

Emerging Space Activities and Civil Aviation

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Mexican Space Agency

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UNCERTAIN INTERNATIONAL REGULATION

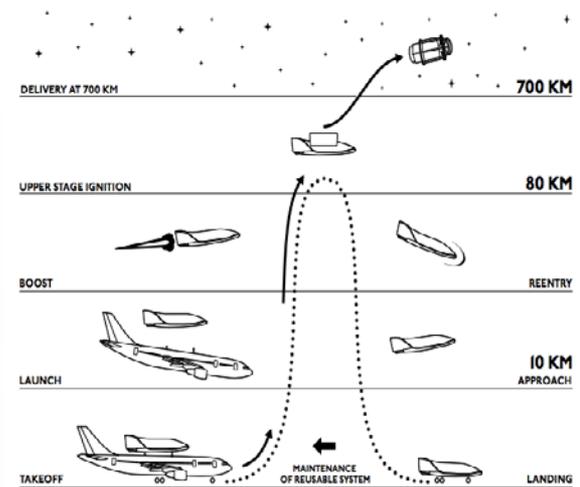
- There is, at the moment, no international regulation to be applied to this type of flights; nor within the framework of the Air and Space Law or Space Law. At national level, only the United States of America has implemented legislation as of 2004, intended to regulate and authorize suborbital flights.
- It is not certain which legal regime should comprise manned suborbital flights such as they are right now, whether Air Space or Outer Space regime, nor which organism should regulate them at international level, whether COPUOS or ICAO.



- The doctrine concurs with the fact that UN Outer Space Treaties shall be applied to all space activities and thereby, to all private and commercial activities (not only public or state activities).

IS THE SUBORBITAL FLIGHT A SPACE ACTIVITY?

- Air space is subject to the underlying State sovereignty while outer space is totally open to use and access of all States, therefore it is important to make a distinction between both “spaces”, since rules applicable to one and another are totally different.
- As it has been discussed for quite a long time, it is questionable whether air space vertical limit would be critical in determining the scope and applicability of the Air Space Law with respect to the international Space Law Agreements (outer space approach), or whether the type of activities concerned would determine the type of event to be applied (functionalist approach). **The second school of thought claims that transit flights passing through (sub) orbital space in the course of an Earth-to-Earth transport, would continue to be subjected to Air Space Law.**



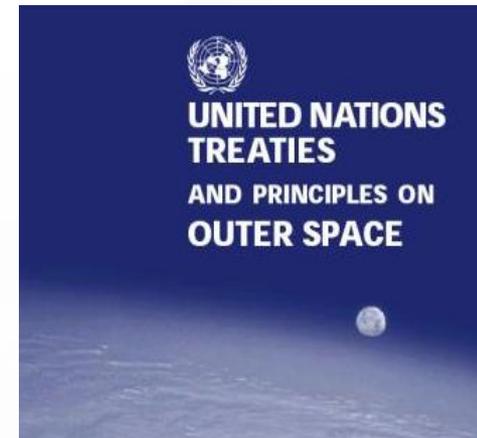
THERE ARE ISSUES WITH THIS THOUGHT

- The beginning of outer space remains without physical delimitation and consequently, States do not recognize how far their vertical sovereignty goes. Only apply to the civil transportation (18000 Km)
- Conflicts and differences may arise among States from the interpretation as to whether they are air space activities or outer space activities. The case of suborbital tourist flights is an excellent example of this argument. The function or purpose of the mission is certainly difficult to define because on the one hand, these vehicles are intended to reach outer space, which would make them become outer space vehicles, but on the other hand, they fly through air space almost all the time.



THERE ARE ISSUES WITH THIS THOUGHT

- There is no clear specification on the delimitation between air space and outer space in International Law that allows us to conclude on the implementation of Air Space Law or Space Law for suborbital flights.
- Air Law would prevail since air space would be where suborbital flights develop in the course of an Earth-to-Earth transport and, any crossing through outer space would be short and incidental.
- The Chicago Convention applies to air civil navigation for commercial activities. However, if suborbital flights are considered subjected to the Air Law in the future, relevant Annexes to the Chicago Convention should in principle, be adapted accordingly to their regulation.



IS A SUBORBITAL VEHICLE A SPACECRAFT?

- The definition of “aircraft”, according to the Annex 7 to the **Chicago Convention**, is that “*any machine that can derive support in the atmosphere from the reactions of the air*”. In principle, the “aircraft” definition excludes suborbital flights using rocket engines as means of propulsión, operating independently from reactions of the air.
- The Air Law presents some difficulties when defining the activity of suborbital flights. The classic definition of “aircraft” does not fit well with the type of vehicles launched by rockets that provide this kind of flights.
- Neither the **Convention on International Liability for Damage Caused by Space Objects**, nor the **Convention on Registration of Objects Launched into Outer Space** provide a definition of “space object” but both stipulate that a space object also imply the component parts of a space object.



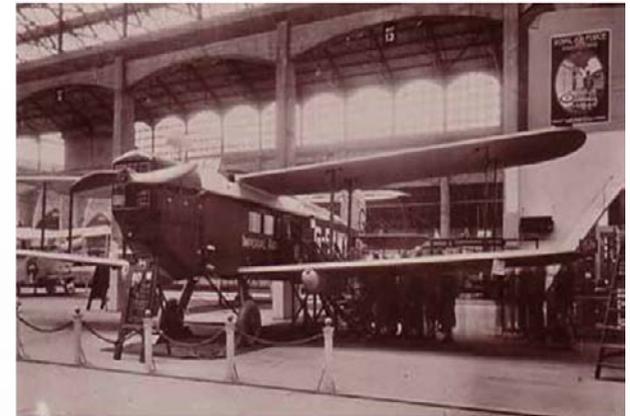
IS A SUBORBITAL VEHICLE A SPACECRAFT?

- Convention on Registration of Objects Launched into Outer Space states that the launching State shall register the space object with the aim of maintaining an international Register containing all related information.
- The Air Space Law of today is not intended to regulate suborbital flights. In this regard, there are comprehensive standards and recommendations approved internationally by OCDE that can be applied internally by each Member State. These are the **Standards And Recommended Practices (SARP's)**, contained in the Annexes 1-18 to the **Chicago Convention**, on airworthiness, on-board staff, aircraft operations, "rules of the air", air traffic management, airports, accident investigations, security measures on board the aircrafts.

CONVENTION
ON
INTERNATIONAL
CIVIL AVIATION
DONE
AT CHICAGO
ON THE
7TH DAY OF DECEMBER
1944

IS A SUBORBITAL VEHICLE A SPACECRAFT?

- An additional advantage of the Air Space Law is that there are legal provisions protecting the passengers, including provisions for compensations in the event of accidents. In Space Law, there is no liability of the carrier or operator, only international liability of the launching State in case of damage to third parties.
- Use of the **Warsaw Convention of 1929/MONTREAL** may be useful in the construction of a specific text related to outer space flights for mere commercial purposes. The role that this System plays is important in the development of aviation industry since it regulates the commercial air flights liability from the standpoint of the protection of passengers.



THE WARSAW CONVENTION

WHAT IS THE STATUS OF A PASSENGER ON A SUBORBITAL FLIGHT?

- Space Law does not regulate requirements with respect to space objects certification and out-licensing for staff. The **Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space** grants astronauts the status of “envoys of mankind” and enjoins upon States Parties the obligation to provide assistance in the event of accident or emergency landing. However, despite that this is not the same case, other provisions such as those contained in the Agreement on the Rescue of Astronauts, do apply and must be applied to any person in the situations described in articles of this Agreement. This extension of scope would be justified on the grounds of humanitarian need which inspired the conclusion of the Agreement.



REGULATION IMPLEMENTATION: THE UNITED STATES OF AMERICA

- Lack of internationally approved rules is leading to the application of provisions established by each State within its territory and air space through practical measures.
- The United States of America is to date, the only Country with a national legislated regulation. Under an amendment to its National space law, called the "Commercial Space Launch Act (CSLA)", enacted in 1984, the Department of Transportation was instructed to authorize launching and re-entry of space object into the territory.
- Based on the same provisions, in December 2004, the United States Congress adopted the "Commercial Space Launch Amendments Act (CSLAA)" Law, equating suborbital flight launching to outer space launching and giving its Agency responsible for civil aviation and outer space transportation, the Federal Aviation Administration (FAA), powers over the regulation and out-licensing to private carrying-passenger suborbital flights.



REGULATION IMPLEMENTATION: MEXICO

- Mexico itself has provisions involving air space and outer space. The first is the Political Constitution of the United Mexican States which includes, since 1960 (date when the reform was implemented), a paragraph referring to the application of sovereignty with regards to outer space, under the terms established by the International Law.
- Particularly on aeronautics, the Civil Aviation Law provides that: " This is a public order Law whose purpose is to regulate use or utilization of air space above the National territory thereon in the context of the provision and development of civil and state air transport services.
- In addition, several mandatory circulars addressed to all civil operators have been issued by the Directorate General for Civil Astronautics. As an example, the one issued in 2015 on the use of drones (officially known as Remotely Piloted Aircraft Systems –RPAS-).



CONCLUSIONS

- We are still uncertain on whether the suborbital flights activities shall be considered as a high altitude aeronautical activity or as a particular class of space flight. The characterization given to these flights will bring significant implications for the emerging air space suborbital industry, given the importance of having a stable regulatory framework in favour of this sector.
- For ICAO, the question involves security matters rather than jurisdiction issues. That is what Mexico has been assessing, not only due to the latest developments in civil aviation, but for the seeking of security measures that allow the coexistence of spacecrafts with the ones flying through air space.

See you in the...



¡GRACIAS!

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