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INTERNATIONAL SPACE LAW AND THE PREVENTION OF WEAPONIZATION OF SPACE

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Abstract: The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (commonly referred to as the "Outer Space Treaty") have been successfully regulating the space activities of states for more than half a century. The treaty is a tremendous achievement of the international community reached in the challenging and complicated "Cold War" era. It sets up the principles of international space law such as the use of outer space for peaceful purposes and for the benefit of all countries, the prohibition of national appropriation of outer space and celestial bodies, the liability of states for damages, caused by their space objects, the special importance of astronauts as "envoys of mankind" etc. These timeless principles govern and must continue to govern space activities of states in the future. Their importance and relevance cannot be affected by the development of technology. However, some aspects of the Outer Space Treaty are subject to heated discussion and even concern not just in the academic circles, but also on governmental level. The lack of definition of outer space and article IV of the Outer Space Treaty are often recalled as the main causes of concern. This article will discuss these and other aspects of the Outer Space Treaty in their relationship with the prevention of militarization of outer space.

Keywords: space law, Outer Space Treaty, weaponization of space, space weapon, international security

1. INTRODUCTION

International space law is one of the newest branches of public international law. The reason for this is simple: until the second half of the XX century, outer space and celestial bodies were "reachable" to men only in the science fiction. But, as Konstantin Tsiolkovsky wrote: "At first there is always a thought, fantasy, fairy tale. They are necessarily followed by scientific calculation. And in the end, execution is crowned with thought" (Tsiolkovsky 1926). The launch by the USSR of the first artificial Earth satellite in 1957 was epochal event – for the first time in history outer space became a domain of human activity. The reaction to this

historic event at the United Nations was immediate: just one year later, the UN General Assembly adopted Resolution 1348 (XIII) which established the UN Committee on the Peaceful Uses of Outer Space. The Committee was established as an ad hoc committee at first but received permanent status at the United Nations in 1959. In 1963 the UN General Assembly adopted the Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space. A few years later, in 1967, international space law received its "constitution" – 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 (hereinafter referred to as the Outer Space Treaty).

The above brief historical overview is used as article's introduction purposefully. In addition to acquainting the reader with space law history, it serves two purposes:

1. An illustration of the speed with which the international community has responded to the advent of the Space Age. International law in the 1960s and 1970s not only regulated the existing space activities of the states, but took a step forward and regulated space activities which were impossible at the time such as establishment of bases, installations, and fortifications on celestial bodies etc. The speed with which international law responded to the new realities in space in the 1960s and 1970s contrasts sharply with the almost complete lack of response to the changes that have occurred in the space sector since then.
2. Reading the brief history of international space law, a careful reader will notice that the latter to large extent "froze" in the 1970s, when the last significant international treaty in this area was adopted – The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (December 18, 1979). Other questions are also likely to arise, such as: what is the situation in space today, almost half a century later? How has technology evolved over the years? What are the opportunities for space exploration in the next 50 years, given the rapid development of technologies such as artificial intelligence and others? Can the legal framework of international space law from the 1960s and 1970s adequately respond to the new realities and challenges that we face today? And tomorrow?

Several such challenges could be named such as: the extraction of resources on celestial bodies; the growing problem with the so-called "space debris", the need for space traffic management, space situational awareness issues etc.

This article however focuses on another important issue which is becoming more relevant with the fast development of space technologies, namely: the prevention of militarization/weaponization of outer space.

In this regard, the article will firstly analyse the current and potential military uses of outer space, underlying the military significance of the latter as the "ultimate high ground". Secondly, the article will provide some terminological remarks on the concepts of militarization and weaponization of outer space in relation with the fundamental principle of using outer space for peaceful purposes.

The article will then analyse the capability of the Outer Space Treaty to prevent weaponization of space, criticizing the "black and white" approach on the matter. Finally, the article will analyse the possible future steps for strengthening the peaceful status of the "Final frontier".

2. "THE ULTIMATE HIGH GROUND" – MILITARY IMPORTANCE OF OUTER SPACE

The importance of taking the higher position in battle has been recognized by military strategists from thousands of years – "All armies prefer high ground to low", underlines Sun Tzu (2016) in the Art of War. Holding the high ground offers an elevated vantage point with a wide field of view, enabling surveillance of the surrounding landscape. For the bigger part of human history taking the higher ground required analyzing the geographical characteristics of the terrain. This situation did not change until the early XX century when the Wright brothers built and successfully tested the first heavier-than-air powered aircraft – the Wright Flyer, on December 17, 1903. Just 8 years later the first aerial bombardment was conducted by Giulio Gavotti in the Italo-Turkish War (1911-1912). Thus, the development of technology in the early XX century moved the high ground "higher" – to airspace. The situation changed again in the 1940s and 1950s when the development of ballistic missile technology allowed the building of missiles capable to reach outer space (the first such rockets arguably being the V-2 and R-7 Semyorka). So, technology had once again moved the high ground, this time to outer space. And since there is no domain "higher" than outer space, the latter is commonly referred to as "the ultimate high ground".

From a historic perspective we can separate the military uses of outer space in two groups - "actual uses" and "potential uses". We can also apply functional classification and group the military uses of outer space in three large groups:

- Informational (actual use);
- Navigational (actual use);
- Destructive (potential use).

2.1. INFORMATIONAL USES

Artificial satellites are used to gather as well as to exchange information. The major militaries in the world use communication satellites for sharing information. For example, the United States military used extensively communications satellites in their operations in the Balkans, Afghanistan, and other countries (Pike 2002, p. 615). Weather satellites provide cloud imagery and other specialized meteorological, oceanographic, land surface and space environmental data (Pike 2002, p. 621). Early-warning satellites provide information of ballistic missile launch. Ocean-surveillance satellites help identify naval units (Pike 2002, p. 623). Imagery-intelligence satellites provide the military with global situational awareness (Pike 2002, p. 625).

2.2. NAVIGATION

Navigation satellites provide information on geo-spatial positioning, but also are used for the so called “precision-guided munition”. Satellite-guided weapons are known for their extremely high accuracy and precision.

2.3. DESTRUCTIVE (DAMAGING) USES

When we talk about destructive (damaging) uses we mean placing of weapons in outer space which are capable to deactivate, damage or destroy targets in outer space or on Earth. Fortunately, outer space has never been used for such purposes and hopefully never will.

3. MILITARIZATION VS WEAPONIZATION OF OUTER SPACE. SOME TERMINOLOGICAL REMARKS IN THE LIGHT OF THE PRINCIPLE OF PEACEFUL USE OF THE OUTER SPACE

The space law literature distinguishes between the terms "peaceful purposes" and "use for peaceful purposes" (Zhukov & Abashidze 2020, p. 216). If the principle of peaceful use of outer space is established, any military use of outer space will be banned. There are currently two main interpretations of the principle of using space for peaceful purposes. One means "non-military use" and the other "non-aggressive use". In the light of the two interpretations described above, there are two terms describing the use of the outer space by the military: "militarization of space" and "weaponization of space" (Yun & Shengli 2019). "Militarization" refers to the use of outer space for military purposes. This is the broader of the two concepts and encompasses all activities in outer space which have significance for the military. In other words, if the activity provides certain military advantage, not only during an armed conflict, but also in peaceful times – such activity must be considered as military use of outer space (militarization of space). As it was briefly described in section 2.1. and 2.2. of this article such activities usually imply the use of reconnaissance and navigation satellites. In the literature has been emphasized that space has been militarized from the very beginning of its active exploration by men. "Weaponization" on the other hand has a much narrower meaning – it means the placement of weapons in outer space. In the second, narrower sense, the outer space has not yet been used.

4. IS THE OUTER SPACE TREATY CAPABLE TO PREVENT WEAPONIZATION OF SPACE?

The question whether the 1967 Outer Space Treaty is relevant and effective in the XXI century is causing heated discussion in the academic circles. Seems that most opinions are poles apart from each other.

One thesis is that the Outer Space Treaty provides good regulation which is successfully governing the space activities of states long enough to prove its efficacy. According to this opinion the discussions for strengthening the Treaty's regime are counterproductive and dangerous as they could lead to undermining the core principles of international space law.

The other thesis is that the Outer Space Treaty is outdated, inadequate and obsolete in the light of the tremendous development of the technology. The proponents of this thesis contend that a newer and better regulation of the outer space must be adopted.

Both groups of opinions have strong and weak points. However, their main weakness is their over-simplistic approach to extremely complicated issues. The regulation of space activities is by itself a very hard task, which is further complicated by politics, new developments in technology etc.

In this regard I will make couple of remarks:

- The Outer Space Treaty was adopted in the challenging times of the Cold War era. It was negotiated between the two main rivals at the world stage at the time – the United States of America and the Soviet Union. Both sides had to agree to compromise in the name of the peaceful exploration of space. The Outer Space Treaty was a tremendous achievement.
- The Outer Space Treaty sets the principles of international space law such as the peaceful use of outer space, the prohibition for national appropriation of outer space and celestial bodies, the liability of states for damages caused by their space objects etc. These principles are timeless and are not affected by the development of technology or new realities in global politics. Stepping back from those principles would be very dangerous and counterproductive.
- The Outer Space Treaty is not perfect, but so are most (if not all) international treaties. The weaknesses of the Outer Space Treaty are often exaggerated.
- The aforementioned does not mean that the shortcomings of the Treaty must be neglected or that its regime could not be reasonably strengthened. It means that we must approach the Outer Space Treaty carefully and delicately.

The major issue of the Outer Space Treaty in the light of prevention of weaponization of space is Article IV of the treaty. Article IV sets two different regimes for the outer space from the one side and the Moon and the other celestial bodies – on the other hand. The regime of the Moon and the other celestial bodies is obviously much more restrictive than the regime of outer space. Article IV prohibits all military activities on celestial bodies but forbids just the placement of weapons of mass destruction in Earth orbit. Interpreting both paragraphs of Article IV in isolation from the other provisions of the Outer Space Treaty, one could confidently conclude that placing of all sorts of conventional weapons in orbit is allowed under the Treaty.

But would such interpretation be correct? In my opinion, no. The rules for interpretation of international treaties are set by the Vienna Convention on the Law

of Treaties 1969. Under Article 31, paragraph 1 of this Convention "*A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.*" This means that Article IV of the Outer Space Treaty must not be interpreted in isolation from the other provisions of the treaty. Quite the opposite, a proper interpretation must consider the purpose and the spirit of the treaty. The main reason for the adoption of the Outer Space Treaty was to secure the peaceful use of outer space. Article III of the Outer Space Treaty stipulates that:
"*States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding.*"

It is hard to imagine that placing weapons in outer space would be in the interest of maintaining international peace and security and promoting international co-operation and understanding.

The above reasoning however does not remove the controversial nature of Article IV. In my opinion, Article IV does not strengthen the regime of the Outer Space Treaty but weakens it. Even though I disagree with the opinion that the Outer Space Treaty allows the placement of conventional weapons in space, the concern that Article IV could be intentionally misinterpreted by certain space actors for achieving military advantages must not be underestimated. In this regard, there is room for strengthening the regime of the Outer Space Treaty. How could this be achieved?

5. PREVENTION OF WEAPONIZATION OF OUTER SPACE – DE LEGE FERENDA

The adoption of international norms regulating the activities of states in the exploration and use of outer space is an extremely difficult, complex, lengthy, and problematic process. The reasons for this are mostly geopolitical and economic. Due to its unique characteristics, outer space has enormous untapped potential to provide economic gains as well as significant military advantages. Competition between the leading countries and their economic and political blocs is fierce in both the civil and military spheres. These two spheres are interconnected. Strong economies allow states to devote significant financial resources to strengthening and increasing the power of their armed forces. The latter, in turn, are often used as a tool to promote certain economic and political interests. For this reason, the interests of the leading space powers too often conflict with each other, and this greatly complicates the rule-making process at the international level. Compromises are made very rarely and on a limited range of issues. Therefore, since the 1970s, not a single international treaty on space matters has been widely adopted. For this reason, more and more issues related to the exploration and use of

outer space are regulated by the so-called "soft law". And to what extent "soft law" could qualify as a law in the first place is uncertain.

Considering the above, we will describe several possible options for solving the problem of "militarization of space", depending on the complexity of their further implementation in practice (from simpler to the most complex):

1. Adoption of an optional protocol to the Outer Space Treaty, prohibiting the placement of any weapon in outer space. The advantages of this approach are obvious – due to its optional nature, the negotiation of its text should be easier, and its opening for signature and ratification should be accelerated. Placing weapons in outer space would destabilize international security, so this important problem must be addressed as soon as possible, in its initial stage. Prevention is always preferable to cure. It is much easier to prohibit the placement of any weapons in outer space now, when this process has not yet officially begun, than to negotiate the removal and / or destruction of weapons already in space. The sooner the necessary regulatory changes in this regard are adopted, the better. History has shown that optional protocols as an international legal instrument of regulation are quite effective and viable. A good example in this regard is the European Convention for the Protection of Human Rights and Fundamental Freedoms and the Optional Protocols thereto, which have been signed and ratified by almost all member states of the Council of Europe. The disadvantage of the optional protocol is that such instrument would not be capable to address the issue in much detail.
2. Adoption of a separate international treaty prohibiting the placement of all types of weapons in outer space. Russia and China followed this path, presenting the Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT) at the Conference on Disarmament. The advantages of this approach are that the adoption of a separate international treaty presupposes a more complete and detailed regulation of the problems of preventing the militarization of outer space. Such treaty could also provide definitions of "outer space", "space weapons" (or "space-based weapons"), "space object", "use of force against a space object". However, the question of whether the term "space weapons" could be defined in the first place and even on the need for such a definition remains controversial.
3. The third approach is the most difficult to implement. Its implementation would take the most time, but it is most desirable in the light of the progressive development of international space law and international law in general. This approach implies codification of all major space law issues, through the adoption of United Nations Convention on the Law of the Outer Space. In my opinion, only the UN can become a platform for the adoption of such a convention. Such convention could be adopted by organizing a UN Conference on the Law of Outer Space. Although adopting such a convention would be extremely difficult, we have a historical analogy in the 1982 UN Convention on the Law of the Sea,

adopted at the UN Conference on the Law of the Sea. The UN Convention on the Law of the Sea is a landmark success in codifying this branch of public international law. The intersection between the law of the sea and space law has been analysed in the international law literature. It is often emphasized that The Outer Space Treaty, the Registration Convention, and the Rescue Agreement are influenced by the ancient law of the sea (Yankov 2011).

The future "space code" can be structurally divided into two parts – general and special. The general part should include the basic principles of space law enshrined in the Outer Space Treaty. One of the main changes should be the introduction of an explicit ban on the placement of any weapons in outer space. Several legal definitions should also find their place in the general part: the definition of outer space, the use of force in space, a space object, an astronaut, etc. The special part could include the rules of the three main space conventions, as well as the rules for extraction of resources from celestial bodies, rules for protection of the space environment, space traffic management rules etc. The Convention must provide a control mechanism and sanctions in the event of non-compliance by a Member State. The Convention could establish new international organization as governing body.

In the adoption of such codification, it will be very important so save the principles of international space law as they are proclaimed by the Outer Space Treaty. Any changes to those principles would be a step back from the wonderful achievements of the Outer Space Treaty and would most probably lead to undesirable consequences.

Of course, at present the adoption of such an international treaty seems unattainable due to the very different interests of many countries and the difficult political situation. But "A journey of a thousand miles begins with a single step".

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