

Conference Report

EXECUTIVE SUMMARY

The Outer Space and Global Security Conference examined the current and future uses of space, assessing ways to prevent the deployment or use of weapons in and from outer space. Participants, who included governmental and non-governmental representatives, discussed a wide range of short-term and long-term measures to enhance space security, including the possibility of a ban on the deployment of any weapons in space. Short-term measures included a variety of confidence-building measures, space debris mitigation measures, cooperative space traffic control, non-offensive defences for space assets, agreements on non-interference with space assets, and increased public engagement on space security issues. In discussions of longer-term strategies, the Conference explored the potential role of the market and commercial interests in support of space security, the feasibility of negotiating a space weapons ban treaty in the foreseeable future, and plans for getting the CD back to work on the space security challenge.

THE MILITARIZATION OF SPACE

Introducing the space weaponization debate, Bruce DeBlois, of the Council on Foreign Relations, distinguished between the militarization of space—force enhancement including communications, navigational and intelligence gathering activity—and the deployment of weapons in space. He examined a wide variety of perspectives both for and against space weaponization—from those who argue it is inevitable to those who think it is costly, destabilizing and a bad precedent—noting that the debate tends to get polarized in a way that “incites emotional response and misdirects attention away from the real issue: that is, what is the best approach toward international security in space?”. He emphasized the importance of exploring the middle ground of the debate and considering options, including collaborative efforts rather than unilateral action or multilateral negotiations, such as temporary deployment of weapons in space in the face of immediate threats, confidence-building measures to establish “rules

of the road”, and attention to immediate concerns like space debris and overcrowding (see Part II).

CIVIL AND COMMERCIAL USES OF SPACE

Alain Dupas, a Paris-based consultant on space issues, examined the central role of civil space activity in creating the “global village” and raising awareness of our fragile environment. Examining the overlap between civil and military space operations, he demonstrated how activities such as remote sensing, navigation, communications and space transportation have both civil and military uses. Public funding far outweighs commercial investment in space, with the US the dominant investor; it provides 94.8% of military investment in space, but only 64.3% of public investment for civil activity in space. Predicting that revenues from commercial space applications will continue to rise, Dupas demonstrated the vast potential for expansion, arguing that this would be maximized if space systems provided relevant solutions for terrestrial needs, particularly sustainable development, and if balance was found between public and private investors, including international consortia.

Recalling the 1998 malfunction of the *Galaxy IV* satellite, a shutdown which interrupted communications, banking and other commercial activities across the globe, Atef Sherif, Director of the National Authority for Remote Sensing in Egypt, examined satellite vulnerabilities. He identified threats from both natural and synthetic space debris, arguing that the risk of a satellite or space vehicle being hit was growing exponentially as a consequence of the vast increase in human-generated debris. Considering other threats to satellites, including anti-satellite (ASAT) weapons, jamming techniques and land-based lasers, Sherif noted the need for increased attention to satellite hardening and other defensive technologies. He emphasized that the potential benefits of civilian space programmes, particularly with regard to sustainable development and communications in developing nations, must be protected from such emerging threats.

In the discussion of commercial uses of space, several participants noted that space offered immense opportunities to developing countries—for communications, access to information, monitoring of agriculture, weather trends and coastlines. Examining the threat that weaponization posed to space assets, there was particular concern that space be preserved

for these peaceful purposes. The opportunities for economic growth and sustainable development were noted and it was argued that all States should have access to these benefits. Some called for increased cooperation and information-sharing with regard to civil space programmes, while one participant stated that the extreme cost of space weapons and the underlying motivation of full spectrum dominance and control were offensive and threatening to developing countries.

Colonel Chris Hadfield, an astronaut with the Canadian Space Agency currently serving as Director of Operations, National Aeronautics and Space Administration (NASA) in Star City, Russian Federation, was the keynote speaker at the Conference luncheon, hosted by the Simons Foundation. He spoke about his personal experiences training for and travelling in outer space, aboard the shuttle, the Russian space station Mir and the International Space Station. With a compelling presentation that included photographs from his space walks and work on the Canadarm 2, Colonel Hadfield illustrated the great potential for international cooperation, technological development and peaceful exploration in outer space, graphically demonstrating the need to regulate human activity and protect space assets.

MILITARY AND SECURITY USES OF SPACE

Lt. Col. Peter Hays, of the United States Air Force, assessed current military uses of space, examining how space assets are used for force enhancement. Geodesy, environmental monitoring, communications, assessing position, time and velocity, navigation, integrated tactical warning and attack assessment and surveillance, intelligence and reconnaissance are some of the military activities requiring satellite technology. Arguing that “virtually all issues of space strategy and military space cooperation are shaped by [this] spectrum of views on the utility of weaponizing space”, Hays identified four views on space weaponization within the military establishment—space hawks, who seek dominance and control through space weaponization; inevitable weaponizers, who believe that the weaponization of space is inevitable and so the US must be first and retain its dominance; realists who believe the US has little to gain from weaponizing space, in part because it would threaten its considerable military assets for targeting and conventional “force support”; and space doves, who advocate that space should be preserved for peaceful uses. The

divergence of views, together with the development of new space technologies, the role of the commercial sector and tools of verification, complicate efforts to arrive at consensus on space arms control, but Hays suggested that commercial interests will play a deciding role in whether or not the US develops space weapons (see Part II).

Examining the implications of space weapons development, Phillip Baines, of the Canadian Department for Foreign Affairs and International Trade, argued that moves to weaponize space responded to three stimuli: missile defences responded to continued reliance upon and proliferation of nuclear weapons and their means of delivery; anti-satellite technologies responded to growing reliance upon and proliferation of artificial satellites and their means of delivery; and offensive space weapons responded to potential threats from unpredictable States. Outlining the variety of technically possible space weapons systems, Baines surveyed the perceived military advantages and disadvantages of basing weapons in space: on one hand they had a global reach, assured access, provided a rapid response, and were durable, but on the other hand they were a static defence, had predictable orbits and immense logistic expense, required a significant constellation size, and there were legal consequences for deploying space weapons. Baines argued that the deployment of space weapons would have negative implications for strategic and political stability, the environment, industry, and international cooperation—and ultimately these negative consequences, their limited military advantages and immense cost outweighed any benefits from space weapons.

Andrei Vinnik, of the Russian Ministry of Foreign Affairs, examined the political implications of the possible deployment of space weapons. He compared legitimate military use of space for strengthening strategic stability, with activities based on the logic of confrontation and the quest for military superiority—namely, space weaponization. The latter, he argued, threatened to undermine international security and stability, and to incite an arms race of symmetrical and asymmetrical space technologies. He described the June 2002 joint proposal, led by China and the Russian Federation, which put forward a possible draft treaty preventing the deployment of space weapons. He explained that that initiative was designed to facilitate peaceful activity and multilateral cooperation in space, and to protect objects currently in orbit, by preventing an arms race in outer space.

SECURING SPACE FOR PEACEFUL PURPOSES

Jonathan Dean, of the Union of Concerned Scientists, assessed the current legal regime related to outer space activity, which included but was not confined to the 1967 Outer Space Treaty (OST).¹ He argued that that body of law established a legal norm against the weaponization of space, and also placed certain constraints on potential space weapons development. He argued that to use weapons against any early warning, imaging or intelligence satellite would violate the concept of non-interference with national technical means of verification, described in the Strategic Arms Limitation (SALT) and Strategic Arms Reduction (START) treaties. This principle provided the basis for General Assembly resolutions calling for non-interference with communications, weather and Global Positioning System (GPS) satellites. He also suggested that there were grounds for the United Nations General Assembly to call for an advisory opinion from the International Court of Justice (ICJ) to assess specific actions the US might take in pursuing space-based missile defence for example, and establish a legal opinion on the validity of pursuing space weapons. Articles VII and IX of the OST allow for consultations to resolve dispute over space activity, including a Liability Claims Commission. Jonathan Dean argued that immediate steps should be taken to demonstrate international concern over US intentions.

Assessing options for a space security regime, Rebecca Johnson, representing the Simons Centre, argued that although the technological prospect for space weaponization was some years away, political action on this issue was of immediate relevance in view of the Bush Administration's ideological approach and military doctrine. Johnson suggested that to ensure continued dialogue with the US, the international debate needed to be framed not as a polarization of those for and against weaponizing space, but rather in terms of ensuring the present and future security and safety of the assets in space on which we currently depended, and also of advancing security on Earth. Some of the strategies Johnson proposed to lay the groundwork for a comprehensive space security treaty included alliance-

¹ Others are the Partial Test Ban Treaty (1963), the Astronauts Rescue Agreement (1968), the Liability Convention (1972), the Registration Convention (1976) and the Moon Agreement (1984), as well as several General Assembly resolutions and the conditions of the SALT and START treaties.

building across military, political and industrial sectors; information-sharing to strengthen advocates of a space weapons ban and contribute towards unifying States behind a coherent concept of space security; and maximizing the engagement of global civil society around achievable goals to prevent the weaponization of space (see Part II).

Responding to these presentations, James Clay Moltz of the Monterey Institute argued that the time was right to pursue space arms control— noting that there were signs that Republican members of Congress had reservations about the push to weaponize space. He suggested some immediate steps to set the stage for a future ban, including confidence-building measures involving debris mitigation, unilateral national declarations or commitments not to develop space weapons, public education, and a United Nations Convention on non-interference with satellites.

In his response, Li Song, of the Chinese Ministry of Foreign Affairs, noted the centrality of US policy in international options for addressing the issue and encouraged wider discussion within the US and the engagement of a variety of actors, including NGOs, which he said had a role to play in providing expertise and promoting awareness for wider public debate. Acknowledging the variety of proposals and approaches on the table, he cautioned against becoming frustrated, stressing that the process itself was an important step towards promoting awareness and developing international consensus on the issue. While advocating that the CD should assume the lead in negotiations, Li Song encouraged discussion in a variety of forums to promote the issue and make steps forward.

PURSUIING A SPACE WEAPONS BAN

Participants differed in opinion regarding the best approaches to pursue space security and a space weapons ban. Below is a summary of the major arguments and counter-arguments raised.

- An incremental approach was favoured by many, to achieve regulation in specific areas where there was currently agreement, thus improving space security in the short term, while preparing the ground to achieve the longer term goal of a space weapons ban. Concerns were raised, however, that though specific steps could be part of a gradual approach

they needed to be integrated into a holistic strategy with the clear aim of a comprehensive space weapons ban. The fear was that interim measures could take years of negotiating, allowing the core issue to be avoided, while space weaponization continued to be pursued until it was a fait accompli;

- A market-driven approach to space regulation could have advantages in preserving and maximizing the economic benefits of the peaceful uses of space, while taking into consideration the exorbitant costs of developing space weapons. Others cautioned that commercial uses of space should not drive the debate, and that care must be taken to prevent arguments about their vulnerability being manipulated or accepted as a rationale to permit weaponization;
- Several participants addressed the role of the CD in negotiating a space weapons ban, expressing frustration with the continued stalemate and with its inability to establish a programme of work. It was recognized that compromise would be required to begin multilateral negotiations on PAROS. The CD was called the “logical” place for these discussions, but many also acknowledged that the issue might need to be addressed in a variety of forums.

Participants also proposed several measures that would immediately increase the security of outer space for current peaceful uses, and could help lay the groundwork for a space weapons ban:

- Confidence-building measures, including unilateral or bilateral statements of opposition to space weaponization, pre- and post-launch notification to build a framework of trust and increase transparency;
- Debris mitigation, tracking, and elimination to address one of the greatest concerns about space security—the increasing presence of space debris and its potential to damage and destroy space assets. Suggestions included improved tracking of debris, “space worthiness licences” granted to those in compliance with debris mitigation standards, and cooperation to develop debris elimination technologies;
- Space traffic control, or rules of the road, to regulate space activity and improve transparency. Some suggestions included management of access to orbital slots, establishment of “keep-out zones” or buffer space around satellites, improved tracking, standard practices for de-orbiting, and limitations on frequency of launch;

- Non-offensive defences—decoys and manoeuvrable satellites, and providing redundant or spare satellites—should be encouraged as effective and non-threatening alternatives to weaponization;
- A United Nations resolution on non-interference with satellites might receive support from commercial sectors and the US Government;
- Increasing public awareness about the prospect of space weaponization and the debris issue would serve to decrease space “illiteracy” and motivate public action;
- Analysis of the long-term costs of space weaponization to explore cheaper, alternative forms of space security;
- Linking members of industry, military and government who were sceptical about weaponization to maximize this opposition;
- Broader awareness and discussion within the US, to motivate public engagement in US policy development.

CONCLUSION

Outer space offers immense potential for commercial, military and scientific use, but these beneficial opportunities are threatened by the prospect of weapons testing and deployment in space. Broad international support for a space weapons ban has been frustrated by the continued stalemate in the CD. Meanwhile, the US drive to develop space weapons appears to be accelerating, pulled along by the current Administration's plans to deploy multilayered missile defences. By bringing together diplomats and non-governmental experts in Geneva, this Conference fulfilled its purpose of furthering an important international debate. In particular, it highlighted several immediate steps that could be taken to address the broader question of achieving security for space assets and assuring access to space for peaceful purposes, while encouraging continued discussion towards a multilateral instrument to ban the deployment and use of weapons in, from, and into outer space.