

Can the Present International Space Law Prevent an Arms Race in Outer Space?

Can the Present International Space Law Prevent an Arms Race in Outer Space?

By Saurabh Jain*

Cite as : (2004) PL WebJour 14

Introduction

Space has long been an area of deployment for military systems. Some 170 purely military satellites orbit the earth, performing functions for the armed forces like surveillance, early warning, communication and control. There are signs now that a threshold is being crossed in military use of space – in future weapons systems could be further developed to the point of deployment whose stationing on earth or in space could initiate an arms race.

In discussing the expanding role of the military in space, the term weaponisation implies an increase in the capability to conduct warfare in, from, or through space. It is appropriate to use the term weaponisation, rather than militarisation, because both the United States and Russia have already militarised space. Since man's earliest days in space, intelligence and communications satellites have had military missions. What space has not been, at least to this point, is weaponised.

This article tries to find out where does the present international law fail, because of which the United States is able to legally develop weapons to deploy in space.

Although no comprehensive treaty about space weapons is in effect, a legal framework does exist. The next section focuses on relevant international treaties that address aspects of the space weapons issue and discuss relevant United Nations resolutions.

Legal framework on space weapons

A. Outer Space Treaty

The Outer Space Treaty entered into effect in October 1967. It is the second "non-armament" treaty (the first being the Antarctic Treaty of 1961). There is no expiration date. The Outer Space Treaty outlines many of the basic principles regarding human exploration beyond earth's atmosphere. The significant principles behind its forty-year success include the prohibition of nuclear weapons in space, and the guarantee of cooperation between States in all peaceful uses of outer space. The United Nations Outer Space Treaty provides the basic framework on international space law, saying that space should be reserved for peaceful uses. As summarised from the UN Office for Outer Space Affairs web site¹, the treaty includes the following principles:

the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind;

outer space shall be free for exploration and use by all States;

outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means;

States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner;

the moon and other celestial bodies shall be used exclusively for peaceful purposes;

astronauts shall be regarded as the envoys of mankind;

States shall be responsible for national space activities whether carried out by governmental or non-governmental activities;

States shall be liable for damage caused by their space objects; and

States shall avoid harmful contamination of space and celestial bodies.

In addition to the 1967 Outer Space Treaty, five other treaties address space issues. These are: the Limited Test Ban Treaty of 1963, which prohibits nuclear tests and any other nuclear explosions in the atmosphere or outer space; the Astronauts Rescue Agreement of 1968, requiring the safe return of astronauts and objects launched into space to their country of origin; the Liability Convention of 1972, establishing procedures for determining the liability of a State that

damages or destroys space objects of another State; the Registration Convention of 1976 requiring the registration of objects launched into space; and the Moon Agreement of 1984, which took the first steps to establish a regime for exploiting the natural resources of space. The latter four elaborate on aspects of the Outer Space Treaty².

B. UN resolutions

Beyond this, there are five relevant General Assembly resolutions. They are: the Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space (1963)³, which preceded the Outer Space Treaty and laid out most of its content; the Declaration on International Cooperation in the Exploration; Use of Outer Space for the Use and Benefit and in the Interest of All States (1996)⁴; and Resolutions on Direct Television Broadcasting, Remote Sensing of the Earth from Outer Space (which seeks to ensure affordable access by developing countries to non-military satellite imaging)⁵; and the Use of Nuclear Power in Outer Space (which deals with limiting exposure in the crash landing of nuclear-powered satellites and the liability for such accidents)⁶.

C. Committee on the Peaceful Uses of Outer Space

In 1958, shortly after the launching of the first artificial satellite, the General Assembly decided to establish an Ad Hoc Committee on the Peaceful Uses of Outer Space, with 18 members, in order to consider:

the activities and resources of the United Nations, the specialised agencies and other international bodies relating to the peaceful uses of outer space;

international cooperation and programmes in the field that could appropriately be undertaken under United Nations auspices;

organisational arrangements to facilitate international cooperation in the field within the framework of the United Nations; and

legal problems, which might arise in programmes to explore outer space.

Practical proposals for international cooperation included exchange of information on space research, coordination of national space research programmes and assistance in the realisation of such programmes⁷.

In 1959, the General Assembly established the Committee as a permanent body and reaffirmed its mandate in Resolution 1472 (XIV)⁸. The Committee is comprised of two sub-committees: the Scientific and Technical Sub-Committee and the Legal Sub-Committee. Each body meets annually to discuss the current items on their respective agenda.

D. Conference on Disarmament

The Conference on Disarmament is the primary body for negotiating this matter. The item was first inscribed (included in the agenda) in 1982. The CD, in 1985, established a subsidiary body (not a negotiating body, but an Ad Hoc Committee) to deal with this topic. It collected a valuable repertoire of information on the issue. Perhaps most importantly, this Committee showed that it is possible to work multilaterally on this subject. This is critical because space and launch capability has not remained static; it has been further developed and proliferated.

Between 1985 and 1994, the Conference on Disarmament created an Ad Hoc Committee (AHC) on the Prevention of an Arms Race in Outer Space (PAROS). The CD delegations studied various ways and means of addressing the security challenges posed by human activity in outer space. UN Document A/48/305, Prevention of an Arms Race in Outer Space Study on the Application of Confidence-Building Measures in Outer Space (15 October 1993) reports on various confidence-building measures considered by the international community over that period. The Conference on Disarmament has not been able to agree on the formation of an Ad Hoc Committee with a mandate for outer space since 1994.

Space is regarded in international law as a peaceful domain for the benefit of all nations and all humankind to share. The Outer Space Treaty outlines many of the basic principles regarding human exploration beyond earth's atmosphere. The United States is seeking to make space a new arena of war. This is in violation of the intent of the basic international law on space, the Outer Space Treaty (OST). The OST, ratified by most of the world's nations, sets aside space for peaceful purposes. But the US administration and military have other ideas.

United States towards controlling space

A. Policy to control space

is politically sensitive, but it's going to happen. Some people don't want to hear this, and it sure isn't in v

absolutely we're going to fight in space. We're going to fight from space and we're going to fight into space. The US has development programs in directed energy and hit-to-kill mechanisms. We will engage terrestrial targets someday from ships, airplanes, land targets from space.

The United States is already on the path of weaponisation of space. This is obvious by the material coming out of the Pentagon's US Space Command based in Colorado Springs, Colo. The cover of the "Vision For 2020" report of the US Space Command, for example, depicts a laser weapon shooting a beam from space zapping a target below. The report opens: "US Space Command dominating the space dimension of military operations to protect US interests and investment. Integrating space forces into warfighting capabilities across the full spectrum of conflict."

"Vision For 2020" compares the US effort to "control space" with the effort centuries ago when "nations built navies and enhanced their commercial interests" by ruling the oceans. What is to be noted here is that, US military documents stress not defence but "control" and "domination" of space and from it the earth below.

The Bush administration in the United States has made clear that it wishes to expand its military capabilities in space and be dominant in this fourth military arena (the other three being sea, land and air). This new "ultimate high ground" would provide further superior military capabilities. While it would provide additional important defence mechanisms, many worry about the other benefit it would bring "ability to use these abilities for offensive purposes to push America's national interests" even if they are not international interests.

Militarised space has long been a fact. A whole armada of satellites for purposes such as navigation, surveillance and communication is now in orbit. Specifically, they perform the function of "force multipliers" by increasing the efficiency of military operations on land, sea and air ("space-force enhancement"). However, USA has now set the stage for further advances: the aim is to limit the capabilities of potential opponents to use space-based systems for military action ("counter-space") and to develop US capabilities to threaten and apply force from space against terrestrial goals. The future potential of space is to be fully utilised by providing a range of "force application capabilities in, from and through space".

B. Weapons for space

What is the current State of space armament? Leaving aside unconfirmed reports of Chinese parasite microsattellites, there are currently no implemented space-based weapons systems known. Space-based laser weapons and space-based missiles (both for the purposes of missile defence) are just as much in the research and development stage as military microsattellites.

USA and Russia have long had technological capabilities to disrupt and possible-to-destroy satellites from the ground (or air), and the technologies are being continuously upgraded. The People's Republic of China is also currently working on acquiring these capabilities. Besides lasers and highpower microwave systems, these include primarily the technological competence of USA and Russia in the form of air-based anti-satellite systems.

Any State with nuclear weapons is technologically in a position to use a high-atmosphere nuclear explosion to damage satellites (including their own) in a number of orbits. Further proliferation of ballistic missiles and nuclear weapons could increase the number of States and subnational actors with this capability in the next few years.

Attacks against the terrestrial part by satellite systems (conventional, electronic) offer yet another possibility for disrupting or damaging these, which is available to far more conceivable actors, as it involves less technological sophistication.

Besides these existing options for use of weapons in, from and through space, additional options can be expected in the near future. How might the further course of development look?

Considering the strategic thinking and goals in the US planning documents and the technologies discussed and pursued to achieve these goals, the following hypotheses can be formulated and presented for discussion on the further technological development of the weapons in question:

There is much to suggest that microsattellites and service robots for use against other satellites may be a first step towards achieving the goal of comprehensive "space control".

Air-based laser weapons against (tactical) ballistic missiles are being developed on an ongoing basis. This could improve their suitability for use against space targets to the point where an air-based laser could become an efficient option.

Development of ground-based kill vehicles for use against satellites is relatively far advanced. Due to further R&D activities in connection with missile defence projects, these developments are being accelerated, so that anti-satellite systems with kinetic energy (KE) warheads may soon be ready for deployment.

Ground-based laser weapons for disruption are already available. Lasers to damage or destroy space targets are

options, which can be expected to be viable in the medium-term.

Ground-based high-power microwave weapons to disrupt satellites are capable of deployment in the short- to medium-term.

Space-based laser weapons to destroy ballistic missiles (even before the end of firing) are currently being pursued with reduced effort; the deadlines for tests and stationing have been pushed well back.

Space-based KE concepts for use against intercontinental ballistic missiles (in the launch phase) are being pursued further, despite the major technical problems to be solved.

From the arms control policy point of view, it is a fact that the military options listed here are not prohibited in any phase of development up to and including deployment. Of the developments listed, the focus is particularly on those which lead to the "weaponisation" of space through relatively passive use "for systems of surveillance, communication and control." This addresses particularly the option of stationing weapons systems for use to, in and from space. From the perspective of arms control policy, this trend poses a problem, as it emerges that existing space law instruments and existing arms control agreements are unsuitable for slowing further militarisation of space, let alone preventing it. Next section tries to find out where does the present international law fail, because of which the United States is able to legally develop weapons to deploy in space.

Treaties implications

Any deployment of orbital weapons would have to take into account current treaties regarding the use of space. "The treaties of primary concern are the Charter of the United Nations (1945), the Partial Test-Ban Treaty (1963), the Outer Space Treaty (1967), the ABM Treaty (1972), the Environmental Modification Convention (1977) and the Moon Agreement (1979)." Taken together, these treaties and conventions prohibit placing nuclear or other weapons of mass destruction in orbit around the earth or the moon, prohibit placing military installations or weapons on the moon or other celestial bodies, and declare that space is to be used exclusively for "peaceful purposes".

Aside from weapons of mass destruction, the treaty implications of deploying orbital weapons are somewhat vague. The preamble to the Outer Space Treaty of 1967 stipulates that space will only be used for "peaceful purposes". While peaceful purposes are never clearly defined in the treaty itself, the treaty references the Charter of the United Nations (UN), which defines "peaceful purposes" to include the inherent right of self-defence. The vagueness with which "peaceful purposes" is defined has prompted considerable discussion of its meaning. Interpretations range from banning any type of weapon whatsoever, to permitting purely defensive weapons to be deployed. "None of the proposed interpretations would permit the deployment of offensive weapons in space."

The problem with attempts to limit space-based weapons to those that are defensive is that most space-based weapons "like most other weapons" are difficult to categorise. This fact has been noted by the UN Conference on Disarmament, which cites "the dual ASAT/ABM capability of many defensive ABM concepts as making the systems potentially offensive." This is mirrored by the potential dual capability of many ASAT concepts which, given their potential ABM capability, would be in violation of the 1972 ABM Treaty. "While some argue that the ABM Treaty has outlived its usefulness and is in fact no longer even valid, the lack of a clear distinction between offensive and defensive orbital weapons makes any deployment controversial."

The ABM Treaty is the most restrictive treaty currently in force that bears on weaponising space. This treaty limits "the United States and the Soviet Union each to a single ground-based ABM site". The treaty is unusual since it does not specify each type of system that is prohibited; instead it is written to prohibit everything and then lists exceptions, the one ground-based system permitted for each signatory. The effect of this structure is that new technologies that could be used as ABM weapons are automatically excluded. Interpreting the treaty has led to considerable controversy, such as, whether orbital mirrors used to aim ground-based lasers at satellites would be components of an ABM system. "Since these mirrors could be used to aim the laser at a ballistic missile, many nations hold that they would be proscribed, regardless of the mission for which they were intended."¹¹ As long as it remains in force, the 1972 ABM Treaty will greatly complicate any attempt to place weapons in orbit.

Solution to prevent weaponisation of space

A possible solution would be to achieve "with the participation of as many States as possible, including USA" regulation of offensive and aggressive space weapons, starting at the level of a ban on stationing. The chance of integrating USA in such a process currently seems extremely small and the danger of reaching a deadlock in negotiations seems great. However, the attempt to reach agreement with USA at such a level (admittedly lower) on an arrangement including a substantial ban would be worth intensive diplomatic and civil efforts. The results of such a process of negotiation would be more valuable for arms control policy than a comprehensive agreement without USA or confidence- and security-building measures, which ignored the core problems. Also, an International Treaty Signing Conference for the Space Preservation Treaty can be convened at any time by any willing UN member State(s) under the authority of Article 102 of

the United Nations Charter. Since 1948, over 40,000 multilateral agreements or treaties have been signed, ratified and deposited with the UN Secretary General by member States under Article 102 of the UN Charter. Under Article 102 of the United Nations Charter, "every treaty and every international agreement entered into by any member of the United Nations after the present Charter comes into force shall as soon as possible be registered with the Secretariat and published by it".

There have been many proposals to fill the gap in the Outer Space Treaty's prohibition of weapons. Canada and many NGOs have made proposals. The most recent suggestion is a Russia-China working paper presented to the UN Conference on Disarmament (CD) on 27-6-2002, which contains possible elements of an international legal agreement on prohibiting the deployment of any weapons in outer space. It would also prohibit the threat or use of force against space objects, a concept that would ban anti-satellite weapons, either mounted on aircraft or ground-based.

At present, there is no prospect that this treaty outline will make progress at CD, owing to the conference rule of consensus decisions and the outright opposition of the United States.

The United States has said it is willing to discuss this issue at CD, but not to negotiate a treaty on it. China had long insisted that, in addition to discussion, the possibility of negotiation must be mentioned in the agenda, however, in August 2003, China signalled it was prepared to compromise on this point¹² There is even some agitation to change the consensus rules of the Conference on Disarmament. In the meantime, the Russian-Chinese draft can be refined further and developed into a usable treaty text, with help from other Governments and NGOs.

Conclusion

The prevention of an arms race in outer space is an arms control issue that is very crucial for averting the erosion of international rule of law. The withdrawal of USA from the ABM Treaty is adding to the perception that law and policy regarding both outer space and international security are at critical junctures. USA increasingly perceives space weaponisation as inevitable, as an integral part of US policy. The dangers of an arms race in outer space are infinite. Though the dangers are literally incalculable, we do know that they would include direct security, economic, energy and environmental risks and losses as well as opportunity costs for sustainable development and human security. The peaceful uses of outer space, both current and anticipated, would be interrupted. Environmental monitoring, resource management, disaster mitigation and prevention, and application of spin-off technology benefits to sustainable development are simply not compatible with plans to develop and deploy space-based and anti-satellite weapons, or any weaponisation of space.

* BA, LLB (Hons.) National Law Institute University, Bhopal. Return to Text

1. External Link: "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space", United Nations Office for Outer Space Affairs; available at the website <http://oosa.unvienna.org/SpaceLaw/outerspt.htm> Return to Text

2. International Legal Agreements Relevant to Space Weapons: available at website http://ucsusa.org/global_security/space_weapons, last accessed on 20th May 2004. Return to Text

3. General Assembly Resolution, 1962 (XVIII) of 13 December 1963. Return to Text

4. The Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries (Resolution 51/122 of 13 December 1996). Return to Text

5. The Principles Relating to Remote Sensing of the Earth from Outer Space (Resolution 41/65 of 3 December 1986); the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (Resolution 37/92 of 10 December 1982). Return to Text

6. The Principles Relevant to the Use of Nuclear Power Sources in Outer Space (Resolution 47/68 of 14 December 1992). Return to Text

7. Resolution 1348 (XIII). Return to Text

8. The United Nations has created Resolution 1721 (XVI) B which establishing the United Nations Registry of Launchings, was adopted 20 December 1961. Return to Text

9. Commander-in-Chief of US Space Command, Joseph W. Ashy, in Aviation Week and Space Technology, 9-8-1996, quoted from "Master of Space" by Karl Grossman, Progressive Magazine, January 2000. Return to Text

10. Glen H. Reynolds and Robert P. Merges, Outer Space: Problems of Law and Policy, 2nd Edn. (Boulder: Westview,

1997), pp. 48-134; or Philip D. O'Neill Jr., "The Development of International Law Governing the Military Use of Outer Space," in Durch, Ed., *National Interests and the Military Use of Space* (Cambridge, MA: Ballinger Publishing Co., 1984), pp. 169-200. Return to Text

11. Duncan Lennox, Ed., *Jane's Strategic Weapon Systems* (Jane's Information Group Limited, Sentinel House, Coulsdon, England: 1997), issue 26 January 1998. Return to Text

12. Available at website <http://www.unog.ch/news2/documents/newsen/dc0333e.htm> Return to Text