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India's ASAT Test: An Arms Race to Outer Space

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ABSTRACT

The paper aims to comprehensively discuss India's successful Anti-Satellite Weapons ("ASAT") test, Mission Shakti. India has joined the ranks of USA, Russia and China after the launch. It navigates through the current international framework governing the ASATs through the help of various outer space and weapons treaties like the Outer Space Treaty, UN Charter, Limited Test Ban Treaty, Anti-Ballistic Missile Treaty and also numerous customary international laws on the subject of ASATs. The paper will, then, try to study if India's ASAT is violating any of these treaties. The discussion of the legal consequences of ASATs is essential to understand the gravity of the threat that ASATs pose to the humankind. The paper furthermore discusses the threats posed by the conduction of ASATs to the outer space environment in the form of debris and the security concerns associated with weapons usage in space. It argues that an arms race to space imminent. Moreover, the paper highlights the need for specific legislation which can contain and hold States responsible for their actions which threaten the environment of the outer space. Also, it discusses the State's show of power through ASATs, which poses a grave risk to the cooperation amongst the international community. On the other hand, the paper also highlights the challenges in adopting uniform legislation on the matter mentioned earlier.

I. INTRODUCTION

Prime Minister of India, Narendra Modi on March 27 announced India has successfully conducted the Anti-Satellite Weapons ("ASAT") test from the launch site on Dr A. P. J. Abdul Kalam Island in the Bay of Bengal.[2] The test, named *Mission Shakti*, literally Mission Strength, has been hailed domestically as an excellent achievement for India. With this India has officially joined the ASAT powers and is now on par with the United States of America, Russia and China.[3] DRDO, which is the organisation which undertakes the responsibility of

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[2] *Frequently Asked Questions On Mission Shakti, India'S Anti-Satellite Missile Test Conducted On 27 March, 2019*, MEA GOV (Oct. 3, 2019) https://mea.gov.in/press-releases.htm?dtl/31179/Frequently+Asked+Questions+on+Mission+Shakti+Indias+AntiSatellite+Missile+test+conducted+on+27+March+2019.

[3] Brian Weeden & Victoria Samson, *Op-Ed | India's ASAT Test Is Wake-Up Call For Norms Of Behavior In Space - Spacenews.Com*, SPACE NEWS (Oct. 4, 2019), https://spacenews.com/op-ed-indias-asat-test-is-wake-up-call-for-norms-of-behavior-in-space/.

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military research and development, carried out the technological mission. Utilising a supposed PDV Mark II missile, a modified version of India's Prithvi Defence Vehicle ("PDV") anti-ballistic-missile interceptor, DRDO destroyed the Microsat-r satellite which was orbiting at 285 kilometres in altitude.[4] Microsat-r was launched by India two months before Mission Shakti to serve as a target for this test.[5]

Before going into the consequences and reactions to the test, it is crucial to understand what precisely an ASAT comprises. It is also pertinent to comprehend the legal consequences of such tests. The function of ASAT is to destroy fundamental components of an enemy satellite for intelligence gathering and the command and control of the launching state's forces.[6] The extent of the danger posed by the ASATs to a particular satellite depends on the orbit in which the satellite is orbiting. Since most of the communication networks are operated through satellites an anti-satellite can have a disastrous impact on the country whose satellite is targeted.[7] If such an operation is carried out, the result could create space debris that could render orbits unusable due to the Kessler syndrome.[8] This issue will be elaborated more in the latter part of the paper.

The paper, therefore, would deal with legal issues posed by such tests and outer space arms control. Lastly, the paper will address what steps might be taken to mitigate damages on the outer space and security of States through ASATs.

To evaluate possible ASATs and outer space arms control measures, it is of the utmost importance to understand the current international legal framework on ASATs. The international laws that would be relevant are the Customary International Law, UN Charter, Outer Space Treaty ("OST"), Limited Test Ban Treaty ("LTBT") and the Anti-Ballistic Missile Treaty ("ABM Treaty").

II. THE INTERNATIONAL FRAMEWORK GOVERNING THE ASATS:

Customary International Laws:

The principles of general international law – Customary law of self-defence and the UN Charter apply in outer space and hence, to ASATs.[9] International law allows the use of

[4] Marco Langbroek, *Why India'S ASAT Test Was Reckless*, THE DIPLOMAT (Oct. 5, 2019), https://thediplomat.com/2019/05/why-indias-asat-test-was-reckless/.
[5] Langbroek, *supra* note 3.
[6] Kurt Gottfried & Richard Ned Lebow, *Anti-Satellite Weapons: Weighing the Risks*, 2 MIT Press 147 (1985).
[7] Debayan Roy, *Does Mission Shakti Violate International Law or Is It Shielded By Right To Free Access To Space?*, NEWS18 (Oct. 5, 2019) https://www.news18.com/news/india/does-mission-shakti-violate-international-law-or-is-it-shielded-by-right-to-free-access-to-space-2079963.html.
[8] *Id.*
[9] Roy, *supra* note 6.

satellites for military purposes but disallows attacks against them. Article 2(4) UN Charter requires the nations to refrain from the use of threat or force in any manner not consistent with the UN charter.[10] It could be argued that this somehow inhibits the use of ASAT. However, the exception of self-defence laid down in Article 51 allows for the use of ASAT in self-defence. Read together, Art 2 and Art 51 indicate a general international prohibition of the use of force, but do not limit specific weapon systems.[11] In the case of India, like China, the ASAT was directed at one of its satellite. The test was conducted based on the customary law of free access to outer space. There is no international law prohibiting ASATs in such instances.

The Limited Test Ban Treaty:

The Limited Test Ban Treaty of 1963 bans nuclear weapons test or any other nuclear explosion in outer space, the atmosphere or underwater.[12] The LTBT, therefore, can stop the testing of any unique ASAT which derives its power from a nuclear explosion. The LTBT would not ban any testing of a non-nuclear component of such technology in outer space. Hence, according to this treaty, the nuclear component could be tested underground on Earth and the non-nuclear component in outer space.[13] India's Mission Shakti did not have any nuclear component to it and hence, would not violate the LTBT.

The Outer Space Treaty:

It could be argued that Preamble, Articles 3, 4 and 9 of the 1967 Outer Space Treaty ("OST") have a direct bearing on ASAT tests. The Preamble of the OST provides that outer space is a heritage of humankind. Moreover, Article 3 states that outer space activities should be carried out per international law for maintaining peace and security and for promoting international cooperation.[14] It can be seen that it was the drafters intended to ensure that outer space is utilised for benefiting the humankind and for providing peace and co-operation. Article 4 places an explicit ban on placing in the orbit around Earth any nuclear weapon or a weapon of mass destruction.[15] Orbiting weapons which use nuclear explosions for power would be understood to be included in this ban.[16] However, it appears that this provision does not limit ground-based ASATs or ASATs which use mainstream explosives or other means to destroy

[10] Charter of the United Nations, June 26, 1945.
[11] PRINCETON (Oct. 4, 2019), https://www.princeton.edu/~ota/disk2/1985/8502/850207.PDF.
[12] *Id.*
[13] PRINCETON, *supra* note 10.
[14] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, January 27, 1967, 610 U.N.T.S 205 [hereinafter OST]
[15] *Id.*
[16] PRINCETON, *supra* note 10.

its target. Testing of such a weapon if it leaves the Earth's atmosphere, does not amount to placing it in outer space.[17] The missile in question does not have a nuclear weapon attached or a weapon of mass destruction. The government of India describes the missile as a "kinetic kill" weapon that directly destroys the target object in outer space.[18] Paragraph 2 of Article 4 prohibits the testing of any weapon on a celestial body which renders it utterly redundant in this instance.

Furthermore, Article 9 of the OST requires the State Parties to take appropriate consultations before undertaking any activity that might jeopardize the activities of other State Parties in their "peaceful explorations and use of outer space".[19] It is possible to argue that the states developing ASATs intend to cause harmful interference and therefore, have to do so only after proper consultation with the international community. Nevertheless, the provision is silent on the procedure or effect of such consultations. In any case, such vague wording of Article 9 diminishes its utility value as outer space arms control provision.[2021]

The Anti-Ballistic Missile Treaty:

The next international treaty to be considered for our purposes is the ABM treaty. Nevertheless, before going into the history and the current relevancy of the treaty, it is vital to understand the distinction between Ballistic Missile defence ("BMD") and ASAT. There is very little connection between a BMD and an ASAT. A BMD is concerned with the protection of a state in wartime situation through the air and civil defence which might or might not be having anything to do with outer space.[22] An ASAT, on the other hand, might be used during peacetime for tampering with satellites to use during crisis and war.[23] If an ASAT becomes capable of intercepting missiles, then it would fall under the ABM treaty. In 1972, the US and the USSR concluded the Limitation on Anti-Ballistic Missile Systems ("ABM Treaty"), which not only laid the foundation for limitation and reduction of strategic and other nuclear weapons but also served as a cornerstone of jurisprudence and a legal barrier to outer space militarisation.[24] The ABM Treaty placed a ban on testing, development and deployment of BMD systems and outer space-based BMD components in Article 5 of the

[17] Kiran Mohan, *India'S Anti-Satellite Missile Test*, VOLKERRECHTSBLOG (Oct. 4, 2019), https://voelkerrechtsblog.org/indias-anti-satellite-missile-test/.
[18] MEA GOV, *supra* note 1.
[19] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, January 27, 1967, 610 U.N.T.S 205.
[20] PRINCETON, *supra* note 10.
[21] Mohan, *supra* note 16.
[22] Ashton B. Richard, *The Relationship of ASAT And BMD Systems*, 2 MIT Press 171 (1985).
[23] *Id.*
[24] Viktor Mizin, *Non-Weaponisation of Outer Space: Lessons from Negotiations*, *in* OUTER SPACE – WEAPONS, DIPLOMACY AND SECURITY, 51 (Alexei Arbatov & Vladimir Dvorkin ed., 2010).

Treaty.[25] However, this treaty failed to mention that these limitations applied only to nuclear weapons.[26] The inference that could be drawn from this is that first time the ban would apply to all other outer space-based weapons. Since a outer space-based BMD system would have many anti-satellite characteristics or capabilities, the ABM treaty would also indirectly ban outer space-based ASAT systems.[27] Unfortunately, the ABM Treaty has no application in India's scenario as it was a bilateral treaty between the US and the USSR. The ABM Treaty was dissolved due to the US' unilateral withdrawal in 2002 and hence, there a subsequent stall in negotiations on the militarization of outer space.[28] Hence, the ABM Treaty has no relevancy, whatsoever, but only carries a precedential value.

Therefore, it can be seen that in the current legal regime, there is absolutely no explicit provision prohibiting the testing of anti-satellite missiles. India can be said to be not violating any international obligations, as stated in the FAQ.

III. THREAT POSED BY ASAT AND MITIGATION OF DAMAGE:

The paper has previously pointed out that the outer space environment concerns ASAT's pose. Article 9 of the OST places an obligation not to contaminate outer space.[29] After China's test, COPOUS has adopted the Space Debris Mitigation Guidelines. Guideline 4 provides that intentional destruction and harmful activities have to be avoided.[30] However, these guidelines are not legally binding. ASAT, in general, creates a substantial amount of debris which is harmful to satellites in orbit and other outer space missions. Therefore, if an ASAT is conducted in such a manner that it creates a large amount of outer space debris, this could violate the right to free access to outer space that is laid out in the above-discussed treaties as well as the customary international law.[31] Indian government claims that the debris generated would eventually re-enter the Earth's atmosphere and burn out.[32]

On the contrary, NASA Administrator Jim Bridenstine commented that Missions Shakti had created 400 pieces of debris and some of the particles were thrown into orbits above the ISS. The US government estimates that the risk to ISS has risen by 44 per cent due to the test.[33]

[25] Anti-Ballistic Missile Treaty, USA & USSR, May 26, 1972, 944 U.N.T.S 13.
[26] *See* Mizin, *supra* note 21 p 52.
[27] *Id.*
[28] Sergey Oznobishchev, *Codes of Conduct for Outer Space*, *in* OUTER SPACE – WEAPONS, DIPLOMACY AND SECURITY, 72 (Alexei Arbatov & Vladimir Dvorkin ed., 2010).
[29] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, January 27, 1967, 610 U.N.T.S 205.
[30] UNOOSA, (Sep 5, 2020), https://www.unoosa.org/pdf/publications/st_space_49E.pdf.
[31] Roy, *supra* note 6.
[32] MEA GOV, *supra* note 1.
[33] Weeden & Samson, *supra* note 2.

India could have avoided outer space debris by not using the kinetic ASAT but other forms of a non-kinetic weapon by capturing a satellite, merely pushing it off its course, or blinding it with a laser.[34] However, the paper would like to point out that India with Mission Shakti tried to assert its dominance as a formidable military power and also to instil nationalistic feelings amongst its country people as it did with Mission Chandrayaan-2's Vikram. It could also be considered a political move by the BJP government as it was during the ASAT that the Indian elections were approaching steadfast.

IV. CONCLUDING THOUGHTS

The militarisation of outer space has to be prevented at all cost and this should be translated into a comprehensive treaty. Prevention of an Arms Race in Outer Space (PAROS) has to be given effect. A treaty that bans all ASAT would be desirable but difficult to verify compliance. Visible test sites could be removed, but possession and experimentation of small ASATs would be challenging to establish. The proposed and more realistic treaty should prevent the development of new ASAT technologies. It should prevent the testing of any technique which would prevent the functioning of any satellite, even if there is no permanent damage. There should be cooperation and transparency in the way the treaty works. The existing system of notifying missile launches should be expanded to include all actions or experiments that have a destructive effect on objects in outer space.

The elimination of non-functioning satellites that threaten to fall to Earth should be conducted under the supervision of other parties, and sufficient information should be provided to avoid any suspicion of secret ASAT experiments. In such elimination, it has to be ensured that limited or debris is created and methods which do not generate debris such as the non-kinetic weapons are used.

The above laid out measures have to be undertaken as soon as possible as it is only a matter of time that other states decide to follow in the footsteps of the US, Russia, China and India. ASATs would leave outer space unusable and highly dangerous area. Such dangers might run parallel on the Earth too. If early legal restrictions are not placed on the militarisation of outer space, it will transform into an arena for an arms race and potentially armed conflicts.

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[34] Roy, *supra* note 6.