

The e-Forces !
The Evolution of Battle-Groupings¹ in the Face of 21st Century Challenges

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Abstract:

Information age technologies have caused a revolution in military affairs (RMA); The claim is almost trite. One needs only to read the newspapers, listen to the radio, watch television, or travel to realize, however, that there has been no corresponding revolution in the human heart or in human affairs. Military and civilian strategists alike must attend to this paradox, for from it springs an important distinction: the difference between the conduct of war and the nature of war. The conduct and nature of war are different: the former is ever changing while the latter is not. Furthermore, the difference has important practical consequences². The key is to develop a way of fighting that is agile enough to adapt to adversaries and antagonists who will do everything in their power to neutralize our technological advantage³. In asymmetric warfare, we must try and stay out ahead of potential attackers⁴. Seizing the initiative will be critical and of strategic importance. The Canadian Forces' (CF) Vision 2020 states that: We will exploit leading-edge doctrine and technologies to accomplish our domestic and international roles in the battle space of the 21st Century and be recognized, both at home and abroad, as an innovative, relevant knowledge-based institution. Indeed, with transformational leadership and coherent management, we will build upon our proud heritage in the pursuit of clear strategic objectives⁵. In keeping with the stated vision of our Army as being knowledge-based, command-centric and soldier-focused, we intend to present herein an evolutionary vision of battle-groupings into expeditionary type task forces by 2020. Based on our soldiers, these evolutionary and expeditionary e-Forces would constitute our greatest weapon⁶.

¹ http://www.army.dnd.ca/LFWA_HQ/Active_Edge/Battle_Group_Organization.htm

² <http://www.ausa.org/PDFdocs/lpe02-3.pdf>

³ CLS, How the Canadian Army will fight, p. 5.

⁴ Horn B., Lcol, Special Operations Forces & Intelligence in Asymmetric Warfare, p. 26.

⁵ DND, Shaping the Future of the Canadian Forces: A Strategy for 2020, p. 7.

⁶ CLS, How the Canadian Army will Fight, p. i.

Scope

Information age technologies have caused a revolution in military affairs (RMA); The claim is almost trite. One needs only to read the newspapers, listen to the radio, watch television, or travel to realize, however, that there has been no corresponding revolution in the human heart or in human affairs. Military and civilian strategists alike must attend to this paradox, for from it springs an important distinction: the difference between the conduct of war and the nature of war. The conduct and nature of war are different: the former is ever changing while the latter is not. Furthermore, the difference has important practical consequences⁷. The key is to develop a way of fighting that is agile enough to adapt to adversaries and antagonists who will do everything in their power to neutralize our technological advantage⁸. In asymmetric warfare, we must try and stay out ahead of potential attackers⁹. Seizing the initiative will be critical and of strategic importance. The Canadian Forces' (CF) Vision 2020 states that: We will exploit leading-edge doctrine and technologies to accomplish our domestic and international roles in the battle space of the 21st Century and be recognized, both at home and abroad, as an innovative, relevant knowledge-based institution. Indeed, with transformational leadership and coherent management, we will build upon our proud heritage in the pursuit of clear strategic objectives¹⁰. In keeping with the stated vision of our Army as being knowledge-based, command-centric and soldier-focused, we intend to present herein an evolutionary vision of battle-groupings into expeditionary type task forces by 2020. Based on our soldiers, these evolutionary and expeditionary e-Forces would constitute our greatest weapon¹¹.

“Natural selection has been defined as a process that promotes the survival of species that are able to adapt to changes in their environment. While it is normally discussed in scientific circles, natural selection has its place in the military environment, as well¹²”.

Introduction & Scope

A RMA has purportedly been underway for a number of years in modern armies. This revolution is characterized partially by advances in modern technology, particularly in the field of information management and electronics. It is now possible to provide more information to commanders on friendly forces' dispositions and on most any other issue on which we care to collect information. In addition, it is possible to build precision weapons that can be directed to pinpoint targets from most weapons platforms, even cell phones. It has stimulated many of the Western armed forces to undertake transformation programs, which typically embody changes to technology, doctrine and the way armies, and individual forces approach war and military operations; Canada is no exception¹³.

⁷ <http://www.ausa.org/PDFdocs/lpe02-3.pdf>

⁸ CLS, How the Canadian Army will fight, p. 5.

⁹ Horn B., Lcol, Special Operations Forces & Intelligence in Asymmetric Warfare, p. 26.

¹⁰ DND, Shaping the Future of the Canadian Forces: A Strategy for 2020, p. 7.

¹¹ CLS, How the Canadian Army will Fight, p. i.

¹² Cotty W., Captain, Special Forces: Selecting & Training Officers for Adaptability, p. 6.

¹³ Fletcher, Col, Canadian Forces Transformation.

Our proud Army must embrace technological change, doctrinal innovation and organizational adaptation. Moreover, political and societal expectations, fed by an ever voracious media, demand quick, sterile operations that inflict the minimum number of friendly, civilian and even, enemy casualties. There is a growing expectation that military operations can be accomplished in short order, and with virtually zero tolerance for error¹⁴. We are also faced with a fundamental transformation in which the traditional boundaries associated with security and defence have blurred; In fact, in many ways they have now merged. The challenge for all of us is how to best position the CF to not only defend Canada and its interests, but also to safeguard the global security and prosperity of all Canadians in a time of unprecedented change¹⁵. Information systems and new business processes can help the Army according to Lt Gén John Riggs, Director of the US Army Objective Force Task Force¹⁶, but integration is key. In this very sense, how best can our Army integrate new information technology capabilities? How can we learn, apply and evolve from new e-business concepts and best practices to increase our Army's efficiency in operations? How should we structure, doctrine, train and equip our Army to face these challenges? Can we afford to plug & play in the RMA digitized battlefield, or can we afford not to?

Future Environment

"Today's world is without precedent," cautioned French military analyst Phillippe Delmas. "It is as different from the Cold War as it is from the Middle Ages so the past offers no basis for comparison¹⁷". Therefore, although it is impractical to paint a future scenario with any degree of precision, it is however possible to describe characteristics that are likely to shape the future battlefield and our ability to operate on it¹⁸. Namely, particular and complex operations such as those in urban terrain, and the premises of the three-block-wars, all portray a very daunting future environment as demonstrated by its study¹⁹. Asymmetry for example, is not designed at its core to win battlefield victory; Rather, its aim is to disrupt, distract, disconnect, or in short, to wear down a normally superior opponent²⁰. In a recent study on unrestricted warfare, two Chinese strategists have warned: "There is no means which cannot be used in war in the future and there is no territory or method which cannot be used in combination²¹". Such is the future security environment, in which our soldiers may very well be involved in combat operations, peace support operations and humanitarian operations, all simultaneously, and all taking place within three blocks²². To function in this daunting environment will require a reorientation of how we think and operate on the battlefield²³. As Sir Michael

¹⁴ CLS, How the Canadian Army will fight, page i.

¹⁵ CMS, The Canadian Navy: Vanguard of Canadian Foreign & Defence Policy, p. 12.

¹⁶ Riggs, Lt Gén, US Army Objective Force Task Force at <http://www4.janes.com/>

¹⁷ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 2.

¹⁸ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 2.

¹⁹ DLSC, Future Security Environment.

²⁰ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 2.

²¹ Qiao Liang and Wang Xiangsui, Unrestricted Warfare, p. 199.

²² CDI, Navigating the Three-Block War and the Urban Triad.

²³ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 15.

Howard stated in 1973; “It is flexibility in mind and organization that needs above all to be developed in peacetime”, adaptability which will provide advantage in wartime. Faced with the modern challenges of this future security environment, decentralized decision-making powers and enlightened lower-level leaders, capable of making reasoned, timely decisions under pressure, are what will determine success or failure²⁴, working with the principles of mission command and Auftragstaktik²⁵. By seeking to detect, disrupt and defeat any type of adversary, antagonist or enemy, on any ground or dimension of our choosing, we will seize the initiative, which has already become a major key to success. Only by leveraging new emerging technologies in every field, including information, will our Army be in a posture to provide the tools our soldiers require to do the best job. And in order to fully leverage new and emerging technologies, our Army must fully integrate. Therefore, the Army must be or become adaptable in contingency planning, considering the allocation of different force packages (or task forces) relevant to specific scenarios²⁶.

Task Forces

In some ways, allied efforts to promote joint doctrine are designed to match the capabilities of the CF’s integrated and unified system. Although we need to better integrate all services and arms into task forces, we already possess a structural advantage over our allies. However, our joint and interagency cultures must still evolve and we must see beyond our cap badges. As the Navy, the Army must stand ready to offer Canadians a wide range of options and task-tailored joint and integrated response packages for the protection of Canada and the global system upon which we depend²⁷. For the Forces to effectively defend Canada’s interests, combined doctrine is in fact more important than joint doctrine²⁸, combined being any military operation which involves the forces of more than one nation acting together to accomplish a single mission²⁹. The current CF Joint Operations doctrine focuses on the operational level of force employment. It is where emphasis is placed on the synergistic integration of CF commands and agencies so that their total effort can be concentrated decisively to achieve the commander's mission³⁰. To facilitate future task organization, the Army’s force structure should remain modular in design and include: Sub-units, as the basic, homogeneous and unbreakable module to execute specific ranges of tasks within a unit framework; Units, as the core integrator of sub-units, with its command & control (C2), and combat service supports (CSS) modules, capable of rapidly integrating new elements within the unit; and Formations, task-tailored and organized for specific missions, with a far broader range of capabilities than today’s formations, integration of all attached units and sub-units within C2 and CSS structures being critical³¹. Our Army must be structured for selected domestic and expeditionary missions and be capable of many tasks across the entire spectrum of conflict; To achieve

²⁴ Horn, Lcol, [Complexity Squared: Operating in the Future Battlespace](#), p. 9.

²⁵ Oliviero, Lcol, [Auftragstaktik and Disorder in Battle](#), p. 57.

²⁶ DLSC, [Future Army Capabilities](#), p. 43.

²⁷ CMS, [The Canadian Navy: Vanguard of Canadian Foreign & Defence Policy](#), p. 12.

²⁸ <http://wps.cfc.forces.gc.ca/papers/amsc1/001.html>

²⁹ B-GG-005-004/AF-000, [CF Operations](#), p. 8-1.

³⁰ B-GG-005-004/AF-000, [CF Operations](#), p. iii/iv.

³¹ DLSC, [Future Army Capabilities](#), p. 43.

this strategic relevance, it must be knowledge-based, sustainable and tactically decisive³². As such, organizing our forces for the different tasks at hand is probably the most suitable avenue considering the limited assets we dispose. Tactical decisiveness, as part of any joint team, will come from a flexible organizational structure that will enable forces to be tailored to the mission and will include components of all five operational functions. Our center of gravity will then become our virtual access to a multitude of weapons platforms, while mission command and manoeuvre warfare will remain the bedrocks around which these changes will take place³³. Various modular sub-units would then also become the basic construct of our future forces and would be specialized to accomplish specific tasks or functions within larger units or formations. For example, an ISTAR sqn would sense, e-Fantry coys, MGS sqns, All Fires btys would act, sustained by a NSE coy or ship and commanded by a joint, maybe interagency and possibly virtual “reach back” NCE or HQ, shielded by a NBC coy, UAV, Air and Helo flights. In retrospect, our current Regimental structure and system lends itself rather hardly to flexible task organizing and our culture is intimately tied with this traditional structure, based on the 1914-18 paradigms. Ninety years later, we need to rethink whether Regiments, as they are known today³⁴, are still viable; if their respected structure is not hindering our evolution by promoting old ways.

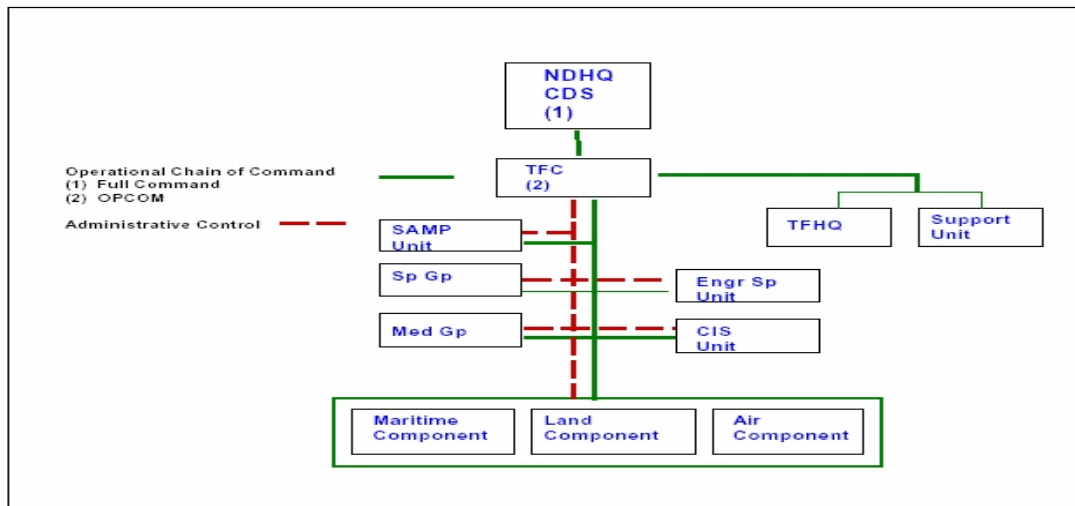


Figure 7-1 A Generic Task Force

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Integrated Culture

The introduction of new technological capabilities has always posed a challenge to existent doctrine and to the contemporary understanding of warfare. From a historical perspective, digitization provides us with an unprecedented opportunity to break down the stovepipe information structures that have characterized armies throughout the ages³⁶. Like the period that preceded and followed the turn of the 20th Century, we face today an era where technology developed for the civil sector is having considerable impact on military development. The implications for national defence and security are broad.

³² CLS, How the Canadian Army will fight, p. 3.

³³ CLS, How the Canadian Army will fight, p. 8.

³⁴ O’Leary, Capt The idea of the thing: The regimental system, p. 19.

³⁵ B-GG-005-004/AF-000, CF Operations, p. 7-1.

³⁶ Bowes, Lcol, The Advent of Digitization; A doctrinal Perspective, p. 28.

Paramount is the opportunity the information revolution offers for a high degree of integration among all agencies responsible for enhancing security internationally and nationally³⁷. The expanded, more lethal, technologically dependent battle space creates the final characteristic of the future realm of conflict: interdependent operations. At this time, the ability to conduct effective joint operations (those involving two or more armed services of a single country) has been the immediate goal. This entails the ability to plan and conduct Bluetooth³⁸ operations in a seamless manner, with integrated command structures, interoperable communications and information systems, along with common doctrine and procedures³⁹. Milnet for example, would-be a secure Intranet used for allied military/security strategic, operational & tactical purposes, which would allow layers of e-business type applications to run securely, providing military connectivity & global communications, enhancing coordination & collaboration and accelerating distribution of military and security information. Ultimately, faced with the future security environment and new interagency doctrine, our forces will need to integrate at a much lower level with agencies and allies. In this very sense, through the advancement of joint, interagency, multinational and knowledge-based concepts and doctrine, the CF will employ an agile, adaptable and modular force to conduct integrated operations across the spectrum of conflict⁴⁰. As such, the most likely threshold could very well be our organizational adaptability, our ability to integrate all our structures and cultures, both vertically and horizontally, along with technology. In other words, we need to become interoperable within, with our allies and agencies, not only systematically but also and foremost in the sense of adopting a corporate culture. Political acumen and a clear understanding of the national interest and policy will be key. Therefore, mastering the strategic art of war will require close, co-operative, interdepartmental relations, leaders, both military and civilian with vision, to see over and beyond bureaucratic barriers⁴¹. More to the point, the key to the success of digitization will not paradoxically be technology; It will be our willingness to evolve our doctrine in order to employ the technology to its maximum effectiveness⁴².

Evolved Doctrine

Few competent military or political decision-makers would argue that the status quo is acceptable. The vacuum created in the wake of the former Cold War has been filled with instability, conflict and seemingly continual change. The Canadian Army, like its allied counterparts throughout the world, must evolve if it is to remain a strategically relevant institution⁴³. Technology enables doctrine and structures, allowing the creation of new

³⁷ http://vcds.mil.ca/dgsp/pubs/rep-pub/analysis/tech/tech4_e.asp

³⁸ Bluetooth is an IT standard that allows high-speed radio-based communications among all sorts of wireless devices, which can then interoperate without direct user intervention; Bluetooth was also the nickname of Harald Blatand, a Viking and Danish king who united Denmark and Norway. One of his skills was to make people talk to each other. From: Laudons, *Management Information Systems*, 1st Canadian Edition, 2002, p 327.

³⁹ Joint Doctrine for the CF: Joint & Combined Operations, B-GG-005-004/AF-000, p. 4.

⁴⁰ DP&M, [Overarching Strategic Concepts](#).

⁴¹ DP&M, [Overarching Strategic Concepts](#).

⁴² Bowes, Lcol, *The Advent of Digitization: A doctrinal Perspective*, p. 28.

⁴³ Horn, Lcol, [Complexity Squared: Operating in the Future Battlespace](#), p. 2.

capabilities or the enhancement of old ones. Selective acquisition and adaptation of technology is fundamental to the creation of the Future Army, but it must be aligned to the requirements of the Future combined land forces and battle space⁴⁴. In almost every case, technologies are applied first in an attempt to improve the prevailing method of fighting. Then, once the full capabilities of new technologies are fully grasped, new methods of fighting emerge. Often these new methods then produce new organizations and training requirements as well as new demands on military leaders⁴⁵. Although this approach has long been characterized by the historical evolution in military affairs, analysis of the modern RMA⁴⁶ and of the Future Security Environment study⁴⁷, rather recognize that the Army must commit its resources toward revolutionary rather than evolutionary increases in capability. “Future war,” predicts the former US Marine Corps Commandant, General Charles Krulak, “is most likely not the son of Desert Storm (‘90); Rather it will be the stepchild of Somalia and Chechnya⁴⁸”. With open minds, we must begin to think of new operational concepts leading to an evolved doctrine. As such, the American approach towards pre-emptive operations⁴⁹, may well become an imperative. All dimensions must be considered; For example, pre-emptive humanitarian operations. Carl von Clausewitz stated that a nation’s ability to successfully wage war is dependent on the synergistic relationships among the populace, the military, and the government. In deed, the failures of the UN intervention or lack of in Rwanda, has prompted civil society debates about the right, the obligation or the will of our nations to even intervene in such circumstances, transcending today’s international conventions and legal framework⁵⁰. This increased political pressure will have direct impact on future operations, conducted unilaterally or not by our nation in the defence of its global national interests. In light of these upcoming strategic realities, the expeditionary option seems to be the most viable one presented to date, to better adapt our Army, both structurally and culturally, to face the challenges of the 21st Century. Our enemies should no longer count on our traditional reluctance to use force before being attacked; on our passivity in front of events on CNN.

Digital Manoeuvre

As has stated Michael Porter, Harvard University Business Professor: “The question is not whether to deploy technology, but how to deploy it⁵¹”. The concept of manoeuvre warfare is eminently suited to an army that is well trained, highly educated and willing to take risks⁵². Manoeuvre, tied to situational awareness and virtual access to lethal weapons effects, will become dominant; that is access through digitization. The size of forces will become less relevant, quality becoming a key factor over quantity. Elements of forces will disperse and join back together as the operational situation dictates. Their ability to

⁴⁴ DLSC, [Future Army Capabilities](#), p. 44.

⁴⁵ <http://www.ausa.org/PDFdocs/lpe02-3.pdf>

⁴⁶ Fletcher, Col, [Canadian Forces Transformation](#),

⁴⁷ DLSC, [Future Security Environment](#), p. 43.

⁴⁸ Robert Holzer, [Krulak Warns of Over-Reliance on Technology](#), p. 4.

⁴⁹ http://www.military.com/NewContent/0,13190,NI_Preemption_0103.00.html

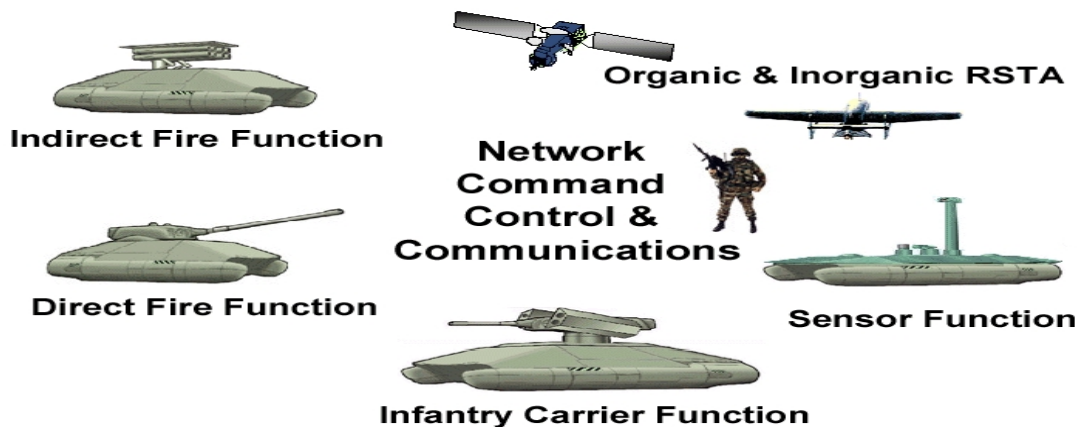
⁵⁰ [http://www.unsystem.org/ngls/documents/pdf/Report_global_governance_\(final\).pdf](http://www.unsystem.org/ngls/documents/pdf/Report_global_governance_(final).pdf)

⁵¹ Porter, Michael, [Strategy and the Internet](#), p. 64.

⁵² CLS, [How the Canadian Army will fight](#), p. 4.

call on precision weapons and provide accurate target designation at all times will be the critical key to operational and strategic success⁵³. Continual technological advancements will enable land forces to manoeuvre while acquiring and engaging targets more rapidly, at greater ranges, with more precise effects and greater lethality than ever before. The greatly improved ability to locate and identify targets, accurately assess their capabilities and engage them in a timely manner will enable the employment of much smaller, more agile, adaptable networked sub-units that can be dispersed over greater distances and still, have greatly reduced logistical support needs. This diffusion of force, protected through access to real-time information and precision weapons rather than on mass and firepower as in the past, will allow for simultaneous (asynchronous) operations throughout the whole battle space⁵⁴. There will obviously be an increased emphasis on information operations and small, agile, dispersed elements, much aware of the situation, operating in a non-linear environment, supported by instantaneously delivered precision-effects weaponry⁵⁵. Digitization, the application of information technology for the acquisition, processing and distribution of digital information to enhance situational awareness and operational effectiveness⁵⁶, will be key to our battle edge in this new and future security environment, while manoeuvre & mission command will be the bedrocks around these strategic change⁵⁷. IT infrastructure in the private sector already links many workstations, networks, servers, cell phones, personal devices, vehicles and even, numerous partners⁵⁸. Precisely because information has become key to multidimensional warfare, our Army should also leverage the underlying efficiencies that will inevitably be provided by IT. This can only be done once we have accepted and managed change in order to integrate.

Future Combat Systems Enabling the Objective Force



⁵³ Horn, Lcol, [Complexity Squared: Operating in the Future Battlespace](#), p. 10.

⁵⁴ Horn, Lcol, [Complexity Squared: Operating in the Future Battlespace](#), p. 9.

⁵⁵ Horn, Lcol, [Complexity Squared: Operating in the Future Battlespace](#), p. 15.

⁵⁶ CLS, [How the Canadian Army will fight](#), p. 9.

⁵⁷ CLS, [How the Canadian Army will fight](#), p. 8.

⁵⁸ Laudons, [Management Information Systems](#), p. 124.

Expeditionary Nature

With the publication of the London Declaration in July 1990, NATO initiated a process of transformation in response to important fundamental changes in the European security environment. Thus, a new Alliance strategic concept was developed, which takes a much broader approach to political stability and security to include the maintenance of smaller force structures at much lower readiness levels, featuring enhanced mobility, flexibility and multi nationality⁵⁹. The UN is also shifting to a broader Human Security paradigm⁶⁰. To a great extent, structure is not fixed but rather is shaped to a considerable degree by the choices we made. Since Canada's deployment to Bosnia in early 1992, our Army has constantly deployed Battalion Groups to almost every theatre of operations, with the notable exceptions of Timor, Eritrea and South-West Asia, where joint task forces were deployed, with Army components being either company groups or again battle groups⁶¹. In other circumstances, such as operations in Kosovo, Macedonia and Haïti, task-tailored forces were deployed, sometimes comprising as few as one, up to sub-units part of JTF-2. However, it appears quite obviously that there ought to be no more pre-determined force packages for pre-determined problems in pre-determined situations; Adaptability is key. Canadian Army vision 2020 recognizes two operational imperatives: The first imperative is that our Army, as an expeditionary force must be capable of rapid strategic deployment and must possess the combat capabilities necessary to be tactically decisive in either View 1 or View 2 operations. Second, underpinning the first operational imperative is our military ethos, the human qualities of professionalism, dedication and courage, which serve to define our Canadian Army⁶². Land forces must provide relevant and significant tactical capabilities including: enhanced manoeuvre forces with improved close range firepower (including beyond-line-of sight capability) integrated with advanced extended range firepower elements (which possess precision attack capability); comprehensive sensing and analysis capabilities; the ability to shield committed land forces from enemy threats; effective sustainment; and advanced command capabilities. In developing these tactical capabilities, our Army must recognize the need to have its expeditionary e-Forces capable of either independent operations within a joint national framework or effective integration within a coalition formation⁶³. Expeditionary forces must be able to achieve decisive tactical success in all operations. Therefore, they must be organized, resourced, equipped, doctined & trained to be strategically relevant, tactically decisive, deployable, agile, versatile, lethal, survivable and sustainable across the full spectrum of operations. These e-Forces will operate within the framework of a joint and combined force in which it will lead many joint tactical forces, often as part of a coalition force and, at all levels of command, operate with non-military partners and agencies. These e-Forces will comprise agile, modular organizations whose leaders are adaptive for prompt and sustained, joint, interdepartmental and multinational operations in complex environments⁶⁴. In creating expeditionary and evolutionary forces, it should be possible and preferable to blend a

⁵⁹ B-GG-005-004/AF-000, [CF Operations](#), p. 9-1.

⁶⁰ <http://www.humansecurity-chs.org/>

⁶¹ http://www.forces.gc.ca/site/operations/past_ops_f.asp

⁶² DLSC, [Future Army Capabilities](#), p. 41.

⁶³ DLSC, [Future Army Capabilities](#), p. 42.

⁶⁴ http://vcds.mil.ca/dgsp/pubs/rep-pub/dda/cfsoc/chp10_e.asp

number of approaches into our Army's e-Forces structure without exceeding the available resources. Theoretical doctrinal discussion, operational research and recent practical experience all push the need for a robust, flexible force structure. Technology is expected to soon provide massive improvements in current capabilities in order to make Canada's expeditionary forces easier to deploy and significantly more effective than they presently are. Therefore, we should maintain a broad range of operational and support sub-units, tailored as the situation dictates into task forces, a balanced Army being indeed more relevant⁶⁵. As such, a renewed operational culture and focus are necessary to develop an expeditionary modular type of structure most flexible to all contingencies, with an edge.

Information Edge

The visualization, high-performance computing and networking technologies initially developed for the simulation and training market are now being applied to C2 systems of systems, to help commanders make decisions faster⁶⁶. This new information technology, sensor capability and output, coupled with full-spectrum connectivity, will provide an abundance (perhaps even an overload) of information that will need to be filtered, fused, and processed in a timely manner. This may well become the most daunting challenge for commanders of the future: to cull the important bits of information from the massive waves of clutter that will continually flood them⁶⁷. A commander's awareness of the situation is achieved through the processing of data into information, information into knowledge and knowledge into understanding. Processing various data into information, includes filtering, fusing, formatting, organizing, collating, correlating, plotting, maybe translating, categorizing and arranging data in such a way as to give it meaning⁶⁸. One of the defining characteristics of many of the new concepts we are beginning to embrace is the use of information and knowledge to create situational awareness and understanding. This will be achieved by enhanced situational awareness made possible by global C2 and the emerging ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) capabilities⁶⁹. This in turn will allow for a far greater integration of combat systems and capabilities over much greater distances, creating unprecedented combat powers. The changing nature of the gathering, processing and employment of information in decision-making and execution of operations is perhaps the single most important advance to affect military operations in the near future⁷⁰. The concept of data/information being sent simultaneously to several level headquarters will have to be incorporated into procedures. This concept will streamline our information flow and will be consistent with increasing horizontal integration across the force⁷¹. The most significant impacts will come from advances in information systems and knowledge management. Maintaining currency with these advances will be quite a significant challenge, but such currency will be vital for interoperability with our allies. Developments in these areas will require new command

⁶⁵ Mader, Major, Shifting Paradigms: Thoughts on Army's Future Force Structure, p. 45.

⁶⁶ <http://www.nationaldefensemagazine.org/article.cfm?Id=978>

⁶⁷ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 13.

⁶⁸ CLS, How the Canadian Army will fight, p. 11.

⁶⁹ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 15.

⁷⁰ CLS, How the Canadian Army will fight, p.5.

⁷¹ CLS, How the Canadian Army will fight, p. 12.

and control paradigms based on a higher degree of delegation to seize the initiative, in a flatter command structure⁷². One important area that needs to be much more aggressively addressed, is creating the capability to rapidly move information about the battlefield situation, the status of stocks and supplies, and personnel for example, directly to the appropriate individuals and organizations in the Army, says Lt Gen John Riggs, Director of the US Army Objective Force Task Force. This involves the application of information technologies, but maybe more importantly, requires changes in processes for collecting and disseminating that information⁷³. Integration of information from new sensor systems and from all intelligence sources through knowledge management will provide an order of magnitude improvement in situational awareness and enhance the quality of decision-making. This will significantly enhance the precision of operations by facilitating the appropriate application of military force and expertise to the situation at hand, eventually taking into account a multitude of subjective political and diplomatic considerations⁷⁴.

Conclusion

In essence, the need will be for networked, adaptable, superbly trained and educated, highly mobile, well-equipped e-Forces, capable of rapid deployment on complex, joint, multi-dimensional independent, interagency and/or coalition operations. These e-Forces must be capable of conducting selected missions and many tasks across the spectrum of conflict⁷⁵. To this aim, capability and effects must be completely embedded into one command and culture. The continued existence of ponderous chains-of-command and unwieldy protocols & staff will be tantamount to failure. Equally, any inability to ensure connectivity and accurate situational awareness of all friendly forces will be so deadly⁷⁶. The gravest danger our Nation faces lies at the crossroads of radicalism and technology⁷⁷. New procurement and technology development initiatives are needed to ensure that fast moving technologies can be quickly developed to maintain the capability of in-service platforms and systems through tech-insertion, thereby guarding against obsolescence⁷⁸. And as it has already been recommended that the USMC Marine Expeditionary Unit model be introduced in the Canadian Army / CF to satisfy the requirements of a special operations capability for the 21st Century⁷⁹, we would argue in fact that our whole Forces need to adopt an expeditionary and evolutionary posture, structurally by shifting to task-tailored forces and culturally, by adopting a renewed operational focus, based on our ethos. In fact, as the Summary of Duty with Honor states, the overriding purpose of Canada's profession of arms is the conduct of military operations, and faced with the challenges of the 21st Century, we must integrate all stakeholders into these e-Forces. Canada's Army in the 21st Century will continue to depend on soldiers and leaders with the military ethos, values and skills to prevail in the ambiguous and violent situations

⁷² http://vcds.mil.ca/dgsp/pubs/rep-pub/analysis/tech/tech9_e.asp

⁷³ Riggs, John, Lt Gén, US Army Objective Force Task Force at <http://www4.janes.com/>

⁷⁴ http://vcds.mil.ca/dgsp/pubs/rep-pub/analysis/tech/tech9_e.asp

⁷⁵ CLS, How the Canadian Army will fight, p. 2.

⁷⁶ Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 13.

⁷⁷ <http://www.globalsecurity.org/military/library/policy/national/nss-020920.pdf>

⁷⁸ http://vcds.mil.ca/dgsp/pubs/rep-pub/analysis/tech/tech6_e.asp

⁷⁹ Lizotte, G., Major, A special Operations capability for Canada, p. 34.

they will face. Fortunately, the strength of Canada's Army has always been and remains well-trained, well-educated, highly professional soldiers and leaders, organized in cohesive and robust fighting teams⁸⁰. We owe them the proper structure and culture. Therefore, the Army must consider the future security environment and the nature of conflict in 2020 in order to select and integrate new capabilities within new doctrine and new structure⁸¹. We may be fooled by changes in the conduct of war, such as the ongoing RMA and the information revolution, but in essence, the nature of war remains brutal, the violent prolongation of politics, the fog and the friction it is known by, according to Clausewitz. In conclusion, what will be needed are adaptable, highly trained and highly educated, highly mobile, well-equipped e-Forces packages, capable of rapid deployment on complex multi-dimensional joint and coalition operations, able to conduct tasks and missions across the entire spectrum of conflict⁸². In this sense, the most suitable avenue for our Canadian Forces lies in its evolution into expeditionary "e-Forces" and its parallel adaptation structurally and culturally, to face the tremendous challenges of 21st Century.

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⁸⁰ CLS, How the Canadian Army will fight, p. 6.

⁸¹ DLSC, Future Army Capabilities, p. 45.

⁸² Horn, Lcol, Complexity Squared: Operating in the Future Battlespace, p. 15.

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