



# General Assembly

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## Committee on the Peaceful Uses of Outer Space

### Questions on suborbital flights for scientific missions and/or for human transportation

#### Note by the Secretariat

#### Addendum

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## II. Replies received from Member States

### Austria

[Original: English]  
[18 December 2018]

**Question (a). Is there a relationship between plans to establish a system of space traffic management and the definition and delimitation of outer space?**

The establishment of a space traffic management system could in many areas enhance the safety and sustainability of space activities, for instance through improved information-sharing on space situational awareness; enhanced registration procedures; notification mechanisms for launches, in-orbit manoeuvres and re-entries of space objects; safety provisions; regulations with regard to space debris; and environmental provisions.

While it is important that such a system provides legal certainty with regard to the scope of its application, it is also crucial that it allows for the necessary flexibility to adapt to progressive technological developments that may complicate the determination of a fixed boundary between airspace and outer space.

Therefore, the definition of the activities covered by a space traffic management system appears to be more important than the establishment of a set delimitation of outer space. In this regard, it seems useful to adopt a holistic approach that ensures that space activities are covered comprehensively, including launch, in-orbit operation and post-mission disposal.

In addition, close coordination between air traffic management and space traffic management seems to be of central importance for the safety of air and space traffic, since space activities generally also comprise the launch from Earth, transport through airspace and re-entry.

Moreover, a discussion at the international level regarding the scope, content and nature of a future space traffic management system appears vital to ensuring the safety and sustainability of space activities and avoiding divergent practices and rules at the national, regional and international levels.

**Questions (b)–(g)**

Please see the replies of Austria contained in document A/AC.105/1039/Add.9.

### Myanmar

[Original: English]  
[28 December 2018]

**Question (a). Is there a relationship between plans to establish a system of space traffic management and the definition and delimitation of outer space?**

Yes. Myanmar is of the view that the establishment of a system of space traffic management can facilitate control over the process of minimizing the increase in the number of future objects that are ineffective for the space community. On the other hand, we should consider establishing the best plan for space traffic management only after clearly defining and delimiting outer space.

**Question (b). Is there a relationship between suborbital flights for scientific missions and/or for human transportation and the definition and delimitation of outer space?**

Yes. Suborbital flights are carried out in outer space for a limited duration; they cannot remain in orbit and must re-enter the Earth's atmosphere. Therefore, it can be said that they operate in the areas of the outer space zone, the near space zone and the

airspace zone, and they can easily affect the sovereignty of other nations and their airspace if operational failures occur. Thus, suborbital flights have a direct relationship to the definition and delimitation of outer space.

**Question (c). Will the legal definition of suborbital flights for scientific missions and/or for human transportation be practically useful for States and other actors with regard to space activities?**

The clear, stable and uniform legal definition of suborbital flights will be practically useful for States and other actors that have plans to operate such vehicles, but for Myanmar it is not yet practically useful, as the national satellite system of Myanmar is in the planning stage, and there is presently no plan for suborbital flights.

**Question (d). How could suborbital flights for scientific missions and/or for human transportation be defined?**

They could be defined as future space transportation vehicles that are constructed for commercial benefit, intended for wealthy people who want to travel to outer space for recreational purposes.

**Question (e). Which legislation applies or could be applied to suborbital flights for scientific missions and/or for human transportation?**

Both air law and space law could be applied to suborbital flights for scientific missions and/or for human transportation because suborbital flights operate in the three zones above the Earth. In addition, it is important to apply the newly emerging and delineated regime of aerospace law to them.

**Question (f). How will the legal definition of suborbital flights for scientific missions and/or for human transportation impact the progressive development of space law?**

In accordance with current technological developments in the space community, additional provisions should be appended to existing space law to cover matters relating to suborbital flights inclusively.

Therefore, the legal definition of suborbital flights for scientific missions and/or for human transportation will impact the progressive development of space law.

**Question (g). Please propose other questions to be considered in the framework of the legal definition of suborbital flights for scientific missions and/or for human transportation.**

Myanmar would like to propose some questions that should be considered in the framework, as follows:

- (a) How will the companies that initiate suborbital flights provide for the safety of space tourists or participants during the flights?
- (b) How much duration should take a suborbital flight before leaving the next space trip?<sup>1</sup>
- (c) How many space flights can a space vessel complete within its lifespan?
- (d) Which aspects relating to the safety and peaceful use of suborbital flights can be included in the framework without harming social and space communities?
- (e) What plans are in place for insurance or compensation if participants come to harm during space flights?

<sup>1</sup> The text of this question is reproduced in the form in which it was received from Myanmar.

## Pakistan

[Original: English]  
[7 January 2019]

**Question (a). Is there a relationship between plans to establish a system of space traffic management and the definition and delimitation of outer space?**

Keeping in view the recent progress and advancements in space technology and the rapidly increasing trend in space transportation activities, and keeping in view that space launch and re-entry vehicles may have to fly over the airspace of one or more countries during space transportation activities, it has become important to define the limit of the boundary between airspace and outer space so that air and space traffic activities can be clearly differentiated. For the establishment of a system of space traffic management, it would be pertinent to define the boundaries of such a system.

**Question (b). Is there a relationship between suborbital flights for scientific missions and/or for human transportation and the definition and delimitation of outer space?**

As mentioned above, the scientific payload and/or human transport vehicle may reach outer space and may fly over the airspace of one or more countries during space transportation activities. Therefore, it seems important to define the limits of airspace and outer space. The countries that are planning to conduct and operate suborbital flights would need to know when and where space-related laws and regulations apply and when and where airspace-related laws and regulations apply. Pakistan is of the view that an international agreement or framework may be established to define the registration, authorization and licensing of passage rights for commercial space activities (aerospace/suborbital) during launch and re-entry from orbit.

**Question (c). Will the legal definition of suborbital flights for scientific missions and/or for human transportation be practically useful for States and other actors with regard to space activities?**

The legal definition of suborbital flights for scientific missions and/or for human transportation will be practically useful in terms of distinguishing them from flights intended for the development and testing of the delivery or placement of weapons systems. The legal definition will also support the development of the relevant legal regime and/or guidelines for suborbital flights.

**Question (d). How could suborbital flights for scientific missions and/or for human transportation be defined?**

Suborbital flights are flights that are conducted at very high altitudes and that can reach outer space but do not achieve the velocity necessary to complete one or more orbits around the Earth. Provisions relating to the peaceful purposes of scientific payloads should be included in the definition of suborbital flights for scientific missions and/or human transportation. Such payloads should not contain any weapon or any object that can assist or be part of a weapon system, or any object that could be a threat to assets in space or on Earth.

There is a need for a legal definition of suborbital flights; however, further distinctions between suborbital flights for scientific missions and human space flights may be based on specific criteria, which may include the following:

- (a) An open declaration by the suborbital flight owner of the purpose, objective and payload of the suborbital flight;
- (b) An open declaration by the suborbital flight owner of the complete flight path;
- (c) An assessment and declaration by the suborbital flight owner regarding the safety of the suborbital flight and its environmental and other effects on other States;

- (d) The rights and obligations of the owner of the suborbital flight;
- (e) The rights and obligations of other States affected by the suborbital flight.

**Question (e). Which legislation applies or could be applied to suborbital flights for scientific missions and/or for human transportation?**

Pakistan believes that the contribution of both the air and space sectors is essential in establishing a legal framework for suborbital flights, including in defining suborbital flights and their relationship to the definition and delimitation of outer space, as well as the types of legislation (airspace laws/space treaties) applied to such missions, in order to find an all-encompassing solution to this issue. The overarching role of the Office for Outer Space Affairs as well as International Civil Aviation Organization would be significant in this regard.

**Question (f). How will the legal definition of suborbital flights for scientific missions and/or for human transportation impact the progressive development of space law?**

Considering that the legal definition of suborbital flights for scientific missions and/or for human transportation will be practically useful in terms of distinguishing them from flights intended for the development, testing, delivery or placement of weapons systems, it will assist in the preparation of an international, legally-binding instrument on preventing an arms race in outer space, including, inter alia, on preventing the placement of weapons in outer space.

**Saudi Arabia<sup>2</sup>**

[Original: Arabic]  
[18 December 2018]

1. The term “suborbital flight” refers to vehicles launched for scientific missions and/or for human transportation to an altitude high enough to reach outer space, i.e., between 80 km and 150 km above sea level, but with insufficient speed to achieve Earth orbit. Accordingly, there is a direct relationship between the definition of suborbital flights and the definition and delimitation of outer space. Regulatory frameworks applicable to such flights need to be put in place.
2. A suborbital vehicle may be defined as an aircraft that can be used as a space vehicle or a space vehicle that can be used as an aircraft. To define it accurately, the task for which the vehicle is launched must be determined in line with international legal instruments and national and international norms governing airspace and outer space. Saudi Arabia therefore believes that a legal definition of suborbital flights for scientific missions and/or human transportation needs to be elaborated in order to give States and non-State actors legal certainty regarding their rights and obligations in relation to liability under the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Warsaw Convention), the Convention on International Liability for Damage Caused by Space Objects (Liability Convention) and other conventions and principles.
3. Saudi Arabia believes that it would be appropriate to discuss the definition of suborbital flights at the meetings of the Committee on the Peaceful Uses of Outer Space and its two subcommittees. The Kingdom stresses the importance of the International Civil Aviation Organization being involved in discussions on determining liability. At the present time, it is not possible to define suborbital flights because outer space has not been delimited.
4. Whether a suborbital flight for the purpose of scientific missions and/or human transportation is defined as such is a function of the mission for which the flight is launched and falls within the scope of the Warsaw Convention (airspace law), the

<sup>2</sup> The text is reproduced in the form in which it was received from Saudi Arabia.

Liability Convention (outer space law), the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, and other agreements and principles.

5. It is not possible to determine the impact of a legal definition of suborbital flights for scientific missions and/or human transportation on the progressive development of space law in the absence of a framework that regulates such flights safely and efficiently.

6. (a) Yes, the Kingdom agrees to discuss the views of other countries regarding the definition and delimitation of outer space in order to generate a consensus of views and arrive at a consensus solution that is satisfactory to all.

(b) Suborbital flights are carried out for many purposes and reasons, thus raising questions relating to space travellers (e.g., Are they astronauts or not?) and flights through the airspace of other countries. It is therefore necessary to draw up binding international instruments that define suborbital flights and the objective of the activities to be carried out during such flights. A legal definition of space objects and the activities they perform needs to be elaborated and a legal framework for the registration of suborbital space objects needs to be put in place.

### **III. Replies received from permanent observers of the Committee on the Peaceful Uses of Outer Space**

#### **Secure World Foundation**

[Original: English]  
[18 December 2018]

##### **Question (a). Is there a relationship between plans to establish a system of space traffic management and the definition and delimitation of outer space?**

Not necessarily. Space traffic management systems will likely be established on a national basis. The countries establishing such systems will define the applicability of air and space law regimes as they deem appropriate.

##### **Question (b). Is there a relationship between suborbital flights for scientific missions and/or for human transportation and the definition and delimitation of outer space?**

Not necessarily. Near-term suborbital flights for tourism and science will likely not extend beyond the national airspace of the authorizing State. The countries authorizing such suborbital flights will define the applicability of the air and space law regimes as they deem appropriate. In the future, if suborbital point-to-point transportation ever becomes a reality, international issues related to States' international obligations may arise. However, there are many technical challenges that will need to be worked out before that arises as a serious legal issue.

##### **Question (c). Will the legal definition of suborbital flights for scientific missions and/or for human transportation be practically useful for States and other actors with regard to space activities?**

It is unclear how such a definition would be useful.

##### **Question (d). How could suborbital flights for scientific missions and/or for human transportation be defined?**

They could be defined by looking to the practices of several States for signs of common elements. However, to date, this activity has yet to occur, and regulating in the abstract seems inadvisable.

**Question (e). Which legislation applies or could be applied to suborbital flights for scientific missions and/or for human transportation?**

Various national space legislation regimes may authorize, supervise and regulate suborbital flights for scientific missions and/or human transportation in a manner that fulfils their international obligations. As space activities imply State responsibility, national legislation seems the most logical avenue to govern this activity if or when it emerges.

**Question (f). How will the legal definition of suborbital flights for scientific missions and/or for human transportation impact the progressive development of space law?**

It is likely that States will define the domains of applicability of their national air and space law regimes with regard to suborbital flights. This will advance the progressive development of national air and space law. In time, the common practices of States could impact the progressive development of international space law.

**Question (g). Please propose other questions to be considered in the framework of the legal definition of suborbital flights for scientific missions and/or for human transportation.**

We have no suggestions to offer at this time.

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