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Military Ambitions in Outer Space

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ABSTRACT

The origins of the space race could be traced back to Germany, beginning in the 1930s, with weapons development laying the foundation of space travel. With the expansion of ICBMs being the cornerstone of the invention of the rocket engine, it would be astute to claim that the very ideals of space travel have a basis on violent enterprise. Therefore, it comes as no small surprise that the current scenario of space exploration is headed towards a heated confrontation in space at some point in the future. Moreover, it is disturbing to note the complete lack of adequate provisions in international law that might prevent such a scenario. The author aims to trace the relation between the arms race and the space race, proceeding with the legal developments in this arena, to eventually conclude the possibility of an armed confrontation in space. Adequate suggestions might be explored to reduce the ambiguity in international acts and legislations, to formulate a solution that would be collectively beneficial to all parties involved.

I. DAWN OF THE SPACE RACE

The space race had its roots in the German Nazi program of World War II through Project Amerika, where German scientists conceptualized the first Intercontinental Ballistic Missiles, which had the theoretical capability of reaching the coast of the United States, namely cities like New York and Chicago. However, these projects were put on hold after Hitler's death. Soon after Berlin fell and World War II ended, the US instituted Operation Paperclip², where Nazi scientists were transported to America to work on new ICBM projects. This was indeed an exercise of hypocrisy since the foot soldiers of these very same scientists were being treated as war criminals at the same time.

This was also replicated by the USSR, leading to both countries being in direct competition igniting the flames of a global arms race. The division of labour mattered hugely with regards to the speed of weapons development. USSR had the upper hand in that instance. Its centrally planned system provided for an efficient and quick mode of production preventing replication and duplication of efforts whilst production, unlike the US. Finally, in 1957, during the height of the cold war, the Soviets announced that they had an ICBM capable of reaching the US

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² Project Paperclip: German Scientists and the Cold War, 1971, Clarence G. Lasby, et al. p. 79

mainland, which notably increased US anxiety with regards to this issue.

After the Kennedy election, US weapons and space development was given a much-needed boost. However, it was significantly behind the USSR in terms of attainment of milestones of research in this field. By the time US caught up to them, The USSR had already sent the first human (Yuri Gagarin), satellite (Sputnik) and dog (Laika), into space. Thus, the US decided to stop playing catch-up with the Soviets and instead focused its sights on a more distant target, namely the first human on the moon. This was finally accomplished in the year 1969, when Neil Armstrong became the first human to set foot on the moon. The US systematically claimed that this singular event made them the de-facto winner of the space race, ignoring all previous contributions of the Soviets.

Finally, in the 1970s, the Apollo-Soyuz projects resulted in a joint enterprise by the USA and the USSR. The image of the two spaceships docking in space, with the astronauts and the cosmonauts shaking hands in space, marked the end of the space race of that era. However, it must be noted that the space race would never actually be over as long as man's curiosity remains in abundance. This time however, it is indeed the entry of the private sector into the race that has fuelled a modern iteration of the space race.

II. THE ARMS RACE AND THE SPACE RACE: PARALLEL AMBITIONS

Armed conflict in space was forestalled during the Cold War due to numerous diplomatic and security measures, but was also grounded in the grim recognition by the space powers of the day that a confrontation in space would be disastrous for Earth.³ Even the experiment of the Starfish Prime nuclear test explosion over the Pacific Ocean in 1962, at a height of 248 miles, proved that nuclear explosions in low Earth orbit would have significant and long-lasting effects.⁴ The endgame of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies ('Outer Space Treaty') in 1967 was an intention to prevent the escalation of space war by at least prohibiting the placement of weapons of mass destruction ('WMD') in permanent Earth orbit.⁵ However, the explosive growth in the number of states and corporations able to access space

³ Forrest E Morgan, *Deterrence and First-Strike Stability in Space: A Preliminary Assessment* (RAND, 2010) ch2.

⁴ David SF Portree, 'Starfish and Apollo (1962)', *Wired* (online, 21 March 2012). The explosion on 9 July 1962 caused an electromagnetic pulse that damaged electrical systems as far as Oahu, Hawaii, 800 miles from the blast, and contributed high energy particles into the Van Allen radiation belts which encompass the Earth. It is believed that this increased radiation led to the failure of the Telstar 1 communication satellite, also launched in July 1962, and there were fears that the increased radiation in low Earth orbit would affect and possibly prevent the crewed Apollo missions as the spacecraft orbited through the Van Allen belts. The impact on the Van Allen belts diminished over the subsequent few years.

⁵ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, opened for signature 27 January 1967, 610 UNTS 205 (entered into force 10 October 1967) Article IV ('Outer Space Treaty').

and the increasing competition for access to the space domain raise new challenges to the 'truce' reflected in the Outer Space Treaty and the other four principal space treaties (collectively known as the 'outer space treaty regime').⁶

Of greater importance has been the entrance of new players into the space domain, both nation states and commercial start-ups, disrupting the traditional state of play - i.e. that outer space is so technical, cost-inducive and complex, that only states can afford or would indeed want to access and use that domain.⁷ The cost and complexity of entry into space has considerably decreased and, as it has done so, commercial operators have perceived the growing opportunities for money making ventures, such as Internet of Things connectivity, space situational cognizance, communication, remote sensing, space tourism and even, space mining. Furthermore, many nations other than the traditional space-faring powers are now keen to share in the potential benefits of space.⁸ The growth in civilian and commercial uses of space brings with its heightened risks for space security.

Paradoxically, the Outer Space Treaty itself appeared to anticipate these developments as Article III recognises the role of general international law in addressing broader issues of international peace and security in space.⁹ While the Outer Space Treaty will remain applicable for resolving potential conflict, its role may become less significant vis-h-vis the application of new and more specific rules of international law. Such a change should be viewed in a positive perspective, as a consequence of the technological and legal realities of contemporary use of space and a reflection of humanity's renewed ambition in space.

III. SPACE TRAVEL IN INTERNATIONAL LAW

The UN General Assembly ('UNGA') adopted its first resolution making a direct reference to outer space on November 14, 1957.¹⁰ This resolution counselled states to conclude a disarmament agreement that provides for an inspection system directed to ensuring 'that the

⁶ The outer space treaty regime is composed of the following treaties: Outer Space Treaty; Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, opened for signature 22 April 1968, 672 UNTS 119 (entered into force 3 December 1968); Convention on International Liability for Damage Caused by Space Objects, opened for signature 29 March 1972, 961 UNTS 187 (entered into force 1 September 1972) ('Liability Convention'); Convention on Registration of Objects Launched into Outer Space, opened for signature 14 January 1975, 1023 UNTS 15 (entered into force 15 September 1976); Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, opened for signature 18 December 1979, 1363 UNTS 3 (entered into force 11 July 1984).

⁷ Organisation for Economic Co-operation and Development, *The Space Economy in Figures: How Space Contributes to the Global Economy* (OECD Publishing, 2019) 149.

⁸ 'Global Space Industry Dynamics' (Research Paper, Bryce Space and Technology, 2018)

⁹ Outer Space Treaty, Article III.

¹⁰ Regulation, Limitation and Balanced Reduction of All Armed Forces and All Armaments; Conclusion of an International Convention (Treaty) on the Reduction of Armaments and the Prohibition of Atomic, Hydrogen and Other Weapons of Mass Destruction, GA Res 1148 (XII), UN GAOR, UN Doc A/RES/1148 (XII) (14 November 1957).

sending of objects through outer space shall be exclusively for peaceful and scientific purposes'. This was followed on December 13, 1958 with UNGA Resolution 1348 (XIII) regarding the 'peaceful use of outer space', which established the Committee on the Peaceful Uses of Outer Space ('UNCOPUOS') as an ad hoc committee of the UN.¹¹ UNCOPUOS was established as a permanent committee of the UNGA on December 12, 1959.¹² The specific directive of UNCOPUOS (specifically its Scientific and Technical Subcommittee) pursuant to UNGA Resolution 1472 (XIV) is to 'study practical and feasible means for giving effect to programmes in the peaceful uses of outer space which could suitably be undertaken under United Nations auspices'. It reports to the Fourth Committee of the UNGA, which adopts an annual resolution endorsing 'international cooperation in the peaceful uses of outer space'. All matters regarding international space security, including military activities, are addressed to the UN Conference on Disarmament.

The Outer Space Treaty enunciates the overarching framework for the use of outer space and adopts many of the principles mandated in the earlier resolutions of the UNGA. For example, the explicit reference to 'weapons of mass destruction' in Resolution 1884 (XVIII) was retained and repeated in Article IV of the Outer Space Treaty.¹³ Given its Cold War origins and the fact that space activities were at that time contemplated as being only within the capacity of very few nation states, the reach and scope of the Outer Space Treaty provides little elucidation with respect to the key issues arising in the context of modern day military, civilian and commercial uses of space. It is understandable that the drafters intended to create a regime that provided a measure of balance and transparency to ensure continued access to space by the nations that were at that time spacefaring, i.e., US and USSR. The later space treaties echo an emerging interest by non-spacefaring and developing countries to be able to access the growing benefits of access to the space environment. However, uncertainty still occurs in the application of the Outer Space Treaty and the other space treaties to the modern uses of space for both civilian and military purposes.

IV. MILITARY SCOPE OF THE OUTER SPACE TREATY

The Outer Space Treaty is heralded by many space lawyers as the principal charter for the governance of all of humanity's activities in outer space. Indeed, its overtures to peace, cooperation and universality in space are laudable and are to be genuinely celebrated. Despite

¹¹ Question of the Peaceful Use of Outer Space, GA Res 1348 (XIII), UN GAOR, UN Doc A/RES/1348 (XIII) (13 December 1958) para 1 ('Resolution 1348 (XIII)').

¹² International Co-operation in the Peaceful Uses of Outer Space, GA Res 1472 (XIV), UN Doc A/Res/1472 (XIV) (12 December 1959) ('Resolution 1472 (XIV)').

¹³ Resolution 1884 (XVIII), UN Doc A/RES/1884 (XVIII) (n 68) para 2; Outer Space Treaty (n 4) Article IV.

these virtuous goals, it may be fair to ask whether devotion to the Outer Space Treaty, as the exclusive or even primary mechanism for delivering these outcomes, is perhaps overstated. The Outer Space Treaty itself is a comparatively modest treaty with merely 17 articles that are mostly expressed in general terms. Compared with other regimes, such as the 1982 United Nations Convention on the Law of the Sea with over 320 articles that govern the world's maritime areas,¹⁴ the expectations attached to the Outer Space Treaty would seem to be very ambitious, perhaps too ambitious. Moreover, as emphasized above, its language is largely aspirational and mostly lacking in specificity, particularly with respect to New Space technologies. With regards to militaristic ventures of space, there has long been a minority academic view that the 'peaceful purposes' provisions of the Outer Space Treaty actually prohibited military activity altogether.¹⁵ Such a view sought to largely classify military activity in a binary manner, equating 'peaceful' as meaning simply 'non-military'. This was done with regards to the fact that any military activity performed in space by one state carried with it an inherent threat to the security of other states. The only exception to this perspective was the very narrow opportunity for military scientific activity that carried with it the promise of universal benefits for all states.

Outside of the outer space treaty regime, the 1978 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques¹⁶ ('ENMOD Convention') is a treaty that obliquely deals with developing weapons systems technologies. The ENMOD Convention forbids a state party from engaging in 'military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party'. Critically, 'environmental modification techniques' are well-defined in Article II as 'any technique for changing, through the deliberate manipulation of natural processes, the dynamics, composition or structure of the earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space'. Hence there is a semblance of express recognition of the space environment itself as a potential target of military manipulation. Furthermore, it also grants an associated prohibition on methods of military activity that changes the natural processes of outer space in a manner that has a widespread, long-lasting or unadorned effect that causes destruction, damage or injury to any state party.

¹⁴ United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994).

¹⁵ Fabio Tronchetti, 'Legal Aspects of the Military Uses of Outer Space' in Frans von der Dunk (ed), *Handbook of Space Law* (Edward Elgar, 2015).

¹⁶ Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, opened for signature 18 May 1977, 1108 UNTS 151 (entered into force 5 October 1978).

In some instances, the problem arises from the fact that other parties to the statute do not push for adequate implementation of these very laws. The most recent example would be the Chinese ASAT tests which cause huge amounts of debris in 2007. Due to the test, a large debris field was created and only some states made any inference to the fact that China had not properly complied with Article IX of the Outer Space Treaty. This article requires consultation where there is the possibility of space activity causing 'potentially harmful interference' with the activities of other states party. However, there was no proclamation by any state that the ASAT test itself was unlawful. This seriously hinders the validity and legitimacy of such statutes.

The European Union circulated a draft Code of Conduct for Activities in Outer Space in December 2008,¹⁷ with a draft first released in October 2010¹⁸ and a revised version of the Code of Conduct formed on March 31, 2014.¹⁹ This Code of Conduct references a range of factors and is intended 'to enhance the safety, security, and sustainability of all outer space activities pertaining to space objects, as well as to the space environment'. Though initially enticing momentum, its adoption was ultimately not agreed to due to opposition from a number of non-European countries that preferred a more multilateral process of consultation. The US, conversely, maintained passive support for the proposal.

Russia and China also projected a draft Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects ('PPWT') to the CD in 2008.²⁰ After the failure of that preliminary instrument, they presented a revised version in 2014. Specific US hostilities to the PPWT include: the absenteeism of a clear definition of what constitutes a space weapon, the omission of verification procedures, and the focus on weapons based in space and not on the ground. Commentators have identified that whilst proposing the PPWT and advocating for a proscription of space weapons, both China and Russia continue to develop ground based Anti-Satellite ('ASAT') weapons.

V. SPACE FORCE

The National Defense Authorization Act of USA for Fiscal Year 2020 ("NDAA") establishes the Space Force as a component branch of the Air Force.²¹ The NDAA authorized a Chief of Space Operations, a general officer who will report to the Secretary of the Air Force and serve

¹⁷ Council of the European Union, Council Conclusions on the Draft Code of Conduct for Outer Space Activities, Doc No 17175/08 (17 December 2008) annex I.

¹⁸ Council of the European Union, Council Conclusions of 27 September 2010 on the revised draft Code of Conduct for Outer Space Activities, Doc No 14455/10 (11 October 2010).

¹⁹ International Code of Conduct for Outer Space Activities: Version 31 March 2014, Draft (31 March 2014)

²⁰ Conference on Disarmament, Draft Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects, UN Doc CD/1839 (29 February 2008).

²¹ National Defense Authorization Act for Fiscal Year 2020, Pub. L. No. 116-92 (2019)

on the Joint Chiefs of Staff. The Space Force will initially be composed of servicemembers drawn entirely from the active-duty Air Force; the NDAA authorized no new military positions for the Space Force. The NDAA also establishes the Space Force's official functions and duties. The Space Force's purpose is to provide "freedom of operation for the United States in, from, and to space" and "prompt and sustained space operations." The Space Force is responsible for (1) "protecting the interests of the United States in space," (2) "deterring aggression in, from, and to space," and (3) "conducting space operations."

While the current plan for the Space Force provides no explicit indication that the service would be pursuing new capabilities, its voice on the Joint Chiefs of Staff should allow for visionary officers to advocate for the new capabilities the Space Force can provide the United States. The new service's duties to provide freedom of operations and deter enemy aggression in space suggest that the service's needs for new capabilities will grow as human use of space becomes more common. Given that many of the capabilities future Space Force officers could advocate for are banned, restricted, or hampered by the Outer Space Treaty, the United States should re-evaluate the current international legal framework regarding military activities in space.

It has been a concern for many people that the establishment of such an organization could cause significant disparity and leeway to the US. However, it must be noted that the US is not particularly in violation of any international treaties. Moreover, as per Executive Order 13914 of April 2020, US authorizes utilization of space resources and it rejects the concept of global commons and claims that all the citizens of the nation have the right to go into space and utilize its resources for their benefit.

VI. CONCLUSION

Thus, it could be adequately concluded that a military confrontation in space is a very real possibility at some time in the future. This had indeed been propounded for decades by Bernard Schieiver, the founder of the American Military Space Program. Thus, to reduce such a possibility, space laws must be more accessible to the broader audience. As of now, very limited number of institutions provide an education regarding space laws. Moreover, it is impossible to formulate a multi-lateral agreement that satisfies all parties involved because each nation's goals and ambitions could significantly differ from the other. The most appropriate response could be to formulate national legislations for each individual space faring nation²² that would ensure the nation's private and public sector abide by the rules and regulations necessary to ensure that space remains a region of global commons and prevent the misuse and exploitation

²² UN Resolution 68/74, adopted on 11 December 2013

of space resources.

It is interesting to note that India already has a Space Activities Draft Bill of 2017. However, it is filled with legal loopholes and problems. While the Bill itself draws inspiration from the US Space Launch Competitiveness Act, it copies many provisions that would not be suitable to the Indian scenario. Therefore, it must be reviewed in a better manner to ensure that these loopholes are not exploited by individuals with nefarious purposes. Moreover, provisions regarding regulatory and operational procedures are ignored altogether which could be problematic when the act itself comes into force.

One must always remember that space is a region where nationalities do not divide us, instead it fosters unity and encourages us to live together as one united species in pursuit of a greater purpose. Therefore, to abandon caution and exercise reckless abandonment in pursuit of selfish gains would undeniably result in catastrophic results for the entire human race.
