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SITREP

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GENERAL DYNAMICS

Nuclear capacity in the Pacific Ocean: USS Maryland (SSBN-738) Ohio Class Fleet Ballistic Missile Submarine

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From the Editor's Desk

Since our last issue three separate but interrelated events took place that impact on the nation's understanding of the Afghanistan mission: the Commons 10 April "Take Note Debate", the May 17 vote to extend the mission by two years and a poll that measured a decline in support for the mission.

Although a "Take Note Debate" occurred (only one-third of the Members attended), the May 17 full parliamentary debate and vote, holding our Parliamentarians accountable, was necessary to enlighten Canadians and garner their support for the mission. History confirms that operations do not succeed over time unless three conditions are met and sustained. Firstly, that there is a capable military - our military is struggling to maintain a basic capability but sustainment over ten years is suspect unless considerable funding, recruitment and, equally as important, time for training and building the force is forthcoming. Secondly, that the government fully supports and resources the military to ensure success and minimum loss of life. And thirdly, that Canadians fully support its military in this activity. The absence of any one of these conditions will bring the success of this mission to question.

The first reports of fluctuations in the polls of the popularity of the war in Afghanistan should remind us that war has never stood high in the polls at any time in any democracy. Unpredictability, injury and death are the hallmarks of war, and to imagine that any such activity could ever command even relative popularity in the polls is beyond rational imagination. Forgotten is the fact that the great wars in which Canada engaged in the 20th century were unpopular but necessary.

Themes of man versus technology, US nuclear counter-force capability improvements and the attendant impact on regional destabilization and how to imbue a sense of civic responsibility in Canada's youth are explored in this issue.

David McDonough continues to make an outstanding contribution to the Institute from his well-deserved appointment at the IISS and doctoral candidate at King's College, London. His article examines US modernization of its legacy nuclear systems and the impact of upgrading sea-based nuclear weapons and how their deployment to the Pacific maritime region may have a destabilizing effect.

LCol Steve McCluskey and LCol (Ret'd) Chuck Oliviero argue the immutable and timeless primacy of the soldier over weapons systems and technology especially in light of the present nature of conflict faced by our soldiers in Afghanistan.

A frequent contributor, Sunil Ram, provides an excellent primer on Information Warfare which reveals that as a concept, it "is not new for it is ancient as the origins of human communication." The pervasive nature of communication has made Information Warfare an option for individuals, states, industry and religious fundamentalist insurgents.

And our own George Fells builds upon a theme from our previous issue - that of the need to instill in young Canadians the notion of civic responsibility and obligation to make a contribution to Canada through a program of public service.

We hope that you, our readers, find these articles both interesting and informative. Sincerely,



Chris Corrigan
Colonel (Ret'd)
Editor of SITREP



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THE US NUCLEAR SHIFT TO THE PACIFIC: IMPLICATIONS FOR 'STRATEGIC STABILITY'

by *David S. McDonough*

Significant international attention has focused on US plans to develop earth-penetrating nuclear 'bunker busters', designed to destroy the hard and deeply buried targets (HDBT) capable of protecting an adversary's 'strategic' assets. Such specialized counter-force weapons would indicate a move towards nuclear 'conventionalization', in so far as any such capability would maximize the military utility of using these weapons for counter-proliferation missions. Tactical military utility and usability, rather than the traditional desire to buttress strategic deterrent capabilities, are at the centre of the controversy surrounding these developments.

It is, however, unfortunate that less attention has been paid to other nuclear weapon developments that will come to fruition far sooner than any next-generation earth-penetrating bunker-buster. The US is currently modernizing its nuclear 'legacy systems', which will extend the service life and qualitatively enhance the counter-force capabilities of these weapon platforms. Among the most important of these strategic force modernizations are the upgrades to the American sea-based nuclear weapon capabilities and their gradual deployment shift to the Pacific. This little noticed development represents an important and destabilizing shift in the strategic nuclear environment of this maritime region.

Evolution of US Sea-based Nuclear Capabilities

The American sea-based leg of its nuclear Triad has undergone some dramatic changes since the Navy pushed for its development in the 1950s. Originally, the main attraction of a sea-launched ballistic missile (SLBM) system was its survivability. The oceanic environment made any kind of detection of submarines exceedingly difficult, and the significant ocean presence of US naval forces gave its SLBMs a very large deployment area (and thereby lessened the need to keep the submarines in vulnerable stationary ports).

While advantages in mobility and stealth made them ideal retaliatory weapons, older American SLBM systems suffered some serious disadvantages for US nuclear war planners fixated on obtaining ever more accurate counter-force capabilities. SLBMs may have been survivable, but they lacked the accuracy, sufficient yield or sufficiently robust command, control and communications (C3) arrangements to be useful for either prompt hard-target kill missions against Soviet inter-continental ballistic mis-

siles (ICBMs) or the counter-leadership or counter-C3 targeting, which were popular during the Reagan Administration.

This would, however, change quite dramatically in the beginning of the 1990s, with the successful deployment of the Trident II D-5 SLBM. This strategic weapon system, which is now the mainstay of the American Trident II ballistic missile submarine (SSBN) fleet, was initiated under the Reagan Administration as part of its nuclear 'war-fighting' posture. The need to balance the increasing Soviet counter-force capability, and to fight and prevail in a 'protracted' nuclear war in the event of deterrence failure, meant a renewed interest in both the accuracy and the hard-target kill capability of its nuclear arsenal, both land- and sea-based. This led to the development of both the controversial MX Peacekeeper ICBM and, when it was first deployed in 1990, the Trident II D-5 SLBM, both of which heralded a dramatic improvement in American nuclear counter-force capability.

The D-5 missile would be among the most accurate in the US arsenal, with some estimates giving it a CEP (circular error probable) of 0.07 nautical miles, and therefore effectively equal to the MX Peacekeeper. It would combine this accuracy with the capability to utilize the W88 warhead, which at 475 kilotons offers both the largest yield of any US ballistic missile warhead and a very impressive hard-target kill capability against even very hardened targets (e.g. Soviet ICBM silos or command-and-control facilities).¹ These weapons provided not only a highly survivable nuclear force, but also the perfect pre-emptive, first-strike weapon – the capability to undertake a surprise attack, and be forward-deployed very close to an adversary, with the attendant decrease in any kind of warning time, makes them very threatening weapons indeed.

Problems with basing arrangements eventually led to the curtailment of the MX missile program. And at first, there were fears that the deployment of the D-5 would signify the acceleration of the growing maritime rivalry between both superpowers, which had been marked in the 1980s with the Soviet development of sea-launched cruise missiles (SLCMs) and quieter submarines, and the Reagan Administration's aggressive forward anti-submarine warfare (ASW) operations against the Soviet Union. However, these fears were quickly abated as the Soviet Union fell into the 'ashcan of history', and the D-5 missile would remain a significant, but little noticed and largely uncontroversial, deployment scheme in the post-Cold War period.

Current American Strategic Force Modernization

After a decade of neglect, issues of nuclear policy and targeting have once again become issues of strategic concern. This has largely been triggered by the Bush Administration's 2002 Nuclear Posture Review (NPR), and the alarm that greeted the

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document's advocacy of new nuclear and conventional capabilities, renewed rogue state targeting and the incorporation of active defence and a responsive nuclear infrastructure as integral legs (alongside 'offensive strike systems') of the 'New Triad'.

But while weapon laboratories at Los Alamos only begin to undertake 'advanced concept initiatives' to explore new warhead designs, the United States has been quietly modernizing and making significant improvements to its existing strategic arsenal of nuclear weapons. It is true that this force will be reduced in number, under the Moscow Treaty's limit of 1,700-2,200 operationally deployed warheads. But *qualitative* improvements to this arsenal, rather than a quantitative expansion, promises to give US strategic forces an even more lethal counter-force capability. In fact, American strategic force modernization plans may be even more destabilizing than the more 'novel' and 'exotic' long-term nuclear weapon developments (e.g. earth penetration or agent defeat) envisioned in the 2002 NPR.

Despite the dismantlement of the MX ICBM, American counter-force capabilities for its land-based nuclear arsenal remain robust, and will continue to expand in the years ahead. The majority of the 500 Minuteman III missiles have the W78 warhead, which with its increased accuracy (CEP of 750 feet) and large yield (up to 350 kilotons) was designed to give this force greater hard-target kill capabilities to compliment the MX missile. Under a \$6-7 billion programme, the accuracy of these missiles is being further improved with Global Positioning Satellite (GPS) guidance systems. The high yield W88 warhead for the MX missile warhead, which can be modified for up to 475 kilotons, will also be used as a replacement for the remaining low-yield Minuteman III's W62 warheads – it has been estimated that 200 of these warheads will soon be complimenting the W78. The MX missile may indeed be gone, but the accuracy and the high yields that made these deployments so controversial, and so ideal for first-strike counter-force attacks, will soon be effectively replicated for the entire Minuteman III force.

Of even greater potential significant is the continuing modernization of the American sea-based nuclear capabilities. The SLBM D-5 missile is perhaps the most impressive hard-target kill weapon of the entire US strategic arsenal, and indeed its entire fleet of 14 *Ohio*-class SSBNs is now armed with this missile (the less capable C-4 missile having been decommissioned by 2005). Like its land-based cousins, this force is also undergoing a number of significant improvements in its accuracy and capabilities. The Mk-6 guidance system for the missile is currently being upgraded, and the Navy has displayed a strong interest in increasing the missile's accuracy by making them GPS capable. This

would entail not only extending the service life of its SLBM force, but further increasing what is perhaps the most accurate ballistic missile force in the entire US arsenal.

The increase in accuracy is also critical for improving the hard-target kill capabilities of the lower-yield warheads that many of these missiles carry. While capable of holding the high-yield W88 warhead, the American SLBM force currently consists of only 400 of these

warheads, with the remaining 1,600 warheads consisting of the much lower-yield W-76. Any improvement in missile accuracy would, by concentrating the explosive effect more accurately on the given target, increase the utility of using lower-yield weapons to destroy hardened targets. This would also be complimented with a modernization programme that aims to give the W-76 warhead ground-burst capabilities.

The US Navy also appears to have an interest in testing these weapons with a depressed trajectory, where the missile's apogee is lowered in order to give it increased speed. In March of 2005, a Trident II D-5 missile was tested off the coast of Florida, and would feature the shortest, quickest trajectory (at 2,200 kilometres in twelve to thirteen minutes) that an SLBM had ever been successfully tested. Interestingly, the missile in this test would feature a flap system that would give some manoeuvrability to the missile.² This *de facto* manoeuvrable re-entry vehicle (MARV) is especially noteworthy in that it was featured as part of a depressed trajectory test. One of the problems of a depressed trajectory is the harsh atmospheric conditions, which reduces the accuracy of warhead re-entry.³ However, a MARV warhead would make it possible to shift the re-entry into a more

standard configuration, and therefore lessen the depressed trajectory's trade-off in accuracy.

Qualitative improvements in the already highly lethal SLBM force have been complimented with a shift in their deployment patterns under the Bush Administration. Five SSBNs have been redeployed to the Pacific since 2002, the most recent one being redeployed in late 2005. While five SSBNs are deployed on the Atlantic, there are currently nine SSBNs at the Naval Submarine Base Bangor in the Pacific. The retirement of the C-4 missile, and its replacement by the D-5 for the entire SSBN fleet, has also had a remarkable impact on the Pacific strategic force capability – the C-4 missile, which lacked the D-5's accuracy and yield, had previously armed the SSBNs stationed in the Pacific. As a consequence, nearly 65 per cent of the United States' arsenal of SLBMs – which have become both more accurate and with increased hard-target kill lethality – are now located in the Pacific maritime region.



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THE HEART OF MAN

by *LCol S. D. McCluskey and LCol (Ret'd) C.S. Oliviero*

The art of war is subjected to many modifications by industrial and scientific progress. But one thing does not change the heart of man.¹

—Col Charles Ardant du Picq

Transformation proceeds apace. Effects Based Operations, Network Enabled Operations, Three Block War, the Future Security Environment, the Contemporary Operating Environment and Fourth Generation Warfare as well as a myriad of political, moral, technological and financial constraints, restraints and limitations influence the efforts of the Canadian Forces (CF). Transformation is not new. Humankind has demonstrated an uncanny ability to adapt and overcome. Historically, transformation has been either evolutionary or revolutionary in one of three distinct areas: organizational (phalanx, *levée en masse*, the regimental system), doctrinal (*Blitzkrieg*, Maneuver Warfare, Maoist-type insurgency) and technological (rifled barrels, smokeless powder, information technologies).

When transformation is applied to the art and science of war, innovation and invention strive to provide the originator with some qualitative, quantitative, procedural or positional advantage over the enemy. This is an asymmetric advantage. Students of military history, however, recognize that an apparent asymmetric advantage is often chimerical. Who can count the battles where a numerically weaker force has defeated a numerically superior force? How many Maginot Lines does it take for the concept to become a commonly accepted metaphor for the stupidity of perceived invincibility? The ability to see clearly enough to succeed in future conflicts is the holy grail of military thinkers and a prime motivator for military transformation. If one accepts du Picq's assertion that the heart of man remains constant throughout military transformation, then the CF must ask itself: "What we are doing to fortify the heart of the soldier that we expect to face the horrors of future conflict?"

The draft CF transformation mission statement is: "To rapidly design and implement a more effective, relevant and responsive CF in order to achieve the vision established in the Defence Policy Statement (DPS) 2005."² The operative words in this mis-

sion statement are "effective, relevant and responsive." Here is the first dilemma. The mission statement cannot be understood without reference to another document. This is inherently misguided; mission statements must stand alone.

DPS 2005 identifies the three main thrusts of CF transformation as "technologies and equipment," "structures," and "concepts and doctrine."³ This is the second dilemma. There is no mention of soldiers. It is the soldier that the CF will give new equipment; it is he soldier that will be organized into strategically relevant structures; it is the soldier who will need to be infused with new concepts and doctrine. The soldier is not simply a commodity that needs to be accessorized for whatever nasty little place that is the current political flavour of the month. This begs the question of whether the CF is preparing the "heart" of the Canadian soldier and how CF transformation efforts are preparing, or not preparing, soldiers for the future.

On August 15th, 1870, near Metz, the shrapnel from a Prussian artillery shell mortally struck Colonel Ardant du Picq, Commander of the 10th Regiment. Before he died, he entrusted his papers to a confidante. These papers, later published as *Battle Studies*, were remarkable. One must keep in mind that Colonel du Picq was living and soldiering during the time that the fruits of the industrial revolution were revolutionizing warfare: smokeless powder, rifled weapons, breech loading, magazine fed weapons, the telegraph and railroads were all being introduced into warfare. Europe was embroiled in conflict; the Americans were still suffering from their post-Civil War hangover and presumably the future, in terms of violence and bloodshed looked to hold more of the same. So what was remarkable about du Picq's papers? First, it is difficult to imagine the mental fortitude and effort required of a 'muddy boots' commander, in time of war, to conduct research into ancient and modern battles in order to understand the nature of contemporary and future conflict. Second and perhaps most remarkable was that during a time when technology was revolutionizing warfare, du Picq concluded that the seeds of military success or failure lay not solely in technological innovation or invention but in the human heart.

Not long after du Picq, the Polish banker and railroad financier Jan Bloch provided a different perspective on the same technological changes that were revolutionizing warfare. Examining the lethality of modern weapons, Bloch predicted that war between European powers was no longer possible. He hypothesized that the lethality and ranges of weapons, employed by troops that could produce greater volumes of fire from prone or concealed positions (thanks to magazine fed, breach loading, rifles using smokeless powder) made offensive operations futile. Through his published works, he attempted to convince nations that future war would result in a stalemate, with neither side able to gain a decisive advantage. This stalemate, if let go on for long enough, would be so wasteful of human life and national resources that

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the participants would beggar their nations with little or nothing to show for their efforts.⁴ According to Bloch, warfare as an extension of national policy was an obsolete concept. In many ways Bloch was right. Based upon his observations from the Franco-Prussian War, the same one that killed du Picq, he fairly accurately foretold the failure of the offensive that characterized the First World War up until 1918. Where he was wrong, however, was in his underestimation of the indomitable human spirit that has allowed humanity to consistently overcome barriers to the killing of its own kind.

What one can conclude from the works of these two military thinkers is that the soldier and not just the weapon is key. This thinking, imperfect soldier, with all his inherent strengths and weaknesses is the decisive factor in battle. This conclusion should be self evident to anyone who has ever worn a military uniform. But perhaps it is not. If it were self-evident then how could the soldier have been omitted from the key components of transformation? How much of the current transformation effort has been aimed at fortifying the heart of the soldier that Canada will ask to step into harms way?

Recognizing the importance of providing the soldier with the equipment and doctrine to allow him to succeed in contemporary and future conflict is but one aspect of preparing or generating the force. A significant part of the CF transformation effort has been aimed at re-equipping the current force with the platforms, weapons and tactical level doctrine that will permit it to execute network enabled, knowledge based, command centric, soldier focussed, simultaneous full spectrum operations in a non-linear and non-contiguous environment against the “snakes”⁵ that it will find in failed and failing states. All of these concepts have merit but it needs to be reiterated that the key to making all of these concepts work is the soldier! This being said, what is the CF doing to emotionally and psychologically prepare the soldier?

Colonel du Picq, through research and personal observation, recognized that in battle soldiers face danger. The consequence of danger is fear. What allows a soldier to continue to act in the face of fear is morale. He wrote, “success in battle is a matter of morale.”⁶ Du Picq was a practical soldier. He refused to accept the romantic notions of heroism and courage but sought instead an understanding of how soldiers react in real, not romanticised, combat. He surmised that, “Man is capable of standing before only a certain amount of terror; beyond that he flees from battle.”⁷

The martial spirit and pride may seduce one to reject the concept that any but a coward would flee in the face of the enemy but du Picq chose to observe man as he was rather than how we would want him to be. He sought to answer the questions: “Why

do men fight?” and “Why do they flee?” He found that the answers were threefold: leadership, discipline and cohesion. On cohesion du Picq stated: “A wise organisation insures that the personnel of combat groups changes as little as possible, so that comrades in peace time manoeuvres, shall be comrades in war.”⁸ That cohesion is enhanced by organisational stability and undermined by instability. He made this assertion based on his understanding of why soldiers fight. They fight neither for ‘Queen and Country’ nor out of loyalty to some far removed general. They fight for their group, for their comrades, for the peers with whom they most readily identify, for those people who have shared the same deprivations and fear that they suffered, for those whom they would be ashamed to have bear witness to their cowardice or their fear. In the crucible of combat, cohesion is fostered at the lowest tactical levels.



**Col Charles Jean Jacques Joseph
Ardant du Picq**

Well-trained soldiers do not allow fear to stop them. Why is this? Why not succumb to fear and flee? Because in our training the basic notions of loyalty and respect have been reinforced. Our soldiers have been prepared to look inside themselves and know that they cannot, would not, let down the members of their tank crew, that they would rather die than disappoint the members of their platoon or their company. And they have come to know, through training, that the men and women they have come to know and respect over the months of preparation that lead up to that sudden terrifying instant feel likewise about them.

Ardant du Picq observed that there was a proximity factor at play in battle. Easier for a man to slink away in fear if he believed himself to be unobserved than if his comrades were witness his actions. The tactical formations of the Franco-Prussian war had changed radically from those of the previous two centuries. The close order formations of soldiers, all within the field of view of the commander, had given way to a more widely dispersed battlefield where soldiers were often not visible to one another. It was due to this dispersion that du Picq admonished that “unity should be strengthened”⁹ Let us summarise du Picq. Soldiers are influenced by fear; cohesion and unity is necessary to overcome fear; and the more widely dispersed the troops are, the more prone they are to fear thus more in need of cohesion.

Du Picq was not alone in his observations. Dr. James Schneider, Professor of Military Theory at the US School of Advance Military Studies wrote an article titled “The Theory of the Empty Battlefield.” This article, while ostensibly a study of the paradox of why, with the increasing lethality of weapons, there has been a relative decline in the number of casualties, looks at the effect on the morale of soldiers in battle. On the empty battlefield the enemy is not readily visible. Fear is heightened due to a soldier’s

feelings of isolation and danger. Schneider states, “In isolation and desolation, the soldier faces the yawning abyss of the empty battlefield; threatening to engulf him in the black jaws of moral destruction.”¹⁰ Schneider clearly recognized the relationship between the unseen enemy and fear in the heart of the soldier. He also observed the relationship between technological advancement and dispersion on the battlefield. Like Bloch, Schneider attributed the widely dispersed battlefield to smokeless powder, breach loading weapons which made it possible to fire from prone concealed positions, rifled weapons which had greater accuracy at much longer ranges than smoothbore weapons and magazines which vastly increased the rate of fire. He observed: “Not only does the soldier have to contend with the increase in weapon lethality, but he must contend with an invisible enemy without the moral support of his equally visible comrades. He feels terribly alone. Not only is the battlefield empty, it is psychologically desolate and forlorn.”¹¹ Schneider quotes the French General Negrier, who observed the Boer War: “the invisibility of the enemy directly affects the morale of the soldier, the sources of his energy and his courage. The soldier, who cannot see his enemy, is inclined to see him everywhere. It is but a step from this impression to hesitancy and then to fear.”¹² Schneider’s conclusions echo du Picq: “Apart from the purely tactical aspects of the empty battlefield, one must especially consider the psychological implications.”¹³

How is conflict today and in the future different than in 1870? More importantly, how is the CF to guide its military transformation? In general terms du Picq, Bloch, Negrier, and Schneider’s observations were based upon the paradigm of war where nation states fought each other. Attrition and manoeuvre were the preferred methods of bringing an opponent to his culmination. Geographic distribution of forces was often linear and contiguous with defined battle areas and rear areas.

Whether one looks at the Franco-Prussian War, the Boer War, the two World Wars, or 1973 Arab Israeli War, there was plenty of fear to go around. Was that fear experienced by the combatants of previous wars greater or lesser than the fear experienced by soldiers in Iraq today? Does the CF assume bravery from our soldiers in future conflict simply because of the example set by our veterans? Schneider made a strong argument that technological advancement in weaponry leads to the inevitable dispersal and concealment of combatants. This is clear for conventional battlefields but what does this tell us of a combat environment where the enemy is hidden in plain view? How much fear does a soldier experience when the enemy could be any one of the thousands of people that he operates amidst on a daily basis? What if the enemy could be a member of your own unit who is just waiting for the right moment to express his sympathies by rolling a grenade under your bunk while you are asleep? How much fear does the soldier feel every time he rolls past hundreds of parked cars, buildings and rubbish heaps, never certain that they won’t blow up in his face? What demands do distributed, non-linear, non-contiguous operations, in urban areas, against insurgents using terrorist tactics, place on the heart of the sol-

dier? In other words, how much courage does it take to fight fourth generation warfare?

Today Canadians citizens and the Canadian media are taking a ‘crash’ course on the changing nature of warfare that has shifted from the long-held and politically expedient ‘pleasing’ paradigm of UN classical peacekeeping to offensive counter-insurgency operations that highlight the *raison d’être* of a nation’s military – to defend the interests of the state by prosecuting violence in extremis.

War is about killing. Soldiers are trained to kill and expected to overcome the fear of being killed so that they will be doing the killing rather than the dying. Is overcoming fear what we call courage? Where does courage come from? Is it some innate quality that each individual possesses or lacks or is it something that we can influence through transformation? The Medak Pocket, JTF 2 and Op APOLLO, and now our expanded role in Afghanistan has presented and will continue to present the Canadian Army with experience in combat and suppressing the fear of death. Therefore the CF must accept the need to train soldiers not to take counsel of their fears.

If one accepts that there is a direct relationship between cohesion, morale and the ability to overcome fear of death in order to take action in combat and if one ascribes to the assertion that cohesion can be enhanced or undermined by unit stability or instability, then what has the CF been doing to enhance cohesion at the tactical level with its current transformation efforts?

Organizationally the CF has made significant investments in managed readiness, Army Support Review, Canada Command, Reserve Restructure, modular scalable force employment groupings and specific capabilities such as Special Forces, Standing Contingency Task Force, HUMINT, CIMIC and PSYOPS. Efforts aimed at equipping the force seem to be the most costly aspect of transformation: new helicopters, new ships, Mobile Gun Systems, Multi-Mission Effects Vehicles, Unmanned Aerial Vehicles, Light Patrol Vehicles, Close Area Suppression Weapons, and a myriad of command support information management and communication support technologies. These lists are by no means comprehensive and they clearly demonstrate that for a relatively small force with limited resources the CF is developing doctrine and is modernizing.

New equipment and new doctrine are both essential and welcome. But there is a key aspect that is missing. What is being done to prepare the heart of the soldier that will be sent into harms way on the chaotic and uncertain battlefield that seems to have superseded the ‘empty battlefield?’ Given good leadership, training and discipline, does the CF expect that new equipments and doctrinal concepts by themselves will be sufficient to ensure success in battle? How is the CF building the cohesion, camaraderie, morale and the loyalty to his peers that the soldier will need to act courageously in the face of fear?

The CF has a Managed Readiness model that is designed to ensure that its limited resources are applied to preparing units for deployment on short notice. With this model it builds cohesion for a short period before a unit goes into high readiness but then



that cohesion is squandered when the unit goes into the support and reconstitution phase. From a business model perspective, managed readiness and other programs ensure the efficient management of limited resources. But from a military perspective this model neglects that the first priority of efficient management is the development of soldiers that are combat effective. To be combat effective soldiers must have cohesion. Cohesion is developed through shared experience and the fostering of mutual respect over time. Consider du Picq's admonition to change the composition of combat groups as little as possible. Consider how the contemporary operational environment has changed since the Franco-Prussian war. Is it only combat units that need a high level of cohesion on today's battlefields? Does the CF expect that its combat support and combat service support forces will operate only with combat arms escorts or in relatively benign and safe rear areas?

Are the factors that contributed to the Canadian soldier's fighting spirit in previous conflicts the same today as they were in the past? Can a soldier be infused with 'fighting spirit'? These are the questions that need to be answered by adding a fourth transformational line of operation to those enunciated in DPS 2005. This fourth line of operation is the moral component of transformation that takes a holistic view of all transformation initiatives with a view to producing combat effective soldiers not simply well equipped, well informed individuals that are only brought together on the eve of an operational deployment.

The CF asserts that the Canadian soldier is the bedrock of transformation. The CF further asserts that the morale and cohesion essential to the soldier's effectiveness in combat will be enhanced by the way that it prepares soldiers. The CF accepts that its vision of future battle will demand greater cohesion and morale from all branches and corps, not just the combat arms. While leadership and discipline are essential to building the required morale and cohesion it is foolhardy to lay the sole responsibility for providing them at the feet of the Commanding Officer and the Regimental Sergeant-Major.

Assaults on moral cohesion most often originate at the highest levels of management within the CF and the Government. The assaults on cohesion are launched in the name of efficiency and are often made palatable with a liberal sprinkling of apologies like 'the most bang for our buck' or 'we cannot afford the Cadillac solution.' This has left many of our leaders in the near untenable position of adhering to the letter but not the spirit of directives as they attempt to build combat effectiveness, fighting spirit, moral cohesion, by diverting Operations & Maintenance funds into training. The sad thing is that it appears that these assaults on cohesion are not even intended. They are simply collateral damage.

Morale and cohesion can be developed. There are numerous historic examples of the effectiveness of Canadian troops in combat. What factors contributed to the morale and cohesion of these soldiers and units? Was it the regimental system? Was it the amount and quality of training? Was it regional recruiting? Were the soldiers of yesteryear more self-sufficient and robust

than soldiers today? Once the factors that build morale and cohesion have been identified, the factors, which undermine cohesion, need to be determined. Does the plethora of individual taskings affect morale and cohesion? What effect does managed readiness have in terms of the quantity of training and what is the impact? Has the increase of contractors and use of reservists to fill unmanned positions had an impact on cohesion?

Clearly, initiatives aimed at building the morale and cohesion of our soldiers may appear wasteful and inefficient to Treasury Board but that does not make it any less necessary. The efficiencies achieved today, which hinder future combat effectiveness, are false economies that are harmful to our soldiers, to the Army, to the Canadian Forces and ultimately to Canada. In all management and program decisions the heart of the soldier **MUST** be given equal weight as a decision factor as are the factors of material efficiency and cost effectiveness.

Soldiers, have individual strengths and weaknesses. They suffer cold, heat and fear. Let us not romanticise the combat effectiveness of the Canadian soldier or assume that they are all naturally imbued with the courage that will shine forth when the battle is joined. Let us discover what it is that gives the soldier courage under fire and then deliberately plan to develop it, allocate funding to its development and measure our effectiveness. ♣

The views expressed are those of the author and do not necessarily reflect the views of the Institute or its members.

NOTES

¹ Ardant du Picq, *Battle Studies: Ancient and Modern Battle*, Colonel J.N. Greely and Major R.C. Cotton, trans, (Harrisburg PA: Military Service Publishing Company, 1958), 109.

² General R. J. Hillier, CDS, NDHQ 1950-9(CoT), August 2005 Draft v 1.0, 2/7.

³ Government of Canada, *Canada's International Policy Statement, A Role of Pride and Influence in the World: DEFENCE*, internet accessed at http://www.forces.gc.ca/site/reports/dps/pdf/dps_e.pdf, 26 August 2005, 4.

⁴ Jean de Bloch, *The Future of War in Its Technical, Economic, and Political Relations*, trans. R. C. Lory, (Boston, MA: Ginn, 1902) xiii-xvi.

⁵ Generals Hillier and Caron have used the term 'snakes' on numerous occasions to denote the unconventional and irregular forces that the Canadian Forces and the Canadian Army will operate against in current and future conflict.

⁶ du Picq, 109.

⁷ *Ibid*, 113.

⁸ *Ibid*, 96.

⁹ *Ibid*, 111.

¹⁰ James J. Schneider, "The Theory of the Empty Battlefield", *Journal of the Royal United Services Institute for Defence Studies*, (September 1987), 43.

¹¹ *Ibid*, 43.

¹² *Ibid*, 42.

¹³ *Ibid*, 41.

A DUMMY'S VIEW OF INFORMATION WARFARE

by Sunil Ram

*“Cyberspace: A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts...A graphical representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the non-space of the mind, clusters and constellations of data. Like city lights, receding...” —William Gibson, *Neuromancer**

When the Canadian science fiction author William Gibson coined the term cyberspace in his 1984 book *Neuromancer*, a vision of what the future of humanity might be was unveiled. Inadvertently he also offered up a world in which information warfare (IW)¹ was being played out in a region of electrons and in the mind. What was science fiction some twenty-two years ago has now manifested itself as a constant reality of the modern asymmetric battle space. In this context it can be argued that in the traditional military sense and in terms of modern warfare, “the concept of ‘the front’ is obsolete.”²

When Osama bin Laden declared his global jihad against America on 23 August 1996 he signed his manifesto “From the Peaks of the Hindu Kush, Afghanistan.” The manifesto was written on an Apple Macintosh³ and was rapidly reported around the world by various media outlets. Bin Laden then gave his first television interview to the west on CNN in early 1997. He and his advisors had understood that they could fight the west with words through the electronic media; he had initiated his information war against the west.

Conceptually, IW is not new for it is as ancient as the origins of human communications. It is simply put a battle over control of information and the communications process. Various revolutions in information such as writing, printing and electronic communications have all impacted this process over time, but it has only been in the closing decade of the 20th Century that rapid technological advances have made instantaneous communications

available to almost anyone, anywhere, at anytime, thus making IW a viable tool for anyone.

So what is Information Warfare?

The answer to the question above varies depending on whom you ask and when you asked the question, but what was clear by the 1980s was that “information” could be used as a weapon or conversely it could be attacked. Thus, began a process to define this rather nebulous concept.

In February 1996, the American Department of Defense (DOD) saw the application of information warfare in military operations as part of command and control warfare (C2W). The

DOD defined command and control warfare as “The integrated use of operations security, military deception, psychological operations, electronic warfare, and physical destruction, mutually supported by intelligence, to deny information to, influence, degrade, or destroy adversary command and control capabilities, while protecting friendly command and control capabilities against such actions.”⁴ In 1997 Brian Lewis stated, “Information warfare is the application of destructive force on a large scale against information assets and systems, against the computers and networks that support the four critical infrastructures (the power grid, communications, financial, and transportation).”⁵

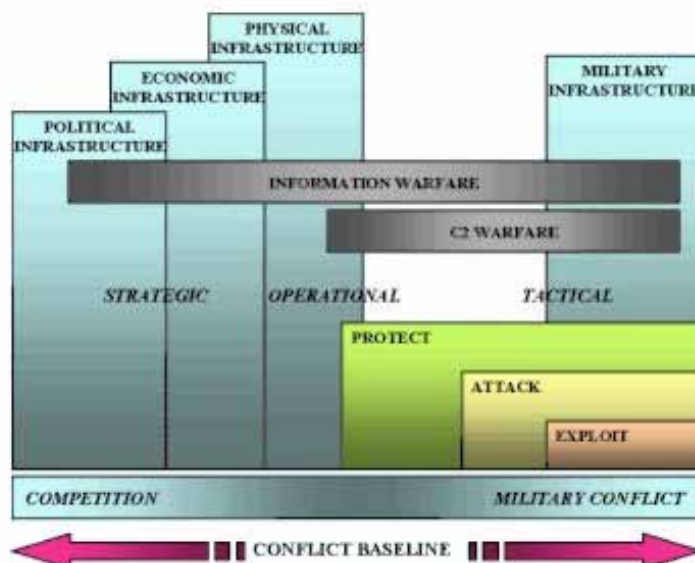


Figure 1: The Context of Information Warfare

Source: Adapted from Robert Thompson Jr. “Information Warfare” US DOD

However, in these early days there was very little consensus on what IW was or what it applied to.⁶ And as Richard E. Hayes and Gary Wheatley correctly surmised as early as 1996, “The term ‘information warfare’ is used to mean many things, but is often focused on the military or cyber-war domains dominated by computers and communications infrastructure. This narrow definition is inconsistent with the broad policy questions relevant to competition and conflict using information media.”⁷

It soon becomes clear that within DOD literature and that of most western armed forces there is considerable variation on what IW is and to add further confusion to the mix it is a sub-category of information operations (IO), and part of information superiority (IS), information systems warfare (ISW) or information dominance warfare (IDW) to name a few. What is clear is that ‘information’ in context of a state is a strategic asset or resource that

Sunil Ram teaches military history, land warfare and tactics at American Military University in West Virginia and was a Signals Officer in the Canadian Forces. And he likes cats because they all understand IW implicitly.

In terms of offensive IW, let us not forget that it is warfare and there are consequences just as damaging as in a conventional attack. By causing the destruction or disruptions of the information infrastructure of an enemy there may be major collateral damage, which is rather the point of the attack. Imagine if a logic bomb or some kind of virus disrupted the traffic light system of a city and cut communications to emergency services. There would be a level of chaos that would result in at the very least economic loss, as there was in the 2003 Eastern power blackout (which was not an IW attack) that spread at its peak, from Cleveland to New York, in the USA and from North Bay to Ottawa in Canada. It was estimated that the blackout cost the US economy some \$6.4 billion.¹⁰ There may even be deaths associated with such an attack, and more than likely this will be amongst the civilian population.

Offensive IW capabilities include offensive software such as worms, viruses, Trojan horses, logic bombs, spamming attacks, denial of service attacks and other similar malicious software; the alteration of computer hardware for a malicious purpose- known as chipping; there are packet sniffing technologies that monitor networks and then capture information going over the network; and “photonic warfare” in the form of directed energy weapons such as High Energy Radio Frequency (HERF) guns, high-powered microwaves (HPM) and Electromagnetic Pulse (EMP) bombs or anti-radiation weapons. These weapons are used “to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying adversary combat capability.”¹¹

Conceptually, offensive IW extends into the world of psychological operations (PSYOPS) as well, especially when we take into account the use of information as the message. Strategic PSYOPS advance broad or long-term objectives and are global in nature. They can be directed toward large audiences or at key communicators.¹² Thus, these include Civil Military Cooperation/Civil Affairs (CIMIC/CMA) operations.

IW from an offensive perspective is also a superb tool for intelligence agencies. Few cyber-attacks are detected and of those, few are reported. Even when these attacks are detected it is even harder to find the source and apprehend them. It was found that only 4% of attacks were detected on US DOD sites and of those only 27% were reported.¹³ IBM reported in the first half of 2005, criminal-driven computer security attacks increased by 50 percent, with government agencies and industries in the United States targeted most frequently.¹⁴ What is seen as criminal activity has in fact become a nexus with terrorist activity and thus has be-

come IW. The FBI reported that al Qaeda terrorist cells hiding in Spain used identity theft in the form of stolen credit cards to make numerous purchases. Moreover, false passports and travel documents were used extensively to open bank accounts for routing money through Pakistan and Afghanistan for the mujahideen movement.¹⁵ They had either hacked into databases themselves to gather this information or had purchased it from some source that had committed the cyber-crime. The impact were the Madrid train bombings, the end-game was the withdrawal of Spanish forces from Iraq.

When former Director of Central Intelligence (DCI) John Deutch testified before Congress in 1996 he stated that the US would face some “very large and uncomfortable” incidents at the hands of foreign computer terrorists. Many referred to this as a “digital Pearl Harbor,” a phrase coined in a 1991 testimony before the US Congress by Winn Schwartau.¹⁶ Though calling attacks “digital Pearl Harbors” may be overstating the reality, the threat is clearly amplified by the greater reliance one has on electronic technology.

This then raises the issue of how to defend against such an attack. The solution to this situation has been a Defense-in-Depth approach (see Figure 2). There are three basic lines of defense. The first line tries to stop everyday attacks from hackers who are just testing a system or are curiosity seekers. These make up the majority of attacks.

The next level tries to deal with Potentially Strategic Attacks and the final level has to deal with actual strategic attacks. Given that in each case there will be fewer attacks as the level of sophistication rises, more advanced technologies, human expertise and resources can be directed at these areas to thwart the attack. In these last two cases there has to be a concentration of intelligence and monitoring capability. In the larger spectrum of IW this then includes counter intelligence operations, counter propaganda operations and counter deception efforts. Electronic Protection, which is the defensive aspect of electronic warfare (EW), has to be employed to “protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability.”¹⁷

Like so many issues in the democratic world, we cannot forget the lawyer’s input. “First, it has not been established that information attacks, particularly when they are not directly lethal or physically destructive, constitute the use of “force” or “armed attack” under such provisions as the United Nations Charter. Such attacks thus may be legal forms of coercion even in peacetime,

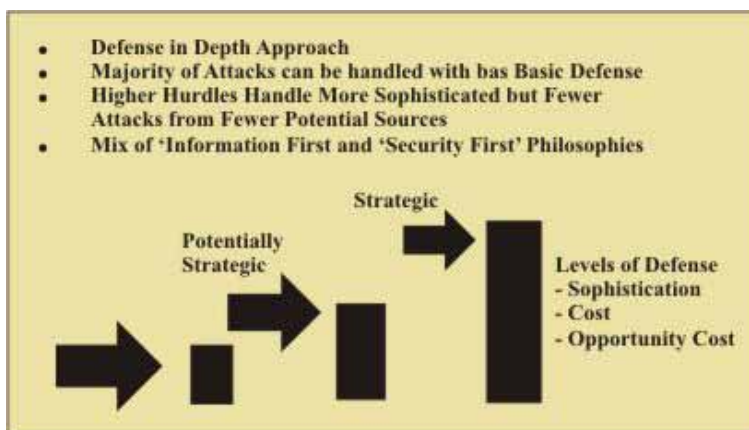


Figure 2: Three-Stage Approach to IW Defense
 Source: David S. Alberts. *Defensive IW*, National Defense University, NDU Press Book August 1996

can be used offensively or defensively and in either case needs to be protected. In both defense and offense it is imperative that the attacker or defender reaches his OODA (observation, orientation, decision, action) loop before his opponent. Though the OOAD loop was initially conceptualized for fighter pilots it applies to IW as every step of this loop requires the collection, processing or moving of information. Thus “information warfare is whatever you need to do to get the end of your decision cycle before your opponent gets to the end of his.”⁸ The US DOD’s definition of C2W is a reasonable starting point, I however will make no attempt to further muddy the waters of what exactly IW is, other than to say in the broadest way IW is the battle that rages over the communications process (whatever that process is-see Figure 1) and that part of this process exists as a facet of cyberspace as William Gibson envisaged it.

Offensive and Defensive IW

For the sake of argument, there are two distinct types of IW, offensive operations and defensive operations. In both cases one must keep in mind a rather paradoxical asymmetry exists, in that the more sophisticated your information infrastructure is, the more vulnerabilities exist. Thus to gain information dominance you are likely to be more vulnerable to attack. Therefore, as your information infrastructure becomes more advanced, your IW concerns shift from offensive to more defensive operations.⁹

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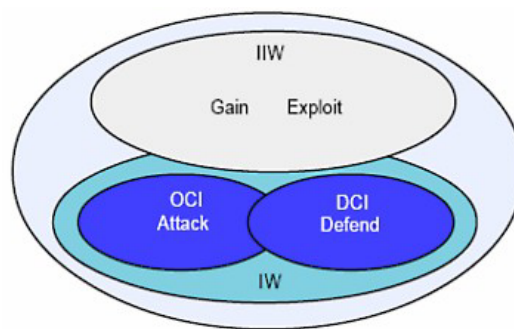


Figure 3: A Conceptual View of the IW Environment

Source: Information Operations, US Air Force Doctrine Document 2-5, 04 January 2002

Note: IIW - information-in-warfare. IIW is a term that identifies various functions designed to continuously provide commanders situational awareness across the spectrum of conflict

OCI - offensive counter information
DCI - defensive counter information

The Nuclear Threat Environment in the Pacific

The American deployment of sophisticated counter-force capabilities to the Pacific maritime environment will likely increase the salience of issues surrounding 'crisis stability' between the emerging and established nuclear weapon states in the region. Concerns over strategic nuclear capability (and vulnerability) will become a growing concern to North Korea and China, the two states most clearly identified in the possible nuclear contingency scenarios of the NPR. But even Russia will have concerns over the survivability of its deteriorating nuclear arsenal against expanding American qualitative nuclear capabilities, which would only be exacerbated by the growing American counter-force presence in the Pacific.

The nuclear developments in the Pacific theatre is related, if only obliquely, to possible contingency scenarios with North Korea. The NPR clearly states that North Korea, alongside other 'rogue states,' may be involved in a number of immediate, potential and unexpected nuclear contingencies. Given the US and international concerns that have grown during the current nuclear crisis, and the fears that Pyongyang has indeed become a *de facto* nuclear weapon state with sufficient re-processed, weapons-grade plutonium for a dozen low-yield fission bombs, it would not be surprising if the SSBN redeployment is related to the need to buttress America's nuclear umbrella over its South Korean and Japanese allies.

A more worrisome possibility, especially to the paranoid leaders ensconced in Pyongyang, is the potential that such a redeployment could signify interest in using these nuclear hard-target kill weapons to pre-empt either their use of nuclear weapons, or more dangerously, their permanent acquisition of a nuclear capability. Pre-emptive thinking, it should be noted, was implicit in the NPR, and has been codified in both the now defunct Doctrine for Joint Nuclear Operations (Joint Pub 3-12) and in CONPLAN 8022, which legitimizes 'crisis action planning' for limited nuclear strikes against unexpected contingencies. Noticeably, such 'global strike' plans have since become operational for its fleet of SSBNs on deterrence patrol.

Such a posture carries definite risk, especially in light of a paranoid North Korean regime armed with a small but highly valued nuclear arsenal. At the very least, its perception could lead to further intransigence on the North Korean side for keeping their weapons, as well as greater pressures to increase the arsenal's survivability by either quantitatively expanding the number of bombs and through increased hardening measures. At worst, the 'hermit kingdom' could undertake a more destabilizing employment strategy for its potentially small and vulnerable nuclear arsenal, such as pre-delegation or launch on warning (LOW). During an extended crisis situation, it could then be placed under significant pressure to pre-emptively use its arsenal, if only to use it before a perceived disarming US first strike eliminates this option altogether. The end result, in all cases, would be a signifi-

cant weakening of 'crisis stability' in a situation already fraught with instability and distrust.

Interestingly, despite the relevance SSBNs may have for the North Korean nuclear scenario, the official rationale for the expanded presence of SSBNs in the Pacific appears to be to 'increase coverage of targets in China'.⁴ The hard-target kill capabilities provided by the SLBM D-5 missile would be ideal for the targeting of both hardened command-and-control facilities and, presumably, when the solid-fuelled Chinese ICBM becomes deployed, any future hardened ICBM silos or mobile-missile launchers. The 2002 NPR even notes that China, due to its uncertain intentions and continuing questions regarding its strategic force

modernization programme, could be involved in an immediate or potential contingency (most likely in the Taiwan Straits). This follows the 1997 decision by the Clinton Administration to re-incorporate Chinese targets in American nuclear war plans, resulting in its inclusion in the Single-Integrated Operating Plan (SIOP) of 1998.

The Chinese arsenal has primarily relied on a minimum deterrence posture. Issues of survivability may have had some impact on the posture itself, and did lead to efforts to harden facilities and reduce pre-launch vulnerabilities, but neither the size nor the launch readiness of the force itself were significantly altered.⁵ And this force is indeed a minimum one, with only a few dozen ICBMs capable of reaching the United States. But the growth of the SLBM forces in the Pacific, with the hard-target kill capabilities inherent in the D-5 missile, promises to raise issues of survivability to a new level.

These weapons could be forward deployed close to Chinese territory, perhaps with a little-noticed 'surge' in deterrence patrols during a hypothetical crisis, and would be able to attack such targets at very short notice and with very little warning. Given China's uncertain early warning system and the arsenal's low alert levels, a pre-emptive first-strike nuclear attack could possibly decapitate China's command-and-control system and destroy its limited number of ICBMs (and indeed its force of medium-range ballistic missiles [MRBMs]). A depressed trajectory SLBM attack, with its increased advantage in speed, would further decrease the warning time for Chinese nuclear planners to undertake a retaliatory strike, and therefore more assuredly eliminate the deterrent value of its nuclear arsenal. Such a worse-case scenario would be far from inconceivable in the minds of Chinese nuclear war planners.

A similar problem is posed to Russian nuclear forces, which have deteriorated quite significantly since the end of the Cold War. Indeed, despite a continuing high number of operationally deployed nuclear warheads, serious problems with their deployments and basing scheme have minimized the amount of targets necessary for a conceivable first strike. Perhaps the most robust of the Russian arsenal is its 258 ICBMs stationed in hardened silos. Other more vulnerable targets include its road-mobile ICBMs, stationed in forty garrison bases, its strategic bombers bases and the once-feared SSBN fleet, which is for the most part stationary in a handful of highly vulnerable ports.⁶ A splendid

first strike that can disarm Russia's entire strategic arsenal, a goal which had always alluded Cold War era strategic 'hawks' despite their very best efforts, has now become a hypothetical possibility.⁷

The increased deployment of hard-target kill weapons in the Pacific could only aggravate Russian concerns over the survivability of its own nuclear arsenal. These silo-busters would be ideal to destroy the few hundred ICBM silos and Russia's infamously hardened command-and-control facilities as well as help reduce any warning time for Russian strategic forces, given their possible forward deployment and depressed trajectory. This is critical for a decapitation mission, due to the highly centralized command-and-control structure of the Russian posture, as well as to pre-empt any possible retaliation from the most on-alert Russian strategic forces. The Pacific also has a unique feature, in that it is an area where gaps in Russian early-warning radar and the continued deterioration of its early-warning satellite coverage have made it effectively blind to any attack from this theatre.⁸ This open attack corridor would make any increase in Pacific-deployed SLBMs appear especially threatening.

Potential Trade-offs to Strategic Stability

The American redeployment of ever more sophisticated nuclear counter-force capabilities to the Pacific is destabilizing primarily because, at least to Chinese and Russian planners, it would appear to represent a move towards securing a first-strike capability against their own nuclear forces. And despite the possible arguments for obtaining such nuclear counter-force capabilities against a potential adversary as 'irrational' as the regime in Pyongyang, North Korea might also react quite rationally to its vulnerability with unexpected and potentially destabilizing

measures. The gradual nuclear shift towards the Pacific might have implications that are far graver than the gradual qualitative modernization and re-deployments might appear to warrant, but the possibility is certainly there.

Fortunately, the strategic environment in the Pacific is far more benign than during earlier periods of superpower rivalry and destabilizing nuclear force modernizations. While the potential for serious nuclear 'crises' cannot be discounted, their likelihood has certainly lessened. In such an environment, modifications to increase the survivability of the Chinese and Russian nuclear deterrent might be made, but this should not be equated to a race for more lethal (and survivable) nuclear weapons, with the attendant deterioration of 'arms race stability'. However, while it would certainly be a mistake to overestimate the potential unstable nature of the present US strategic force posture, one should also recognize that there are clear dangers associated with this posture. Crisis stability may indeed not be as great a concern as during the Cold War, but in any future crisis in the Pacific – most likely on the Korean Peninsula or the Taiwan Straits – the costs associated with this robust counter-force posture on crisis stability will certainly rise.

For example, the vulnerability of the Chinese deterrent against an American surprise disarming counter-force attack would become a far more significant issue in the event of a serious crisis situation between the two countries, with the attendant pressure for Chinese leaders to reduce their control over their forces in order to better assure their retaliatory survivability. The more unstable and opaque regime in Pyongyang, and the likelihood of a potential crisis over its suspected nuclear capabilities, poses another example of a highly uncertain and possibly destabilizing 'crisis' dynamic unfolding due to the presence of incredibly potent

American pre-emptive first-strike nuclear capabilities. The possibility of a Russian crisis in the future, however remote, can also not be discounted. In any such crisis scenarios, the dangers associated with such a robust American counter-force capability becomes far more salient to Chinese and Russian (and North Korea) defence planners, and as unstable 'hair-trigger' alertness levels and other measures are instigated to reduce their own deterrent's vulnerability, the likelihood for accidental or inadvertent nuclear warfare would only increase.

One should also recall that such a deployment pattern, while not appearing as threatening in an environment with few serious 'crises' than during the Cold War, does make American intentions appear more uncertain, and likely more troubling, to established nuclear powers.



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Continued on page 16

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Like so many issues in the democratic world, we cannot forget the lawyer’s input. “First, it has not been established that information attacks, particularly when they are not directly lethal or physically destructive, constitute the use of “force” or “armed attack” under such provisions as the United Nations Charter. Such attacks thus may be legal forms of coercion even in peacetime, and the use of conventional armed force may not be an appropriate response to such attacks; indeed, such a response might be considered an act of aggression. No provision of international law prevents countries from taking many actions against other states, such as embargoes, that inflict great hardship on those states and their populations. Second, it is equally unclear whether some of the damage that information warfare attacks could inflict, as by disrupting government or private databases and systems, is the sort of damage that international humanitarian law is intended to restrain.”⁹ Thus we are left with a legal black hole, which all sides in asymmetric conflicts exploit.

So in brief the majority of IW attacks try to disrupt, deny, degrade, destroy, deceive or coerce in terms of information and information systems. There are no geographical or political boundaries to the IW battle space and the threats are both Structured and Unstructured. Structured threats are generally State or criminal sponsored attacks, or attacks by non-state actors or ideological groups like al-Qeada that have long-term goals. Unstructured attacks originate from individuals or small groups with a limited support structure and limited motives, and are not sponsored by State, criminal or non-state actors indirectly.

As Sun Pin, the great-grandson of Sun Tsu observed in his treatise Military Methods, “When the unorthodox is initiated and is not responded to, then it will be victorious.” So has it been with IW in the modern asymmetric battlefield. ♦

The views expressed are those of the author and do not necessarily reflect the views of the Institute or its members.

NOTES:

- 1 The first use of the term “information war” occurred in a report titled “Weapon Systems and Information War” by Dr. Thomas P. Rona given to the Boeing Company in 1976.
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ON GUARD FOR THEE – THE COTC AND MORE

by Lt (Ret'd) George Fells

Few readers are likely to disagree with Hon. LCol DH Neville Poy's excellent article in the March-April '06 issue of SITREP, "Whatever Happened to Our Canadian Officers' Training Corps?" He pleads for the re-introduction of the COTC.

I, as a father and grandfather, would go further and recommend that all Canadians at some stage in their life between the age of 15 and 25 are required to do one year of paid service to their country. Rather than restricting this opportunity to "Officer Cadet" training and to those who already have demonstrated they are capable of achievement - at least they got into university - why not broaden the reach to all young people of every colour, creed, background and location.

Such service need not necessarily be in the Reserves or Regular Service, although that could be encouraged. It could be in a whole range of public service including such roles as tree planting, forest fire fighting and prevention, conservation through to civic roles and training (police or hospital auxiliaries, firefighting, traffic control); group activities such as Katimavik (for which two years ago we are told there were 10,000 applicants and funding available for only 1,000 positions); Canada World Youth; Junior Rangers and on up to the pinnacle of Militia and/or Regular Service.

I had an experience some four years ago at a Regimental Christmas dinner that was made up of a very diverse group of young Canadians. I was sitting opposite the Padre and the Band Major and beside a young officer. After I had managed to persuade him not to call me "Sir" - obviously my gray hair must have given the appearance of grandfatherly seniority! - he told me how he had got into the Militia. He and his family lived in a high-density, downtown housing project. One day he saw one of his buddies come in wearing a hat and uniform. When he asked what it was, he was told it was a Queen's Own Rifle's uniform "Come over on Saturday and watch us."

To cut a long story short he did, was intrigued, told his Dad, who mocked him asking why he wanted to do a "damn fool thing like that?"; and joined, after quite a bit of frustration with interviews and so on.

That was four years before I met him as a proud young officer of the QOR of C, and a Parole Officer in North York dealing with young offenders. "Oh, by the way", he said, "when I told Dad I was graduating from training as an officer, he delightedly came to the Passing Out Parade saying, 'Son, I'm so proud of you!'"

The majority of Canadians do not see Canada as a militaristic nation. They prefer the image and the role of peace maker/peace keeper, famine relief, humanitarian aid, etc. The problem

is that to take on any of these roles, you need disciplined training. The other problem is that being nice guys doesn't always work. Sometimes, as in Afghanistan, or Cyprus, or Suez, or Kosovo, or anywhere else, you get fired upon. And when fired upon, you may have to return fire to save your life and the lives of your comrades or the people you are there trying to help. And for that role you have to be trained, prepared and equipped.

One other problem is that while Canada and its troops and support personnel are treated with respect and admiration around the world - I know because I served alongside them in Korea and later in the British Commonwealth Forces Korea training camp in Kure, Japan, when I was a Lieutenant doing two years of National Service in the British Infantry - Canada can not always be relied upon to make a contribution, or if it does, make more than a token contribution.

I recommend developing a program of civic service that would take five years to establish. The program would consist of four levels:

- Level A Service in the Regular Force
- Level B Service in the Reserves
- Level C Service in the local community such as Auxiliary police/police cadet, hospital support worker/orderly, ambulance service
- Level D Canada World Youth, Katimavik, Junior Forest Ranger etc.

To qualify, Levels C and D would be required to include certain basic activities and disciplines that promote a sense of civic responsibility, selflessness and self-discipline that instill a personal obligation to make a contribution to society. These activities could include:

- Physical fitness development
- First Aid and CPR
- Swimming and life saving proficiency
- Civics and Canadian history
- Leadership principles and team building
- Nature conservancy
- Adventurous training to include basic map reading and navigation and survival

There would be a system of recognition, e.g. one star, two star, etc depending on the level achieved in the hierarchy. All graduates would have their names maintained on a list, with contact information, for call in emergencies. There could also be a 2 weekend or 1 week a year, reunion/training/update session. (This is a common requirement in several European countries and works well).

There will be challenges and naysayers, but the opportunity to strengthen the backbone of Canadian society and improve the sense of belonging and integration are huge, particularly among

young Canadians, and over as little as ten years, would vastly improve the sense and reality of what it is to be Canadian. The demise of the nuclear family, the increased number of single-parent or multi-parent families and resultant lack of male or female role models for youth, and the lack of civics and history teaching in our schools, amongst other things, contributes to a self-focused “What’s in it for me?” society rather than a community of citizens imbued with a sense of contributing to improving society.

The challenges will include:

Cost, but even at say a minimum cost of \$10,000 per year per individual, the return is a multiplier of that in terms of social cohesion, preparedness, health, etc. It must also be weighed against the cost, social and economic, of dealing with youth who get into trouble on the street.

Integration between different levels of government, structurally and economically, again, once negotiated and agreed upon, the provinces, townships, cities and even villages would have a built-in response preparedness for any disaster - natural, including flood, fire or earthquake; etc as well as the upside opportunity to assist in forest management, agricultural projects, clean ups, etc.

The time to act is NOW. According to the World Health Organization and Health Canada, Canada’s youth is becoming increasingly obese. There is no concept of civic responsibility or obligation and “what it means to be a Canadian.” It has been said that to truly understand and know Canada, one must travel coast-to-coast including the North meeting other Canadians and preferably, in the winter. Until one has that sort of opportunity, one

will not truly know the huge magnificent land that we are blessed to inhabit nor the peoples that make our nation great.

Add to this the fact that this lack of responsibility or obligation extends to new Canadians. We welcome some 350,000 immigrants a year into Canada. New Canadians are arriving and staying in major metropolitan areas, in particular Toronto, Vancouver and Montreal. As the downtown areas become full and congested, the immigrant populations are increasingly clustering in new suburbs, some with shopping centres with signs in their own language, churches and meeting places, geared appropriately, to these communities. Throughout Europe, especially in France and the United Kingdom, the phenomenon of ‘ghettoization’ is occurring where immigrants can live for successive generations without learning the language, laws, mores, and language of their adopted country.

In other words, the challenge to integration into Canadian society is increasing, and the opportunities to instill the values and principles of the adopted country may well be diminishing. This makes the need to offer young people the opportunity to see and experience the broader Canada even more important. The downside is negligible, the upside huge. The price of doing nothing may well be disastrous.

“Oh Canada, (let’s) stand on Guard For Thee” ... while the opportunity lasts and before we get into a position where the glue that holds our cherished mosaic together dries up and becomes a saucer of fractured and fragmented dreams. ✦

The views expressed are those of the author and do not necessarily reflect the views of the Institute or its members.

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The possible inability of Russian and Chinese forces to adequately assure the survivability of their own nuclear arsenals would only increase suspicions of American strategic primacy, and as such increase mutual tension and the potential frequency of future ‘crises’. Arms race dynamics might not take hold immediately, as per the arguments from many ‘dovish’ critics of the US nuclear posture, but there is definitely the possibility for increased mutual distrust, a greater likelihood for crises and, thereby, all the prerequisites for long-term patterns of ‘strategic instability’. ✦

found in Robert S. Norris and Hans M. Kristensen, ‘U.S. nuclear forces, 2006,’ *The Bulletin of the Atomic Scientists* (Vol. 62, No. 1, January/February 2006), pp. 68-71.

³ This problem is noted in Lisbeth Gronlund and David Wright, ‘Depressed trajectory SLBMs,’ *Science & Global Security* (No. 3, 1992), pp. 101-159

⁴ Norris and Kristensen, *Op. cit.*, pp. 68-71.

⁵ See Jeffrey Lewis, ‘The Minimum Means of Reprisal: China’s Search for Security in the Nuclear Age,’ PhD Dissertation, University of Maryland, School of Public Policy, (2004), ch. 3.

⁶ For more on Russia’s nuclear forces, see Robert S. Norris and Hans M. Kristensen, ‘Russian nuclear forces, 2006,’ *The Bulletin of the Atomic Scientists* (Vol. 62, No. 2, March/April 2006), pp. 64-67 and Pavel Podvig’s Russian Nuclear Forces Project, available at <http://www.russianforces.org/eng/>.

⁷ See Keir Lieber and Daryl Press, ‘The End of MAD? The Nuclear Dimension of U.S. Primacy,’ *International Security* (Vol. 30, No. 4, Spring 2006), forthcoming.

⁸ For a good summary of Russian early warning problems, see Geoffrey Forden, Pavel Podvig and Theodore A. Postol, ‘False alarm, nuclear danger,’ *IEEE Spectrum* (Vol. 37, No. 3, March 2000), available at: <http://www.armscontrol.ru/start/publications/spectrum-ews.htm>.

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NOTES

¹ For more on the D-5 capability, see Owen Coté, ‘The Trident and the Triad: Collecting the D-5 Dividend,’ *International Security* (Vol. 16, No. 2, Fall 1991), pp. 117-145.

² Information on the D-5 test launch, alongside much of the technical details of American strategic force modernization, can be