

International Regularity Body, a Key to Space Tourism Success

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Abstract

More than 2.5 Billion people around the world are travelling by air every year, and most of them are tourists.

The tourism industry could not be successful without a reliable air transport industry, especially with regard to safety and liability of the service providers. Air transport industry is well regulated under the auspices of ICAO especially with regard to safety, certification and liability of the operators and service providers. While this has not impeded the advancement of the air transport nor the aviation dependant tourism in a way it has provided a reliability and public confidence and in its own right has helped to expand the tourism industry.

Outer space, and space tourism are interrelated and both have international nature. Any proper use of outer space in particular in tourism industry should be able to attract the support and participation of all states. This will facilitate the development of industry and business in a real global sense

In order to have successful space tourism industry, drawing on our experience from aviation industry, we need to have well regulated operators and service providers especially with regard to the issues such as safety, certifications, liability with recognition and practice by all states.

This can be done through the creation of an international body to regulate outer space activities especially for issues such as certification, standardization, safety requirements and liability of operators and service providers. This paper tries to show how such an international body can be established and what its role would be in promoting the space tourists especially by private operators.

Introduction

No doubt that traveling to outer space especially by tourist has significant impact on mankind. This contribution could affect the economic growth, employment, education, culture, world peace, environmental protection and

social welfare of all mankind all around the world irrespective to their economical status.

Two main obstacles exist in development of space tourist, namely: the high cost of traveling to space as the main obstacle and non existence of internationally acceptable code of conducts by the service providers to give confidence to the global

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community in regards to travelling to outer space.

High launch cost

Today the cost of travelling to outer space for couple of days with a short stay in orbit is more than \$20 million per person¹, which obviously very few can afford it or are ready to pay such amount of money. The success of space tourism is then very much dependant on mass travelling. In fact it is a two way trade, more tourists means lower price, and reduction in cost means more people to outer space.

After 100 years of first flight by Wright Brothers more than 2.5 billion of people are travelling by air annually,² however, after more than 50 years of first space flight by Yoori Gagarin still few are travelling to space. Although this shows the difficulties, risk and high cost of travelling to outer space, it also indicate that outer space is the matter of interest to the governments and not yet to the general public and private sector.

Space tourism can be categorized in three groups, as follows:

Sub-orbital flights, orbital flights and orbital flight with stay in space hotel, or space station.

Space tourism industry has a rapid growth nature like the rapid growth of the airline passenger traffic which took place during the 1930s or explosive growth of the mobile phone industry in Japan from 1994 through 1996, starting from almost zero, new customers reached 40 million within 3 years³.

Studies show when the price of travelling to space reaches to 1% of existing cost, millions of people rush to space travel, and that means billion of dollars in commercial turnover⁴.

Travelling to outer space by millions of people per year raises many questions by the people as well as service providers which if not addressed properly, the future of space tourism industry will be at risk.

People interested in travelling to outer space would like to have maximum assurance for their safety and reliable services, while at the same time service providers would like to know their liability limits and role of law in their business.

Safety Aspects of Space Tourism

Space tourists seek maximum safety in their journey to outer space and expect their safety to be guaranteed by their government. That means all activities of the companies which are providing services for space travel must be controlled and monitored by appropriate government authorities. In the United States, the Federal Aviation Administration (FAA), the Office of Commercial Space Transportation (AST) responsible for safety approval of commercial space activities.

The Office of Commercial Space Transportation (AST) has issued the first-ever safety approval for a Spaceflight Training System. The approval was granted on April 7, 2010 to the National Aerospace Training and Research Center (NASTAR) of Southampton, Pennsylvania, for a centrifuge simulator with the ability to expose flight crew members to the G-forces they experience during suborbital flights.⁵

The approval process involved a thorough review of the design and operation of the NASTAR STS-400 simulator and on-site observation by AST personnel. NASTAR plans to offer its space training system commercially.

So far the space tourism has domestic nature, that means all tourists which have gone to outer space has return back to the same territory as they lunched, therefore under the same jurisdiction and are governed by the national law of the launching state concerned. But tourism industry has international nature and very soon the embarkment and disembarkment of the outer space tourists are not the same and rules and regulations of different states must be applicable. International rules and regulations acceptable to all states are essential to give the confidence to outer space tourists to use the services and avoid conflicting regulations and duplications of rules making procedures by different states. This is important especially for service providers which have to obey rules and regulations of all states concern.

In case of hotel or station in orbit with possibility of receiving tourist from all around the world, it is essential to have uniform rules, regulations and standards for landing, ducking and operation of space transportation vehicles from different countries to such destinations.

Rules Making Body

Although aviation industry under the Chicago Convention is ruling by strong international organization namely International Civil Aviation Organization (ICAO) in all aspects of aviation industry, but it seems for outer space there is no such an agreement among states to have such an international body yet. ICAO adopted a set of the Annexes to the Chicago Conventions. These annexes setup standards and procedures for safety, security, environment, operation and other technical aspects of civil aviation. International recognition and application of these Annexes by all

member states are the key points to the success of civil aviation industry⁶.

Although there are not too many space flights or space tourists yet, but in few years we will see crowd of people willing to go to outer space.

Expensive and sophisticated investments and devise for research and development of commercial space transportation are needed. As the resources mostly have to be provided by private entrepreneurs and it is essential to get maximum benefit from each dollar spent for development of commercial space transportation systems and therefore reduction of cost to travel to outer space by tourists, it seems internationally acceptable standards and procedures greatly reduce duplication, parallel and conflicting activities.

In terms of operation of commercial space transportation systems, the internationally acceptable standards and procedures for safety, security, environment and operation, the same as ICAO Annexes are more important, for obvious reasons that states are sovereign and they act according to their national law or internationally approved rules and regulations.

National Regularity Body

There are no uniform authorities among states for governing and regulating the commercial activities of state space concerns. In the United States, the FAA is responsible for licensing and the operational activities of commercial space transportation⁷. In Russian Federation, Russian Space Agency is responsible to do the same tasks. In Japan the National Space Development Agency is responsible for development of satellites and rockets for the launching of the satellites and development of facilities and equipments necessary there for⁸. In

Australia the Space Licensing and Safety Office (SLASO) is responsible for commercial outer space activities. In Iran the Iranian Space Organization (ISO) is responsible for commercial space activities by private entities. Although private sectors in Iran mostly are engaged in manufacturing or communication aspect of outer space.⁹

Needs for International Regularity Body

The same as in the case of commercial air transportation, two set of complementary rules and regulations for commercial space transportation is essential. Under the public international law a set of rules and regulation is necessary to address subjects such as safety, security, licensing, environment and operation of the service providers. Under the private international law a set of rules and regulations is needed to deal with rights and responsibilities of the service providers as well as the people who are travelling to outer space. It should address subjects such as responsibilities, liabilities and their limitations for service providers. It should deal with insurances of service providers, space transportation system and the passengers who are travelling to outer space. It should provide the guide line for contractual agreement between the passenger and the operator. Under the existing international space law states are internationally responsible for all outer space activities by individuals or entities in their state and international claim can be made only by states¹⁰. In case of outer space travelling, tourists should be able to make claim on the bases of contractual agreement any time and any places which they deem it necessary. So far, neither these rules and regulations exist, nor there are any outer space tourists who may wish to make such a claim.

History shows the international rules making procedures is very long and it takes years that an international instrument come to force and accepted by majority of states and in case of space law it seems even more difficult. It seems that it is essential that under the auspices of the UN and COPUOS a commission the same as Air Navigation Commission (ANC) of ICAO be responsible to provide technical standards as the recommended practices without binding to states. This will help the uniformity among states for their outer space activities which is essential for development of outer space tourism and at the same time consider the political and national interests of states.

Conclusion

Outer space tourism alike the tourism on the earth is not limited to the boundaries of states and in order to be successful the same as the tourism industry on the earth, needs to be recognized internationally by all states. Risks are much higher in outer space travelling than in air travelling; therefore people are more concern about their safety and reliabilities of the service providers. Service providers at the same time because of high risks which exist in travelling to outer space would like to know what would be their responsibilities and liabilities and what would be its limitations. So far no internationally acceptable rules and regulations exist to address neither the concerns of the people who wish to travel to outer space as a tourist nor the concerns of the service providers. The limited numbers of people who travel to outer space as a tourist were under the national law of the state concern. It seems there is no unanimity among states for having international body the same as ICAO for governing outer space activities. Many space fairing

nations do not wish to have very active roles for governments and prefer an international body the same as INMARSAT. However under the existing international conventions which are governing outer space activities states have the main role and responsibilities for outer space activities. Space tourism is a booming industry and in few years millions of people rush to travel to outer space. An unprepared and weak body to coordinate international activities will damage the safety and prosperous future of the space tourism in years to come.

References

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5. http://www.faa.gov/about/office_org/headquarters_offices/ast/safety_approval/
6. Chicago Convention 1944, Articles 37 and 57, ICAO publication, Doc. 7300.
7. Pursuant to the authority provided in 49 U.S.C. Subtitle IX, chapter 701, Commercial Space Launch Activities (Chapter 701), the Office of Commercial Space Transportation (AST) of the Federal Aviation Administration (FAA) licenses or permits commercial space launch and reentry operators and operators of launch and reentry sites.
8. Statement by Japanese delegation to the 49th COPUOS Legal Subcommittee.
9. Iranian Space Organization Act, Approved by the Parliament in 2004.
10. Outer Space Treaty 1967, Article VI.