

# **A Launch Window of Opportunity Making Space a Strategic Goal For Canada**

© 1999 By Andrew B. Godefroy, (Capt CME)

Royal Military College of Canada

[godefroy-a@rmc.ca](mailto:godefroy-a@rmc.ca)

Like many western nations in the post-Cold War period, the new decentralized and highly unpredictable global environment has affected the sustainability of Canada's traditional national interests – essentially sovereignty, peace, prosperity, and a high standard of living for all Canadians. In order to maintain the safety and longevity of those interests Canada has been confronted with the challenge of reorienting its foreign and security policy to meet new symmetrical and asymmetrical threats. While relying heavily on the tools of DFAIT and in particular DND to prepare for and defeat threats to its national interests, the government of Canada has yet to employ its nation's power to the fullest in the pursuit of its objectives. This paper argues that Canada has until very recently all but ignored one area that could directly support all of those national interests previously mentioned - namely space power. Resting on the laurels of First World economic status, and juggling the application of such theoretical concepts as soft power or middle power on the world stage, it has not even become a threshold power in terms of space technology and applications. While it would be unfair to gage Canada against the United States or Russia in scope of a space program, though it easily surpasses the capability of both these countries in some areas of expertise, it begs to question why other middle and small powers such as Japan, Italy, and even Brazil are all moving well ahead in space while Ottawa stands virtually still? Does Canada need space power? What are the impetuses for developing space power, and is Canada even capable of doing so? What are the implications of not having adequate space power, and should it be considered a strategic priority in Canada given the threats resulting from its absence?

Dr. Sean Maloney and Dr. Scot Robertson argued in a recently published article in the CIA's *International Journal* that, "...Canada is not an isolationist power. It participates in a variety of international forums to secure its objectives. To be effective, it needs fundamental tools, including economic strength, diplomatic pressure, an intelligence/assessment capability, and the threat of military force in its many guises." In the present and future security environment space power will be instrumental to successfully applying a combination of these tools. As Maloney and Robertson further point out, "If Canada does not have the tools, it will be at a severe disadvantage in the international arena. Similarly it will have no basis for maintaining sovereignty since sovereignty is based on power projection." Just as nuclear capability was deemed an essential measurement of a state's power, so too will space capability be considered a critical yardstick. For Canada space power will be essential to its own future security and

prosperity especially in a multi-polar world, therefore making it a strategic interest requiring further development.

## **The Ghosts of the Past**

The present status of Canada's space program is clearly reflective of its sporadic and politically complicated past. Canada rose out of the ashes of the Second World War in a critically geographic and geo-strategic position. Poised between the United States and the Soviet Union, Canada could not escape, even if it had so desired, playing a central role in Cold War security and deterrence against the Russian menace. Among the many projects it cooperated on with its American allies was the development of rocketry and space-related sciences, first for the protection of North America and later for the ascension towards and exploitation of outer space. Throughout the late 1950s and 1960s, Canada made considerable contributions to the development of space power. Under the efficient direction of Defence Research Board (DRB) Canada with the cooperation of the United States became the third country in the world to place a man-made object into orbit. This was a significant achievement for Canada, however it was by no means indicative of what lied ahead for country's space program. After a brief initial interest in space development, Canada allowed its national program to be rapidly and completely demilitarized and decentralized to the point of impotence. By the early 1970s space was non-existent in Canadian security and defence policy, and had been neatly chopped up into niche markets and scattered throughout Industry Canada. It was not until two key events in 1986, the debate over the renewal of the NORAD agreement and the destruction of the American space shuttle *Challenger*, that Canada seriously re-evaluated space in terms of national security.

In 1982 US President Ronald Reagan authorized NSDD-42 officially designating the Space Transportation System (STS), commonly referred to simply as the "space shuttle" as the primary launch vehicle for the American national security space program. All expendable launch vehicle (ELV) production was halted in favour of the new system. In a gross space policy error, the United States had placed all its astronauts in one capsule so to speak. When the *Challenger* was destroyed and this accident was followed by three more ELV launch failures American access to space literally ground to a halt. As Canada was entirely dependent on the United States for access to space, its own space programs were likewise in limbo. With no indigenous launch capability and no military or civilian space organization in existence, Canada was entirely unable to conduct any sort of space activity beyond a few government and commercial ventures already ongoing.

The NORAD renewal agreement of 1986 was of particular note to Canadian policy makers due to the advent of the Strategic Defence Initiative (SDI) tabled by the Reagan government in 1983. Serious concern over whether or not Canada would become *de facto* involved in the development and deployment of SDI was raised due to Canada's official position against the deployment of space weapons and ballistic missile systems. It was assumed that the controlling organization for any SDI system would be NORAD, and if that was the case, then Canada may have found itself having to bow out of the cooperative defence of North America. In the end the NORAD issue was settled to the satisfaction of the Canadian government and the alliance remained standing at least until the next renewal. Additionally, DFAIT and DND found themselves unable to confront serious questions about space-related defence during the period as neither department had

organizations in place to even passively monitor the issue. This led to the creation of the Directorate of Space Doctrine and Operations at NDHQ in 1987. Though short-lived it was superseded by other military space organizations that eventually led to the modern day D Space D.

## **Out of the Cold War and Into a Colder One**

While there may no longer be bipolar rivalry dominating the development and application of space assets since the end of the Cold War, the absence of such political control mechanisms has led to an unprecedented proliferation in missile and space technology. Today, ten countries have indigenous launch capability, that is the industry and organizations to build and launch their own space assets. Canada is not on that list. Two countries have an established manned space program. Two more countries are currently creating one. A dozen other countries have dedicated astronaut corps. Again Canada is not among them. While Canada does have a small team of qualified astronauts, these men and women have either been seconded from their original positions to NASA or have been one-shot deal travelers with no intentions or potential to return to space again. Over a dozen countries have dedicated military space assets, but Canada is not on this list either. Though projects are currently underway that will change this status, presently Canada relies completely on its partnership with the United States for military space assets and assistance.

Such a state of affairs has created a whole new series of security implications for Canada. In a recently sponsored study by D Space D, a number of important issues were raised that merit further attention. They are as follows:

- **Space as a warfare environment** – Though presently not a very serious threat, Canada has fifteen satellites totaling over \$2 billion worth of hardware in orbit, and nothing to protect it with. While other countries are exploring the development of early warning detection and emergency maneuver equipment for military and civilian satellites, Canada has yet to initiate any such project. Though there has been a moratorium on Anti-Satellite weapons – many countries possess the basic military capability to interdict or physically harm satellites and their data.
- **Space as a center of gravity for military and commercial operations** – The future security environment will undoubtedly include a significant space element. Thirty-seven countries currently orbit satellites, as well as eight civilian companies (for example European Telecom Satellite Organization has as many satellites in orbit as Canada does). Space assets provide numerous non-weapon force enhancement capabilities for military forces. GPS, target acquisition, imagery, communications, and reconnaissance are but a few of the many applications satellites provide. Space provides a whole new arsenal of assets to both public and private interests. Essentially space operations are here to stay, and Canada can either actively participate in it or passively monitor the situation. What it cannot do is ignore it.
- **Space as a DND/CF responsibility** – As demonstrated in the 1986 NORAD debates, space-related issues are a DND/CF responsibility. Specifically, it must be prepared to address any infringements to Canada's sovereignty or security that may be generated

within or through the space medium. Canada's infrastructure for space-related defence issues is still very much in its embryonic stage, however, a considerable effort has been made given limited resources currently available.

- **Space as a DND/CF opportunity** – Historically Canada's condoning of various international treaties regarding the peaceful use of outer space were misinterpreted by the Canadian government as orders for a complete military withdrawal from space. Fortunately the 1986 NORAD debate encouraged a serious review of what Canada's military role in space could and should be. One of the few highlights to arise out of the 1987 White Paper on Defence was the commitment towards putting space operations back into DND's *modus operandi*. Presently D Space D is engaged in over thirty defence-related space projects and has committed over \$600 million over the next fifteen years to Canadian-American cooperation projects. This clearly indicates that Canada is interested in pursuing security and defence issues in space, and intends to use DND as a primary vehicle in that pursuit.
- **Space as a Canadian threat** – While access to space creates advantages it also presents a wide range of new and perceived threats for Canadian security. Most notable is the gross proliferation of public and private access to high-resolution imagery and remote sensing data. These new 'prying eyes' have raised concerns over potential organized crime and terrorist activity, improved navigation and detection systems for illegal drug importation and immigration organizations, and challenges to Canadian economic security in general. Additionally the CF has begun to initiate doctrinal debate on the impact of space assets on Canadian operations. In particular, the land staff has taken an interest in Navigation warfare or NAVWAR, and both the navy and airforce are paying close attention to the impact of space on its own strategy, doctrine, and training.
- **Space as an RMA catalyst** – Following on the previous comments, it is becoming increasingly obvious that future developments in CF land, sea, and air concepts of operations will be affected by space-related technologies. Emerging capabilities in data acquisition, correlation, analysis, and distribution will undoubtedly enhance the battle pace awareness of those forces capable of exploiting them. Likewise, future CF operations will be affected by the presence of these new capabilities on the battlefield. C4ISR technologies will fully integrate space technology into its infrastructure.
- **Space as an alliance coalition requirement** – If Canada wishes to fight alongside the best then it must be capable of understanding and integrating space-related assets into its day-to-day operations. As a member of both NORAD and NATO Canada will be required to operate with a sufficient amount of knowledge of space systems and applications in both peace and war. In particular, advanced C4ISR systems will demand officers and men with a particular expertise in space systems. Presently Canada has a very limited number of personnel devoted to space operations and a handful of persons posted to exchange positions in US military space commands. Future operations will require a solid commitment to space-trained personnel.

- **Space as a foreign policy issue** – Recent trends have indicated that the issue of space has increasingly affected foreign policy decision-making. In the case of Canada, access to particular technologies has been a considerable influence in determining the deployment of Canadian Forces overseas. If not in possession of indigenous space assets for a particular mission, Canada has demanded space assets from its allies before committing troops on the ground. Likewise Canada has deployed particular space assets that through a bi- or multi-lateral agreement has influenced its foreign policy. For example, Canadian participation in COSPAS/SARSAT created ties between Canada and the USSR (now Russia) that may otherwise have not existed. Such a relationship needed to be handled delicately when Ottawa's major ally was the prime adversary of its SARSAT partner.
- **Commercial space as a readily available force multiplier** – At the beginning of the space age most satellites assets belonged to the military. This balance has continually shifted in favour of commercial assets over the last three decades. The dramatic increase in commercial space assets and products has provided a multitude of readily available sources to exploit for security and defence purposes. For example, although RADARSAT is a commercial venture, its product is easily applicable to military operations. Likewise commercial weather and telecommunications satellites provide an outlet to be exploited by the Canadian Forces. There is every indication that this trend will continue into the foreseeable future, meaning that the CF will need to become aware of the many issues surrounding civil-military integration of space assets. The Americans are currently struggling with the issue now and have clearly identified a number of obstacles in achieving a smooth relationship between the two.

## **Conclusion**

As this paper has demonstrated there are a number of security concerns all of which point towards the need for a commitment to making space a strategic goal for Canada. It is quite obvious from the analysis of present trends that the future security environment will include space in every issue and at every level. Canada must seize on this opportunity now if it is not to be left behind by both its allies and adversaries. The initial advances by DFAIT and DND have indicated a sincere potential for enhancing Canada's space power, and this commitment must continue if Canada is to be considered even a threshold power in terms of space capability. In terms of security and defence it has every impact from national interests right down the last rifleman on patrol.