FROM OUTER SPACE TREATIES TO COMMERCIAL SPACEFLIGHT: TRACING THE EVOLUTION OF SPACE LAW IN THE ERA OF SPACE TOURISM

Chinnu. S, Assistant Professor, Kerala Law Academy Law College, Thiruvananthapuram

ABSTRACT

The evolution of space law has been shaped by the rapid growth of space exploration and the emerging sector of space tourism. Initially focused on sovereignty, resource use, and peaceful exploration, space law now encompasses regulations addressing commercial activities, liability, environmental protection, and the rights of private individuals in orbit. The rise of space tourism has introduced new legal challenges, such as passenger safety, insurance, jurisdiction, and property rights in outer space. This paper reviews the historical development of space law, analyses current international frameworks, and explores the regulatory needs prompted by commercial space travel. It aims to provide an understanding of how legal systems adapt to the expanding human presence beyond Earth.

Keywords: space law, space tourism, commercial space flights, international space treaties, liability, outer space governance, regulatory challenges, space exploration

1.1 INTRODUCTION

"Affordable and safe commercial space journey put human access to outer space is a major contribution to the progress of mankind."

-Neil Armstrong

National and international law governing activities in outer space is included in the field of space law. The five international treaties and five sets of guidelines governing space that have been developed under the direction of the United Nations Organization (UNO)[1] are together referred to as space law. Space law encompasses the norms, standards, and guidelines of international law. Nevertheless, national laws and regulations, executive and administrative directives, judicial decisions, international agreements, treaties, conventions, and the norms and regulations of international organizations (such as the International Telecommunication Union, or ITU) are also included in the field of space law.

The last unexplored area for human travel is space. Technology development improves aeronautical vehicles to carry more people into space, notably because of US interest. Protecting and promoting the peaceful use of space is a major goal of the international regulatory framework, which also regulates the space tourism business. We must examine the history in order to gain insight into space law and space tourism. The similar thing is envisaged in this chapter.

1.2 NATURE AND EVOLUTION OF INTERNATIONAL REGULATIONS ON SPACE

Space laws, like other branches of international laws originated with the need to establish certain rules and regulations between member states to govern the activities in space arena. In 1932, Vladimir Mandl[2], an expert in various laws, highlighted the possible issues that could arise out of outer space activities that cannot be addressed using air laws. The need for space laws gained momentum in 1950's with the publications of authors like John Cobb Cooper, Ronaldo Quadri, Charles Chaumont, Nicolas Matte, Eugene Pepin and others.

[1] DR. JYOTHI RATTAN & DR. VIJAYA RATTAN, PUBLIC INTERNATIONAL LAW, UNITED NATIONS AND HUMAN RIGHTS,Bharat Law House Pvt.Ltd,(Third Edition,2016)
[2] MARK J SUNDHAL ET al., "NEW PERSPECTIVE ON SPACE LAW", Proceedings of the 53rd IISL Colloquium on The Law of Outer Space, pp.3-4, 2011

Though these experts highlighted various possible issues, they failed to come out with solutions in the form of laws and treaties. The first doctoral dissertation dealing with space law appeared in 1953[3]. When nations started putting manmade objects beyond atmosphere (Sputnik-1 being the first of such kind launched on October 4, 1957), the ideas, theories and apprehensions put forward by the legal experts earlier proved to be reality and this called for establishment of practical space laws in the form of rules, regulations and treaties among the member states.[4] With the launch of Sputnik, the world community (mainly the Soviets and the United States) began to address possible principles, requirements, and contemplated prohibitions as law. Experts has classified the evolution of space laws of previous century into 4 categories[5] namely pre-sputnik (1910-1957) legal concepts, establishment of COPUOS, application of various national and international laws during the era of space race and international cooperation and finally the laws related to human activities beyond the earth.[6]

1.2.1 PRE-SPUTNIK SPACE LAW CONCEPTS

Earlier works[7] of eminent lawyer Emile Laude (1910) and Soviet official V A Zarzar (1926) highlighted the possible emergence of various issues that could emerge out of use of outer space. But their works failed to address the practical aspects and possible legal remedies to tackle such issues. In 1934, the Soviet scholar Korovin predicted the threat to national security once manmade objects[8]are put beyond the atmosphere and this opened the eyes of various experts to serious address such concerns. In 1946, the British Interplanetary Society in London published the various aspects of state sovereignty at altitudes beyond atmosphere. By 1950's various articles on space laws started appearing in various conferences and journals. [9]

In 1955, the US National Committee for the International Geophysical Year (IGY) presented a feasibility study report on US satellite to be place beyond atmosphere. In 1955, the US and the Soviet governments officially announced launch of their own satellites as a part of IGY.

[3] Nandasiri J, "A Concise History of Space Law", Keynote Address on Space Law, IAC-10.E7.1.1
[4] *Supra n 14*
[5] PAUL DRYE, FALSE STEPS: THE SPACE RACE AS IT MIGHT HAVE BEEN, Smashwords,2015
[6] *id*
[7] *id*
[8] "Secret Moon Bases: The Project Horizon Files: Vol 1", US Army, Paranoia Publishing pp. 77-78,2017.
[9] *Supra n 14*

1.2.2 POST-SPUTNIK DEVELOPMENT OF SPACE LAW

Launching of Sputnik in 1957 and the competition between the United States and the Soviet called for development of laws and treaties to control the activities in space to protect the national security. This resulted in establishment of United Nations' Committee on the Peaceful Uses of Outer Space in drafting applicable space law. COPUOS could arrive at consensus on subjects in which the Soviet and the United States could mutually agree without voting.

The first major achievement of UN was Declaration of Legal Principles governing the Activities of States in the Exploration and Use of Outer Space, adopted unanimously by UNGA in 1963. Based on certain principles COPUOS formed five treaties to govern activities in the outer space.

The details of COPOUS principles and treaties are presented in following sections. As time passed, more countries entered into space activities and the size of COPUOS members increased. As the size increased, obtaining consensus on the content of formal treaties became substantially more difficult.

1.3 NEED FOR LEGAL FRAMEWORK IN SPACE

A legal framework had to be introduced into the area after Sputnik was launched since it was anticipated that numerous legal problems would surface. Concerns pertaining to political, military, and economic concerns may emerge among the different nations across the globe. As a result, there was an urgent need to put in place a legal framework to govern the actions and advancements occurring in the new outer space realm.[10]

1.3.1 Militarization[11]

The definition of militarization is the use of weapons and armed forces in conflict. During World War II, nuclear weapons technology advanced quickly, and major global powers sought to establish new arenas for displaying their might. One such dimension that was

[10] "There is currently no comprehensive framework governing the military uses of space, despite a number of clauses in current space law restricting military actions in space. Another topic for debate is the wisdom of creating space weapons or, conversely, maintaining a weapons-free environment in space."
[11] Dr.ISHITHA CHATERJE, AIR AND SPACE LAW, Central Law Publications, New Edition,2024 p.215

assumed to exist was space. The two global superpowers, the United States and the Soviet Union, started these explorations. This raised concerns that these nations will build fortifications or military outposts in space. The Earth was not prepared for such devastation in the event that this led to a conflict between them in space.[12]

1.3.2 Privatization and Commercial space activities

Privatization is the transfer of business from government to private players. During the early years of space exploration, the space activities were carried completely under the authority of the state for political and military purposes. Further developments in the space technology led to another fear due to a speculation that soon private players would take over the activities in space. As many private entities had started to show their interest in the exploration of space and this may lead to many issues. [13]Further the activities by the private players are more of profit oriented than of prompting common welfare. These implications made it necessary to develop a legal framework so that such activities by the commercial players would be regulated.[14]

1.3.3 Exploitation of Resources

Exploitation of natural resources is using of natural resources for economic growth and sometimes with negative connection of environmental degradation. Explorations in outer space started to grow at a faster space in order to explore and excavate the resources. Such activities in the outer space by the states which were carrying space explorations may cause various environmental concerns. Growing concerns over such an exploitation led to the establishment of a legal framework in the outer space for regulation.

1.3.4 Failure of Launches

As the space explorations developed there may be chances for the launch of the space objects to be a failure. If such a failure occurs it would cause mass destruction. Therefore, there was a growing need for the regulations to be formed to save the earth from such destruction. Failure of the launch of space objects may also cause distress to the astronauts. Therefore, there

[12] "Consequently, there was an urgent need to establish an international legal framework that could regulate such operations and, by forbidding them, turn space into a tranquil location for conducting research."
[13] "Issues such as exploitation of resources and appropriation of ownership on the moon and other celestial bodies."
[14] *Supra n 29*

must be a need for such a provision as to rescue the astronauts if in case such an activity occurs in any state other than the jurisdiction of the state that has launched the space craft.

1.3.5 The Developing Countries' Concerns

Furthermore, the majority of emerging nations as well as other nations desired that a new environment be utilized exclusively for peaceful objectives. Only by forming a regulatory body to oversee operations and foster harmony in the area would such a goal be realized.

The United Nations Committee for Peaceful Uses of Outer Space (COPOUS) was established as a result of this. UN COPUS is the global body responsible for establishing legal guidelines that nations must adhere to when carrying out space operations.[15]

1.4 PRINCIPLES AND DEFINITIONS ON OUTER SPACE

Any chapter of law must include principles and definitions, and space law is no different. In this context, "outer space" refers to the area that is outside of Earth's atmosphere; this atmosphere is generally referred to as "airspace," and it is naturally governed by air law. The case for space law to become a distinct area of international law has occasionally been made using a range of justifications. On strictly legal grounds: The case may be argued in the following ways:

1. The concept of state sovereignty has been accorded significant weight in air law, and it has remained in this position up until this point without facing significant opposition. However, one of sovereignty's fundamental and prominent features effective control is difficult to implement in space, negating the applicability of the notion.

2. The definition of "aircraft" as specified by air law does not apply to spacecraft. This implies that the Chicago Convention of 1944, which established air law, cannot be applied, and that the need to develop unique regulations for space-related concerns arose.

[15] "The principle stating that the natural resources of space are held in common by all nations and should be distributed equally for the benefit of all humankind, as also stated in the 1967 outer space treaty, was one of the main concerns raised by the developing countries during the evolution of space law. These third-world or developing countries presented their concerns to the United Nations General Assembly under the heading of "common heritage to mankind."

3. Air law mostly covers privately owned aircraft; state-owned aircraft (such as military, law enforcement, customs, and postal aircraft) are frequently expressly excluded from its purview. Conversely, the majority of spacecraft are owned by states, and only a small number of governments can afford the funds needed for their development, outfitting, and launch.

It is clear that given these conditions, implementing air law regulations to space operations would face nearly insurmountable challenges and must be rejected as a feasible option.[16]In relation to the matter, further factors have also been put forth that, while not legally binding, surely have all the advantages of expediency.

'Aerospace law' is defined as an attempt to combine the two legal disciplines into a single chapter. It represents the viewpoint of people who believe that both branches should be combined into a single branch because they are both directly or indirectly related to laws governing man-made aircraft. In this sense, "aerospace" has the following definition:

The Earth's envelope of air and the space above it, the two considered as a single realm for activity in the flight of air vehicles and in the launching, guidance and control of ballistic missiles, earth satellites, dirigible space vehicles and the like.[17]Working on the basis of this description Cooper arrives at the following definition of 'aerospace law".

1.5 THEORIES ON THE DEFINITION OF OUTER SPACE

1. Theory Of Unlimited Extend:

It was widely acknowledged before to World War I that all nations had unrestricted access to air space over open seas and unclaimed terrain. M. Milde (Czechoslovakia) proposed an infinite upward extension of state jurisdiction, but in actuality, this is not feasible[18].

2. Gravitational Theory (J. Kroell):

It suggests extending state sovereignty to space, the outermost region of the earth's

[16] See resolution 721 (XVI), 20 December 1961 and the 1963 Declaration of Legal principles Governing the Activities of States in the Exploration and Use of Outer Space, as well as Article I of the 1967 Outer Space Treaty.
[17] J.C. COOPER. 'AEROSPACE LAW-SUBJECT MATTER AND TERMINOLOGY', JALC 1963, p. 89
[18] In this instance, a space body cannot be launched beyond orbit without prior authorization. This strategy was not grounded in the reality of science.

gravitational pull. Its foundation is the security of state principle, which forbids dropping anything that might end up back on Earth. Still, pinpointing the precise location is challenging. Nowadays, 1.5 million kilometres is practically acknowledged. However, it is incredibly unfeasible.

3. Air Space Theory:

It utilizes the Conventions of Paris and Chicago. It acknowledges the maximum bound of governmental authority up to the nation's outermost airspace. Three approaches are developed in this theory (a) atmosphere theory, (b) Aerodynamic Theory (Oscar Schacter)[19],(c) Biological Theory[20]

4. Satellite Orbit Theory (G.P. Zadorozhyny, Soviet Jurist) S. Lay:

It proposes that the lowest point at which a satellite can be launched into orbit should be the line denoting the boundaries of state sovereignty. 140 km is now the lowest point that a satellite orbit typically crosses. Below this altitude, a spacecraft drops instantly and burns.

It proposes that the lowest point at which a satellite can be launched into orbit should be the line denoting the boundaries of state sovereignty. 140 km is now the lowest point that a satellite orbit typically crosses. Below this altitude, a spacecraft drops instantly and burns.

5. The Karman Line Theory (A.G. Haley, Theodarbon Karmen):

It restricts the state's authority to a maximum of 85 kilometres in the vertical space above its borders.

6. Effective Control Theory (H. Kelson, A.C. Cooper):

It implies that a state's jurisdiction should be set to the extent of its ability to dominate the area above it[21]. This theory carries a risk. Nations with sophisticated science are granted selective sovereignty over space.

[19]"It seeks the extension of State jurisdiction to altitudes required for the lifting of manned aircraft. The point at which it is no longer possible to fly powered jet jets that get their support from the atmosphere's reaction is known as outer space."

[20]"In accordance with it, the boundaries of space extend as long as there is a chance that human existence may exist; otherwise, there is nothing beyond it. It is regarded as ranging from 16 to 60 kilometers."

[21] "It did not specify a maximum height."

7. **Interest Theory:** The theory says that the State's right to fulfil its interests through limiting space's extension shall be left to their own discretion.

8. **Security Theory (Osnits Kaya):** It says that every state's sovereignty extends to the point at which it becomes capable of taking action to protect its security[22].

9. **Zone Theory (J.C. Cooper):** He created three areas. (a) a territory that reaches a height at which planes are able to fly. (b) a continuous area up to 480 kilometers above it. (c) empty space after that. It adheres to the law of the sea idea.[23]

1.6 OUTER SPACE AS A COMMON HERITAGE OF MANKIND

The idea that space, including celestial bodies, is part of humankind's shared heritage is one of the cornerstones of space law. This idea was codified in the 1967 Outer Space Treaty. It implies that no country has the right to assert its sovereignty over any celestial body or space. Every nation has an equal right to access and make peaceful use of space.[24]

1.6.1 EXPLORATION AND USE OF OUTER SPACE FOR THE BENEFIT OF ALL:

Space law places a strong emphasis on the idea that space exploration and use should benefit all nations and humankind as a whole. In order to advance social, economic, and scientific advancements, it promotes international cooperation in space operations. This idea encourages the exchange of information, resources, and technologies in order to progress human civilization as a whole.[25]

1.6.2 PEACEFUL PURPOSE[26]:

The use of space for any aggressive or military purpose is forbidden by space law. The fundamental tenets of space law are the peaceful exploration and utilization of space. This

[22] "Thus, every country has the right to prevent other governments from infringing on its territory through space. The theory only tells the story of the unilateral delimitation principle."
[23] "The notion of mesospace was recently created by Dutch writers C. De Jager and G. Geignin (1975). The layers separating outer space from air space are implied. The air space ends at the point where they fix the upper limit, which is 50 kilometres above the ground. At a height of 130 km, the lowest point in space is fixed. The layers that lie in between the other two spaces, or meospace (no man's space), are 80 km away. P. Magno, an Italian author, contends that dividing space into three zones could make defining its boundaries more difficult."
[24] *Supra n 29*
[25] VALENTYN HALUNKO, SPACE LAW: THE PRESENT AND THE FUTURE: ADVANCED SPACE LAW, Volume 3, 2019: pg.30-47.
[26] *id*

concept forbids the deployment of WMDs and the carrying out of military operations that might cause space to become militarized or weaponized.[27]

1.6.3 STATE RESPONSIBILITY:

Space law holds states accountable for their actions in space, including those conducted by their national space agencies, commercial companies, or anyone who fall under their purview[28]. States are in charge of making sure that international commitments and space law are followed. To avoid causing harm to other states or their space assets, they have to approve and oversee space activity.[29]

1.6.4 LIABILITY FOR DAMAGES:

A framework for liability in the event that space activities cause damage is established under space law. States are required to pay compensation for harm their space objects may have caused to other space objects or to the Earth. This notion guarantees states' financial accountability for any damage resulting from their space operations and promotes the growth of insurance procedures to pay for possible losses.[30]

1.6.5 REGISTRATION OF SPACE OBJECT:

States are required by space law to provide a capable international authority for their space objects, such as satellites or space missions. Transparency and the identity of space objects and their owners are guaranteed by this principle. Registration facilitates the coordination of space activities, the avoidance of collisions, and the protection of the space environment.[31]

1.6.6 RESCUE AND RETURN OF ASTRONAUTS:[32]

States are required under space law to help and take appropriate action to guarantee the safe and timely rescue of astronauts in need. It also requires astronauts to return to their home nations. This principle highlights how crucial it is to protect astronauts' lives, health, and safe

[27] *id*
[28] *id*
[29] *id*
[30] *Supra n 29*
[31] Under the Registration Convention the regulations with regard to space objects has been directly propounded.
[32] The Rescue agreement envisaged the same.

return to Earth.[33]

1.6.7 PREVENTION OF HARMFUL INTERFERENCE:

Any conduct that could negatively impact other states' efforts to peacefully explore and utilize space is forbidden by space law. States are required to refrain from any actions that could impede other countries' legitimate space activities. These actions include intentionally damaging or destroying space objects or using radio frequencies that are detrimental.[34]

1.6.8 ENVIRONMENTAL PROTECTION:[35]

The significance of safeguarding the space environment and avoiding the production of space trash is acknowledged by space law. States are urged to implement responsible space debris mitigation strategies in order to reduce space debris. In order to ensure that space remains safe and useful for future generations, this idea supports sustainable space operations.

1.6.9 INTERNATIONAL COOPERATION AND COORDINATION[36]:

International coordination and collaboration in space operations are promoted by space law. States are encouraged to exchange technology, knowledge, and information in order to foster benefit and understanding amongst them. This principle acknowledges that because space activities are difficult, expensive, and involve multiple parties, cooperation is frequently necessary. More productive and efficient space exploration and use can result from international cooperation.[37]

1.7 DELIMITATION OF OUTER SPACE

Regarding the sovereignty over the space, there were only bilateral agreements and local laws in place prior to 1976. States' exclusive sovereignty over their airspace was confirmed by the Havana Pan American Convention (1928) and the Paris Convention (1919).

---

[33] *Supra n 29*
[34] *id*
[35] *id*
[36] "The international coordination and cooperation among the states are the pivotal role of the treaty agreements of outer space. With regard to the agreement the international relations between the states with regarding the peaceful use of outer space has been proclaimed."
[37] *Supra n 29*

The US Federal Aviation Act of 1958 is the first municipal law that addresses this issue.

The United States of America possesses total and exclusive national sovereignty over its airspace. Such provisions are found in the 1962 Soviet Air Navigation Act. In 1976 the UN Committee on Space Research (COSPAR) prepared a study on the degree of remoteness of the orbits of the earth's satellite.[38]It fixed the satellite orbits with the perigee[39] below 150 kms.[40]

Functional Approach:

It is predicated on taking into account both air and space activities. It was not interested in establishing an exact border between space and air. It must be decided by a mutual agreement between nations based on the activities that are classified as spatial. According to the functionalist view, these challenges are surmountable since there isn't a clear boundary delineation in outer space. However, because the functional approach does not address the issue of proper international law, it lacks legal support[41].

Spatial Theory:

It results from the functional theory's flaws. The Subcommittee of the UN has approved it. It is founded on the Moon Treaty's fundamental need for humanity's common heritage[42]. Through the establishment of consensus procedure, the space law also contributes to procedural law. Through conscience-driven efforts, the UN committee on the peaceful uses of outer space formed the area of international law.

1.8 SPACE TOURISM

Space tourism refers to the commercialization of space exploration activities such as visiting space as a tourist, seeing a rocket launch, stargazing, or visiting a location with a space

[38] "It aimed to determine the lowest attitude of the satellites' unmanned flights."
[39] "The point of a celestial body's orbit that is closest to Earth is known as perigee."
[40]"In 1977, the UN Legal Subcommittee concluded its investigation. Two distinct types of approaches were consequently established."
[41]"The following are its flaws:
(i) The only way to end the risky international disputes is through a scientific method of dividing space.
(ii) The hypothesis adopts a wait-and-see approach that could have detrimental effects.
(iii) The industry's pioneers may monopolize the market in the lack of appropriate international law.
(iv) In the future, space may be used to generate the solar energy needed for Earth. It shouldn't be restricted to just developed countries. The idea downplays the necessity of an international legal framework to govern space for the good of all people on Earth."
[42] Article 11(1) of Moon Treaty

theme. Since technology has created such a large window of opportunity for human space travel, only highly skilled astronauts have been able to do it. Scientists have used space exploration to explore new paths, but today they see space as a new marketplace[43].

If space tourism originated with the two superpowers of economic strength the US and the USSR it was because they saw it as a source of costs rather than revenue[44]. Moscow was open to the idea of receiving several tens of millions of dollars from individuals who were prepared to cover the cost of travel and lodging, allowing them to partially or fully finance the launch. In this way, they might use private cash to partially finance their research missions. There was a clear difference between Russia and the US on this topic. The US did not want to get that cash and was concerned about the International Space Station (ISS), an expensive and sensitive space complex, becoming a destination for eccentric millionaires.

There have already been a number of roughly tourism-related excursions suggested to NASA, but none of them have progressed beyond rudimentary ideas or assumptions. The first person in history to travel to space purely for leisure and for a price, classified as a tourist, was Dennis Tito, a North American tycoon and former NASA engineer. Even with the expensive "ticket," there is a lengthy waiting list because the location isn't always available. Nevertheless, a number of travellers have joined the American on his journey, all of them through Space Adventures thus far.

1.8.1 EVOLUTION OF TOURISM IN SPACE

Without a basis, it is challenging to comprehend the history of space tourism. The United States and Russia's space missions advanced technology to the point that we can now discuss frequent space flight by common people. From there, we can get started.Following the successful launch of Sputnik 1 in late 1957, the Soviet Union was keen to capitalize on their "lead" in the Space Race. When they succeeded on April 12, 1961, Soviet cosmonaut Yuri Gagarin[45] became the first man to travel into space. John Glenn became the first American to

[43] "Like it is in the near future, the phrase space tourism is being used more and more. With some corporations currently offering seats as expensive as hundreds of thousands of dollars, that near future may be closer than ever. The goal of space tourism is to provide experiences beyond the ordinary. Rich companies have already begun to launch space tourism firms."

[44] "Russia chose to accept the offer of taking a tourist that is, a person traveling for non-professional reasons after the USSR broke up and the ensuing economic crisis."

[45] "Gagarin flying the Vostok 1 spacecraft into orbit for 108 minutes. The American Mercury space program was aiming to achieve the same goal at the same time, and astronaut Alan Shepard became the first American citizen in space in May 1961."

complete around the globe in the middle of 1962.

With President John F. Kennedy's renowned "We Choose to Go to the Moon"[46] speeches in 1961 and 1962, the United States set the highest bar after "losing" the first leg of the space race. The Gemini and Apollo space programs succeeded in their mission to reach the moon in 1969, replacing the Mercury space program. Almost fifty men had visited space in just twelve years, some of them more than once.

As the 1960s came to an end, human spaceflight was demonstrated to be repeatable. The notion that individuals other than highly skilled astronauts and cosmonauts would be able to travel to space gave rise to the 1970s. In the history of space tourism, this is the first significant chapter.The United States began to discuss moon outposts and lunar orbit during the 1980s. Regrettably, tragedies in the 1980s prevented the space tourism sector from growing significantly.The Space Shuttle program, which ran from 1981 until the last mission in 2011, was mostly successful[47]. Charles Walker made a flight on STS-41-D in 1984. Although he wasn't the first space tourist, he is generally regarded as the first non-government astronaut because his business, McDonnell Douglas, paid for his ticket. Christa McAuliffe was the first teacher in space, having arrived in 1985. Early in 1986, the entire world watched with bated breath as Challenger took off[48]. The Challenger disaster, as one might anticipate, hindered the advancement of the American aerospace sector.

Since Apollo 1 in 1967, this was the first accident in which American astronauts have perished. The United States and Russia launched and conducted spaceflight on a regular basis during the 1990s. China also started to gradually transition into a space-faring nation.There was a resurgence of space travel in the late 1990s. The first company to start working with private persons interested in space travel was Space Adventures, Ltd. in 1998. In 1997, SpaceDev was created (and later acquired by Sierra Nevada Corporation in 2008). In 1999, XCOR Aerospace was established in response[49]. These space tourism businesses were all

[46] "As the US and the USSR fought it out once more to be the first to land a man on the moon, traveling to space by themselves and completing circles became routine."
[47] "355 people travelled to space and 135 missions were launched during that time. Among them were MIT engineer Byron Lichtenberg and German physician Dr. Uli Merbold, who were Space Shuttle experts on STS-9 in 1983."
[48] "People who know you will recall the catastrophe that transpired after. The Space Shuttle program halted for more than two years following the deaths of the Challenger crew, and the Space Flight Participant program was retired as a result."
[49] "Bigelow Aerospace, the second noteworthy space tourism business, was established in the same year with the goal of launching a commercial space station into orbit."

founded on the idea that space travel shouldn't be primarily determined by price.

As people who had amassed substantial riches in the dot-com bubble looked to the stars and attempted to purchase their place in it, their target market rapidly became apparent.Space travel started to become a modest but steady reality as the century went on. A new chapter in the history of space tourism was written in the 2000s, when it first became formally established. The Russian commercial spaceflight company MirCorp sold a ticket to the Mir space station to Dennis Tito, an American businessman, in 2001.[50]

Tito started a nearly eight-day visit on the International Space Station (ISS) in April 2001. As a result, he became the first private citizen to buy a space ticket. The majority of these people booked their flights through Space Adventures; all of them travelled to space on Soyuz spacecrafts because NASA forbade tourists from traveling on space shuttles after the Columbia tragedy in 2003.Around this same period, the more well-known names in space travel started to gain popularity. Amazon billionaire Jeff Bezos founded Blue Origin in 2000, and Virgin Galactic was founded by Richard Branson in 2004.

In 2006, Rocket Lab was established. Numerous other businesses sprang into the space sector as well, seeking to take advantage of the resurgence of interest in space among the general public and a new segment of the wealthy population willing to pay for access.

The majority of people desired more sophisticated space exploration as we entered the second decade of the new millennium. Regretfully, there was little advancement in the early years, and the U.S. Space Shuttle program made its final flight in the middle of 2011. From that point on, Russian Soyuz rockets carried the astronauts of the International Space Shuttle. A number of players kept making modest changes in the market during the ensuing years. Other people also joined the game.

As 2024 approaches and the last frontier gets closer to being accessed by the general public, space tourism is gaining popularity worldwide. There are difficulties in this developing sector, which is being led by innovative commercial space enterprises. But the accomplishments to date have been nothing short of remarkable, paving the way for a time

[50] "Tito collaborated with Space Adventures to move his $20 million ticket to the International Space Station following Mir's decommissioning in 2001."

when space travel will not be limited to space tourists.

1.8.2 SPACE TOURISM –BASIC CONCEPT

"Any commercial activity offering customers direct or indirect experience with space travel" is the definition of "space tourism."[51]"The activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure" is the official definition of tourism provided by the World Tourist Organization (WTO) and the United Nations Statistical Committee in 1994.[52]

Thus, for tourism to occur, three things must be present: (1) a discretionary income that can be used for leisure travel; (2) a sufficient amount of free time to devote to planning and actually taking the trips; and (3) a tourism-supporting infrastructure that provides lodging, food and drink, transportation, and things to see and do at the destination.[53]

1.8.3 TYPES OF SPACE TOURISM[54]

Type of Space Tourism	Description	Key Characteristics
Suborbital Space Tourism	Short trips to the edge of space provide a few minutes of weightlessness and expansive vistas of Earth. Travelers ascend to elevations over the 100 km/62 mi Kármán line.	Altitude of 100 km/62 miles above the Kármán line. Brief but expansive vistas.
Orbital Space Tourism	Passengers can spend days or weeks in space on longer voyages that circle the Earth. In addition to receiving thorough training, travelers spend a lot of time weightless.	Thorough instruction and prolonged weightlessness. experience in orbital spaceflight.

[51] Jürgen Cloppenburg and Stephan Hobe: Towards a New Aerospace Convention? Selected Legal Problems with "Space Tourism," Proceedings of the 47th Colloquium on Outer Space Law, 2004 377
[52] Roger D. Launius & Dennis R. Jenkins, Is it Finally Time for Space Tourism? 4 Astro politics 253, 255 (2006).
[53] DR. FRANS G. VON DER DUNK, "PASSING THE BUCK TO ROGERS: INTERNATIONAL LIABILITY ISSUES IN PRIVATE SPACEFLIGHT", 86 Neb. L. Rev. (2007), p.400.
[54] Martijn Barten *revfine* **,** Space Tourism: 7 Space Companies That Will Make You An Astronaut,(09-05-2023,11;30am)**,** https://www.revfine.com/space-tourism/#types-of-space-tourism

Type of Space Tourism	Description	Key Characteristics
Lunar Space Tourism	A unique opportunity for lunar exploration is provided by missions to land or even orbit the moon. Travelers leave Earth's orbit in search of a unique chance to visit the Moon.	Lunar orbit or investigation of the surface. Take in the lunar surroundings.
Interplanetary Tourism	Missions to other planets, such as Mars, are part of the futuristic concept, which provides an opportunity to see interplanetary travel. Travelers could investigate celestial bodies that are not directly next to Earth.	Investigating other celestial bodies. Possibility of studying Mars.
Space Hotel Stays	Space hotels or habitats in orbit offer long-term accommodations along with space-based facilities. Luxurious lodging, fine cuisine, and leisure pursuits are provided to passengers in a space-based setting.	Spacious lodgings and activities cantered around space. services and amenities based on space.

1.8.4 THE COST OF SPACE TOURISM

Currently, each passenger must pay $450,000 to reserve a seat on a Virgin Galactic suborbital voyage. Regarding Blue Origin, a flight can now cost up to $28 million.[55] We will have to wait till later to find out when space travel will be reasonably priced. According to experts, the cost of a passenger on a suborbital flight will be closer to $100,000 throughout the next ten years. This will be the first time space tourism is thus broadly available, even if it will

[55] Everything You Need to Know About Space Tourism, *Advanced Structural Technologies Inc,* (10-05-2023,12:40pm),https://astforgetech.com/everything-you-need-to-know-about-space tourism/#The_Cost_of_Space_Tourism

still be beyond many people's budgets.[56]

Why Does Space Travel Cost So Much? Unit flyaway costs provide the best explanation for why space tourism is so costly. These consist of the entire cost of gasoline, related overhead, and direct and indirect production expenses. which is all monitored using the cost per kilogram of payload.[57] On the other hand, these expenses may cover things like[58]:

- the price of the spaceship itself;
- fuel;
- maintenance;
- marketing;
- crew; and more.

1.8.5 DIFFERENT STAGES INVOLVED IN SPACE TOURISM

One of the primary features of space tourism is transportation, including both space travel to and from space and space travel itself. There are so various methods to space tourism, each with its own stages and consequently its own set of legal ramifications.

1. Earth's Surface

Earth is the starting and finishing point for space tourism. Thus, domestic law primarily governs this aspect of space tourism. Consequently, several exclusions from international space law exist that interfere.

2. Airspace

Airspace is the next area to be affected by space tourism, as it naturally extends beyond the planet's surface. In essence, a state's territory and sovereignty govern its airspace. This rule

[56] *id*
[57] "The Falcon 9 costs about $2,700 per kg, for comparison. However, this number does not necessarily reflect the true costs incurred by companies that build these crafts. This is because the exact cost of launching spacecraft is exceedingly difficult."
[58] *id*

is restricted with regard to space objects, and the existence of an international right of passage is unquestionable.

3. Residence in orbit – ISS

The establishment of a hotel module connected to the International Space Station (ISS)[59] is one space tourism project. A contractor or subcontractor of a Partner State, a user or customer of a Partner State, and a contractor or subcontractor of a user or customer of a Partner State may all be liable with regard to the ISS-Agreement. The Applicability of the Liability Convention[60] to the International Space Station may be excluded by the Partner States under their own domestic laws, with effect for third parties.[61]

4. Outer Space

One important clause in the Outer Space Treaty of 1967 is found in Art. VIII[62], which states that a state party whose registry an object launched into space is carried on must maintain jurisdiction and control over the object and any personnel on it while it is in space or on a celestial body.[63]

5. Residence on Celestial Bodies

A major regulatory framework for this period is the Moon Agreement (1979)[64]. The Outer Space Treaty has more provisions, however they are a little vague and somewhat broad. The fundamentals of space law, such as the freedom and common heritage principles, are unquestionably completely applicable.

---

[59] NASA, *International Space Station*, (05-10-2023, 10:41 AM) http://www.nasa.gov/mission_pages/station/main/index.html

[60] Malay Adhikari, *Space Tourism:Legal Issues and Challenges with Special Reference to India,* 03-10-2023,12:30 PM ,http://www.oosa.unvienna.org/pdf/publications/STSPACE11E.pdf

[61] "The jurisdictional issues must be evaluated through the lens of the ISS-Agreement (International Government Agreement on the Space Station), which essentially adheres to the link-up principle Space Tourism Legal Issues and Challenges with Particular Reference to India 387."

[62] *Supra n 90*

[63] "Both state and private interests are impacted in this situation. It is very evident from this clause that space objects are subject to national law and, by extension, basic private international law rules."

[64] *Supra n 90*

1.9 ADVANTAGES AND DISADVANTAGES OF SPACE TOURISM

Advantages of Space Tourism	**Disadvantages of Space Tourism**
• Encouraging Scientific Research These space tourism companies are always searching for new and creative ways to get into space at a lower cost. They have to conduct research during the procedure. Space tourism is destined to fail unless new technology and procedures are developed in the aerospace sector. Therefore, we all gain from scientific discoveries produced during the process. They can also be applied to other, more scientifically oriented projects.	• Unbelievable Cost Space tourism is now extremely closed off to the majority of the people. At the moment, only the most affluent members of society can afford it. Because of this, this business is likely to remain hidden from the general public until major advancements are achieved that make it feasible for more people to afford it.
• Increasing Space Science Awareness in the Public Public knowledge of space science will undoubtedly increase as space travel becomes more and more affordable every ten years. Soon, space will become a possible destination rather than this distant object that many of us may never visit in our lifetimes. The goal of space tourism is to completely transform how people view space.	• Dubious Regulation There are currently no established regulations for independent space travel. Who is in charge up there is left seriously unclear by this. Will anything or anywhere be off-limits once the spacecraft departs the atmosphere and the space tourist industry develops? Who will set the regulations if there is ever a space hotel in orbit? Only time will be able to provide answers to these questions.
• Promoting Innovation in Spacecraft Once more, business is always looking to maximize efficiency. This will translate into faster and more advanced space travel methods that are continuously being developed by numerous businesses. Any progress made in this area will lead to better	• Hazards inherent in space. Since the targeting approach does not destroy you, as it would during a planned human spaceflight endeavour, the natural threats found beyond our planet's environment will become problematic in a number of ways. People are at risk from the exposure that

rockets and spacecraft, which can be used for a variety of scientific projects.	turns sunlight into electricity while in space, and the air atmosphere that is hanging in it can change their physical stability.
• Space tourism gets ready for all emergencies The universe is a vast realm where potential threats could exist practically anywhere. When you limit your attention to our solar system, there have occasionally been threats from comets and asteroids that, in the event of an impact, may cause significant harm to Earth. We can recognize these hazards as part of our preparedness for a potential interaction that could save our group thanks to space tourism.	• Hazards inherent in space. Since the targeting approach does not destroy you, as it would during a planned human spaceflight endeavour, the natural threats found beyond our planet's environment will become problematic in a number of ways. People are at risk from the exposure that turns sunlight into electricity while in space, and the air atmosphere that is hanging in it can change their physical stability.

1.10 CONCLUSION

A broad perspective on the development of space law and space tourism has been presented in this chapter. Developed during the last six decades, space law is a relatively recent area of the law. The space race to explore outer space between the Soviet Union and the United States during the Cold War is where the history of space law began. Since its development in the 1960s, space law has advanced significantly. Space law will be crucial in controlling these activities and guaranteeing the peaceful and sustainable use of space as long as humans explore and exploit the space environment.

Whereas in the near future, space tourism will be used more and more frequently. With some corporations currently offering seats as expensive as hundreds of thousands of dollars, that near future may be closer than ever. The goal of space tourism is to provide experiences beyond the ordinary. Rich companies have already begun to launch space tourism firms.

Both the concept of space law and tourism in space are very significant as well as a major turning point which provides an international weight to this study.

REFERENCE

ARTICLES

- Daniel Georgiev Danova, A review of space tourism services: supply and demand challenges, Dergi Parks, Vol 2, 2020, https://dergipark.org.tr/en/pub/toleho/issue/53785/739977

- Dr. Frans G. Von Der Dunk, Passing The Buck To Rogers: International Liability Issues In Private Spaceflight, 86 Neb. L. Rev. (2007), https://digitalcommons.unl.edu/nlr/vol86/iss2/5/

- E. Galloway, 'Should the UN Draft a Treaty on Earth Resources Satellites? A Pro and Con Analysis, Journal of Space Law, Vol. 3. (1979), pp. 78-79., https://scholar.smu.edu/cgi/viewcontent.cgi?article=3923&context=til

- Mark J Sundhal , "New Perspective on Space Law", Proceedings of the 53rd IISL Colloquium on The Law of Outer Space, pp.3-4, 2011, https://www.scribd.com/document/428692197/Air-and-Space-Law-Book

- M.Lachs, 'The International Law of Outer Space', 113 Recueil des Cours, 1964-III, p.33, https://brill.com/edcollbook/title/18848

- Nandasiri J, "A Concise History of Space Law", Keynote Address on Space Law, IAC-10. E7.1.1, https://www.iafastro.org/assets/files/publications/iac-publications/iac-2010-final.pdf

- P.G. Dembling on this Treaty in Jasentuliyana/ Lee, Manual on Space Law, 1979, Vol. I, pp. 1-51., https://www.cambridge.org/core/journals/netherlands-international-law-review/article/abs/nandasiri-jasentuliyana-and-roy-sk-lee-manual-on-space-law-2-vols-dobbs-ferry-new-york1979-xv-479-pp-and-xii-550-pp-dfl-150-75-per-set/5CF090AAB913B02D671146C4719F299E

- Sthephen Hobe, Legal aspects of space tourism, Nebraska Law Review, Vol 86,2007, https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1089&context=nlr

BOOKS

- Dr.Ishitha Chaterje, Air And Space Law, Central Law Publications, New Edition,2024
- Dr. Jyothi rattan & Dr. Vijaya rattan, Public International Law, United Nations and Human Rights, Bharat Law House Pvt.Ltd, Third Edition, 2016
- Dr.Shilpa Jain, International law, Allahabad Law Agency, first edition, 2022
- I.H.PH. Diederiks-Verschoor, V. Kopal, An Introduction to Space Law, Wolters Kluwer, Third revised edition,2008
- M.N. Shaw, International Law, Cambridge University Press, London, 4th Edition, 1997.
- Sandeepa Bhat, Space Law (In the Era of Commercialisation), Eastern Book Company, 1st Edition,2010
- Sandeepa Bhat, Space Tourism In The Era Of Commercialisation, Eastern Book Company, 2010

JOURNAL

- Venkatesh, Space Tourism: Future Of Legal Framework?, Vol.3, THE LAW BRIGADE GROUP JOURNAL, pg.32-39
- "Galloway, Consensus Decision Making by the United Nations Committee on the Peaceful Uses of Outer Space, Journal of Space Law, vol 3, 1979

WEB PAGES

- NASA, *International Space Station*, (05-10-2023, 10:41 AM) http://www.nasa.gov/mission_pages/station/main/index.html
- Malay Adhikari, *Space Tourism:Legal Issues and Challenges with Special Reference to India,*http://www.oosa.unvienna.org/pdf/publications/STSPACE11E.pdf
- Space Tourism: A Closer Look on Safety Sustainability, Space Generation Advisory

Council,https://spacegeneration.org/space-tourism-a-closer-look-on-safety-sustainability

- A Definitive History of Space Tourism & Human Spaceflight, July 5, 2020, https://spacetourismguide.com/history-of-space-tourism/
- United Nations Office of Outer Space Affairs, https://www.unoosa.org
- Committee on the Peaceful Uses of Outer Space, https://www.unoosa.org/oosa/en/ourwork/copuos/index.html