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Definition and Delimitation of Outer Space.

- By María Paula Pardo.

JUNE NEWS ON MEXICAN AVIATION

PRONUNCIATION:

'che-l&m, is Latin for airspace or sky. The Romans began questioning the rights they had in the space above the land they owned and how high above them those rights would extend. They decided on, Ad coelum et ad inferos, meaning that their property rights would extend as high up as the heavens and all the way down to hell.


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Definition and Delimitation of Outer Space.

by *María Paula Pardo.*

Throughout history, outer space has served as a source of inspiration for renowned artists, such as Jules Verne and William Shakespeare. In addition, outer space has played, and continues to play, a determinant role for the Earth. Furthermore, nowadays we rely on space activities and applications and as explained by Masson-Zwaan, a day without satellites is no longer imaginable, or even feasible¹.

“Despite the notorious differences between air space and outer space, including their corresponding legal frameworks, the international community has yet to establish legal boundary between these domains.”

While the fascination with outer space has captivated human interest for centuries, it was the launch of Sputnik I by the Union of Soviet Socialist Republics (USSR) during the Cold War in 1957 that marked the commencement of outer space activities as we know them today. The space race between the United States of America and the Union of Soviet Socialist Republics (USSR) led to the adoption of the five United Nations Treaties of international outer space law², adopted by the mechanism of consensus within the United Nations Committee on Peaceful Uses of Outer Space (COPUOS) and which all have been ratified by the United Mexican States.

In the early stages, space activities were primarily carried out by governments. However, in recent times, we have witnessed a significant shift to an increased involvement of private entities and commercialization within the space industry and consequently, resulting in a remarkable increase in the frequency and variety of space activities. For instance, (i) the launch of large satellite constellations carried out by Space X with the Starlink Constellation (30,000 satellites), OneWeb Constellation (7774 satellites) and Amazon with the Kuiper Constellation (6362 satellites)³ or, (ii) suborbital flights carrying individuals in exchange for a financial compensation to companies such as Virgin Galactic or Blue Origin.

There is an undeniable connection between airspace and outer space, considering the fact that accessing outer space requires going through air space, and the same applies for the re-entry of space objects. However, there are notable physical differences between these domains and the legal frameworks applicable therein, namely aviation law governing air space and international outer space law regulating activities in outer space, and which differ one from another as briefly explained below.

While it is crucial to acknowledge and comprehend all the distinctions between these domains, special attention will be devoted to the contrasting legal frameworks that govern these domains. As per Trimarchi and Scott, aviation law includes rules, whether international or national, that have as their object or subject, stakeholders involved in aviation transport⁴. Furthermore, pursuant to Article I of the Convention of International Civil Aviation of 1944, States have complete and exclusive sovereignty over the airspace above their territory⁵.

1.- Masson-Zwaan, T. L., *Widening the Horizons of Outer Space Law*, Meijers reeks, <https://hdl.handle.net/1887/3562089>, page 8. Also see 'What would a day without space look like', German Space agency, <https://www.youtube.com/watch?v=wrwJqdN6NFO> (accessed in June 2023).

2.- *Treaty on Principles Governing the Activities in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies*, 1967; *Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space*, 1968; *Convention on International Liability for Damage Caused by Space Objects*, 1972; *Convention on Registration of Objects Launched into Outer Space*, 1975 and, *the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 1979.

3.- Masson-Zwaan, T. L., *Widening the Horizons of Outer Space Law*, Meijers reeks, <https://hdl.handle.net/1887/3562089>, page 72.

4.- Trimarchi, A. Scott, B. *Fundamentals in International Aviation Law and Policy*, Routledge, 2020, page 3.

5.- *Convention of International Civil Aviation of 1944*, Article I.

On the other hand, international outer space law constitutes the set of rules governing humankind's activities applicable to a certain domain, that is, outer space⁶. According to Article II of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies of 1967⁷, also known as the Magna Carta of international outer space law, which entered into force in October 10, 1967, and currently has 113 State parties⁸, outer space including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means⁹. Additionally, it is worth mentioning that outer space is free for exploration and use by all States without discrimination of any kind and its exploration shall be carried out in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind¹⁰.

Despite the notorious differences between air space and outer space, including their corresponding legal frameworks, the international community has yet to establish legal boundary between these domains. As per Bittencourt Neto explains, a legal frontier, still undelimited, exists between the territorial air space, under national control and jurisdiction, and outer space, where no claim of sovereignty is authorized¹¹.

The definition and delimitation of outer space has been a current topic of debates within the United Nations Committee on Peaceful Uses of Outer Space (COPUOS) since the early stages of outer space law; however, no consensus has been reached so far. Although some States have adopted unilateral limits through national legislation such as the Van Kármán line, which has been considered an imaginary limit at an altitude of 100 km above the sea level, it does not constitute a legal frontier in the international community.

The debate has two positions. The functionalist approach considers that the delimitation is unnecessary or even impossible¹² and the type of activity should determine the legal rules applicable. In other words, the law would depend on the purpose of the activity, not where it effectively takes place¹³. In contrast, the spatialists approach defends the need of a clear legal frontier between airspace and outer space.

Taking into consideration differences between these domains, the rapid development of technology, the new commercial initiatives and the blurring differences between aeronautics and astronautics¹⁴, the discussion regarding the definition and delimitation of outer space is gaining more relevance nowadays.

Suborbital flights, sounding rockets, high-altitude platforms stations (HAPS) and the concept of near space, are examples of the advancement of technology and thus, a clear multilateral decision regarding the delimitation of outer space would clarify the rights and obligations of all the actors involved in the activities carried out in outer space and airspace and thus, creating legal certainty in relation to international liability and responsibility¹⁵.

6.- Bittencourt Neto, O. *Revisiting the Delimitation of Outer Space in Light of the Long-Term Sustainability of Space Activities*, *Air and Space Law*, Volume 48. Special Issue, 2023, page 93.

7.- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies of 1967, Art II, available at <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>. See <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/status/index.html> for the status.

8.- See https://treaties.unoda.org/t/outer_space.

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

10.- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967, Article I.

11.- Bittencourt Neto, O. *Revisiting the Delimitation of Outer Space in Light of the Long-Term Sustainability of Space Activities*, *Air and Space Law*, Volume 48. Special Issue, 2023, page 94.

12.- *Ibid*, page 101.

13.- *Ibidem*.

14.- *Ibid*, page 95.

15.- Bittencourt Neto, O. *Revisiting the Delimitation of Outer Space in Light of the Long-Term Sustainability of Space Activities*, *Air and Space Law*, Volume 48. Special Issue, 2023, page 95.

AICM admits: Reduction of flights did not work to reduce saturation.

The Government is facing difficulties in reducing the saturation of the Mexico City International Airport (AICM) despite the reduction of the maximum number of operations from 61 to 52 per hour. The measure to reduce nine slots per hour, which began in October of last year, managed to reduce only 0.1% of total operations, but the number of commercial passengers increased by almost 11%. The airport's general director, Carlos Velázquez Tiscareño, acknowledged that the measure did not work as intended because the airlines used larger planes. Airlines are allowed to use the same schedule to operate an airplane that has a capacity of 99 passengers or one that allows them to transport up to 240. According to Fernando Gómez Suárez, an independent airline industry analyst, the government should have eliminated at least 30% of its daily flights. www.elfinanciero.com.mx/empresas/2023/06/27/reduccion-de-vuelos-en-aicm-no-soluciono-saturacion-admite-director/ 22/06/2023.

Mexico responded satisfactorily to FAA requirements for category 1: SICT.

The Secretary of Infrastructure, Communications, and Transportation, Jorge Nuño Lara, reiterated that the Mexican authority responded satisfactorily to the requirements of the U.S. Federal Aviation Administration (FAA) to regain air safety category 1 and is now only awaiting its final ruling. To address these observations, the Mexican Congress reformed the Civil Aviation and Airport Laws. These reforms granted powers to the Federal Civil Aviation Agency (AFAC) regarding the technical-operational elements related to the air transportation of passengers or cargo. As a result, AFAC may issue technical-administrative provisions related to the operation, certification of aircraft, systems, equipment, licenses, certificates, and air traffic services. www.forbes.com.mx/mexico-respndio-satisfactoriamente-requerimientos-de-la-faa-para-categoria-1-sict/ 27/06/2023.

Technology suggested to be used to recruit personnel at airports.

Technology can be an answer to recruiting foreign employees who are not fluent in the native language. There are digital translation devices that can instantly interpret various languages, both audio and text, making it clear to users what is being asked or said. The aviation industry is desperately trying to recruit staff to avoid the delays and inconvenience that many passengers experienced at airports last summer. www.a21.com.mx/aeropuertos/2023/06/27/sugieren-utilizar-tecnologia-para-reclutar-personal-en-aeropuertos 27/06/2023.

Mexico's aeronautical technicians in crisis: Only 185 psychophysical examinations per day are conducted.

The Federal Civil Aviation Agency (AFAC) continues to face deficiencies in the performance of psychophysical aptitude exams for the country's aeronautical technical personnel. Currently, its infrastructure only allows it to conduct 185 exams per day, which means that there is a delay in attending to almost 6 thousand accumulated consultations. The airline industry has criticized the Government for the lack of consideration to change the psychophysical examination schemes that are necessary for workers to be able to practice in compliance with national and international regulations. However, so far, no problems have been reported for pilots who have to fly abroad because, although medical exams without validity are being accepted in Mexico, it is the decision of each country, a member of the International Civil Aviation Organization, to allow or deny entry. www.elfinanciero.com.mx/empresas/2023/06/27/tecnicos-aeronauticos-en-mexico-en-crisis-solo-se-les-hacen-185-examenes-psicofisicos-al-dia/ 27/06/2023.

AMLO anticipates failure in the purchase of Mexicana de Aviación due to interference from lawyers.

President Andrés Manuel López Obrador commented that the majority of the workers of the defunct airline, Mexicana de Aviación, had already approved, in an assembly, the sale of the brand and three buildings to the Secretariat of National Defense for more than 800 million pesos. However, two lawyers began to advise a group of between 100 and 200 former workers to ask for more resources, which has stalled the process. On May 18, López Obrador, through the Ministry of Finance and Public Credit, authorized the creation of a Mexican state-owned airline. www.forbes.com.mx/amlo-anticipa-fracaso-en-compra-de-mexicana-de-aviacion-por-injerencia-de-abogados/ 28/06/2023.

In this month extract was prepared by R. Nerio, J. García, F. Barraza, A. Ruiz.

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