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Adequacy of International Law for Prevention of Outer Space Weaponization: A Critique

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ABSTRACT

The weaponization of outer space, as distinguished from its militarization, has gained keen attention over the years, owing to the advancement of technology and the suspicious space activities undertaken by various nations. The launch of potentially destructive space assets by one nation spurs immediate reactions from other nations in the form of the launch of defensive space assets, emerging into the vicious cycle of space weaponization. Powerful nations of the world have long been portraying a contradictory stand by emphasizing the need for better space regulation on one hand, and continuously launching queer space assets on the other. This is supplemented by numerous issues including but not limited to that of space debris, space mining, and State accountability for restoring the status quo in outer space pursuant to any asset destruction activity. Although the existing international law governing space matters addresses various issues and acts as a guiding factor for international tranquillity, it is not sufficient to ward off the perpetually intensifying space race between nations eventually culminating in space weaponization.

The present article furnishes an in-depth research over the issue of outer space weaponization. Chapter I puts forth an introduction to the matter in hand, Chapter II discusses the contemporary challenges inviting urgent attention from the States, Chapter III reviews the existing international legal scenario for regulation of the outer space, Chapter IV renders a critical analysis of the said legal scenario, and Chapter V concludes the research while extending feasible recommendations to the instant problem, promoting robust international co-operation.

I. INTRODUCTION

The outer space has been tapped into and explored by the mankind over hundreds of years. Such scientific exploration of space did not pose any security threats to different nations of the world until the twentieth century. Militarization of the outer space commenced in 1957

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with the launch of Sputnik by Soviet Union, propelling an unending space race between the technologically equipped nations.³ Therefore, space militarization has been practiced since the very onset of outer space activities.⁴

Notably, space militarization shall be firmly distinguished from space weaponization, for the former refer to the use of space for facilitating early-warning, surveillance, communication and navigation,⁵ whereas the latter involves the preparation or utilisation of space for future combats and mass destruction.⁶ Military use of space is undeniably the need of the day. However, weaponization of the same invites unimaginable and inexorable dangers to the entire world, including to the nations fostering such weaponization.

The need for international co-operation for evading outer space weaponization was recognized as early as in 1959 when the United Nations General Assembly constituted a Committee on “The Peaceful Uses of Outer Space” for promoting the usage of space for the benefit of all.⁷ The same culminated in the formulation of the Outer Space Constitution, namely the Outer Space Treaty of 1967 (OST). It is the foundational agreement between the nations advancing the idea that outer space is available to all the States for exploration, and that the Moon and other celestial bodies, not being a subject matter of claim by any sovereign nation, shall be used only for peaceful purposes.⁸ Since then, the outer space has remained a free area, devoid of any governing sovereign and regulated by the aforesaid treaty along with few addendums and fresh subsequent agreements between States.

The currently operational international law does not restrict the deployment of conventional assets in the outer space. Rather, it prohibits the placement of merely those space assets which are in the form of nuclear and mass extermination weapons.⁹ Considering this position of the international law as well as the cosmic advancement in technology, States have constantly lived in the fear of being ambushed in the outer space by other States. Hence, they have undertaken various measures to attain and sustain superior space equipment so as to

³ Un Nagashima, *The Militarization of Space and its Transformation into a Warfighting Domain*, S.P.F. (July 17, 2020), https://www.spf.org/iina/en/articles/nagashima_02.html.

⁴ Meghan Bartels, *Space Has Always Been Militarized, Just Not Weaponized — Not Yet, Anyway*, SPACE.COM (Nov. 1, 2018), <https://www.space.com/42298-space-weaponized-already-military-history.html>.

⁵ Nidhi Sharma, *Outer Space and International Security*, O.R.F. (Dec. 28, 2019), <https://www.orfonline.org/research/outer-space-international-security-59579/>.

⁶ Takuyo Wakimoto, *Weaponization of Space Will Harm the United States More than it Gains*, THE SPACE REVIEW (Jan. 28, 2019), <https://www.thespacereview.com/article/3647/1>.

⁷ Yang Chengjun, *US Space Force can't be taken lightly*, GLOBAL TIMES (Jan. 25, 2020), <https://www.globaltimes.cn/content/1177832.shtml>.

⁸ Yasmin Ali, *Who Owns Outer Space?*, B.B.C. (Sept. 24, 2015), <https://www.bbc.com/news/science-environment-34324443>.

⁹ Takuya Wakimoto, *Weaponization of Space Will Harm the United States More than it Gains*, THE SPACE REVIEW (Jan. 28, 2019), <https://www.thespacereview.com/article/3647/1>.

avert the impending dangers.¹⁰ This evinces that in the pursuit of mustering defence mechanism for their respective space assets, the States have essentially weaponized the outer space. Moreover, some States also aim at using force in order to secure unhindered control of the outer space. These actions of the States of planting offensive and defensive space equipment contribute to the vicious cycle of weaponization, having the potential of bringing the entire mankind to a dreadful end.¹¹

II. CONTEMPORARY CHALLENGES

The outer space activities of various nations over the past few years have spurred worldwide security threats and uncertainties. Tensions regarding the weaponization of space, especially by the world powers including U.S., Russia and China, have been swelling with each passing day. Satellites rendering somewhat military functions along with other hidden functions have conveniently been planted into the space under the garb of rendering purely civilian functions, with no possible mechanism of determining the actuality.¹²

The paucity of orbits in the outer space gives rise to the problem of overcrowding through innumerable space equipment, and to a race between nations for reserving these orbits for their future uses.¹³ Further, targeting and destroying by one nation of the satellites of fellow nations in the space brings to light the concern of space debris, and that of the responsibility and accountability for restoring the status quo by cleaning this debris.¹⁴

Given the growing technological power of major nations, even their basic and peaceful space activities are met with sceptical eyes of the world, paving way towards far-reaching lack of faith and confidence in such nations.¹⁵ In fact, numerous States have already established separate commands in their respective armed forces specifically for dealing with the outer space matters.¹⁶ Clearly, every passing day yields a novel challenge for the international law governing the outer space weaponization.

¹⁰ Gp Capt Ajey Lele, *Trends in Space Weaponisation*, IDR (Oct. 6, 2010), <http://www.indiandefencereview.com/news/trends-in-space-weaponisation/3/>.

¹¹ *Id.*

¹² Makena Young, *Why Cooperation Is Still Possible in a More Militarized Space*, W.P.R. (Sept. 22, 2020), <https://www.worldpoliticsreview.com/articles/29076/why-cooperation-is-still-possible-in-a-more-militarized-space>.

¹³ Nidhi Sharma, *Outer Space and International Security*, O.R.F. (Dec. 28, 2019), <https://www.orfonline.org/research/outer-space-international-security-59579/>.

¹⁴ Yasmin Ali, *Who Owns Outer Space?*, B.B.C. (Sept. 24, 2015), <https://www.bbc.com/news/science-environment-34324443>.

¹⁵ Rajeshwari Pillai Rajagopalan, *Assessing the British Proposal on Space Security*, O.R.F. (Dec. 11, 2020), <https://www.orfonline.org/research/assessing-the-british-proposal-on-space-security/>.

¹⁶ *Beijing Attacks Washington for 'Weaponisation' of Outer Space*, THE HINDU (Dec. 23, 2019), <https://www.thehindu.com/news/international/beijing-attacks-washington-for-weaponisation-of-outer-space/article30383016.ece>.

It is pertinent to note that U.S. has openly committed to achieving “full spectrum dominance”, i.e. control over all the four dimensions of warfare namely land, air, water and space, for the purpose of protecting and promoting their own interests.¹⁷ The same appears to be in sheer violation of the ultimate aim of promoting the use of space for the benefit of all humanity, as envisaged by the OST of 1967.¹⁸ Further, U.S. has persistently refused to sign various international agreements brought forth for the peaceful use of outer space. The affirmation is evidenced by the withdrawal of U.S. from the “Anti-Ballistic Missile Treaty, 1972” and the “Intermediate-Range Nuclear Forces Treaty”,¹⁹ as well as by its reluctance to accept the proposal advanced by Russia and China in 2014 which aimed at preventing outer space weaponization.²⁰ The aforesaid factors clearly point towards the U.S. strategy of gaining influential power over other States, and have the potential of igniting hostility in the international realm.

During the month of July 2020, a queer satellite was launched by Russia into the space that initially treaded close to a U.S. satellite but eventually motioned towards another Russian satellite.²¹ While Russia claimed the purpose and function of the launched satellite to be the observation of its previously placed national space assets, the same was challenged by U.S. and U.K. alleging that the said satellite was launched as an anti-satellite weapon, an action highly alarming for their own space assets as well as national safety.²² A similar action was undertaken by Russia on December 15, 2020.²³ Russia has unequivocally denied these allegations as utterly groundless and unsubstantiated. However, in anticipation of negative future eventualities, other nations too have started to engage in fortifying their defence by launching their respective equipment into the outer space, turning it into an appalling warzone.

Paying heed to the Indian scenario, the growing distress between India on one hand and China and Pakistan on the other has fuelled the need for outer space weaponization for the

¹⁷ T.J. Coles, *The Weaponization of Space*, THE NEWS (Mar. 21, 2019), <https://www.thenews.com.pk/print/446651-the-weaponisation-of-space>.

¹⁸ *Id.*

¹⁹ Ryo Nakamura & Tomoyo Ogawa, *US, China and Russia Lock Horns Over Weaponization of Space*, NIKKEASIA (July 29, 2020), <https://asia.nikkei.com/Politics/International-relations/US-China-and-Russia-lock-horns-over-weaponization-of-space2>.

²⁰ *International Legal Agreements Relevant to Space Weapons*, U.C.S.U.S.A. (Feb. 11, 2014), <https://www.ucsusa.org/resources/legal-agreements-space-weapons>.

²¹ Makena Young, *Why Cooperation Is Still Possible in a More Militarized Space*, W.P.R. (Sept. 22, 2020), <https://www.worldpoliticsreview.com/articles/29076/why-cooperation-is-still-possible-in-a-more-militarized-space>.

²² Jonathan Marcus, *UK and US Say Russia Fired a Satellite Weapon in Space*, B.B.C. (July 23, 2020), <https://www.bbc.com/news/world-europe-53518238>.

²³ Almudena Azcarate Ortega, *Placement of Weapons in Outer Space: The Dichotomy between Word and Deed*, LAWFARE (Jan. 28, 2021), <https://www.lawfareblog.com/placement-weapons-outer-space-dichotomy-between-word-and-deed>.

protection of Indian space assets. The numerous instances of anti-satellite (ASAT) activities carried out by China have greatly fostered the requirement of Indian space asset management along with that of counter weapons.²⁴ Considering the long-standing political discord between India and Pakistan, India shall be on the edge for similar threats from Pakistan and shall stay prepared to ward them off.²⁵ The same is true not merely for India but for all the nations that are at odds with some other nation(s), thus rendering the avoidance of arms race in space an unrealisable goal. Nevertheless, in the pursuit of full-fledged disarmament, India and many other nations have championed the opposition of outer space weaponization, and have called for collective and co-operative approach towards space activities, avoiding any potential conflicts over the issue.²⁶

However, the dearth of international agreements concerning the manner of the use of outer space furnishes a window for its manipulation, and even invokes the issue of nuclear warfare in sheer violation of nuclear peace agreements.²⁷ The seriousness of the issue is further highlighted by the fact that even the weaponization of space has been tagged by nations including Australia, U.S. and U.K. as an outworn and out-dated challenge, for they foresee more involved and deleterious challenges in the near future.²⁸ Therefore, unless cogent measures are strictly formulated and adopted by the States for the regulation of space activities, the use of outer space will continue to pose an uncertain and unimaginable threat to the international peace and security.²⁹

III. INTERNATIONAL CO-OPERATION FOR OUTER SPACE REGULATION

Well aware of the intense and augmenting space race between nations as well as the distress it causes, the Committee on the Peaceful Uses of Outer Space has brought forth numerous treaties and guiding principles, bringing forth the idea of common growth and exploration benefitting all through international co-operation.³⁰ Undoubtedly, given the extraordinary

²⁴ Wg Cdr RK Singh, *India's Option in Space: Militarisation, Weaponisation or Weapons Free Space*, U.S.I. (2012), <https://usiofindia.org/publication/usi-journal/indias-option-in-space-militarisation-weaponisation-or-weapons-free-space/>.

²⁵ *Id.*

²⁶ Yoshita Singh, *India Opposes 'Weaponization' of Outer Space in United Nations*, MINT (Apr. 4, 2018), <https://www.livemint.com/Politics/9fNbippE6SzdHHutkpUf3K/India-opposes-weaponisation-of-outer-space-in-United-Natio.html>.

²⁷ Nidhi Sharma, *Outer Space and International Security*, O.R.F. (Dec. 28, 2019), <https://www.orfonline.org/research/outer-space-international-security-59579/>.

²⁸ Jessica West, *How to Keep Outer Space Weapons-free*, THE PLOUGHSHARES MONITOR (2019), https://ploughshares.ca/pl_publications/how-to-keep-outer-space-weapons-free/.

²⁹ Rajeshwari Pillai Rajagopalan, *Assessing the British Proposal on Space Security*, O.R.F. (Dec. 11, 2020), <https://www.orfonline.org/research/assessing-the-british-proposal-on-space-security/>.

³⁰ *Space Law Treaties and Principles*, U.N.O.O.S.A., <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html>.

nature of the space, the development of international law with respect to the same has been slow and gradual,³¹ inculcating within its ambit the possible solutions to new issues and challenges as when they arise.

The OST of 1967,³² as aforementioned, promotes peaceful use and exploration of the outer space including moon and other celestial bodies, and prohibits the signatory States from placing nuclear weapons in space. It clearly holds the States accountable for all the activities carried out in the space by any entity falling under their respective jurisdictions, as well as for any damage inflicted by their space assets. Further, it also obligates the States to prevent adverse contamination in the outer space and on celestial bodies. The duties imposed by the said treaty essentially enumerate the general principles of observance by the States.³³

Pursuant to this, the Rescue Agreement of 1968 was brought into force,³⁴ providing for the responsibility of States to redeem distressed astronauts and render them back, as soon as possible, to the State that launched them. The agreement also obligates the States to extend aid to the launching States for the recovery of their space assets, in case such assets return back to the Earth but land beyond their territory. Clearly, this agreement highlights the shared responsibility of States in space matters and the need to lend a helping hand to each other to promote common benefit.

The issue of State liability for any damages caused by their space assets on Earth or in space and the manner of settling claims with respect to the same have been addressed by the Liability Convention of 1972.³⁵ Thus, this convention stretched the matter of State accountability to another level, creating a preventive and deterrent effect among nations, and prompting them to play safe and avoid detrimental activities. The activities of States on Moon and other Celestial Bodies are regulated by the Moon Agreement of 1979 which is on similar lines as the OST.³⁶ Considering the plethora of agreements, supplemented by

³¹ *United Nations Treaties and Principles on Outer Space*, U.N.O.O.S.A. (2002), <https://www.unoosa.org/pdf/publications/STSPACE11E.pdf>.

³² *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, U.N.O.O.S.A., <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>.

³³ Kartikeya Saigal, *Understanding the International Agreements on the utilization of Outer Space*, INVEST INDIA (Feb. 20, 2020), <https://www.investindia.gov.in/team-india-blogs/understanding-international-agreements-utilization-outer-space>.

³⁴ *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, U.N.O.O.S.A., <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introrescueagreement.html>.

³⁵ *Convention on International Liability for Damage Caused by Space Objects*, U.N.O.O.S.A., <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introliability-convention.html>.

³⁶ Malcolm Shaw, *Moon Treaty*, BRITANNICA, <https://www.britannica.com/topic/international-law/additional-info#contributors>.

numerous declarations, formulate the international law governing outer space.

While these previously signed agreements hold great value in the present day scenario, the prolific increase in the technological capabilities of different nations calls for better robust governance mechanism through the execution of treaties addressing the present day issues and challenges. The recent activities clearly evince an impending weaponization race, raising serious questions with respect to the maintenance of peace in the orbit.

With the adoption of the “Draft Resolution on Responsible Behaviours in Outer Space” with the title “Reducing Space Threats Through Norms, Rules and Principles of Responsible Behaviours”, the end of the year 2020 has brought a new ray of hope in the international realm. The Resolution provides for the study of the current and apprehended dangers and risks to space systems by the States, identification of the effect of different activities on international safety and contribution of measures for further growth and execution of similar principles in the near future.³⁷ Therefore, the States are keen on emphasizing the need to indulge into continuous research so as to cope with the advancing times.

If followed with utmost sincerity and transparency, the States through this latest mutual effort, can together lead the entire world towards a better and secure future. However, given the contradictory approach of States and the vicious cycle of attack and defence strategies that they are stuck in, it is highly unlikely for States, especially the major powers of the world, to honour this recent agreement.

IV. ANALYSING THE GREY AREAS OF OUTER SPACE REGULATION

Interestingly, the aforesaid actions of the States depict an inherent dichotomy, i.e. the States have been discussing and stressing the need for better outer space regulation, while relentlessly carrying out tests and launching suspicious space objects causing friction amongst them.³⁸ Undoubtedly, the formulation and execution of new outer space agreements is highly futile an exercise when the very intention of the States is to neglect and circumvent the same. Nevertheless, such agreements are the need of the present day for securing a better future.

It is pertinent to note that the existing international law is exceptionally inadequate to tackle

³⁷ Almudena Azcarate Ortega, *Placement of Weapons in Outer Space: The Dichotomy between Word and Deed*, LAWFARE (Jan. 28, 2021), <https://www.lawfareblog.com/placement-weapons-outer-space-dichotomy-between-word-and-deed>.

³⁸ Almudena Azcarate Ortega, *Placement of Weapons in Outer Space: The Dichotomy between Word and Deed*, LAWFARE (Jan. 28, 2021), <https://www.lawfareblog.com/placement-weapons-outer-space-dichotomy-between-word-and-deed>.

the contemporary challenges concerning the outer space. Moreover, the differing interpretations of various provisions forming part of these agreements allow the States to identify and take advantage of legal loopholes for furthering their own purposes. This further augments international disagreements, leading to distrust and discord throughout the world. The following constitute few of the lacunae that international space law is tainted with –

V. AMBIGUITY IN THE DEFINITION OF SPACE WEAPONIZATION

The main issue in concern, namely “outer space weaponization”, has not been exhaustively or sufficiently defined in any international agreement. Therefore, the States are unable to reach a consensus with respect to the same, and attempt to define it in a manner suitable to them.³⁹ Same is the case with the meaning of ‘weapons’. In the absence of these definitions, advancing arguments against weaponization and suggesting remedial measures is completely inefficacious. The space has already been weaponized in the eyes of some States, while its weaponization has not even commenced in the eyes of the others. Hence, coming together to fathom out the solutions to contemporary challenges is more involved an exercise than what it generally is perceived to be.

VI. INTERPRETATION OF “PEACEFUL PURPOSES” UNDER THE OUTER SPACE TREATY

Article IV of the OST, 1967 permits the military use of the outer space by the States, but strictly for “peaceful purposes”.⁴⁰ This evinces that the provision calls upon the States to ensure international tranquillity while tapping into an area meant to be used for the benefit of all mankind. However, the Treaty fails to provide a lucid and exhaustive meaning of “peaceful purposes”, thus stirring ambiguities and rendering window for varied interpretations.⁴¹ The same is evidenced by the fact that U.S. interprets peaceful purposes in a broad manner to mean “non-aggressive” use of space, whereas Russia interprets the same to mean “non-military” use of space.⁴² As a result of the said ambiguities, the States can conveniently argue that the establishment of Space Force and the launching of defence equipment do not offend the provision promoting peaceful uses of outer space. Therefore, in

³⁹ Aaron Mehta, *What is a space weapon, and who has them?*, C4ISRNET (May 27, 2020), <https://www.c4isrnet.com/battlefield-tech/space/2020/05/27/defining-what-a-space-weapon-is-and-who-has-them/>.

⁴⁰ Cestmir Cepelka & Jamie H.C. Gilmour, *The Application of General International Law in Outer Space*, 36 J.A.L.C. 30, (1970).

⁴¹ Bin Cheng, *The Legal Status of Outer Space and Relevant Issues: Delimitation of Outer Space and Definition of Peaceful Use*, 11 J. SPACE L. 89 (1983).

⁴² James Fukazawa, *Does the U.S. Space Force Violate the Outer Space Treaty?*, D.J.I.L.P. (Apr. 28, 2020), <https://djilp.org/does-the-u-s-space-force-violate-the-outer-space-treaty/>.

the absence of a clear definition, the States find themselves free to mould their own interpretation of the provision and utilise the outer space as they feel fit, in the manner that serves their own purposes.

VII. PROHIBITION OF MERELY A FEW KINDS OF SPACE ACTIVITIES

Article IV of the OST envisages that the States shall not place any “nuclear weapons or any other kinds of weapons of mass destruction” and shall not establish military bases etc. in the outer space. A quick perusal of this provision evinces that the States are free to deploy any other kind of weapon in the outer space domain unless the same is not in violation of the ambiguously defined “peaceful purposes”.⁴³ Therefore, the law does not entirely prohibit the weaponization of outer space. A wholesome reading of Article IV furnishes innumerable loopholes to the States that can be used to weaponize this domain. In fact, the increasing Anti-Satellite activities in the space are the very result of this legal lacuna.⁴⁴ Ratification of such incapacitated agreements aids the States in depicting international co-operation on paper, while effortlessly resorting to its evasion in reality.

VIII. THE DICHOTOMY BETWEEN PATENTING AND COMMUNAL PROPERTY

Article II of the OST of 1967 disallows the appropriation of any area in the outer space or on celestial bodies.⁴⁵ Notably, patenting of any subject-matter provides for a monopoly right to the patentee throughout a particular territory. Entities that have been tapping the space are allowed to patent their ideas, designs and technologies. However, the position with respect to the patentability of satellite constellations and their orbital patterns is highly unclear.⁴⁶ Permitting such patenting will render to the patentee States the monopoly control over the entire area covered by these constellations.⁴⁷ Therefore, patenting of any subject-matter in the outer space raises serious questions of outer space monopolization, and violates Article II of the OST. At this juncture, it is pertinent to note that the international law is absolutely silent on this issue and no efforts have been made to address it in the near future. Therefore, the international law is not robust enough to avert major powers of the world from securing

⁴³ Takuya Wakimoto, *Weaponization of Space Will Harm the United States More than it Gains*, THE SPACE REVIEW (Jan. 28, 2019), <https://www.thespacereview.com/article/3647/1>.

⁴⁴ Almudena Azcarate Ortega, *Placement of Weapons in Outer Space: The Dichotomy between Word and Deed*, LAWFARE (Jan. 28, 2021), <https://www.lawfareblog.com/placement-weapons-outer-space-dichotomy-between-word-and-deed>.

⁴⁵ Cestmir Cepelka & Jamie H.C. Gilmour, *The Application of General International Law in Outer Space*, 36 J.A.L.C. 30, (1970).

⁴⁶ Christopher Green & Eda Stark, *Outer Space Treaty & Beyond: Do Existing Space Laws Put an Astronomical Barrier to Private IP Rights in Space?*, J.D.S.U.P.R.A. (Sept. 8, 2020), <https://www.jdsupra.com/legalnews/outer-space-treaty-beyond-do-existing-44028/>.

⁴⁷ *Id.*

and reserving their territory in the outer space, thus harming the very sustainability and stability of this domain.⁴⁸

IX. THE DEFENCE OF “SELF-DEFENCE”

Article III of OST provides for the requirement of adhering to the United Nations Charter while carrying out space activities.⁴⁹ The UN Charter prohibits the use of any kind of force against other States in ways which violate basic aims of UN, the exception being the use of force in self-defence as envisaged under Article 51.⁵⁰ Although the defence is subject to the principles of proportionality and necessity, the position with respect to the same is not as lucid as required to disable the States from reaping undue advantage of the exception clause, and hence, to prevent an arms race in space. Majority of the satellites today serve both military as well as civilian purposes.⁵¹ The question that surfaces here is that if a State destroys a satellite of another State that renders both types of functions, how will the proportionality and necessity principle be used to justify such destruction? Wouldn't the destruction of an asset performing civilian functions be violative of the UN Charter?⁵² If yes, won't the defence of self-defence allow the States to undertake any space functions in the garb of civilian space functions? These questions remain unanswered till date, highlighting yet another deficiency of the international law in governing the outer space.

X. ACCOUNTABILITY OF SPACE DEBRIS AND LACK OF TRANSPARENCY AMONG STATES

The increase in space debris is directly proportionate to the increase in the number of space weapons.⁵³ The debris contributes to congestion in the outer space and poses continuous threat of damage to the space assets. The international forum for controlling space weaponization has not been able to deduce a fool-proof mechanism of tracking and clearing the space debris.⁵⁴

⁴⁸ Gp Capt Ajey Lele, *Trends in Space Weaponisation*, IDR (Oct. 6, 2010), <http://www.indiandefencereview.com/news/trends-in-space-weaponisation/3/>.

⁴⁹ Cestmir Cepelka & Jamie H.C. Gilmour, *The Application of General International Law in Outer Space*, 36 J.A.L.C. 30, (1970).

⁵⁰ Jared Zimmerman, *Assessing How Article 51 of the United Nations Charter Prevents Conflict Escalation*, REAL CLEAR DEFENSE (June 4, 2018), https://www.realcleardefense.com/articles/2018/06/04/assessing_how_article_51_of_the_united_nations_charter_prevents_conflict_escalation_113507.html.

⁵¹ Blair Stephenson Kuplic, *The Weaponization of Outer Space: Pr eaponization of Outer Space: Preventing an Extraterrestrial Arms Race*, 39 N.C. J. INT'L L. & COM. REG. 1124, 1156 (2014).

⁵² *Id.*

⁵³ The General Assembly, *Prevention of an Arms Race in Outer Space*, T.E.I.M.U.N. (2014), <https://teimun.org/wp-content/uploads/2013/11/Topic-1-Prevention-of-an-Arms-Race-in-Outer-Space-.pdf>.

⁵⁴ Takuya Wakimoto, *Weaponization of Space Will Harm the United States More than it Gains*, THE SPACE

Further, the current international agreements lack the provisions for transparent use of the outer space by the States. Withholding of information stirs suspicion among States and creates an atmosphere of tension and distrust. For instance, a State launching a satellite is hesitant to share any information regarding its “orbital slot and radio frequency”.⁵⁵ This makes the outer space activities of States even more unpredictable, leading to higher degree of distrust. Unfortunately, these problems, although acknowledged and feared, haven’t been resolved through any international regulations, depicting the terrifying inadequacy that international law is tainted with.

The aforementioned constitute few of the numerous criticisms of the international law for prevention of weaponization of outer space. Even the Resolution on “Reducing Space Threats through Norm, Rules and Principles of Responsible Behaviours”, that has been adopted on December 7, 2020,⁵⁶ fails to address these issues. The Resolution urges the states to resume their commitment towards peaceful space exploration, stresses on avoidance of space debris, notes the fast-moving technology and the need to keep up with it, and recognizes the need for higher transparency, while highlighting that an arms race in outer space will hamper international security. Clearly, the Resolution states the obvious and what is already known. This evinces one of the biggest lacunae of international law, of having merely an advisory value in numerous circumstances. However, the emphasis placed by the Resolution on the anticipation of future threats to outer space, and on deliberation on the respective views of the states with regard to the same, so as to facilitate the formulation of novel international rules is a commendable measure having the potential of resolving the contemporary challenges that haunt the security of outer space.

XI. CONCLUSION AND SUGGESTIONS

One cannot deny that the major powers of the world are on the advent to dominate each of the four spectrums of the universe. The existing international law is not sufficiently equipped for preventing outer space weaponization. There does not exist any foreseeable end of the vicious cycle of offensive and defensive space activities of the States. Even the most recent outer space resolutions fail to resolve the contemporary challenges that have shadowed the world. Given the benefits that these legal ambiguities render, States believing in individualistic approach champion the “prevention of arms race in the space” on paper, while

REVIEW (Jan. 28, 2019), <https://www.thespacereview.com/article/3647/1>.

⁵⁵ PN Tripathi, *Weaponisation and Militarisation of Space*, INDIAN ARMY (2013), <https://indianarmy.nic.in/WriteReadData/Documents/Weaponisation.pdf>.

⁵⁶ UN. General Assembly, *Reducing Space Threats through Norm, Rules and Principles of Responsible Behaviours*, UN Digital Library (2020), <https://digitallibrary.un.org/record/3895440?ln=en>.

continuing to bolster their respective dominant positions in the space.

The present complexity cannot be resolved by merely drawing a new international agreement addressing the contemporary challenges and incentivizing its ratification by all the States throughout the world. The need of the day is to identify and tackle the existing legal uncertainties at once and simultaneously, to come up with strict yet dynamic piece of agreement with heavy penal provisions so as to deter the States from undertaking any detrimental activity in the outer space. Imposition of sanctions and leaving less scope for interpretation is the key to success.

“Peaceful Purposes” shall be construed to exclude any action that has the potential of raising even the slightest of alarm at the international level. However, a defence with respect to the same shall be accorded in the form that any uncalled for and frivolous challenge raised by any State against rightful space activity of another will attract hefty fine and international condemnation.

Further, patentability of space technology shall be made legal, but a patent having the implication of monopolization of any area in the outer space shall not be granted. The definition of “outer space weaponization” shall be updated regularly and the ambit of “weapons” shall not be restricted to render the agreements futile.

Also, it is high time that provisions are incorporated in agreements specifically to prevent space congestion as well as space debris. New agreements shall clearly indicate the need for States to give prior declaration of an anti-satellite activity or any other activity that will generate debris and such activity shall be allowed only if it is a necessity and robust reasons have been provided for the same. States shall be strictly mandated for clearing out the debris resulting from their activities on a prompt basis.

Furthermore, tackling the lack of transparency will foster better agreements and negotiations among the States and hence, will re-establish international faith. Provisions promoting transparency shall immediately be incorporated in international agreements. The interface between the defence of “self-defence” and the principles of proportionality and necessity need to be thoroughly researched upon and codified so as to prevent its misuse.

Another measure to be implemented in the near future, with the contribution of all the States, is the establishment of a shared Research and Development department at the international level, consisting of research scholars, State representatives, scientists, and most importantly, space law advocates and jurists. This department shall discuss the contemporary space related matters on a continuous basis and address them as and when they arise, with mutual

discussions and consultations. Valuable recommendations of think-tanks as well as Non-Governmental Organizations can also be considered to bolster the law. Such an exercise will pave way towards prompt addendums and amendments to the existing international law, keeping it updated with the advancing technology and with upcoming and foreseeable complications.

Above all, the States themselves need to inculcate the sense of responsibility towards common growth of all mankind, allowing their current individualistic approach to take a back-seat. A tranquil future can be secured only when all the States join their hands together for framing it. Although a blanket ban on weaponization is too ideal a goal to achieve, measures can be taken to limit such weaponization to a great extent.
