

#03-3

Preventing the weaponization of space: options for moving forward

*Sarah Estabrooks
March 2003*

We are currently standing at a crossroads in the development of outer space. First called for by US President Eisenhower in 1958, the principle that space would be used for peaceful purposes has been accepted for nearly 50 years. Although the term “peaceful purposes” was never clearly defined, it was accepted that this included military, communications, commercial, and scientific uses. But there is strong movement within the US military establishment to expand the military uses of space to include war-fighting capabilities, to go beyond the accepted parameters of “peaceful uses” and the norm against placing weapons in space.

The weaponization of space debate

There is a broad international consensus opposing the weaponization of space and supporting the creation of a legal instrument banning the placement of weapons in outer space. Still, little progress has been made towards achieving this ban, while space has become increasingly militarized and the US is taking steps to make space weapons a reality.

The *Vision for 2020* document published by US Space Command in 1997 was the first clear indication of US intentions for space

weaponization. Since coming into office, the Bush administration has accelerated research and development of the planned ballistic missile defence system. In June 2002, it withdrew from the Anti-Ballistic Missile Treaty, arguing that this would hinder testing and development of the proposed ‘layered’ missile defences. As Secretary of Defense, Donald Rumsfeld has led the way in promoting military developments in space. He chaired the 2000 Commission to Assess United States National Security Space Management and Organization, which warned of a “space Pearl Harbour” if the US did not move to defend its space assets.

Defining the issue

Defining terms is chronically difficult in international arms control and disarmament negotiations, and this discussion is no different. Since the early days of the space race the international community has referred to the use of “space for peaceful purposes,” and to the need to maintain a “space sanctuary”; meanwhile military use of space has continued to expand. But a distinction must be made between “militarization” and “weaponization” of space.

Space has been “militarized” since the earliest communications satellites were launched into orbit. Today, militaries worldwide rely heavily on satellites for command and control, communications, reconnaissance and monitoring, early warning, treaty verification, and navigation with the Global Positioning System (GPS). Research and development is frequently funded by defence contracts. States accept that “peaceful purposes” include military use, even that which is not particularly peaceful, and space is considered a sanctuary only in that no weapons are deployed there.

Although space is heavily militarized, it is not yet weaponized. Space “weaponization” is generally understood to refer to the placement in orbit of space-based devices that have a destructive capacity. Therefore, while satellites may be used for aggressive measures, such as GPS navigation of fighter jets or precision guided missile delivery, satellites themselves have no destructive capacity and their support of military operations would not be considered weaponization.

Nor is there clear consensus on the definition of a space weapon. The Canadian government describes three categories of potential space weapons: space strike or orbital bombardment weapons that would operate in space but against land, sea, or air targets; anti-satellite (ASAT) weapons that would be used against enemy satellites; and finally, space-based variants of ballistic missile defence that would destroy ballistic missiles in the boost or mid-course phase. Space weapons might use directed energy, such as lasers or radio frequency, kinetic energy to destroy the target upon direct impact, or conventional explosives. Canada assumes a weapon is space-based if it “orbits the earth at least once, or has or will acquire a stable station at some point beyond earth orbit” (Westdal 2001). Defining the limitation of “space” is also an essential factor in this debate (DFAIT).

Any legal mechanism to prohibit weapons in space must take into account the full potential for the development of space weapons, the scope of use, and their placement in orbit.

Regulating outer space through the United Nations

The threat from uncontrolled military expansion into space was recognized very early in the space race. In 1962 the UN General Assembly adopted the “Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space.” This resolution became the basis of negotiations in the Committee on the Peaceful Uses of Outer Space of a multilateral mechanism regulating the use of space. The resulting Outer Space Treaty entered into force in October 1967, becoming the first treaty governing access to space. It established the principle that outer space is not open to national appropriation but is a global commons free for the use of all states, and it codified the phrase, “peaceful use of outer space,” banning the placement of weapons of mass destruction in orbit and the establishment of military bases in space. Nuclear weapons testing in outer space was banned by the Limited Test Ban Treaty of 1963, and several subsequent treaties and declarations were adopted in the 1970s, regulating exploration and military activity in space.

The weaponization of space issue first appeared on the UN General Assembly agenda in 1981 when the Conference on Disarmament was given the task of negotiating a treaty to regulate the military use of space in the resolution, *Prevention of an Arms Race in Outer Space* (PAROS). Although it was always a contentious subject, the CD made some progress on a draft treaty until disagreement between China and the US in 1995 prevented consensus on the creation of the Ad Hoc committee to continue negotiations. The CD had been negotiating a Fissile Material Control Treaty (FMCT), which was near completion, when China insisted that it would only support that item if PAROS were considered at the same time. The US has consistently argued that there is no space race, and therefore no need to negotiate PAROS. China’s insistence on linking the items and US opposition to PAROS blocked action on both items and the CD has remained effectively paralyzed since 1995.

Despite the stalemate in the CD, the First Committee of the UN General Assembly continues to support the PAROS mandate; at the 2002 session the vote was 156 in favour of PAROS, zero against, with Israel and the US abstaining (UN 2002). For 20 consecutive years the General Assembly has supported efforts to ban weapons from space.

Moving forward....

The drive to develop space weapons is growing – with a strong US commitment to missile defence, and the dissolution of the ABM – but so is international will to prevent the weaponization of outer space. Still, the best forum, mechanism, and methodology to put in place such a ban have not yet been determined. There is continued struggle in the CD to break the impasse there and begin discussions on PAROS; meanwhile NGOs and some States have proposed several alternative processes. I will examine some of these options for banning weapons from outer space.

1. Multilateral negotiations

Several proposals have been made to jump-start negotiations on a space weapons ban at the Conference on Disarmament, with Canada, China, and Russia taking the lead.

In 1998 Canada submitted a *Working Paper Concerning CD Action on Outer Space*, proposing that the CD establish an Ad Hoc Committee on Outer Space to commence negotiation of a convention. This early proposal suggested that the CD appoint a Special Coordinator “with an appropriate mandate to explore prospects for the early establishment of an Ad Hoc Committee with a negotiating mandate” as an interim measure toward full negotiations (CD 1998). The working paper proposal was renewed in February 1999 and Canada once again called for the establishment of an “ad hoc committee on outer space with the mandate to negotiate a convention for the non-weaponization of outer space” (CD 1999).

China’s support for PAROS negotiations was first clearly outlined in its working paper, “China’s Position on and Suggestions for Ways to Address the Issue of Prevention of An Arms

Race in Outer Space (PAROS) at the Conference on Disarmament” (CD 2000a). China’s proposal is more explicitly defined than Canada’s, offering specific recommendations as to what elements should be included in a legal instrument preventing the weaponization of outer space, with specific references to preventing an arms race in space.

Russia and China presented a joint CD Working Paper, with support from the delegations of Vietnam, Indonesia, Belarus, Zimbabwe, and Syria in June 2002. This most recent proposal was entitled “Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects.” It is effectively a draft Treaty, building on the earlier Chinese proposal and suggesting a purpose, structure, definitions, obligations, and mechanisms for entry into force.

At this point, the majority of States are still committed to pursuing a space weapons ban through the Conference on Disarmament, the official forum for multilateral arms control and disarmament treaty negotiations. This was made clear with Denmark’s vote on the Draft resolution, “Prevention of an Arms Race in Outer Space” at the First Committee of the UN General Assembly in October 2002 on behalf of the EU. It submitted a statement clarifying its voting rationale:

We want to reiterate that the Conference on Disarmament is the only international multilateral negotiating forum for disarmament. Therefore, it is within the CD that any decision should be taken regarding work on the prevention of an arms race in outer space (Nielsen 2002).

Efforts to break the deadlock and pursue discussions continue. In August 2000 Ambassador Celso Amorim of Brazil proposed a program of work, which called for the creation of four Ad Hoc Committees: two to “deal with” nuclear disarmament and PAROS respectively, the third to complete negotiations on the Fissile Material Control Treaty, and the fourth to begin discussions on a legally binding instrument on

negative security assurances (CD 2000b). More recently, the Five Ambassadors Proposal reiterated the call for four Ad Hoc Committees, giving the Committee on PAROS a mandate to “identify and examine, without limitation and without prejudice, any specific topics or proposals, which could include confidence-building or transparency measures, general principles, treaty commitments and the elaboration of a regime capable of preventing an arms race in outer space” (CD 2003).

2. *Step-by-step approach*

Arguing that an all-or-nothing approach to a space weapons ban is likely to alienate the key player from the outset, several people have proposed an incremental approach to a comprehensive ban.

John Rhinelanders has outlined a three-step process, including a “modest” step of a “multilateral agreement on non-interference with ‘peaceful’ assets orbiting in space ... perhaps in the form of a United Nations General Assembly resolution”; secondly, an “intermediate” step of “one and perhaps two ‘permissible interpretations’ of the [Outer Space Treaty] that would ban orbiting killers weapons, however armed, and perhaps require mitigation of debris in space”; and a “comprehensive” step, “a series of amendments to the OST or a new freestanding treaty that would include forbidding attack vehicles in space and establish the technical means of verification” (Coyle & Rhinelanders 2002, p. 6).

3. *Interim measures*

Another option for a gradual approach calls for interim measures to address the major threats of space weaponization, until such time as a treaty is in place. Some suggestions include a space debris management regime, confidence-building measures, and a space traffic control initiative.

Space debris already poses a serious threat to satellites, the International Space Station, and space travel, and testing of any space weapons would increase this threat exponentially. Debris mitigation might include initiatives to minimize debris during launches, strengthen the 1972 Liability Convention to include the potential

damage to space assets by debris, and research debris removal (Hitchens 2002b). Theresa Hitchens has argued that, as debris is a concern for all space users, and the US is a leader in debris tracking and mitigation, this could be an important area for international cooperation (2002b). This is an area of particular concern for industry and commercial space users and therefore one that might have wider support for immediate action.

Confidence-building measures would likely be an element of a treaty on space weapons, but could also be implemented separately in the interim. The working paper Russia and China submitted to the CD with suggested Treaty elements included a call for confidence-building measures:

To enhance mutual trust, each State Party to the Treaty shall promulgate its space programme, declare the locations and scopes of its space launch sites, the property and parameters of objects being launched into outer space, and notify the launching activities (CD 2002).

Although this language was written for consideration in future treaty negotiations, it suggests some measures that could be taken to increase transparency with regard to launches and space activity in the short term.

The application of “Space Traffic Control” or “Rules of the Road” to regulate space activities and establish standard practices is proposed as another intermediary requirement in securing outer space. Drawing parallels to similar agreements for activity at sea, Michael Krepon notes that these regulatory agreements could take the form of executive agreements between national authorities, and therefore not require lengthy treaty negotiations (2001). Clearly such interim measures would not prevent the weaponization of space, however they would allow for greater space security for peaceful activities, and diffuse the US argument that there is a risk of a “Space Pearl Harbour.”

4. *Compromise*

James Clay Moltz has proposed a compromise arrangement to break the deadlock on space

arms control. It would allow for limited missile defence, granting permission to attack missiles traveling through space, including deployment of boost-phase missile defences that do not require space-based elements. Testing of ground-, sea-, and air-based interceptors in low-Earth orbit against ballistic missiles passing through space would also be permitted, but with certain restrictions. In exchange, Moltz calls for a ban on the use, testing, or deployment of weapons or interceptors of any sort above 500 miles; a ban on stationing weapons of any sort in low-earth orbit; a ban on testing or use of lasers from ground-, sea-, or air-based orbital objects; and a ban on testing or use of other ground-, sea-, or air-based weapons against satellites or space-based objects (2002b, p. 8).

This set of prohibitions is designed to protect communications satellites in geo-stationary orbit and mediate use of low-earth orbit. Moltz argues that this strategy would please American moderates in the debate, including those in the Pentagon who do not support the hard-line on space, and might also receive bipartisan consensus in Congress. He argues: “The problem today in trying to identify a defensible middle ground for space arms control is the lack of a formula to draw in these moderates, who do not want to be painted as ‘anti-missile defense’” (2002b, p. 7). At the international level, Moltz suggests that this proposal might offer the Chinese an avenue to limit some of the most threatening elements of missile defence, and that Russia might be receptive to such a proposal (2002b, p. 9). But for those who oppose missile defence and seek a complete ban on weapons in space, this proposal is unacceptable.

5. Legal options

The body of international law referring to space security and governing activity in outer space is extensive. The 1967 Outer Space Treaty and subsequent treaties which enhance specific elements of the OST, have established a norm against the weaponization of space and the maintenance of outer space for peaceful purposes. This norm is reinforced annually with the UN General Assembly First Committee vote on the “Prevention of an Arms Race in Outer Space” Resolution.

Jonathan Dean (2003) argues, however, that this body of law establishes more than a legal norm against the weaponization of space; it also provides certain existing constraints on potential space weapons development. He highlights Article VII of the OST (1967), elaborated upon in the Liability Convention of 1972, which makes treaty parties that launch objects into outer space liable for damage to the property of another treaty party. The Liability Convention calls for a Claims Commission to assess liability in such a situation. Establishing the principle of co-operation in space activity, Article IX of the OST states that if a State party is concerned that another State’s activity might “cause potentially harmful interference with activities in the peaceful exploration and use of outer space,” it may request consultations regarding that activity. These mechanisms demonstrate some of the obstacles that could, and should, be put in the way of US plans to develop space weapons. Dean (2003, p. 5) argues that these mechanisms could be put in place immediately to demonstrate international concern over US intentions.

Dean (2002) also demonstrates that there are elements in the current treaty language that could be built on to create a definitive ban against space weapons. As a more immediate measure, he suggests that, based on the provisions in these Articles and the peaceful uses norm, the General Assembly could call for an Advisory Opinion from the International Court of Justice to assess specific actions the US might take in pursuing space-based missile defence, for example. This would establish a legal opinion on the validity of pursuing space weapons.

Others have suggested that amending the Outer Space Treaty to expand its list of banned weapons systems would be possible, and would not require the lengthy negotiations of a new draft treaty. John Rhineland and Philip Coyle (2002), p. 6) have called for a caucus of states parties to the Outer Space Treaty to review the Treaty and suggest specific amendments. They argue that “an amendment or permissible interpretation unanimously or overwhelmingly

endorsed by the treaty's 96 members would be very significant, and could include an explicit prohibition on tests against targets in space."

6. *An "Ottawa Process"*

Even if discussions commence on PAROS within the Conference on Disarmament, the consensus-based negotiations will undoubtedly hinder development of a comprehensive space weapons ban in the near term. Many people, especially from the NGO sector, have called for independent negotiations outside the CD, or an "Ottawa Process," in the pattern of the Landmine Treaty negotiations. Rebecca Johnson, formerly of the Acronym Institute, has advocated an independent treaty process, through which sympathetic States could negotiate a treaty outside the CD. The concern is that the US would boycott such a process and refuse to sign any Treaty. Johnson (2001) asserts that, although this is likely true, the influence of the commercial sector could go a long way in bringing the US on side.

7. *The Space Preservation Treaty*

The Space Preservation Act of 2002, tabled in the US Congress by Rep. Dennis Kucinich, calls on the US "[t]o preserve the cooperative, peaceful uses of space for the benefit of all humankind by prohibiting the basing of weapons in space and the use of weapons to destroy or damage objects in space that are in orbit..." The national legislation calls for the negotiation and implementation of an international *Space Preservation Treaty* through the United Nations. Rebecca Johnson (2003, p. 60) has argued that while the Space Preservation Treaty is not likely to result in real legislation, it is a valuable advocacy tool and "there may be some political merit in other parliaments introducing similar initiatives to stimulate national debate and public and political mobilization around space security issues."

Conclusion

The options I have presented are not mutually exclusive; indeed a combination of approaches will likely be required to achieve a space weapons ban. It will be necessary to continue advocating for multilateral negotiations; to elevate the profile of this issue with the public in

order to gain their support; to engage commercial, industrial, and scientific actors; and to work together as civil society partners. Some principles are useful to keep in mind:

1. There is currently international political will, including a strong commitment from Canada, to prevent the weaponization of space. To uphold this commitment, continued discussions on space arms control must be encouraged, particularly in the Conference on Disarmament, but also in the UN General Assembly, Committee on the Peaceful Uses of Outer Space, International Telecommunications Union, and other international organizations.

2. For nearly 50 years a norm has been upheld ensuring that space is a global commons to be used for peaceful purposes, and not for battle. These lines have become increasingly blurred and development of ballistic missile defence threatens to violate this normative standard. We must consciously make the link between missile defence and the introduction of weapons into space.

3. Dependency on satellites is continually growing, and we must be concerned with the broad security of outer space assets. Measures such as debris mitigation, and 'rules of the road' are important for maintaining access to outer space for peaceful purposes.

4. We are faced with a unique opportunity in the history of arms control, to prevent a problem before we have to address its consequences.

Sarah Estabrooks is a Program Associate with Project Ploughshares.

References

Aldinger, Charles 2001, "U.S. Likely to Put Arms in Space – Air Force Chief," Reuters, August 2. [Online], Available from http://www.space.com/missionlaunches/space_weapons_010802.html.

Dean, Jonathan 2003, "Defenses in Space: Treaty Issues," in *Future Security in Space: Commercial, Military, and Arms Control Trade-Offs*, ed. James Clay Moltz, Occasional Paper No. 10, Center for Nonproliferation Studies and Mountbatten Centre for International Studies, pp 5-6.

----- 2002, "The Current Legal Regime Governing the Use of Outer Space," conference paper presented at the Outer Space and Global Security Conference, November 26-27, Geneva, Switzerland.

DeBlois, Bruce 1998, "Space Sanctuary: A Viable National Strategy," *Airpower Journal*, Winter, pp. 41-57.

Conference on Disarmament 2003, CD/1693, Initiative of the Ambassadors Dembri, Lint, Reves, Salander and Vega, "Proposal of a Programme of Work," 23 January. [Online], Available from <http://ods-dds-ny.un.org/doc/UNDOC/GEN/G03/600/93/PDF/G0360093.pdf?OpenElement>.

----- 2002, CD/1679, "Working Paper Presented by the Delegations of China, the Russian Federation, Vietnam, Indonesia, Belarus, Zimbabwe and Syria: Possible Elements for a Future International Legal Agreement on the Prevention the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects," submitted to the Conference on Disarmament, June 27. [Online], Available from <http://ods-dds-y.un.org/doc/UNDOC/GEN/G02/624/84/PDF/G0262484.pdf?OpenElement>.

----- 2000a, CD/1606, Letter Dated 9 February 2000 from the Permanent Representative of China to the Conference on Disarmament Addressed to the Secretary-General of the Conference Transmitting a Working Paper Entitled "China's Position on and Suggestions for Ways to Address the Issue of Prevention of An Arms Race in Outer Space at the Conference on Disarmament." [Online], Available from <http://www.unog.ch/disarm/curdoc/1606.htm>.

----- 2000b, CD/1624, Proposal by the President on the Programme of Work for the 2000 session of the Conference on Disarmament, 24 August. [Online], Available from <http://www.unog.ch/disarm/curdoc/1624.htm>.

----- 1999, CD/1569, *Canada Proposal concerning CD action on outer space*, 4 February. [Online], Available from <http://www.unog.ch/disarm/curdoc/1569.htm>.

----- 1998, CD/1487, *Canada Working Paper Concerning CD Action on Outer Space*, 21 January. [Online], Available from <http://www.unog.ch/disarm/curdoc/1487.htm>.

Coyle, Philip E. and Rhinelander, John B. 2002, "Drawing the Line: the Path to Controlling Weapons in Space," *Disarmament Diplomacy*, Vol. 66, September.

Department of Foreign Affairs and International Trade (Canada), "The Non-Weaponization of Outer Space." [Online], Available from <http://www.dfait-maeci.gc.ca/arms/outer3-en.asp> [Accessed 15 October 2002].

Eisenhower, Dwight 1958, January 13, letter to Nikolai Bulganin, Chairman, Council of Ministers, USSR. [Online.], Available from <http://www.eisenhowerinstitute.org/programs/globalpartnerships/fos/newfrontier/letters.htm>.

Hitchens, Theresa 2002a, "Space Weapons: More Security or Less," in *Future Security in Space: Commercial, Military and Arms Control Trade-Offs*, ed. James Clay Moltz, Occasional Paper No. 10, Joint Publication of The Center for Nonproliferation Studies and The Mountbatten Centre for International Studies, pp. 28-31. [Online] Available from <http://cns.miis.edu/pubs/opapers/op10/op10.pdf>.

----- 2002b, "Some Ideas on Space Security," an intervention presented to the Outer Space and Global Security conference, November 26-27, Geneva, Switzerland.

Johnson, Rebecca 2003, "Security without weapons in space: challenges and options,"

Disarmament Forum, Making Space for Security? No. 1, pp 53-65.

----- 2001, "Multilateral Approaches to Preventing the Weaponisation of Space," *Disarmament Diplomacy*, No. 56, April.

Krepon, Michael 2001, "Lost in Space: the Misguided Drive Toward Antisatellite Weapons," *Foreign Affairs* May/June.

Moltz, James Clay 2002a, *Future Space Security*, Issue Brief for Nuclear Threat Initiative, June. [Online], Available from http://www.nti.org/e_research/e3_13b.html.

----- 2002b, "Breaking the Deadlock on Space Arms Control," *Arms Control Today* Volume 32, Number 3, April.

Nielsen, H.E. Ambassador Erling Harild 2002, Support statement on behalf of the European Union referring to Draft resolution L.30, "Prevention of an arms race in outer space," New York, October 22.

Space Preservation Act of 2002, HR 3616 IH, 107th Congress, 2nd Session. [Online], Available from <http://www.peaceinspace.com/L3-legislation-act.shtml>.

Spacy, William L. II 1999, "Does the United States Need Space-Based Weapons?" CADRE Paper for College of Aerospace

Doctrine, Research, and Education, Air University, Air University Press, September. *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 1967. [Online], Available from <http://www.oosa.unvienna.org/SpaceLaw/outersptxt.htm>.

UN General Assembly 2002, A/C.1/56/L.30, *Prevention of an Arms Race in Outer Space*, First Committee Voting Record, 57th Session of the UN General Assembly, 21 October. [Online], Available from <http://www.reachingcriticalwill.org/1com/1com02/vote/voteindex.html>.

United States Department of Defense 2002, "DOD Announces Merger of U.S. Space and Strategic Commands," News Release No. 331-02, June 26. [Online], Available from www.defenselink.mil/news/June2002/b06262002/bt331-02.html.

Westdal, Ambassador Christopher 2001, Testimony on PAROS for Delivery by Ambassador Westdal at the "Disarmament Week" Seminar, New York, 11 October. [Online], Available from <http://www.dfait-maeci.gc.ca/arms/outer6-en.asp>.

Project Ploughshares is an ecumenical agency of the Canadian Council of Churches, formed to implement the churches' imperative to pursue peace and justice. The mandate given to Project Ploughshares is to work with churches and related organizations, as well as governments and non-governmental organizations, in Canada and abroad, to identify, develop, and advance approaches that build peace and prevent war, and promote the peaceful resolution of political conflict.

"and they shall beat their swords into ploughshares, and spears into pruning hooks; nation shall not lift up sword against nation; neither shall they learn war any more" (Isaiah 2:4)

