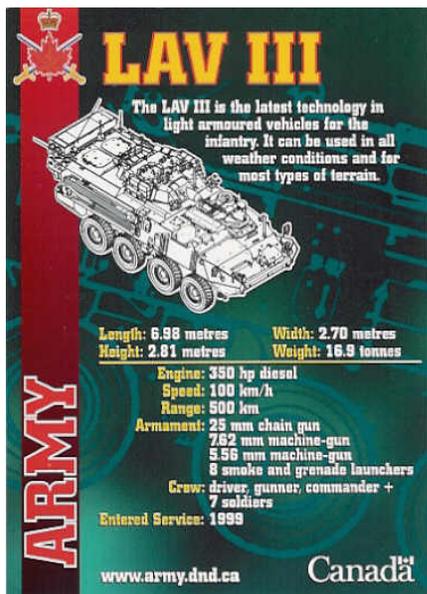


Figure 2 - LAV III Infantry Vehicle

in United Nation operations has risen significantly since 1989 with CF personnel and units having deployed in 65 missions compared to 25 missions between 1948 and 1989.²³ As a result, army units have been stretched to their limits due to personnel shortfalls and, in particular, the increased operational tempo, which has arisen from the changing world security environment. Canada's most prepared land forces are the two battle groups currently deployed in Bosnia and Afghanistan. It is important to note that

replacement battle groups require 90 days preparation training prior to commencing the tour

rotation. In the meantime, reality is that the CF does not have ready rapid deployable multi-purpose units to participate in UN or NATO response to a sudden crisis. If the CF is to have a RRDF it must be fully staffed at the wartime manning level to mitigate the current peacetime manning levels and personnel shortages within the army. Thus, a fully manned Ready Rapid Deployable Force unit ensures that all personnel within the unit are trained to the same level of readiness, thereby strengthening the cohesiveness of the unit,

²⁰ LAV III is the latest armoured vehicle purchased by the CF for the mechanized infantry units. It is an armoured personnel carrier, mounts a turreted 25mm canon.

²¹ "The numbers in the CF are critically low. The authorized number in the CF is 60,000, but the regular personnel currently numbers only 57,212." Royal Canadian Military Institute, "A Wake Up Call for Canada – The Need for a New Military", 14.

²² Sens, 3.

²³ Department of National Defence, "Defence Performance and Outlook 2000: Making a Difference at Home and Abroad", A-JS-007-000/AF-001, 10.

and its ability to deploy rapidly with minimal additional training in comparison to the current battle group formations. In summary, the RRDF unit would allow Canada's immediate participation in any future UN or NATO response to a sudden security crisis and provide the additional training time required to prepare a follow-on battle group if required. In effect, Canada could meet its international commitments immediately with a

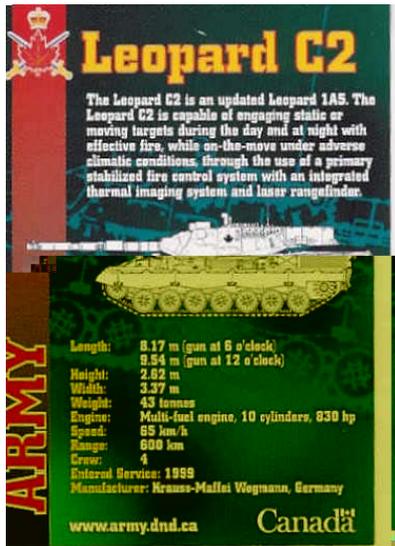


Figure 3 - Leopard C2 Tank

credible force and determine whether or not it wishes to contribute additional land forces to the crisis in the near future.

Vehicle, which were redistributed within the army in 1999. The squadron's role of providing direct fire support to infantry battalions or battle groups that have over 54 LAV IIIs was unrealistic, as the squadron's firepower brought little extra overall combat force to the organizations that it was to support. More changes will likely occur due to the scheduled

retirement of the Leopard C2 tank in 2010 with no plan to replace it (with another main battle tank).²⁵ Its likely replacement will be a wheeled armoured combat vehicle (ACV) type similar to the South African 105mm Rooikat or Italian 105mm Centauro ACVs (see

Restructure of the Army has created further challenges within the CF and has included unit establishment changes and the Equipment Rationalization Plan of 1999.²⁴ One result of the Equipment Rationalization Plan was the creation of the Direct Fire Support Squadron within the Armoured Regiments based on the Coyote Reconnaissance

Figure 4 - Italian Centauro



Figure 4 - Italian Centauro

²⁴ "The ERP will allow the Army to integrate the LAV III, and other new equipment smoothly while creating standardized organizational structures. It will allow an easier and more accurate assessment of impacts and costs and, therefore, better implementation planning. ... The ERP does not represent an end state: it will continue to evolve." Mooney, "ERP - A Major Step to a Modern Army", *Maple Leaf*, Department of National Defence, 15 February 1999, Vol. 2, No. 3, 8.

²⁵ Directorate of Land Strategic Concepts, "Armoured Combat Vehicle Concept Paper", (19 May 1998), 1.

Figure 4).²⁶ The ACV is to fill the direct fire support capability requirement of the Army, but the retirement of the Leopard C2 will force an army doctrine review, as the Army will no longer be capable of fighting in accordance with its current doctrine.²⁷ In summary, all this is not to say that the Direct Fire Support Squadron and armoured combat vehicles cannot provide viable combat power, on the contrary, as integrating the armoured combat vehicle into the squadron would bolster the Coyote based squadron as the building block to the Armoured Cavalry Squadron. Consequently, the creation of this Direct Fire Support Squadron as part of the Equipment Rationalization Plan may have set the conditions to potentially forming the CF's Ready Rapid Deployable Force - the Armoured Cavalry Squadron.

As part of the restructuring plan for the CF land forces, the Army will be completely based on the LAV family of vehicles as of 2010, thus transforming the Army

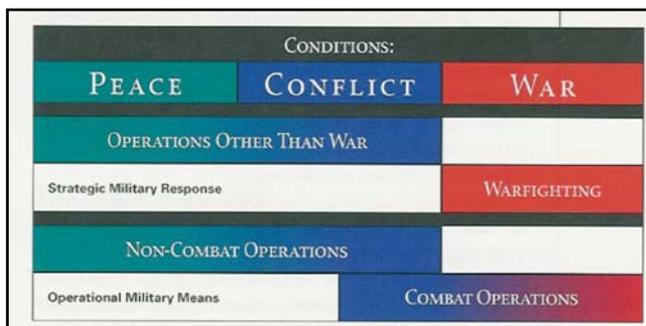


Figure 5 - The Spectrum of Conflict and Continuum of Operations

into a light - to - medium combat force limiting its ability to fight throughout the full spectrum of conflict, namely in the conditions of war (see Figure 5).²⁸ The Army will have limited capabilities allowing for its engagement in a high intensity conflict with UN, NATO or coalition

led forces as seen with the Gulf War.²⁹ Therefore, the Army must ensure that the units' combat force based on LAVs are organized with complementary and force enhancing

²⁶ The Rooikat and Centauro are 8x8 wheeled armoured combat vehicles (ACV) mounting a turreted 105mm gun. They are classified as direct fire support vehicles providing the same type of firepower as the Leopard tank but have less armoured protection. These vehicles were identified as potential contenders during the Identification Phase of the Armoured Combat Vehicle Project L2636. As well, the Rooikat and Centauro are cited in the "Armoured Combat Vehicle Concept Paper", B-1/1.

²⁷ The conclusion of the operational research conducted in Ex IRON NOBLE concludes that the ACV cannot replace the Leopard in warfighting tasks, as losses were much too high. This suggests that current doctrine would have to change if ACV did replace the tank. "Armour Combat Vehicle Concept Paper", D-2/12.

²⁸ "The security environment within which nations interact can be depicted as a spectrum of conflict which ranges from peace at one end to total war at the other." Department of National Defence, "Canada's Army: We Stand on Guard for Thee", B-GL-300-000/FP-000, (1 March 1998), 73.

²⁹ During the Gulf War, 4 Canadian Mechanized Brigade Group was still based in Germany at full war establishment strength with a complete armoured regiment of tanks, the Army still lacked the required

weapon systems.³⁰ It is only in this way that the Canadian Army can be a credible and combat capable expeditionary force if it is to be of value to Canada's UN, NATO and Coalition partners in future conflicts whether conventional or asymmetric.³¹ The Canadian Army should ensure that it restructures, reviews doctrine, and re-equips itself appropriately with modern and interoperable combat equipment.³² The CF must have the capability to deploy those Army forces quickly around the world if it is to have the ability to rapidly respond to the future security environment and meet its international security commitments.³³

The organizational concept of Armoured Cavalry Squadron (Armd Cav Sqn) uses the Direct Fire Support Squadron as the basic building block and is loosely based on the United States (US) Armoured Cavalry Regiment and Marine Corps concepts. The Armoured Cavalry Squadron would be a robust and integrated combined-arms force with relative combat power for its size in comparison to an US Armoured Cavalry Regiment's squadron.³⁴ Its organizational structure and combat capabilities would allow it to execute reconnaissance and security tasks and missions as an independent unit.³⁵ Furthermore,

capabilities to participate in the land campaign as determine prior to the outbreak of the conflict by Force Mobile Command Headquarters in 1990. Therefore, it can be assumed that the issue of a LAV unit being limited to specific tasks in a high intensity conflict is likely not an issue of great concern.

³⁰ "...enhanced airlift and sealift will only make sense if the army and other equipment we wish to deploy is actually worth deploying, few defence analysts would take umbrage at DND's quest for enhanced global deployability. The real change is to identify an asset mix which is both credible and affordable." Shadwick, 81.

³¹ "If Canadian diplomatic initiatives are to have any credibility, and if Canada is to remain committed to peacekeeping and intervention contingencies, it must retain significant combat-capable expeditionary capacity." Sens, 5.

³² "Continued interoperability within coalitions or alliances represent the second major challenge that new military technologies pose the CF. The Canadian Forces have never by themselves taken part in operations outside of Canada, nor is this likely in the future, so the CF must maintain the capability of working with the military forces of other nations." Steven Irwin, "A Multi-purpose Capability and Advanced Technology", Canadian Military Journal, (Winter 2001-2002), Vol. 2 no. 4, 57.

³³ "The rhetoric and the conundrum of rapid deployment are not new. Paul Hellyer's 1964 White paper, for example, stressed, "the emphasis in our force structure is on greatly increased mobility," and concluded that it would be necessary to "substantially augment our existing air transport capability." ³³ Shadwick, 81.

³⁴ "...cavalry organization is quite different. The need for mobility and agility and for economy of effort over vast distances has caused modern cavalry to be organized around combined-arms teams ... consisted of a built-in mixture of scouts, infantry, tanks, and mortar for indirect fire support." General Donn Starry, US Army, foreword, Armored Cav – A Guided Tour of an Armored Cavalry Regiment, by Tom Clancy (New York: Berkley Book, 1994), xviii.

³⁵ General Donn Starry, US Army, foreword, Armored Cav – A Guided Tour of an Armored Cavalry Regiment, by Tom Clancy, xvii; "According to Spanish Army doctrine, the Cavalry is a combat arm that

the Armoured Cavalry Squadron would be as deployable as the US Marines, both by air and sea. It would have the characteristic of self-sustainment in operations as the Marines. The basic organization of the squadron is illustrated in Figure 6.

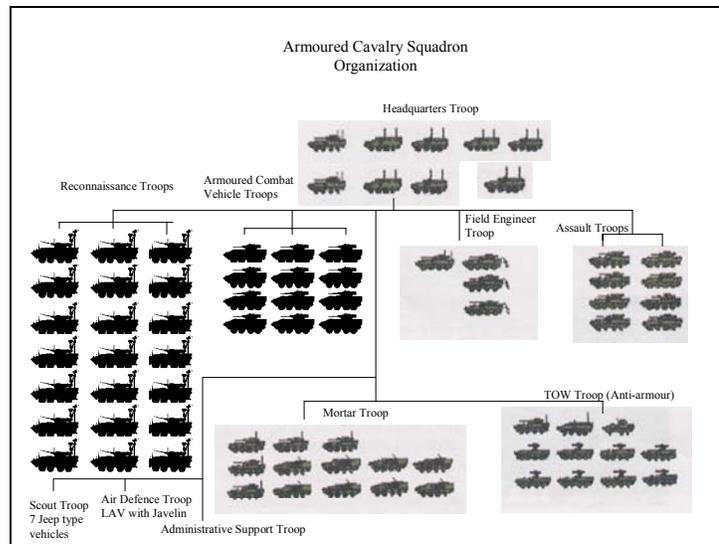


Figure 6 - Proposed Ready Rapid Deployable Force



Figure 7 - TRILS LAV

A short description of the Armoured Cavalry Squadron is necessary so that one may visualize and appreciate the organization’s combat power and potential capabilities. The organization (grouping) of the Squadron is built upon the Direct Fire Support Squadron, which is depicted by the three reconnaissances and one administrative troop (see Figure 6). Adding the other troops to the basic building block of the reconnaissance troops creates the

Armoured Cavalry Squadron’s combined-arms team: armoured combat vehicle, TOW Anti-armour, Mortar, Assault, Field Engineer, Scout and Air Defence Troops.³⁶ In addition to the combat power of the combined-arms team that would provide the Squadron with its ability to

specializes in reconnaissance, screening, scouting, covering force, flank protection, exploitation, pursuit, delay manoeuvres, and withdrawal protection.” Candil, 41.

³⁶ The exact composition of the squadron and troops would have to be examined in detail through operational research and experimental exercises. The current proposed squadron structure is based on the author’s personal experience while commanding “A” Sqn (Armoured Cavalry) of the Lord Strathcona’s Horse (Royal Canadians) in 1998-99. He proposed this Armoured Cavalry Squadron concept and was

fight, its reconnaissance and surveillance capabilities would be significant with the Coyote, TRILS (see figure 7) and AERIES LAVs and Scout Troop.³⁷ These assets would provide the Squadron with significantly better situational awareness to that achievable by the battle group and light infantry battalion.³⁸ The Squadron's combat and supply vehicles would be based on variants of the LAV III (see figure 8), thereby contributing to the economy of effort in terms of maintenance and supply requirements.³⁹ More importantly, commonality of the vehicles ensures that operational and tactical mobility is equal throughout the Squadron contributing to its effectiveness and flexibility. The necessity of these types of mobility will be discussed later. Finally, the Administrative Troop would be of the appropriate size to sustain the Squadron and would be based on the LAV variants for maintenance and recovery vehicles, ambulances and most supply vehicles. In summary, the Armoured Cavalry Squadron would be completely based on LAV of which many variants are already in existence in the CF or are in the process of procurement. The Squadron is organized similarly, as a combined-arms team, to that of a US Armoured Cavalry Regiment or US Marine unit. Although the Armour Cavalry Squadron has the same capabilities as the aforementioned US units, the Squadron's overall



Figure 8 - LAV Variants

authorized to form it for Exercises PRAIRIE RAM and STALWART RAM 1999. "A" Sqn had Leopard tanks, instead of armoured combat vehicles (ACV), and had approximately 85% of the proposed Arm'd Cavalry Squadron combat structure. The Squadron consisted of approximately 400 personnel and 75 armoured fighting and light combat vehicles.

³⁷ Scout Troop provides close reconnaissance (operating in very close proximity of the enemy), whereas the Coyote Troops, TRILS, and AERIES detachments provide medium reconnaissance capabilities for the Squadron. The TRILS and AERIES are in detachments of two vehicles. The AERIES (Advanced Electronic Reconnaissance Intelligence Evaluation System) is used to intercept, identify, locate, and report on VHF/UHF radio signals in support of electronic warfare operations.

³⁸ Situation (tactical) awareness provided by reconnaissance and surveillance assets through the gathering of information, knowledge, and intelligence on the enemy and terrain significantly enhances a unit's ability to fight and move on the battlefield. Carlton, 51; Matsumura, 5.

³⁹ For example, economy of effort in terms of maintenance and supply is achieved through the commonality of vehicle parts and petroleum, oil and lubricant products required within the Squadron.

abilities are significantly reduced in scale.⁴⁰ Finally, this Squadron would be a very combat capable and ready rapid deployable force due to its compact and well balanced force. In comparison to a battle group, the Squadron would be more rapidly deployable and would have significantly increased combat power to that of the infantry battalion.

As a medium weight combat force, the Armoured Cavalry Squadron could be capable of operating throughout the full spectrum of conflict, although with limited capability to fight in high intensity conflicts (war fighting spectrum). As a result, the Squadron would be restricted to specific reconnaissance and security tasks within a high intensity conflict.⁴¹ Nonetheless, the Squadron could be interoperable and easily integrated into any of Canada's allied forces, specifically forces of the United States, during coalition operations.⁴² Furthermore, the Squadron would be organized so that it could operate on a non-linear battlefield, thereby well suited for operations other than war (OOTW)⁴³. As a robust self-contained combined-arms organization, the Armoured Cavalry Squadron would have the ability to sustain itself with integral logistic assets until a larger force could deploy, or conversely, it could conduct operations independently with minimal additional national logistic support. Thus, the Squadron could act as the vanguard to a larger CF force deployment or integrate into a multi-national force as the Canadian contribution. The Armoured Cavalry Squadron, organized as a combined-arms team, would be a credible, versatile, combat capable and interoperable force which would be compact enough to respond rapidly, yet heavy enough to handle a variety of

⁴⁰ Although aviation assets, such as attack helicopters, would be of significant benefit to the Squadron, they have not been considered, as it would be highly unlikely that Canada would procure such costly weapon systems. Integrating utility helicopters such as the CF Griffon would be an option, but this would require organizational restructure within the CF Air Force. For this reason, this option will not be discussed in this paper.

⁴¹ The Armd Cav Sqn would be limited to various security and exploitation tasks similar to US Cav and US Marine units, British formation reconnaissance, and Spanish Cav units. It should be noted that US Cav and US Marine units have greater offensive capability due to their size and combat forces. The Armd Cav Sqn is meant to be created and developed within current CF means. Furthermore, it is envisioned that the Armd Cav Sqn would be one of two Armd Cav Sqns within a Canadian Armoured Regiment. Morreau, 120-122.

⁴² "Canada's most important alliance/coalition partner has long been, and for the foreseeable future will remain, the United States. ... The CF must ensure that it possesses equipment –especially communication and other aspects of the digitized Army of the Future- that is compatible/interoperable with that of the US." Latham, 6 and 8; Within the military community, it is common knowledge that the Canadian Army has been adopting and aligning much of its doctrine with US doctrine since 1994.

⁴³ Peacekeeping and peacemaking operations fall within the Operations Other Than War spectrum.

missions.⁴⁴ In summary, the Squadron would be a well-balanced organization in terms of weapon systems and capabilities so that it may operate throughout the full spectrum of conflict, however, not without limitations.

Although the battle group and light infantry battalion can operate throughout the spectrum of conflict, neither organization has the level of firepower and compactness of the Armoured Cavalry Squadron's combat force. The Squadron achieves economy of force and easily exceeds the battle group's combat capabilities through its balance of weapon systems and force mixture. For example, the Assault Troops and Field Engineer Troop are trained in basic engineer skills and infantry tactics.⁴⁵ Thus, combining these troops provides the Squadron with the versatility of forming either a field engineer squadron or infantry company. Therefore, the Armoured Cavalry Squadron would have the ability to hold ground with its integral "infantry" or conduct mobility and counter-mobility tasks with its "engineers".⁴⁶ This ability is a force multiplier, which neither a battle group nor infantry battalion can achieve without engineer support augmentation.

Furthermore, in terms of combat force and capability, the Armoured Cavalry Squadron outmatches both the battle group and light infantry battalion in terms of firepower, tactical mobility, and survivability in both offensive and defensive operations. Specifically, the 105mm Armoured Combat Vehicle Troops and TOW Troop provide the direct fire support required to destroy enemy tanks and other armoured combat vehicles. Although, these troops could be integrated into the battle group, it would grow in size, requiring greater lift assets to deploy the force. On the other hand, the same integration into the light infantry battalion would require a transformation of the unit from motorized vehicles to LAV III. However, the limited number of LAV IIIs within the CF would

⁴⁴ Riggs, 26.

⁴⁵ Assault troops within Canadian Armoured Regiments are trained in basic infantry platoon tactics and as tank hunting teams. Furthermore, Assault troopers are taught basic engineer tasks such as mine laying and clearing, laying of explosive charges, and obstacle construction. The Canadian Field Engineers' secondary role is to act as infantry according to doctrine.

⁴⁶ Counter-mobility tasks are meant to deny the enemy the same mobility that friendly forces wish to achieve. These tasks (construction of obstacles such as minefields and roadblocks) cause the enemy to be delayed, blocked or turn their approach on the battlefield. Conversely, mobility tasks are meant to improve and maintain the tactical mobility of friendly forces through the removal of obstacles and construction or repair of roads and bridges. Overall, these tasks are critical to maintaining good tactical mobility.

make this transformation difficult. Moreover, light infantry battalions are still required within the CF to conduct dismounted operations in restrictive terrain.⁴⁷ Additionally, it should be noted that the Armoured Cavalry Squadron would have indirect fire support capability with the 120mm Mortar Troop which functions as the Squadron's integral artillery. The problems that would be caused by the integration of this Mortar Troop into the battle group or light infantry battalion are similar to that of the Armour Combat Vehicle and TOW Troop. In summary, the Armoured Cavalry Squadron's inherent versatility, force mixture and firepower would make it a highly potent and compact combined-arms force, ideally suited for rapid deployment, in comparison to the battle group and light infantry battalion. As a result, the Squadron's ability to operate throughout the full spectrum of conflict would be superior.

In addition to the Ready Rapid Deployable Force criteria of being a combat capable force in terms of firepower and survivability, operational and tactical mobility are critical traits for this type of organization.⁴⁸ The future battlespace will have a considerably expanded area of operation for a singular unit in comparison to what NATO expected its units to cover in Europe during the Cold War period. Greater distances will have to be patrolled by units, requiring high operational mobility including the ability to rapidly deploy throughout their areas of operation.⁴⁹ This will require the increased use of roads to ensure speed of deployment as seen in Bosnia and Kosovo. In addition, during peacekeeping operations, movement restrictions are enforced as tracked armoured combat vehicles can cause unnecessary damage and cross country travel tends to be very dangerous due to the mine threat. Heavy and light tracked armoured vehicles move slowly on roads and within urban areas. Furthermore, many heavy armoured vehicles exceed the road and bridge classifications. This would hinder operational mobility and speed of deployment in many areas of operation. A major factor that limits heavy forces' mobility, and is often overlooked, is the extensive logistic tail required to sustain these

⁴⁷ The need for light infantry battalions has most recently been emphasized with the participation of the Canadian light battalion group deployed in Afghanistan. The mountainous terrain is highly restrictive to armoured combat vehicle movement. Matsumura, 103-104.

⁴⁸ Riggs, 24.

⁴⁹ "Operational mobility is best described as the organization's ability to operate over extended distances in support of operational objectives." Riggs, 24.

forces during operations.⁵⁰ Forces based on wheeled armoured vehicles have a higher level of operational mobility as they are much more capable of rapidly deploying throughout an area of operation in response to sudden situational changes.⁵¹ As a result, more armies from around the world are procuring and deploying wheeled armoured combat vehicles for operations.⁵² Although, the Canadian battle group has good operational mobility, it lacks the capability of rapidly massing significant firepower in comparison to an Armoured Cavalry Squadron. If required to operate in an extended area of operation the light infantry battalion, with its slower and limited transport, would be a less desirable choice as the Canadian Ready Rapid Deployable Force.

Tactical mobility is often related to the ability of combat vehicles to manoeuvre on the battlefield while under enemy fire. This, however, is an incomplete view of tactical mobility, as the entire organization, including logistic vehicles, must be considered. If true tactical mobility is to be achieved, the logistic tail of an organization must have equal mobility to that of the combat vehicles.⁵³ Thus, to be effective, the Armoured Cavalry Squadron must maintain sustained tactical mobility so that it may seize and/or maintain the initiative over its enemy. Without the logistic echelon maintaining the appropriate distance to the manoeuvre forces, to ensure prompt replenishment and support, all tactical gains would be quickly lost at significant cost in terms of time and fuel. Consequently, the Squadron's Administrative Troop's organization should be based on LAV variants (see figure 8). The manoeuvre elements of a battle group are LAV based, but its logistic tail is burdened with slow moving trucks, reducing both operational and tactical mobility. Therefore, the importance of equal mobility capability between manoeuvre and logistic elements should not be underestimated and tactical mobility must be considered as an organizational whole.

⁵⁰ Riggs, 24-25.

⁵¹ "...the Centauro can negotiate road or motorway movements at higher speeds – over 100 kms per hour – exceeding considerably the timing and deployment abilities offered by the main battle tanks and other armored vehicles. In low intensity conflicts or in peacekeeping operation such capability would prove extremely useful when long distance movements are required." Candil, 42; Paul Hornback, "The Wheel Versus Track Dilemma", *Armor Magazine*, (March-April 1998), 33.

⁵² Riggs, 23-24; Candil, 41; Carlton, 1.

⁵³ Riggs, 25 and 28.

Finally, survivability is a function of tactical mobility, which is not solely enhanced or achieved through the actual mobility characteristics of a vehicle. The ability of a combat vehicle to manoeuvre across rough terrain is undoubtedly important; tracked vehicles possess greater mobility than wheeled vehicles. Therefore, if an organization requires wheeled vehicles to obtain the desired operational mobility for a combat force, other means must be available to enhance survivability for improved tactical mobility. The Armoured Cavalry Squadron's armoured fighting vehicles (AFVs) do not have the same survivability as a tank or other heavier armoured vehicles. Consequently, the Armoured Cavalry Squadron's combined-arms organization significantly enhances its ability to deal with a wide range of threats and obstacles that could potentially impede its tactical mobility. Indeed, the Squadron's various manoeuvre and combat support elements (Air Defence and Mortar Troop) must fight together as the synchronization and resulting synergistic effect of their weapon systems will appreciably enhance the overall survivability of the force. The Squadron fighting as a combined-armed force maximizes its overall firepower and lethality, which provides for its required force protection, subsequently enhancing the Squadron's tactical mobility.⁵⁴ In brief, a combined-arms team provides the necessary weapons systems and force capabilities to ensure the Armoured Cavalry Squadron's survivability on the battlefield (area of operation), therefore allowing the Squadron to maintain its tactical mobility and freedom of action while addressing potential threats. Conversely, a light infantry battalion, which is not a combined-arms team, has considerably less survivability and tactical mobility on the same battlefield.

It is important to revisit the issue of strategic mobility in order to address a specific overarching unit characteristic that makes a combat force or unit truly ready and rapidly deployable with the shortest possible notice. Strategic airlift and sealift assets undoubtedly contribute to the overall speed at which a combat force can be globally deployed. More importantly a "cohesive" unit has significant impact on unit readiness thereby truly affecting the CF's ability to respond and deploy rapidly to an area of crisis. Battle groups require a minimum of 90 days to train and prepare for deployments while a

⁵⁴ Carlton, 49 and 52; Riggs, 23-25.

light infantry battalions can deploy within 30 to 45 days. As stated earlier in this paper, the CF would be hard pressed to deploy either one of these forces within 21 days, notwithstanding the CF capability deficiency in strategic airlift and/or sealift. As the battle group is not a cohesive organization but a formation organized when ordered to, it does not have the inherent ability to deploy rapidly. Specifically, it requires considerable personnel and force augmentation, including training and integration time, before it can be declared operational ready for deployment. An Armoured Cavalry Squadron may require some deployment training, but in its proposed structure as a combined-arms force and completely staffed without peacetime restrictions, could deploy within 21 days. More importantly, the soldiers of the Armoured Cavalry Squadron would be trained to the same readiness level and continually train as a combined-arms unit; this is not true of a newly formed battle group. If it is to have the ability to deploy in a moments notice in response to a sudden crisis abroad, a Ready Rapid Deployable Force must always be fully staffed (as this ensures the highest possible readiness), be a cohesive unit (requiring no augmentation), and be a combined-arms force. To conclude, the characteristics of unit cohesion and integral possession of combined-arms capabilities wholly ensures its readiness and rapid deployability. Unquestionably with such a unit, the CF could respond immediately to sudden global crises, thereby placing the Canadian Government in the best possible position to meet its international security commitments to its coalition partners.

As a ready rapid deployable force (RRDF), a unit should be self-sustaining and possess integral logistic assets so that it could integrate its own support echelon with that of the lead nation.⁵⁵ Most of all, the RRDF should require minimal national support for at least 30 and optimally for 90 days. This does not mean that the RRDF must carry 30 to 90 days supplies but that it has the necessary capabilities to service its needs. Therefore, the administrative troop or echelon must be appropriately organized by function and size.⁵⁶ All three potential RRDF forces (battle group, light infantry battalion

⁵⁵ Lead nations are appointed for operations through political negotiations for all operations. The lead nation normally provides the basic logistic infrastructure within the area of operation. It also is responsible to negotiate host nation support, thereby establishing logistic support contracts with civilian and governmental organizations.

⁵⁶ Examples of administrative functions are maintenance, medical, supply and transportation.

and Armd Cav Sqn) have an administrative echelon, but the Armoured Cavalry Squadron has a significant advantage over the other two organizations. Its administrative echelon would be more robust catering to longer sustainment due to its composition.

The Armoured Cavalry Squadron administrative echelon is based on the Armoured Corps echelon system, which is considerably more flexible and capable. Specifically, the Armoured Cavalry Squadron has more maintenance, supply, and transportation capability. As a result, it can better integrate into the lead nation's support system with minimal additional support requirements from either national or lead nation assets. The light infantry battalion, due to the basic nature of its organization, does not have this same ability and will be much more dependent on national and lead nation support. Transportation capability within the light infantry battalion is extremely limited. As for the battle group, it is much more capable than the light infantry battalion, especially in terms of supply and transportation functions and assets. It could possibly be self-sustaining for 30 days, but beyond this point a strain would develop on its administrative echelon. A solution would be to increase its transportation and supply capability but this would increase its size and have an impact on its deployability.

Overall, unit self-sustainment for 30 to 90 days is highly desirable for two reasons. First, it provides the CF time to prepare follow-on forces all the while having a credible force deployed in the area of operation. Second, it provides the Canadian Government the time required to assess the situation and determine whether or not it wishes to deploy additional forces in support of the international crisis. Consequently, the capability of self-sustainment benefits all three levels of operation (tactical, operational and strategic); large dividends can be gained with minimal effort if the logistic support of the RRDF is appropriately considered.

In review of the issue presented in this paper, the Canadian Forces lacks the ability to deploy forces rapidly in response to sudden international crisis for two reasons. First, it lacks the appropriate strategic airlift and sealift assets. Second, it does not have a combat land force that is ready and rapidly deployable. As a result, the Canadian

Government's ability to contribute and support its international security commitments to its coalition partners has come into question on numerous occasions. The Canadian Forces requires a deployable unit, which has the combat force of a battle group, but the deployability of a light infantry battalion. Furthermore, the unit must have significant operational mobility as the future battlespace will have a notably extended area of operation, requiring forces to operate over great distances. The creation of an Armoured Cavalry Squadron can provide the Canadian Forces with a credible ready rapid deployable force so that it may fulfill its commitments as outlined in the 1994 Defence White Paper and subsequent defence documents. This paper has shown how the Armoured Cavalry Squadron can be organized and created using current, and soon to be purchased, armoured fighting and combat vehicles. The potential of this organization should not be overlooked, as further discussion and investigation regarding its viability would serve the Canadian Forces well in working towards solving the overall issue of rapid deployability.

In conclusion, to fulfill Canada's international security commitments, the Canadian Forces must have an expeditionary land force with elements that are ready and rapidly deployable that can respond quickly to sudden international conflicts that arise. Thus, the Canadian Forces must ensure that combat land forces earmarked for rapid response duty are truly ready, rapidly deployable, and equipped appropriately for such duties. Moreover, the strategic lift capability deficiency cannot be properly addressed without first identifying a Canadian Forces rapid reaction land force. The need for a ready rapid deployable force is quite evident with today's changing security environment as future conflicts will require quicker response times from a UN or NATO led force. Consequently, if Canada is to take part in the response, it must have combat capable and self-sustaining land forces that are rapidly deployable on very short notice.

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