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Aids Setting foot into Space – Scrutinizing Military use and Commercial use

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In 2021, we caught sight of two key events related to space. The first was observing two billionaires, Richard Branson and Jeff Bezos, going to space making it a remarkable moment in history. The second was watching space debris fall on Earth when a Russian satellite was destroyed, resulting in over 1,500 huge pieces of space debris and hundreds of thousands of smaller fragments that could collide with the International Space Station, according to the US. This reflects the two sides of the coin, on one side humans are achieving new heights by commercializing space but on the other side, there have been massive destruction and deployment of armed weapons in space. In this paper, I analyse the legal aspects of satellites, the use of space as a warm place, and the need for laws to curb these wars. I examined the Outer space treaty, 1967, and its applications in the current times, and study the challenges that the existing laws are facing due to which there is a need for a set of new laws or amendments to the existing laws.

Keywords: *commercialization, outer space treaty, satellites in space, data spoofing.*

INTRODUCTION

The Soviet Union launched Sputnik I, the world's first artificial satellite, on October 4, 1957. Experts and residents in the United States were taken aback by the successful launch since

many had believed that the United States would be the first to achieve this technological breakthrough. The Soviets' performance fuelled worries that the US military had fallen behind in creating new technology in general. As a result, Sputnik's launch exacerbated the weapons race and increased Cold War tensions. Both the United States and the Soviet Union worked to create new technologies throughout the 1950s. Near the conclusion of WWII, Nazi Germany was on the verge of constructing the world's first intercontinental ballistic missile (ICBM), and German experts helped research in both countries after the war. Sputnik's success had a significant influence on the Cold War and the United States. Fears of falling behind prompted US authorities to speed up space and military projects.¹ This clearly reflected that the very purpose behind injecting human-made objects into space was to ultimately use those objects as a war weapon and to dominate other nations. Humans use land, air, and water for war and intrusion on Earth, but now they are not limited to these three geographies. We are aiming to use space as a place of war. We can observe the emergence of satellites in the present times. However, unlike the past, there are two wide uses of these satellites – One is the commercial use of satellites and the other is the military use of satellites. However, now there has been another case in which the military is relying upon commercial satellites. In this paper, I will be discussing the legal aspects of satellites, the use of space for war in near future, and present principles and laws to curb the wars.

At present, there are five treaties that provide the fundamental standards that apply to outer space. These treaties outline fundamental concepts, norms, and legal frameworks for all the actions carried out in space. These treaties are - Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967², also known as outer space treaty; The Agreement on the Rescue of Astronauts

¹ 'The Launch of Sputnik, 1957' (U.S. Department of State) <<https://2001-2009.state.gov/r/pa/ho/time/lw/103729.htm#:~:text=On%20October%204%2C%201957%2C%20the,first%20artificial%20satellite%2C%20Sputnik%20I.&text=As%20a%20result%2C%20the%20launch,working%20to%20develop%20new%20technology.>> accessed 22 January 2022

² 'Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies' (United Nation Office for Outer Space Affair) <<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>> accessed 22 January 2022

and the Return of Objects Launched in Outer Space, 1968³; Convention on International Liability for Damage Caused by Space Objects, 1972⁴; Convention on Registration of Objects Launched into Outer Space, 1975⁵, and Agreement governing the Activities of States on the Moon and Other Celestial Bodies, 1979⁶. In this paper, I will specifically focus upon the Outer space treaty because it is identified by most nations. The treaty has been ratified by 102 states and has been signed by twenty-six states.⁷ The treaty involves numerous principles and frameworks that apply to all the activities that take place in outer space. Article 4 of the Outer space treaty states that all state parties to the treaty must use the moon and other celestial bodies solely for peaceful purposes. On heavenly planets, the construction of military facilities, installations, and fortifications, the testing of any form of weapon, and the execution of military exercises are all prohibited. It is not illegal to utilize military troops for scientific study or other peaceful activities. It is also not banned to employ any equipment or facility essential for peaceful exploration of the moon and other celestial bodies.⁸ States Parties to the treaty agree not to deploy in orbit around the earth any objects carrying nuclear weapons or any other forms of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.⁹ However, there have been numerous cases in which the countries have caused massive destruction in outer space. In an anti-satellite missile test on November 15, 2021, Russia destroyed one of its aging satellites. The US 18th Space Control Squadron verified that the COSMOS-1408 satellite had broken

³ 'Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space' (*United Nation Office for Outer Space Affair*) <<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introrescueagreement.html#:~:text=The%20Agreement%2C%20elaborating%20on%20elements,to%20launching%20States%20in%20recovering>> accessed 23 January 2022

⁴ 'Resolution adopted on the reports of the First Committee' (*UNOOSA*) <https://www.unoosa.org/pdf/gares/ARES_26_2777E.pdf> accessed 23 January 2022

⁵ 'Convention on Registration of Objects Launched into Outer Space' (*United Nation Office for Outer Space Affair*) <<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introregistration-convention.html>> accessed 23 January 2022

⁶ 'Agreement Governing the Activities of States on the Moon and Other Celestial Bodies' (*United Nation Office for Outer Space Affair*) <<https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/intromoon-agreement.html>> accessed 23 January 2022

⁷ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (n 2)

⁸ *Ibid*

⁹ *Ibid*

apart. According to the report, the occurrence might result in roughly 1,500 additional bits of debris drifting across space. A considerable percentage of the space debris now in orbit results from two main catastrophes. In an anti-missile weapon test in 2007, China deliberately destroyed one of its satellites, with 3,527 pieces of identifiable debris remaining in orbit in March 2021. Then, in 2009, the American satellite Iridium 33 collided in orbit with the Russian spacecraft Cosmos 2251. The amount of material exceeding 10 cm now circulating has doubled due to this occurrence alone.¹⁰ Although there has not been any notable damage on Earth from the debris, from the past decade there have been multiple events when the debris from the satellites have fallen on Earth. This poses a significant threat to humans.

Outer space treaty is binding in nature for the signatories of the treaty. However, the problem here is that different countries comprehend different definitions of the term “Peaceful Purposes”. Peaceful purposes are seen broadly by the US as "non-aggressive," whereas peaceful objectives are interpreted narrowly by Russia as "non-military." The US perspective is consistent with Article IV of the OST, which expressly permits military personnel to be used for peaceful purposes. Article 2 of the Outer Space Treaty clearly stated that “space and celestial bodies cannot be appropriated by a nation”¹¹. However, as more firms show interest in mining space objects for minerals, space law experts have been contesting its interpretation in recent years. Moon Express, which expects to launch its first spacecraft to the Moon this year, has a long-term objective of extracting water from the lunar surface¹², while Planetary Minerals and Deep Space Industries are working on extracting water and other resources from asteroids. Given these objectives, Congress approved the US Commercial Orbit Launch Competitiveness Act in 2015, ensuring that any data acquired from space will be owned by US-based enterprises. The US claims that the Outer Space Treaty does not forbid such acts.

¹⁰ Pierre Omary, ‘Destroyed Russian Satellite Creates Yet More Space Debris to Threaten the International Space Station’ (*The Conversation*, 24 January 2022) <<https://theconversation.com/destroyed-russian-satellite-creates-yet-more-space-debris-to-threaten-the-international-space-station-172078#:~:text=Two%20major%20events%20have%20generated,in%20orbit%20in%20March%202021>> accessed January 22 2022

¹¹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (n 2)

¹² Loren Grush, ‘How an International Treaty Signed 50 Years Ago Became the Backbone for Space Law’ (*The Verge*, 27 January 2017) <<https://www.theverge.com/2017/1/27/14398492/outer-space-treaty-50-anniversary-exploration-guidelines>> accessed 22 January 2022

While many experts believe that this is a plausible interpretation, other nations may disagree and allege that such extraction is in breach of the treaty. And its passage has sparked a great deal of debate¹³.

It is difficult to estimate the degree to which space is now militarized since many objects in space have two primary purposes namely - combining military and civilian purposes- and nations are not always forthcoming about the nature and purpose of their actions in space. Nonetheless, two prestigious think tanks have issued comprehensive analyses outlining the spread of various types of ASAT weaponry. These findings show that a number of countries have kinetic anti-satellite missiles capable of striking a target physically. Furthermore, so-called 'soft death weapons,' which are non-kinetic, are becoming more widespread. Cyberattacks are aimed at satellites, ground systems, and the communication lines that connect them. Disruptive tactics (such as GPS jamming and data spoofing) that are very affordable are becoming a rising military danger. While the growing weaponization of space appears to be true, it's difficult to say if this can be classified as an arms race.¹⁴The idealism spirit of the legislation and state practice – the military uses of space that need to be regulated – are vastly different. Because space law is primarily concerned with peaceful ends, it lacks precise norms that relate to the weaponization and use of force in space. Of course, the rules of war would apply if an armed confrontation erupted. While military engagements are governed by a variety of conventions and treaties, there are no explicit guidelines for space combat. Given the absence of physical boundaries, lack of sovereignty, fast technical improvements, diversity of participants, and dual-purpose nature of space objects, current laws of war cannot simply be applied to space combat.¹⁵

With the continuing development of satellite technologies and related applications in the 2000s and 2010s, the satellite launch market was not only attempting to lower satellite prices and risk but also attempting to accelerate the development cycle. In this context, the smaller satellites

¹³ *Ibid*

¹⁴ Lonneke Peperkamp, 'An Arms Race in Outer Space?' (*Radboud University Nijmegen*) <<https://repository.ubn.ru.nl/bitstream/handle/2066/230867/230867.pdf?sequence=1>> accessed 25 January 2022

¹⁵ *Ibid*

are gaining popularity since they can do a single specialized duty and is readily networked. Small satellites have become widely employed by the business sector due to their inexpensive investment and fast development cycle. Telecommunications services are the first noteworthy field for space commercialization. The Uruguay Round of World Trade Organization (WTO) negotiations contained a bold agenda that included the deregulation of telecommunications services. The World Trade Organization (WTO) approved a Reference Paper that lays forth guiding principles for national regulatory agencies when it comes to fundamental telecommunications regulation.¹⁶ Competitive protection, connectivity, universal service, public disclosure of licensing standards, independent regulators, and the allocation and utilization of scarce resources are among the six principles laid out in this plurilateral agreement.¹⁷ The purpose of these principles is to ensure that the national regulatory environment can provide a level playing field for satellite service providers in their competitiveness.

International space regulation is becoming increasingly challenging as more nations join the space club, owing to the diverse interests in space operations¹⁸. As a result, the introduction of soft-law documents became a significant element of space legislation after 1979¹⁹. The United Nations General Assembly (UNGA) is the primary platform for soft-law development. With no space treaties in place after 1979, the UNGA adopted a proactive and pragmatic approach to resolution adoption. Principles Governing States' Use of Artificial Earth Satellites for International Direct Television Broadcasting in 1982; Application of the Concept of the "Launching State" in 2004; Recommendations on Improving States' and International Intergovernmental Organizations' Practices in Registering Space Objects in 2007, and so on²⁰. The European Union (EU) has proposed a nonbinding document named International Code of

¹⁶ Jennifer A. Manner & Alejandro Hernandez, 'An Overlooked Basis of Jurisdiction for Net Neutrality: The World Trade Organization Agreement on Basic Telecommunications Services' (2014) 22 *Comm Law Conspectus* 57 <<https://scholarship.law.edu/cgi/viewcontent.cgi?article=1507&context=commlaw>> accessed 23 January 2022

¹⁷ *Ibid*

¹⁸ Yun Zhao, 'Space Commercialization and the Development of Space Law' (*Planetary Science*, 30 July 2018) <<https://oxfordre.com/planetaryscience/view/10.1093/acrefore/9780190647926.001.0001/acrefore-9780190647926-e-42#acrefore-9780190647926-e-42-div1-3>> accessed 23 January 2022

¹⁹ *Ibid*

²⁰ *Ibid*

Conduct for Outer Space Activities for international society's consideration to promote peaceful and sustainable use of space²¹. However, these soft laws do not have legal force; they do not impose any legal responsibilities. States are not legally obligated by such documents, which is not a desirable scenario for space activity governance.²²

CONCLUSION

There are now five accords that set the foundational rules for outer space. These accords lay forth the underlying principles, standards, and legal structures that govern all space activities. Because it is recognized by most governments, I concentrated on the Outer Space Treaty in my study. The treaty's signatories agree not to launch any nuclear weapons-carrying objects into orbit around the Earth. There have been lots of instances in which governments have wreaked havoc in outer space. Due to this incidence alone, the amount of debris over 10 cm presently flowing has increased. The pact on outer space is inherently binding on the treaty's signatories. "Space and celestial bodies cannot be taken by a nation," according to Article 2 of the OST. However, as more companies express interest in mining space objects for minerals, space law experts have questioned the application of the statute. Two think tanks have published reports on the spread of different types of ASAT weapons. According to these results, a number of countries possess kinetic anti-satellite missiles capable of physically impacting a target. Satellites, ground systems, and communication links are all targets for cyberattacks. Disruptive methods (such as GPS jamming and data spoofing) are becoming more used in the military. Small satellites are currently gaining popularity since they can perform a single specific task and are easily networked. The first notable industry for space commercialization is telecommunications services. The World Trade Organization (WTO) has adopted a Reference Paper that lays forth guiding principles for national regulatory authorities in the area of basic telecommunications regulation. We can anticipate the adoption of specific binding space laws in the future to control the operations and activities carried out in space.

²¹ Jameson Rohrer, 'Deciphering and Defending the European Union's Non-Binding Code of Conduct For Outer Space' (2012) 23 (1) Duke Journal of Comparative and International Law 187

<<https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1386&context=djcil>> accessed 23 January 2022

²² *Ibid*