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Legal Regime of Outer Space Vis-À-Vis Commercial Space Activities: India and the world

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From Sputnik 1 by USSR to Falcon IX by Space X, we have come a long way in terms of space exploration. The Legal regime has also developed as now exists a myriad of regulations governing orbital and suborbital space. However, as we continue to push boundaries when it comes to space activities, there arises a need to address the potential issues that become more plausible with such fast-paced development. Apart from the already existing corpus of international laws, countries such as the United States have taken it upon themselves to formulate policies and legislations that promote the participation of private sector and commercial space activities. While this pro-activeness is commendable, the more ambitious we become, the more essential it becomes to fathom what the coming era of space commercialization holds and develop a framework to tackle the existing problems as well as any anticipated ones. This article aims to address the widening ambit of commercial space activities, discuss the existing favourable legislations in the United States of America while also discussing the regime for commercial space activities in India, highlighting the issues that persist in the present space law regime and attempt at making a comparative analysis in order to suggest the policies from USA that India could incorporate to aid the promotion of Non-Government Private Entities carrying out such activities.

Keywords: *commercial space activities, policy framework, private entities, space law.*

INTRODUCTION

Space Law, at its broadest, is a bucket of several legislations and treaties that govern or apply to outer space and activities that are related to it.¹ More simply, it is the application of already established domestic principles in a new area. It is a more 'recent' area of law that has come to regulate the by-product of the much advanced technological developments in contemporary society. Communication, satellite routing, navigation, forecasting, monitoring, and more recently tourism is the result of what genius minds and a lot of money can do.

Outer Space is not a lawless, ungoverned frontier. Global institutions have taken the authority to develop a set of principles governing outer space to avoid countries to wreak havoc with the power in their hands. Long before the International Space Laws were formulated, there did exist the Chicago Convention², which recognized every country's sovereignty over the air space directly above their territory. However, due to the very nature of space programs involving crossing transnational boundaries gave rise to the apprehensions of space exploitation among the non-space faring nations, which led to the formulation of 'Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies'³, concisely, the Outer Space Treaty. One of the major purposes that the treaty served was to establish that outer space must only be used for peaceful purposes, given the fear of militarization of space.⁴

This treaty along with four others form the 'Five United Nations Treaties on Outer Space' namely: the Rescue Agreement, Liability Convention, Registration Convention, and Moon Agreement. Even though all of this seems like a huge advancement in the field of space law, little to none has been done to modernise the existing legal regime. The current stance of space

¹ Francis Lyall, *A Treatise* (2ndedn, Routledge 2017)

² Convention on Civil Aviation, 1947

³ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967

⁴ Nicolas Matesco Matte, *Aerospace Law* (Sweet & Maxwell 1969)

laws is proving to be unsuccessful in dealing with the problems arising out of the growth of commercial space activities.⁵

THE NEED FOR EVOLUTION

The beginning of the space race is rooted in the cold war between the two superpowers, the Soviet Union and the United States. It is continuing as a modern-day 'war' between tech-giants racing towards space in their private spacecraft. While they build a colony on Mars we here need to devise laws to govern those outer space activities. Space tourism is a new trend in the market. Talks about regularly sending ordinary citizens (with loads of money) to space no longer lie in the distant future. It could happen anytime now. As humans move to space, they are going to break laws, commit crimes and get hurt. Are we ready with the set of laws that will apply to our fellows above the earth?

This was put to test in August 2019, when Summer Worden, a former Air Force Intelligent Officer, accused her ex-spouse and NASA scientist Anne McClain of identity theft. The scientist logged into Worden's bank account to view her private financial records.⁶ In simple circumstances, this could have been a normal case of identity theft but the problem arose when it came to light that the private details were accessed from a computer network registered with NASA. The crime was committed in the International Space Station hence gaining the title of the first criminal wrongdoing in space. Now, although the law states 'this civil space station may be used only for peaceful purposes.'⁷, it is a blanket statement and the possibility of space crimes hasn't been taken into consideration. Moreover, the question of jurisdiction still persists.

Criminal Jurisdiction in Space is paralleled by maritime crimes and the Antarctic Treaty.⁸ However, there too, unresolved jurisdictional questions, conflicting interests, and unverified claims make it almost impossible to investigate a crime. A new set of laws need to be chalked

⁵ Stephanie D. Veech, 'To Infinity and Beyond: The History of Space Travel and the Legal Implications of Privatized Space Flight Through the Lens of SpaceX' (2019) 18 (1) Loyola Maritime Law Journal, 151

⁶ Mike Baker, 'NASA Astronaut Kate Mc Clain Accused of Crime in Space' (*The New York Times*, 23 August 2019) <www.nytimes.com/2019/08/23/us/astronaut-space-investigation.html> accessed 19 June 2022

⁷ United States Code, 1926, Title 51

⁸ Hamilton De Saussure, 'Maritime and Space Law - Comparisons and Contrasts (An Oceanic View of Space Transport)' (1981) 9 (1) Journal of Space Law, 93

out to apply to the International Space Station. The question is not only about crime, but soon anything that happens here will happen in the space. The Outer Space Treaty states that 'the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries...'⁹. Commercial space exploitation is vaguely defined and not dealt with properly in any international treaties. We are now at a point where the private sector is capable of exploring space and on the brink of extracting resources for profit. Countries are creating domestic laws that violate the treaties and permit their citizens to conduct activities like space mining. This will require new economic and environmental treaties and laws to be enacted so that all the nations have an equal footing and the extent to which space is exploited. As companies like Space X, Virgin Galactic, and Blue Origin fly more and more and as hypersonic planes blur the line between space and air, space law becomes less of a novelty and more of a big deal.

Delving into the topic of privatisation, another topic of contention is the liability in cases of damage to life and property in outer space. The Liability Convention talks about the 'Launching State' being responsible for the damage caused by their space object.¹⁰ Article 3 of the convention focuses on the liability of the 'Launching Party' arising out of injury to a person.¹¹ However, the relevant parties talked about here were only considered to be government or any governmental organisation¹². This leaves a lingering question on the liability of private companies and their capability to compensate for large-scale damages. Uniformity in domestic space law is another issue to be dealt with. Until now, space law has remained to be an unclear bunch of rules, regulations, treaties, and a mix of domestic laws. There is a lot left to explore and determine in the area. As humans continue to fly high, quite literally, laws can't be left behind on this planet. Lawmakers need to reach the stars and stop the chaos that might otherwise unfold.

⁹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967, art.1

¹⁰ Convention on International Liability for Damage Caused by Space Objects, 1972

¹¹ Convention on International Liability for Damage Caused by Space Objects, 1972, art.3

¹² Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967

SPACE LAW REGIME IN THE USA

The lack of proper legislation didn't discourage the countries from having aspirations for using space as a viable resource to go ahead and formulate domestic legislation. The USA serves as an example of proactively creating laws in order to aid the further growth of the private space industry. Other countries followed suit, to prevent being at a competitive disadvantage.¹³ For the purpose of this article, we shall restrict ourselves to analysing the legislations from the United States of America aiding commercial space exploitation for the simple reason that it has made the most progress in this sector and has one of the most robust legal regimes in the present times.

In order to further develop the space industry, the USA passed the Commercial Space Launch Competitiveness Act of 2015¹⁴, a law that helps the private sector realise its corporate ambitions through provisions such as granting private companies and individuals, the right to own resources collected in space¹⁵. This is a big development as the possibility of space mining may become viable in the near future. The Act seeks to extend the provisions such as 'indemnification of launch providers for catastrophic extraordinary third party losses'¹⁶.

Tedious procedures for attaining licenses to carry out operations in the private space sector and the requirement for the multiplicity of approvals from the government can not only be a heavily time-consuming process but also a major deterrent to private players.¹⁷ To deal with this issue, the American Space Commerce Free Enterprise Act¹⁸ was brought into effect. Through this Act, lawmakers intended to bring amendments to the Title 51 of the United States Code titled national and Commercial Space Programs' to make the certification procedure more transparent and less burdensome, and support a competitive industry where

¹³ Juan Jones, 'US, Luxembourg, Emirates and Now Japan Take the Lead to Exploit Space Mining' (*Atalayar*, 28 July 2021) <<https://atalayar.com/en/content/us-luxembourg-emirates-and-now-japan-take-lead-exploit-space-mining>> accessed 20 June 2022

¹⁴ US Commercial Space Launch Competitiveness Act, 2015

¹⁵ Milton 'Skip' Smith, 'The Space Law Review: USA' (*The Law Reviews*, 9 December 2021) <<https://thelawreviews.co.uk/title/the-space-law-review/usa>> accessed 21 June 2022.

¹⁶ *Ibid*

¹⁷ Stephanie D. Veech (n 5)

¹⁸ American Space Commerce Free Enterprise Act, 2017

activities such as offshoring are discouraged.¹⁹ This also seeks to address the concerns related to the private sector's activities conforming to USA's obligations to the treaties it has ratified.

Space X's recent feats (in collaboration with NASA) and investors seeing potential in space tourism and space mining i.e. 'space-for-space economy'²⁰, gives rise to the need for the international community to look past geopolitical rivalries to create a legal framework that not only keeps the space industry in check but also that its exploitation serves the interest of all and doesn't have adverse consequences. Although The United States is said to have the most robust space regime out of all space-faring nations, its current legal regime for outer space fails to consider a number of potential issues²¹ that are becoming more and more likely with the growth of privatized space travel and other non-conventional forms of commercial space activities.

SPACE LAW REGIME IN INDIA

India recognized the need for adopting a basic framework of space laws by signing and ratifying the Outer Space Treaty), 1967 Liability Convention, 1979 and the Registration Convention, 1982.

STRUCTURAL FRAMEWORK OF INDIAN SPACE REGIME

India's space program can be said to have received its foremost stimulus in the year 1962 owing to the establishment of the Indian National Committee for Space Research, INCOSPAR, whose activities then transferred to ISRO, the Indian Space Research Organisation (ISRO) which is now spearheading the space sector in India and effectively maintaining the monopoly of Government in this area. In order to commercially exploit the space products developed by ISRO and assist the Indian Space Industry by taking the burden of technology transfer and industry cooperation off ISRO's shoulders, Antrix Cooperation was established to market ISRO products abroad and handle deals with international customers worldwide. NSIL, a public sector enterprise works domestically to equip the Indian private space industry with

¹⁹ Press Release, 'Smith Introduces American Space Commerce Free Enterprise Act of 2017' (*Science House*, 7 June 2017) <<https://science.house.gov/news/press>> accessed 21 June 2022

²⁰ Matt Weinzierl & Mehak Sarang, 'The Commercial Space Age is Here' (*Harvard Business Review*, 12 February 2021) <<https://hbr.org/2021/02/the-commercial-space-age-is-here>> accessed 22 June 2022

²¹ Stephanie D. Veech (n 5)

the latest space tech and boost commercialisation. Complying with Article 6 of the Outer Space Treaty, the Indian National Space Promotion and Authorisation Centre (IN-SPACe) acts as a regulatory agency which enables private corporations to use the facilities and capabilities of ISRO. An example of the same could be the recent MoUs signed with Skyroot Aerospace Pvt Ltd and Agnikul Cosmos Pvt Ltd to use the resources and facilities available at ISRO.²²

POLICY FRAMEWORK RELATING TO THE PRIVATE SECTOR

India is obligated to enact national space legislations because legal certainty is a precondition to the development of any commercial activity. As of date, India doesn't have a national space law and the bill for the same (Draft Space Activities Bill)²³ has been pending consultation since 2017. India's space sector has always been dominated by government agencies. To encourage more participation from Non-Government Private Entities (NGPEs) and to push for commercial space activities, the Draft Space Based Communication Policy of India, 2020 was launched, which, among other things includes the SpaceCom Policy, 2020.²⁴ It allows private players to build and set up new communication satellites, and develop launching services and ground stations, basically, it opens the doors to make use of ISRO's existing resources and collaborate with the organisations on various interplanetary missions, thus recognizing new stakeholders in the space industry.²⁵

The policy driven pattern became successful during the deregulation drive for the telecommunication industry which bloomed into a competitive private industry.²⁶ This shows that India may soon join its western counterparts in the commercial space drive, for this to happen, a regulatory framework needs to be set up in place. There persist in certain regulatory issues that plague the current space regime in India. Agreements between NGPEs and

²² 'Two Space tech Startups Get Access to ISRO Facilities, Expertise to Test Rocket Systems' (*The Economic Times*, 18 September 2021) <<https://economictimes.indiatimes.com/tech/startups/two-spacetech-startups-get-access-to-isro-facilities-expertise-to-test-rocket-systems/articleshow/86313816.cms>> accessed 23 June 2022

²³ Draft Space Activities Bill, 2017

²⁴ MartandJha, 'From Allowing Private Players, to Regulating Satellite Use, Why India Needs a Space Law' (*Firstpost*, 3 October 2021) <www.firstpost.com/india/from-making-provisions-for-private-players-to-regulating-satellite-use-why-india-needs-a-new-space-law-10020521.html> accessed 23 June 2022

²⁵ *Ibid*

²⁶ K R Sridhara Murthi, 'A Review of India's Commercial Space Efforts' (*Observer Research Foundation*, 1 March 2017) <www.orfonline.org/expert-speak/a-review-of-indias-commercial-space-efforts/> accessed 23 June 2022

ISRO/DOS are not in a standard format, therefore making predicting negotiation outcomes uncertain.²⁷

Section 12 of the Draft Space Activities Bill indemnifies the government of any liability in case of any loss or damage sustained due to the licensee's commercial space activity, there is also no limit to the licensee's liability.²⁸ While the bill proposes mandatory insurance requirements, it becomes doubtful whether an insurance company would be willing to write off an unlimited liability against risks.²⁹ Many companies that are willing to venture into commercial outer space exploration are start-ups and therefore, in their initial years, wouldn't likely have the capacity to expose themselves to such a high financial liability. This high risk aversion by the Government might bring repercussions in the form of stalled participation from the private sector.

Such activities need extensive and patient capital and currently, only either the Government or the global private equity market can bet on the same.³⁰ Even if there is a 100% FDI limit for private players, it is subject to the government's approval. There exists the issue of multiplicity of approvals and procedural ambiguity that might ward off start-ups and companies from participation.³¹ Thus arises a need for a single window policy like the United States. Structural reforms, strengthening research and development, and enabling space legislation are needed to tackle the aforementioned problems. Cues can be taken from the US and other such countries which have better policies to leverage the private sector for commercial operations rather than just manufacturing assistance.

²⁷ Nitin Sarin & Vinamra Longani, 'The Space Law: India' (*The Law Reviews*, 9 December 2021) <<https://thelawreviews.co.uk/title/the-space-law-review/india#:~:text=India%20signed%20the%20Treaty%20on,was%20not%20ratified%20until%201982>> accessed 23 June 2022

²⁸ Draft Space Activities Bill 2017, s 12

²⁹ Stephanie D. Veech (n 5)

³⁰ IBEF, 'Enhancing private sector participation in India's commercial space sector' (*IBEF*, 20 May 2021) <www.ibef.org/blogs/enhancing-private-sector-participation-in-india-s-commercial-space-sector> accessed 23 June 2022

³¹ *Ibid*

CONCLUSION

Space law is not something that can be concluded in single legislation made by a single country. It requires hours of research by scholars from different backgrounds. Then too there will be continuing developments leading to a new set of problems to be dealt with. Each country is on a different level of development with respect to its space research and more specifically private space industry. While the developed countries make laws that are being tested in real time, the less developed ones can learn from them to proceed with their policy framework. Talking specifically about India, first of all, there is a need to boost private space companies' participation in the field. Till then laws can be developed to deal with issues like limited liability, timely approval, coordination, cooperation, and competition with foreign companies. and agency counterparts, the development of domestic laws in sync with international law, as well as addressing the lacunae of legislation in the space regime is what is required to carry out smoothly and maximise the benefit of commercial space activities.