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## SPACE WEAPONIZATION AND CANADA-U.S. RELATIONS: LESSONS FROM AUSTRALIA

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At a time when new forms of security threats via outer space place further pressure on states to characterize key security values, a government's best option is to design a relevant and innovative space defense policy. In particular, the geographic location, finances and diplomatic support of middle powers afford them a decisive role in the international realm of space and security policy. To shed light on future space and weaponization policy options this article applies a comparative analytical framework to Canadian and Australian military space relations with the United States. An in-depth examination of these states' past, present and future approaches to space weaponization reveals that rapid adoption of new organizational and managerial practices for Canada and the U.S. would improve the chances of long-term middle power-major power cooperation on space weaponization.

### INTRODUCTION

Since the end of World War II, Canadian security policy has maintained a highly adaptive quality. New circumstances and emerging threats have continually challenged the evolutionary capacity of the Canadian military. The repeated success of Canada's defense can be attributed to a sound capacity to anticipate security needs, generate appropriate approaches to

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combat and foster strategic partnerships with close allies. Now more than ever Canada must modernize its security policy. Major players in global politics have largely finished reshaping the post-Cold War geo-strategic environment. Most notably, the United States has taken an assertive role in the fight against terrorism. In this stasis of new global order, Canada has aligned itself with NATO members to combat the Taliban in Afghanistan and has been committed to implementing the Canada-U.S. 2001 Smart Border Declaration. Clearly, Canada has demonstrated a sovereign interest in building closer security relations with the United States.

Outside the events of September 11<sup>th</sup> 2001, new forms of security threats via space place further pressure on the Canadian government to characterize its key values and design an innovative defense policy. The prospect of a "Space Pearl Harbor," and lost access to space-based services should not be understated. Attacks to key Canadian space assets could be effectively deterred through cooperation in U.S. space weaponization efforts. In order to help formulate and refine Canada's collaborative approach to space and security, I argue that the Government of Canada must move beyond broad international policy statements and formulate a defense strategy specifically for space policy which allows Canada to effectively participate in and advocate U.S. space weaponization. In support of this argument I analyze previous Canadian security objectives that relate to space and critique the current status of Canadian space security policy. By evaluating the merits of past positions and present policies it becomes evident that Canada is in serious need of a sound framework to address space security matters. In addition to this evaluation, the implications of political and economic capital will be incorporated throughout the analysis as forces which continually influence Canadian space policy. Lastly, organizational and managerial recommendations for Canada and the U.S. cooperation on space weaponization will be offered.

## **CURRENT CANADIAN MILITARY SPACE POLICY**

It is undeniable that Canada, at present, does not maintain a significant military presence in space. The Canadian government has not implemented any substantial policy for space since 1967 and the country currently only operates a small number of satellites. This capacity lies in contrast to Russia, China and the United States which maintain large-scale programs comprised of detailed surveillance, satellite constellations and long range missiles.

In order to guarantee Canada a place in the crowded space policy arena, policymakers must draft and implement a forward-looking strategic

framework. An innovative plan will have to promote economic prosperity as well as security and military objectives. Rapid growth in the commercial space sector provides a bridge to balance these goals. A clear-cut plan that aligns Canada with U.S. objectives and prevents knee-jerk reactions, like the opting out of the ballistic missile defense (BMD) system for North America, will allow Canada to demonstrate its value in a North American security agenda and leverage access to U.S. military space.

A greater understanding of where Canadian military space policy should proceed is further highlighted by a cross-country comparison of Australian space and security relations with the United States. Post 9/11, both Canada and Australia have taken “similar strides towards a more robust national security position” (Rostek 2006, 22). Further, Australia’s economic size, military capacity and Anglo-Saxon roots also make it an acceptable country for comparison with Canada. While Australia and Canada may differ in some respects (geographic proximity to the U.S.), contrasting each country’s unique investments in American military space assets still offers valuable insights into Canada’s space policy options.

## **LESSONS FOR CANADA FROM CURRENT AUSTRALIA-U.S. RELATIONS**

Since the Australian government under John Howard took office in 1996, there has been a continuous convergence in Australia-U.S. security relations. Timely decisions in Australia’s defense and foreign policy strategically positioned the country as a U.S. ally on global economic and security matters (Nossal 2005, 79). In terms of security alliances, Australia made critical judgments on stabilizing East Timor, invading Afghanistan, occupying Iraq, entering a U.S.-Japan-Australia strategic relationship and promoting national missile defence (NMD), all of which invariably supported U.S. interests. With this interventionist posture, Australia – the one time diplomatic pawn in international affairs – was able to present itself as a reliable and active partner in key U.S.-led initiatives.

From a long-term or historical perspective Australia’s military space policy does not provide a shining example for Canada. Previous eras of Canadian space innovation no doubt trivialize the Australian policies of similar periods. For example, Canada was the third country to have a satellite in orbit. In addition, the shuttle remote manipulator system more or Canadarm has been a staple tool on the NASA space shuttles since the early 1980s. Looking to the future, however, Canada’s past achievements or status in technological development should not be a reason to overlook Australia’s the recent strides forward. Innovative programs and a desire

to coordinate internationally demonstrate that new Australian space and security policy is on the way and investment is rising considerably.

A common theme in Australia's updated approach is the collaboration between their Department of Defense and U.S. counterparts on several key initiatives. Most notably, the Australian government collaborated with the United States to gain access to a world-leading satellite communication capability. The partnership, worth approximately \$1 billion, is supplied by the advanced Wideband Global Satellite Communications (WGS) constellation (Spacewar 2007). Through this arrangement defense personnel within coalition forces will have an enhanced ability to conduct multiple synchronized operations. Overall, the partnership is a sign of further unity on security matters. Australia's technological integration will reduce hesitation by U.S. military strategists over operational compatibility.

Australia's new WGS constellation indicates what is achievable through coordination with more robust U.S. space defense programs. By buying in on a six satellite constellation, Australia profits from a defense communications satellite network with worldwide reach and high bandwidth. Moreover, Australia will have a greater ability to play significant roles in Australia-U.S. missions. Increasingly, terrestrial military operations rely upon space-based technology to function. Harmonizing communication technology with the United States is one way for middle powers like Australia and Canada to benefit from large scale networks, battle-space information and a closer relationship with U.S. military operations.

Australia has also surpassed the capacity of Canadian military space assets by developing its own communications satellite system. The Australian Defense Satellite Communications Capability uses the C1 satellite to provide communications right through the Asia Pacific region in various bands (Ka, X and UHF radio frequency bands) (Space Security 2007, 99). In contrast, Canada has yet to develop its own military satellite program and instead is dependent upon the commercial sector (Iridium network) (Fergusson 2007, 33) for surveillance, imaging and communication services (Space Security 2007, 99). Although the benefits of public-private partnerships are vast, the security implications of relying on commercial entities for surveillance are understandable. Australia demonstrates that even middle powers are capable of controlling key space technology and developing modern autonomous communication systems. Canada can replicate this strategy with its space-based surveillance and support initiative Project Polar Epsilon and would also benefit from future coordination with the United States; more synchronized communication would improve the functional interoperability of Canada-U.S. forces.

The heightened innovative capacity of Australia provides another example where association with U.S. military space efforts can significantly develop space assets. The United States and Australia are pursuing cheaper and more responsive lift capabilities (Space Security 2007, 123). These new technologies have the potential to increase space security by enabling faster recovery times after attacks or malfunctions (Space Security 2007, 123). In 2006, the Australian Defense Science and Technology Organization and the U.S. Air Force Research Lab signed an agreement to work jointly on hypersonic technology development (Space Security 2007, 147). The \$54 million Hypersonic International Flight Research Experimentation (HiFIRE) project may move both countries towards a viable spaced-based strike capability (Space Security 2007, 147). Certainly involvement in such advanced technology would be far more expensive for Australia without the assistance of U.S. research. Australia's exposure to this technology, through test flights at Woomera, will improve security benefits in weaponized space. As international agreements struggle to define what is offensive, what is defensive, what is for dual use, what is a weapon and what is even verifiable, Canada must also acquire new knowledge on space weapons technology. Australian experiences show that the necessary expertise for investigating space weapons technology can be acquired through collaboration with the United States.

Projects such as HiFIRE demonstrate how intellectual ground in space weapons development is not easily covered. Many years are devoted to testing and research on projects before they are remotely feasible. Middle powers like Australia and Canada do not have the independent resources for long-term funding or to cover exponential increases in costs associated with advanced space weapons programs. Collaboration with the U.S. is an opportune method of taking part in time-consuming developmental stages.

NMD provides a quality example of technological innovation being inextricably linked to human capital and serious time allocation. Australia, unlike Canada, embraced the U.S. call for partners in developing a NMD capability. By entering into the defense system in its initial stages Australia has distanced itself from the other countries, such as Canada, which opted out. Canada, unlike Australia, chose to sacrifice its national security and future technological expertise by declining an opportunity to gain preferential access to information about ballistic missile threats (Sloan 2004, 162).

U.S. NMD is not a capability likely to go away; rather it has strong potential to develop into a weaponized space asset, and Canada once again

may be approached for support (Schofield 2005, 56). One may argue that Australia's steadfast support of NMD is due to its geographic distance from the United States. Indeed, Canada's close proximity to major U.S. cities allows it to free ride on U.S. missile defenses while remaining opposed to space weaponization. While there is some validity to this argument, it should be noted that vocal support of U.S. military initiatives, rather than passive free-riding, is generally reciprocated by improved security and economic integration. Australia's efforts give it an open ear in Washington as well as access to sensor technology that can be further applied to military support functions (Fergusson 2007). Canadian policymakers, more than anyone, should recall the value that access to the U.S. administration can have for a variety of interests beyond national security.

Finally, one may argue that Australia is merely playing catch-up to Canada by replicating the multifarious economic, security and cultural relationship that it has with the United States; space policy being just one facet of a larger strategy. Indeed, a trade agreement one week followed by further military cooperation the next may seem like the Canadian path to stronger U.S. relations. Yet Canadian policymakers, particularly space and defense experts, should not use this as time to rest on their laurels. Space weaponization is an inevitable reality for all countries, including Canada.

## THE INEVITABILITY OF SPACE WEAPONIZATION

The inevitability of space weaponization is apparent for multiple reasons. Most notably, treaty enforcement and international law struggle with a precise definitions space weapons. This is due to practical challenges in verifying space assets as weapons. Space-based technology is often "dual-use" with both commercial and military capabilities. Thus, it can be impossible decipher whether a space-asset is designed for business or military means. In addition, technological advancements and military inertia continually lead countries to utilize space for strategic purposes.

Recently, global changes in military space practices have required major players in space security to advance long-term defense projects. In particular, China's anti-satellite test demonstrated its pursuit of military space programs that utilize tools of asymmetrical warfare. Passive technologies for counter-space defenses of anti-satellite weapons, such as surveillance, satellite system hardening, and space asset maneuvering, are tactically inadequate for protecting space assets (Meteyer 2005, 48). Protection of space assets requires a capacity to deter attacks from force application. By pursuing space weaponization options alongside U.S. efforts, Canada

could provide the protection needed for key space assets.

As the all-encompassing space arena increasingly becomes a setting for military conflict, states small and large will have an interest in enhancing the survivability of space assets. In particular, Canadian and Australian economic activity relies heavily on secure and stable functioning space assets. Australia, a close partner in American military operations, has aligned itself with U.S. counterparts to protect its public and privately owned satellites. In contrast, Canada's policy of non-weaponization, if left alone, will degrade Canadian expertise in space defense and force continental security interests to become an even smaller part of U.S. efforts (Fergusson 2007). At the very least, Canadian access to leading U.S. systems, especially intelligence and reconnaissance data, could be diminished (Godefroy 2000, 55). Recent developments requiring "shutter control" agreements with the U.S. to launch systems has highlighted Canada's dependence on the U.S. and the importance of maintaining positive relations with America's military space cadre (Huebert 2004, 194). Shutter control restricts the types of images that can be accessed by various parties. Canada's ability to upload critical images from U.S. networks is sustainable through close international ties. Without a relationship similar to the Australian-American partnership, Canadian space assets and homeland security will be jeopardized by developments in space weaponry.

### **RECENT CANADIAN SPACE SECURITY INITIATIVES: AN INCREMENTAL REENGAGEMENT WITH THE UNITED STATES**

Although Canada has refused participation in U.S.-led missile defense, the Canadian government recently financed three new space security ventures: project Polar Epsilon, the U.S. extreme-high-frequency (AEHF) satellite communications system, and project Sapphire. Once launched, AEHF will guarantee Canada future access to the U.S.'s secure military communications system (Fergusson 2007, 33). In addition to project Polar Epsilon's use of RADARSTAT-2, Canada is also investing in a surveillance-of-space sensor called Project Sapphire (Pugliese 2005). Sapphire, a replacement for the retired Baker-Nunn ground based sensors (Fergusson 2007, 33), will feed the U.S. Air Force's space surveillance network and gather data on objects reentering the earth's atmosphere (Fergusson 2007, 33). Each of these capabilities will potentially strengthen Canada's role in the North American Aerospace Defense Command (NORAD) and increase Canada's access to information derived from U.S. space assets.

Combined, these three initiatives certainly integrate Canada's military

with the U.S. Each has a capacity to enhance national and continental security. Nevertheless, their collective implementation is unlikely to compensate for the decision to oppose missile defense.

## CANADA'S PEACEKEEPING MISSIONS AND SPACE TECHNOLOGY

While closer Canada-U.S. space and security relations will undoubtedly involve greater alliance in foreign policy, the pursuit of space technology does not imply that longstanding Canadian commitments (space technology commitments) to UN peacekeeping forces will be cast aside. Commercial satellite imagery has played and will continue to maintain a significant role in peacekeeping sensor capabilities. UN operations, from the Rwanda Refugee Exodus Situation (1996) to Kosovo (1999), have utilized commercial satellite imagery (Huebert 2004, 41). Canada's persistent support of sensor capabilities through its own satellites has the potential to improve an internationally recognized commitment to global peace and security. Publicly communicating this point is an integral part of improving political support for space and security.

Canada's RADARSAT-1 system displays the prospective utility of a more enhanced commitment to space security policy. The dated satellite, produced jointly through a public private partnership, has many capabilities which could support peacekeeping missions. Possible benefits include: the potential tracking of large groups of refugees, assessment of urban area displacement, road and rail network identification, and analysis of terrain features (Huebert 2004, 46). These capacities will be further developed in the newly developed RADARSAT-2 which has an enhanced version of the RADARSAT-1 sensor (Huebert 2004, 51). Embracing space technology through RADARSAT-2 and further satellite capabilities could improve Canada's ability to conduct peacekeeping operations.

Debates surrounding Canada's role in space and security often focus solely on contentious issues such as ballistic missile defense. Yet peacekeeping applications of space technology should not be forgotten in the midst of controversial matters. To show leadership in peacekeeping efforts Canada must embrace efforts such as RADARSAT-2. Promoting and protecting these sensor capabilities relies upon Canada's willingness to proactively engage with the United States. Due to the United States' International Trade in Arms Registry (ITAR), which restricts international transfers of weapons technology, U.S. officials only agreed to launch RADARSAT-2 after Canada established the 2005 Remote Sensing Space Systems Act to govern the dissemination of data, licensing, shutter control and priority



access (Fergusson 2007, 33). As this arrangement shows, Canada has a clear dependency on the United States for military launch capabilities and the defense of peacekeeping space assets. Consequently, politicized or non-strategic reactions to U.S.-led BMD jeopardizes Canada's leadership role in peacekeeping operations.

## SPACE WEAPONS AND CANADIAN POLITICS

### **BMD: Identity politics and the Quebec factor**

Canada's decision to opt out of U.S. BMD plans can be misconstrued as a stance "to avoid embracing missile defense capabilities that might facilitate space weaponization" because "a U.S. emphasis on military space functions will impede development of the multilateral collaboration that all states—including the United States—will require to achieve the civil space goals" (Huntley 2007). This flawed conclusion is based on small state international relations theory and stems from Canada's promotion of less interventionist military doctrines such as human security throughout the 1990s. Canada's status as a middle power and an influential power broker has evolved through consistent support for disarmament and arms control (Beier 2005, 443). However, Canada's role as international peacekeeper rather than peacemaker has not been a key determinant of national space policy. The executive branch of government has always grasped the benefits of national missile defense and other policies of space weaponization. Notable government practitioners of Canadian foreign policy have consistently promoted closer security ties with the U.S as a central objective regardless of a policy's political or technical feasibility (Noble 2005, 28).

Domestically in Canada it is well understood that the government's newfound opposition to BMD was not the result of a strategic middle power outlook, but was an outgrowth of turbulence in the Canadian political environment. Not unlike other liberal democracies, all politics in Canada is local, even on matters of international security (Rudd 2005, 31). With this in mind, Prime Minister Paul Martin's flip-flop on the issue of BMD can be attributed to his party's reliance on key constituents, mainly Quebec voters, due to the prospect of a tight election. Quebec public opinion had been and remains consistently more opposed to BMD than opinion in other parts of Canada (Martin 2005, 41). At the time of the BMD decision, the Liberal party led parliament, but struggled with a minority government. Furthermore, they faced serious criticism for a scandal that was highly publicized in Canada, with public attention located in Quebec. Consequently, saving seats in Quebec was a primary goal for the party.

Outside of short-term politics, Liberal leaders understood Quebec's long history of holding up Canada's participation in security matters. From invading Iraq to conscription crises in both world wars, the Quebecers have been less supportive of militarism and war than other Canadians (Martin 2005, 42). Even Brian Mulroney's Conservative government, which promoted Canada-United States economic and security integration, declined the Reagan Administration's invitation to participate in the Strategic Defense Initiative (SDI) after considering public opinion in Quebec and other parts of Canada (Huebert 2004, 198).

In addition to overwhelming public disapproval of BMD in Quebec, Canadian politicians were keen to observe that many Canadians were not interested in the sophisticated debates among military practitioners, public interest groups and epistemic communities (Beier 2005, 432). Contrary to academic predictions from Canadian security experts like David Haglund, a focus on national security after 9/11 and a heightened level of threat did not induce Canadians to embrace space weaponry or consider it any less controversial (Haglund 2001, 688). Moreover, questions concerning technical feasibility or uncertain financial cost that were raised by experienced Canadian engineers like Robert Harrison (2003) or defense specialist David Rudd (2003) were not central determinants of public disapproval. Instead, voters' negative evaluations of BMD were primarily based on their view of Canada's place in the world (Beier 2005, 431). Indeed, many Canadians had subscribed to former Minister of Foreign Affairs Lloyd Axworthy's position that Canada's soft power relies on the image projected abroad. According to his logic, Canada's views would be accepted abroad if foreign policy decisions followed a consistently applied and attractive set of values (Beier 2005, 444). BMD and the possibility of space weaponization did not promulgate politically favorable values of diplomacy and peaceful conflict resolution. This strong public sentiment allowed politics to so easily trump security.

### **Strategic policy statements**

The cases of SDI and BMD highlight the role that democratic politics play in shaping Canada's space policy. As a middle power, Canada's space policy reformulation has never been a direct result of international events such as weapons testing by rogue states; it is more common for policymakers to revisit their position when approached by larger powers or international bodies such as the United States. For instance, in 1968 after signing onto the UN Outer Space Treaty, Pierre Trudeau's first government transformed defense space policy by depriving the military of funds for all space projects

(Godefroy 2000). In addition, following Canada's debate over SDI, the Canadian government, under Mulroney, released a space policy paper in May 1986 (Godefroy 2000). From this paper came the creation of the Canadian Space Agency and by the 1990s Canada had placed a security component into its space policy (Godefroy 2000).

In contrast to the above trend, BMD provided an example where the Canadian government elected to respond without a well thought framework for pursuing Canada's space policy objectives. Parliament regarded BMD as a hiccup in terms of the space weaponization debate. In reality, it was a proverbial call to the government executive that times had changed and leadership would be necessary. Through advancements in directed energy weapons and boost or reentry phase missile defense intercept programs, future space weaponization could protect Canada's space assets and improve Canada-United States integration. In order to draft and implement a long-term strategy that supports these benefits and overcomes interim politics, the Canadian Government must be reorganized and positioned to collaborate on U.S.-led technologies.

## POLICY RECOMMENDATIONS

The above arguments concerning Canada's current position on space weaponization point to several ways in which policy should change, several of which have already been mentioned. The task remaining is to organize and elaborate on these ideas concerning needed organizational and managerial changes.

Without a doubt, the first step in expanding Canadian space weapons initiatives is to actually define and outline priorities in an overarching strategic policy statement. While certain aspects may not require public development, an overall strategic policy framework must be offered to public audiences so that Canada's true objectives and reasons for taking action are made transparent. The framework should be long-term so as to accommodate changing weapons technology and commercial sector expansion. A consistent and precise military space strategy would also ease space security doctrines into democratic political realms. When issues like national missile defense reappear, Canada could point to a solid plan for U.S. engagement.

A strategic framework must have an overarching authority to guide space policy among multiple departments. This centralized administrative capacity can only be achieved through a substantial restructuring of bureaucracy. The most obvious change should come in the creation of Directors General for space organizations in both the Departments

of National Defense (DND) and Foreign Affairs (DFAIT) (Fergusson 2007, 68). Currently, intradepartmental control over military space policy development is diffused among a variety of bodies. In DND, senior officials do not have direct access to military space activities because program administration is dispersed throughout the Assistant Deputy Minister for Policy (ADM-POL), the Vice Chief of the Defense Staff (VCDS), and a small section within the new Joint Production Capabilities Directorate (Fergusson 2007, 62). Likewise, in DFAIT, space policy is handled as a subgroup of issues within a division devoted to non-proliferation, arms control, and disarmament (Fergusson 2007, 65). To eliminate this decentralized control over military space policy development and implementation, both DND and DFAIT must consolidate policy development. Establishing Directors General would be a starting point for allowing senior decision-makers access to organized space and security policy. DND could use the old Directorate of Space Development as a framework (DSPACED) and move policy development outside the confines of the Directorate of Joint Capabilities (Fergusson 2007, 71).

Advancing space weaponization policy within DFAIT's structural hierarchy is also necessary for improved space advocacy. Emphasizing space technology's importance in future Canadian peacekeeping missions is important to reducing negative public stigma towards space weaponization. Granting a Director General managerial authority in Foreign Affairs' communications will bridge Canada's public messages on international disarmament, peacekeeping and space weaponization.

Beyond intradepartmental restructuring, overarching changes to Cabinet and interdepartmental relations are also required to further military space doctrine through a strategic policy statement. Again, here we can learn from examining the challenges faced by the Government of Australia. Under Australia's current Government Space Forum, chaired by the Department of Industry Tourism and Resources, information exchange and interagency collaboration on space-related responsibilities can take place (Australian Government 2007). Canada also maintains an interdepartmental committee on space that provides a similar function of coordination. However, other government approaches to space policy organization differ substantially in key aspects. For example, the Australian Government does not support a centrally-funded "space program" or "space office" (Australian Government 2007). Recently, Australia's defense and civil space communities have called for coordinated national space policy and a national space office (Dayton 2007). From Australia's Space Policy Advisory Group (Chapman 2006) to the anticipated Kokoda Foundation research project, prominent

figures from defense and commercial sectors are pressing for a strategic space policy statement and space office. In contrast, the Canadian Space Agency (CSA) is a well established facet of government that is located within Industry Canada. The drive in Australia to develop a space office, and a government-endorsed national space policy demonstrates that Canada should ensure that its CSA has the proper authority and a vision to promote space, security and weaponization.

As discussed, Australia has chosen an active approach to investing in U.S. military space technology. Borrowing from this alliance-building approach and given the established CSA, Canada should allow CSA to operate as an independent Ministry of Cabinet (outside Industry Canada) in order to advocate closer relations with the United States. Such macro institutional adjustments would increase a strategic space policy's presence at Canada's highest level of decision making. Ensuring that long-term policymaking adequately incorporates security interests would also mean that DND investments need to be integrated into a CSA space investment and policy framework (Fergusson 2007, 66). Under a strengthened CSA-DND cooperation, DND could retain control over its space finances, but projects would benefit from superior access to civil space technology.

An autonomous CSA that embodies DND objectives is also a necessary component to engaging with top levels of U.S. defense counterparts. Maintaining equal footing with officials at the National Security Space Office requires reciprocal high-ranking officials in Canada. Australia's commitment to space weaponization and security is maintained through hierarchical military structures. For example, in 2003 the Australian government appointed a director of Defense Space Engagement to oversee defence space activity, coordinate the writing of a defence space policy (ultimately a space doctrine) and liaise with private sector officials (Sach, 2003 134). Additionally, a Defense Space Coordination Office under the Chief of the Air Force was established to direct military space operations, and invest in space-related personnel training (Sach 2003, 137). Each of these positions allows Australia to interact with high-ranking counterparts in the United States. As well, they provide a framework for developing an upper-level space cadre. Any heightened emphasis on defense space by Canada must be manifested in a similar organizational structure to provide and generate space leadership. This could be achieved by reallocating defense space policy development and space advocacy to a separate directorate while retaining the Chief of the Air Staff and Deputy Commander of NORAD as operational heads (Fergusson 2007, 62).

Should Canada embrace the recommendations above, U.S. military

officials must recognize this heightened focus on space weaponization and respect the initial fragility of a closer relationship. Repositioning the Canadian government to favor space weaponization comes at considerable financial and political costs. It is imperative for Canada to demonstrate to the Canadian public that its dedication to space and security brings better access and involvement in U.S. military space. Canada must gain greater access for space experts and increased relevance within the National Security Space Office's international policy.

Small states, such as Australia and Canada, can bring additional resources, geographic location and diplomatic support to space weaponization projects. Maximizing these benefits requires a renewed U.S. emphasis on bilateral networks of communication at middle levels of government. In particular, the Canada-U.S. Defense Space Cooperation Working Group (DSCWG) should become more than a clearinghouse for space cooperation activities. The initial mandate of the working group was to negotiate a Canada-U.S. Defense Space Framework Agreement (Canadian School of Public Service 2004). Expanding the DSCWG's limited use, through increased focus on dialogue between its sub-groupings, would manage communication along several informal channels. These regular information exchanges will not only facilitate collaboration, but also allow Canadian officials to display their dedication to space weaponization.

## CONCLUSION

Rapid adoption of the organizational and managerial recommendations for Canada and the United States would improve the chances of long-term cooperation on space weaponization. Without such change Canada will continually lack the political capital in Quebec or elsewhere to follow through on a strategic policy statement. At a time when new forms of security threats via space place further pressure on Canada to characterize key security values, the government's best option is to design an innovative space defense policy. To help formulate and refine Canada's approach to space and security, the Government of Canada must move beyond broad international policy statements and formulate a defense strategy that allows Canada to effectively participate in U.S. space weaponization.

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