

CRITICAL ANALYSIS OF THE ARTICLE IV OF THE OUTER SPACE TREATY AND ITS RELAVANCE FOR THE PRESENT DAY

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Abstract— *Space Law can be defined as the body of law governing space related activities. Space Law comprises a variety of international agreements, treaties, conventions, United Nations General Assembly resolutions, and rules and regulations of international organizations. The committee on Peaceful Uses of Outer Space(UNCOPUOS) has concluded five principle treaties on Space Law. Its first treaty, The Treaty on Principles governing the activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies was adopted in 1967. This Treaty provides the basic framework for international space law. Article IV of the treaty prohibits placing in orbit around the earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies or station such weapons in outer space in any other manner. However, the treaty is silent on emerging threats such as kinetic kill vehicles, space-based lasers and Anti-Satellite weapons. In this backdrop the author seeks to examine Article IV of the treaty and identify the inadequacy of the treaty to include modern space weapons. This study is based on Primary sources which includes international instruments such as United Nations treaties and secondary sources such as books and journal articles on the subject. Furthermore, the author has conducted a field research as well. The study brings in to focus the grey areas pertaining to Article IV of the treaty in terms of the inadequacy and precision of the terms employed vis-à-vis the technological advancements taking place in the contemporary context. The study concludes emphasizing the necessity of updating the Article IV of the outer space treaty to include Kinetic kill Vehicles, Laser Weapons and Anti-Satellite Weapons, in addition to the weapons of mass destruction which is already stated in the Article.*

Keywords— kinetic kill vehicles, Laser weapons, Anti-Satellite weapons.

I. INTRODUCTION

Space law is a creature of international law which is a combination of customs and treaties. During the years of 1960 and 1970s several agreements were adopted to prevent the weaponisation of outer space. These include

the treaty banning Nuclear Weapon Tests in the Atmosphere, in outer space and under water (1963), The Outer Space Treaty, Agreement on the Rescue of Astronauts, The Return of Astronauts, and the Return of Objects launched in to Outer Space(1968), Convention on International Liability for Damage Caused by Space Objects(1972), Convention on Registration of Objects Launched in to Outer Space(1975), Agreement governing the activities of States on the Moon and Other Celestial Bodies(1979). The primary treaty governing the law of space is The Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies or more commonly known as the Outer Space Treaty of 1967 (listener,2011). The outer space treaty prohibits placement of nuclear weapons or weapons of mass destruction in the orbit of earth or in any other celestial bodies (outer space treaty Article IV). Article IV of the treaty constitutes, as President Johnson stated “the most important arms control development since the 1963 treaty banning nuclear testing in the atmosphere, in space and under water”. Further ambassador Goldberg explained to the political committee of the General Assembly that “This Article restricts military activities in two ways. First, it contains an undertaking not to place in orbit around the earth, install on the moon or any other celestial body, or otherwise station in outer space, nuclear or any other weapon of mass destruction. Second, it limits the use of the moon and other celestial bodies exclusively to peaceful purposes and expressly prohibits their use for establishing military bases, installations, testing weapons of any kind or conducting military manoeuvres “(Dembling & Arnos, 2007). It is explicitly clear that Article IV of the outer space treaty guarantees the demilitarization of outer space. However, with the development of technology several new space weapons have been created by states and are currently being tested in preparation for deployment over the next several years. This research paper critically evaluates the inadequacy of the Article IV of the outer space treaty not to include those new space weapons and the need to expand the Article IV to ensure peaceful uses of outer space.

II. NEW SPACE WEAPONS

The space weapons generally fall in to one of two categories: kinetic kill vehicles and directed energy

weapons. Kinetic kill vehicles are conceptually straightforward. They are simply solid objects designed to crash in to their targets. Because of the extreme velocities of objects travelling in orbit, no explosives are needed. The force of the impact alone is enough to destroy almost any conceivable target on the ground (Englehart, 2008). Developed States are testing various types of space-based lasers to be used in near future (Lambakis, 2001). space based lasers have the major benefit of being reusable-after the laser apparatus is launched in to orbit, it will function for long periods of time without the need to replenish ammunition, as would be required for kinetic kill weapons. Additionally, they can hit their target within a matter of seconds, as opposed to the delay of several minutes involved with kinetic weapons (Englehart, 2008). Anti-satellite are also space weapons that are designed to hit a targeted satellite in orbit. There is evidence that Anti-satellites (ASATs) have been in existence from early times in countries like United States. The United States has had them since the 1980s and china successfully tested one in January, 11 in 2007. (Englehart, 2008). U.S. government announced a new National Space Policy in 2006 (National Space Policy,2006). It states that the United States invested approximately \$1 billion in developing anti-satellite weapons, in that year. In addition, Russia sees "space warfare as a distinct possibility in the future". Furthermore, China's Central Committee has given its highest priority to the development of anti-satellite weapons since 1998 and has invested between \$1.4 and \$2.2 billion on its space program over the past decade (Kuan,2010) Therefore, it is clear from these facts that developed states are using and some are testing new space weapons. It can be predicted that over the years the investment those states put to space related activities would increase.

III. THE OUTER SPACE TREATY IS OUTDATED

The preamble of the Outer Space Treaty states several noble principles. It states that the state parties to the Treaty recognize the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes, believe that the exploration and use of outer space should be carried on for the benefit of all people irrespective of the degree of their economic or scientific development and believe that international cooperation will contribute to the development of mutual understanding and to the strengthening of friendly relations between states and people. It is clear from the preamble that the main aim of the outer space treaty is to ensure peaceful uses of outer space including moon and other celestial bodies. For the peaceful use, outer space shouldn't be used for military purposes. The

Treaty should expressly prohibit weaponisation of outer space. Although Article IV of the Treaty bans stationing of space objects carrying nuclear weapons and other weapons of mass destruction. It does not expressly state about the prohibition of new space weapons such as the above mentioned Anti-satellites, kinetic kill vehicles and space based lasers. The treaty has failed to define the term "weapons of mass destruction". The definition of the terms "space weapon" is also problematic. Therefore, this loophole can be exploited by the developed states to use space weapons in outer space. It can be seen that although Article IV of the Outer Space Treaty is still valid as an international treaty it has not been updated with the new technology to suit the modern context. Therefore, as mentioned above developed states are using this loophole in their favour. If it continues to happen it can be seen that, as the preamble of the Treaty suggests a peaceful use of outer space cannot be achieved. It can be argued that if restrictions are not imposed states would use space weapons to show military power and it is likely that a space race between states will take place which would be a threat to world peace and harmony. Critics Helen Caldicott and Craig Eisendrath argue that "placing weapons in space inevitably would provoke an arms race there. Such a race eventually would consume hundreds of billions of dollars." Furthermore, US Air Force Commander said in 2005 that "space superiority is not our birth right. But it is our destiny. Space superiority is our day to day mission. Space supremacy is our mission for the future" (Weiner, 2005). Similarly, Mike Moore contends that, "If the United States chooses to go the route of space dominance, other countries will look at ways to make sure it doesn't happen, and we'll be back in another arms race." (Krepon & Hyman,2005). It can be argued that as these statements suggest the states are taking advantage of the loophole in Article IV of the Outer Space Treaty. Furthermore, countries like the US has shown an increase in funding and support for Anti-satellite and related programmes. In 2004 the Pentagon received \$168.6 million for the development of space weapons technology and over \$2 billion for weapons related programmes (Webb,2016). More importantly it would be a major threat to human's existence on earth because of the destruction that can caused by these new space weapons.

III. THE NEED TO UPDATE THE OUTER SPACE TREATY

It can be argued that the essence of the outer space treaty was placed in Article IV of the treaty. Although at the time the treaty was adopted the only major threat was from nuclear weapons, nowadays more space weapons are playing a major part in space related activities. Therefore, it is of immense importance to

update the Article to meet the present scenarios of space activities. Further Article I of the outer space treaty declares that the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. The treaty has provided no interpretation as to the term "province of mankind". It can be argued that the term "province of mankind" refers to the principle of common heritage of mankind. The international law principle of common heritage of mankind enunciates several elements including prohibition of acquisition of, or exercise of sovereignty over, the area or resources in question, the vesting of rights to the resources in question in humankind as a whole, reservation of the area in question for peaceful purposes, protection of the natural environment, an equitable sharing of benefits associated with the exploitation of the resources in question and governance via a common management regime (Noyes, 2012). It can be argued that if the Article IV of the outer space treaty is not updated it would cause violation of the principle of common heritage of mankind. Also weaponisation of space would increase the amount of space debris from the space weapons, which would again be a huge problem to space missions and other space related activities. Further it can be emphasized that Article I of the outer space treaty says that the space activities should be carried out in the interests of all mankind irrespective of their degree of economic development. It is the developed states that use and tests for new space weapons. Therefore, if the Article IV is not updated and those states continue to use hazardous space weapons then it would not be in the interests of whole mankind but in the interests of those states. The tests and use of space weapons by developed countries demonstrates the idea that Space weapons are used for their own protection and to show their military strength to other states and not to protect humankind as a whole. For an example the United States decision to acquire space weapons could come about under a variety of circumstances. Among them are defending against a threat to national security posed by an adversary who is undeterred by other capabilities, responding in kind to the acquisition of space weapons by another nation, whether ally or adversary, acquiring space weapons in coordination with another nation or nations to forestall, control, or influence their independent acquisition of space weapons, and finally unilaterally undertaking the acquisition of space weapons on the basis of anyone of several purposes, for example, to demonstrate global leadership, to protect U.S. and allied economic investments or to improve the efficiency and effectiveness of military capability (Preston et al, 2002). Not only USA but other countries also try to acquire space weapons for similar reasons. It is clear that these reasons would lead the countries to explore new space weapons of mass destruction which would not bring peaceful consequences. Therefore, the need to update

the Article IV of the Outer Space Treaty is urgent in the modern context.

IV. SUBSEQUENT DEVELOPMENTS

The Outer Space Treaty laid down the foundation for the space law. It can be seen that the Subsequent treaties such as The Rescue Agreement, The Liability Convention, The Registration Convention and The Moon Agreement adopted by the United Nations Committee on Peaceful Uses of Outer Space was influenced by the Outer Space Treaty. Article III of the Moon Agreement prohibits testing of any type of weapons of mass destruction on the moon. However, the agreement has not defined weapons of mass destruction and lacks precision. The subsequent treaties have also failed to identify and prohibits weapons of mass destruction. Therefore, the loophole in Article IV of the outer space treaty is visible in subsequent space law treaties too. United Nations General Assembly has passed resolutions each year calling for peaceful uses of outer space and the prevention of an arms race in space. The resolution asks all states to refrain from actions contrary to the peaceful use of outer space and calls for negotiation in the Conference on Disarmament on a multilateral agreement to prevent an arms race in outer space. Most of these resolutions have been unanimous and without opposition, although the United States and a few other governments have abstained. (Gronlund, 2016). Russia-China presented a paper to the UN Conference on Disarmament (CD) on June 27, 2002, which contained 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. Article II of the paper states that state parties shall not place any weapons in outer space. (Gronlund, 2016). In 2015 UN passed the Russian draft resolution on banning arms race in outer space which was adopted during the assembly's 69th session. However, USA, one of the major space faring nations voted against it. Therefore, it can be argued that the resolution is not successful. Russia introduced a resolution on Transparency and Confidence Building in 2015 which was passed in the General Assembly. The resolution emphasized that the prevention of an arms race in outer space would avert a grave danger to international peace and security. However, it can be argued that as the binding force of resolutions is low, it would be more effective if Article IV of the outer space treaty is updated. It can be seen that although several steps have been taken by the international community to ensure peaceful uses of outer space and to fill the gap in Article IV of the outer space

treaty they were not effective solutions and most of the resolutions relating to this matter is not agreed by the United States being a major space faring nation.

IV. RECOMMENDATIONS

The Outer Space Treaty forms the basis for a legal regime on space law. However, the treaty, especially with reference to Article IV should be updated in order to meet the technological developments of the present world. In achieving the peaceful uses of outer space, as the preamble of the treaty suggests and to ensure that space is a common heritage of mankind it is necessary that space weapons are prohibited in space. Further as stated above in the paper, it can be argued that Article II of China and Russia's 2002 working paper submitted to the Conference on Disarmament is too broad in that it has banned all types of weapons instead of prohibiting only the specific types of offensive weapons. Therefore, it can be argued that a ban on all types of weapons is a nonstarter to countries like United States because they have already invested significantly in various military support satellites which would fall within the broad prohibition(Englehart,2007) However, it can be argued that by banning harmful space weapons such as kinetic kill vehicles, space based lasers and Anti-satellite weapons it is likely that major space faring nations such as USA would accept the prohibition. Therefore, it can be recommended that it is the need of the hour to update the Article IV of the Outer Space treaty to include new space weapons.

V. CONCLUSION

The Outer Space Treaty is one of the significant law making treaties in space law. Therefore, the provisions in the treaty needs to be clear without any ambiguity and more importantly it should not have any loophole that can be exploited. Although the Article IV of the treaty bans the placement of any objects carrying nuclear weapons or any other kinds of weapons of mass destruction in orbit around the earth or station such weapons in outer space. it has failed to include the modern non-nuclear space weapons. It can be argued that Article IV fails to safeguard the outer space as a Common Heritage of Mankind. Article IV of the treaty is inadequate to meet the developments of the present day. It contains a gap that needs to be filled immediately to ensure peaceful uses of the outer space. Article IV has been termed a clause of partial disarmament ((Zedalis and Wade, 1978). As there are only few international law principles are available in space law it is important that the few treaties be more comprehensive, clear and precise in nature. Further as the research paper has stated some states are already using such space weapons while some states are testing them. It can be predicted that with the development of the technology more states

would be testing and using powerful space weapons of mass destruction in the near future by taking advantage of the loophole in Article IV. Therefore, it is important that Article IV of the Outer Space Treaty is updated to meet the technological developments of the modern world.

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