

Features of the International Regulation of Space Activities

ELENA SIDOROVA¹, *Center for Comprehensive European and International Studies, Moscow*

Abstract

To identify key prerequisites for the formation of the international system of space activities regulation, there are analyzed the paper starts with the analysis of four distinctive space security theories. The author compares and contrasts special features relating to the international space activities regulation in the 20th century with the contemporary ones. Apart from the military side of the issue, there is tackled the problem of international private space activities regulation. Three development stages of private space activities are defined. The overall obsolescence of the present international legal system of space activities regulation is proven.

¹ **Elena Sidorova**, 20, is a fourth year student majoring in International Relations at the National Research University Higher School of Economics in Moscow. She writes her Bachelor Thesis on the political role of the Jewish Diaspora in the USA. She currently works as a Junior Researcher at the Center for Comprehensive European and International Studies in Moscow. Her academic interests include U.S.-Russia relations, history of international relations, international law, political psychology and political philosophy.

Introduction

The international Space activities are in the limelight of political science now, as they were in 1960s and 1980s. There are several reasons for this. First, after the end of the Space Race between the USA and the Soviet Union, joint space exploration projects had been initiated, but later on did not get sufficient further development. Second, the process of missile technologies proliferation goes on, with the number of member states of the so called "Space Club" increasing. Third, in the beginning of the XXI century a new confrontation among the great powers for the leadership in exploring the Moon, solar system planets and near space occurred. Fourth, pioneering concepts of military space development were put forward, primarily in the field of missile defense systems with the use of space-based detection systems and space-based missile defense interceptors. Fifth, apart from the military side of the issue, competition both among countries and big companies for dominating the space services market has been intensifying more and more over last two decades. All things considered, space attracts lots of actors of the international system and to make space activities more accurate and efficient, the legal status of space, space activities and space objects has to be clearly defined.

When the Space Race began, the USA and the Soviet Union, as the only owners of space technologies, decided to divide space between themselves on the basis of the Treaty of Tordesillas of 1494 between Spain and Portugal. This treaty divided the newly discovered lands outside Europe between the two countries along the meridian 370 leagues west of the Cape Verde Islands. Another option was to introduce the

co-management system per sample of the Antarctic Treaty of 1959, which was considered the first arms control international agreement signed during the Cold War and a very sound diplomatic expression of the scientific and operational cooperation achieved "on the ice". Eventually, neither track was chosen because of the absence of mutual consent between the USA and the Soviet Union (Bogaturov, 2011: 143).

Initially, the necessity to work out international legal norms of space activities was related to the space security issue. The term "space security" appeared for the first time in the academic literature in 1950s. In 1950-1980s four theories of space security were put forward.

The first one is called the space nationalism theory. It was introduced by H. Kahn, D. Kash, D.L. Harvey, L.C. Ciccorty, M. von Bencke and E.C. Dolman in 1950s. These scholars alleged that governments had an exclusive right to protect their space assets and that international treaties did not guarantee protection of one state from military space activities of the other state. Much attention within this theoretical approach was given to the possibility of space militarization, on the one hand, and technological limitation and juridical restriction of this process, on the other (Bogaturov, 2011:144). Space nationalism theory was a success in the USA in 1980s because it corresponded to the Strategic Defense Initiative (SDI) introduced and supported by Ronald Reagan's administration.

The second space security theory was called by its creators (A.C. Clarke, W. Ley, F. Gibney and G. Feldman) the global institutionalism theory. It implies that independent actions of states aimed at protecting their space assets may lead to

space militarization. That's why the only way to guarantee a peaceful nature of space activities is to establish specific international institutions that would have a legal right to manage space activities (Bogaturov, 2011:144). As global institutionalism theory claims, international regulation of the cosmic space should be benchmarked against international regulation of the Antarctic and oceanic space; the structure and contents of United Nations Convention on the Law of the Sea of 1982 could be an ideal model for an international space treaty appropriate for the whole international community.

The third space security theory – the technological determinism theory – was originated by V. Basiuk, N.P. Ruzic, W.A. Frutkin and H.E. York in 1970s. Unlike the first two theories, this one admits that, under existing 1970s international order, it was impossible to grant control over space activities to international organizations, only sovereign states had a legal right to manage space activities. At the same time, technological determinism theory acknowledges the fact that an international body is needed to monitor space activities. But such an international organization can perform only supervisory, non-binding functions; it can only make recommendations that do not have any mandatory power (Bogaturov, 2011:145).

The fourth theory is the one of social interactionism. It emerged in 1980s addressing the issue of space policy implementation mechanisms. The authors of this theory (R.E. Neushtadt, E.R. May, S. Kull, D.W. Larson) touched upon a political side of decision making process relating to space activities. If the global institutionalism theory treats the possibility to work out international legal norms of space activities as a crucial step towards creating the international regime of space activities management, the social interactionism

theory does not refer anyhow to international space regulation. Instead, it only describes different possible political outcomes of international cooperation among two or more parties interested in performing this or that space activity, without providing any legal framework for their actions (Bogaturov, 2011:146).

En masse, the concept of space security, irrespective of all the attempts to provide distinctive ways and methods for formulating international legal norms of space activities, does not refer neither to the reasons for which international space regulation was introduced, nor contents, theoretical meaning and practical significance of the international space law. Today none of the four theories of space security dominates, but instead each theory can be applied under certain circumstances to this or that case.

The real need to work out international legal norms of space activities occurred in late 1950s, when the USA and the Soviet Union succeeded in running their first space programs. Almost simultaneous success of both superpowers in space potentially could lead, on the one hand, to possible declaration of sovereignty of any country over distinctive segments of space and, on the other hand, to possible launch of the weapons of mass destruction (WMD) to space and militarization of circumterrestrial space (Arbatov & Dvorkin, 2009:60).

Prior to starting elaboration of international space laws, were established a series of international organizations and United Nations Committees on the use of space. Thus, in 1950 there was founded the International Aeronautics Federation, in 1958 - the Committee on Space Research, in 1959 – the United Nations Committee on Peaceful Use of Outer Space, in 1961 - the United Nations Office for Outer Space Affairs. These international organizations

and UN Committees were not granted the right to work out universal legal norms relating to the use of space. Furthermore, their activities contradicted one another. But the mere fact of establishing such international bodies was extremely important, as it contributed a lot to maintain a status-quo in international space security (Bogaturov, 2011:149). In other words, even if irreconcilable contradictions between the USA and the Soviet Union over the leadership in space remained, the involvement of the international community in the issue via the newly established legal entities to some extent eliminated the risk of open military confrontation in space, which could endanger the whole mankind, between the two parties.

The adoption of the United Nations General Assembly Resolution № 1721 (XVI) on International Co-operation in the Peaceful Uses of Outer Space in 1961 gained momentum to further development of international space law. This document addressed the principles of the peaceful use of space, the necessity to register spacecraft launched from the Earth and correspondent institutions responsible for launching, the requirement to codify international space activities. These regulations were voluntary to follow for the countries that adopted the resolution. Later on, the regulations set up in the UN GA Resolution № 1721 were included in the Limited Test Ban Treaty signed and ratified by the USA, the Soviet Union and the United Kingdom in 1963. Under the treaty, it was introduced the compulsory ban on launching nuclear weapons into space. It is widely considered that this particular limitation confirmed the real possibility to put supranational regulation of space activities in practice.

Negotiations on the elaboration of a universal agreement on space activities

started at the XVIII session of the United Nations Security Council in 1963. The participants of the negotiations reassured of their decision to abandon the idea of launching WMD into space, placing WMD on any celestial body and in space. It is quite hard to guess whether these restrictions represented the goodwill of the space superpowers or they were the recognition of technical inability to initiate such projects at that moment. Anyway, on the basis of the negotiations, the USA, the Soviet Union and the United Kingdom signed in 1967 the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty). It introduced some crucial restrictions on space activities. Space exploration and space usage in the interests of the whole mankind, complete equality of all the countries in space, freedom of scientific explorations in space and full compliance with the norms of the international law, including the UN Charter, were enunciated as basic principles of the treaty. In addition, the document prohibited appropriation of space, the Moon and other celestial bodies by any country; launching WMD into space, placing WMD on any celestial body and in space; deliberate contamination and pollution of space. The parties to the treaty undertook the responsibility to use space peacefully, to recognize astronauts as envoys of the mankind in space, to apply to the principles of collaboration and mutual help during space exploration missions.

Outer Space Treaty solved a whole set of problems accumulated by that moment. *Prima facie*, U.S.-Soviet space race was put into legal framework. Countries openly announced their will not to declare sovereignty over celestial bodies (this principle started to be widely used much

later, when the technical progress made it possible to send man-tended missions to the Moon and to realize orbital manned flights). The treaty eliminated the direct threat of launching WMD into space and complicated the execution of the works undertaken by the USA and the Soviet Union on the creation of the missile defense system(s) with the use of space-based detection systems and space-based missile defense interceptors (Fenenko, 2008:27).

However, Outer Space Treaty contained several legal gaps that allowed countries to evade the law. For instance, the document did not include a ban on launching conventional weapons into space. Nothing was mentioned about the regulation of commercial space activities. The status of disputable space segments, such as geostationary and polar Earth orbits, was not identified (Fenenko, 2008, 28). The hugest hiatus in the treaty was the absence of the definition of the term "space". The International Aeronautics Federation marked the border between air space and cosmic space at a height of 100 km starting from the sea level in 1955. This definition was not legally binding. The USA, in turn, set their own demarcation line between air space and cosmic space in accordance with the type of the aircraft in use.

Under such circumstances, the need to close the gaps of Outer Space Treaty became a key prerogative for the specialists on international space law. Such an intention explains the adoption of several international space treaties in late 1960s and 1970s. In 1968 there was signed the United Nations General Assembly Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement). This document fixed the commitment of the countries to render assistance to astronauts and set up norms of the return of wrecked spacecraft.

To enlarge the regulations of the Rescue Agreement, in 1972 there was adopted the Convention on International Liability for Damage Caused by Space Objects (Liability Convention), which made it incumbent upon the countries to repair damage done to spaceship in accordance with the principles of international law and the principle of justice. In 1976 the United Nations General Assembly Convention on Registration of Objects Launched into Outer Space (Registration Convention) came into effect. This document introduced the norms relating to the mandatory provision of information about space objects, gave legal force to the UN GA Resolution № 1721, and developed the international register of operating spacecraft.

Despite looking promising, international legal documents of 1968-1976 did not manage to form a new regime of security granting to international space activities. The situation has changed in late 1970s, when the Soviet Union, Argentina and Poland worked out the project of the international agreement on the legal status of the Moon. On its basis it was signed the United Nations General Assembly Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the Moon Treaty) in 1979. The Moon was declared the general heritage of the mankind. Moreover, the agreement says that all the activities on the Moon are performed on behalf of all the human beings. In fact, this claim was the attempt to create the international regime of the Moon exploitation and potential benefits sharing. The agreement came in for criticism on the part of the USA. Ronald Reagan's administration affirmed that the document contradicted the principles of Outer Space Treaty of 1967, which fixed the neutral status of celestial bodies and did not allow any country to declare ownership rights over

them. Also the USA called into question the clause concerning redistribution of the resources extracted from the Moon in the interests of the mankind. From the American perspective, the Moon resources could not belong to anybody, or otherwise could be shared only by the space superpowers, rather than be redistributed among the countries that did not perform their own space activities (Bogaturov, 2011:151-152). In 1984 the USA refused to ratify the Moon Treaty. The Soviet Union eventually followed the example of the USA. Ultimately, the treaty came into force only in 13 countries, among which there were no space superpowers.

With the crash of the Soviet Union in 1991, the USA became the only leader in space, especially in the military space sphere. However, because of extremely high costs of space activities, the USA, Russia and the European Union formed a cooperative system of space exploration. In late 1990s it became clear that the International Space Station (ISS) was the only successful international joint project. No further development was given to international Moon, solar system planets and near space exploration projects (Fenenko, 2008, 30). In 1999, when Bill Clinton's administration announced its intention to modify the Soviet-American Anti-Ballistic Missile Treaty of 1972, a new wave of debates around international space law occurred.

Prevention of space militarization was the main issue under discussion. The Russian president Vladimir Putin made a statement on the necessity to minimize the risk of space militarization at the United Nations General Assembly meeting on 6 September 2000. He proposed to sign the international treaty that would ban launching warlike equipment into space. Putin's announcement was welcomed by China, but

the USA refused to discuss this issue. Moreover, in 2002, George Bush's administration withdrew from the Soviet-American Anti-Ballistic Missile Treaty of 1972 and said America did not intend to be involved into any international joint project relating to the prevention of space militarization. After 9/11 terrorist attacks, the USA intensified cooperation with its NATO allies and started to develop the missile defense system without the participation of Russia (Bogaturov, 2011:153).

So far, the latest attempt to impose mandatory legal norms of space activities regulation on sovereign states was undertaken in 2007, when Russia and China presented to the juridical subcommittee of the United Nations Committee on Peaceful Uses of Outer Space the draft on the prohibition of placing in space any warlike equipment, launching into space any weapons and any using any force against space objects. On 7 August 2007 UN COPUOS approved the draft. The treaty was planned to be made open for signing at the annual United Nations Conference on Disarmament in February 2008. But the USA refused to sign the treaty on the pretext that it contradicted the American national interest in securing its space assets. The U.S. Department of State forwarded to the UN a series of amendments to the draft. There was found no consent among countries either over the text of the draft or the amendments, that's why the treaty was not made open for signing at all.

Today international space law deals equally with the military side of the issue and the commercial one. Space tourism and private spaceflight require the international law of outer space to alter and to become more adaptive to the revolutionary development of this new economic sphere.

Private space activities have undergone three development stages (Von der Dunk, 2011, 146). At the first stage, the categories of shareholders and stakeholders in space activities were very limited. Governments and their space agencies were accountable for launching, operating and controlling space objects. The role of private companies was merely nominal. They were allowed only to be manufacturers of spaceship for public entities, downstream customers of space-based applications and providers of subsidiary services for the benefit of the governments. For this reason, Outer Space Treaty of 1967, Rescue Agreement of 1968, Liability Convention of 1972 and Registration Convention of 1976 focused exclusively on the rights and obligations of state space agencies, rather than private enterprises (Von der Dunk, 2011:146).

The second stage of private space activities development demanded from private entities to start to independently render launch services and operate space objects. From the legal perspective, this implied that governments got obliged to exercise jurisdiction over private companies and to make them meet the requirements of liability and responsibility in accordance with international space law. To achieve this goal, many countries, primarily the USA (Commercial Space Launch Act of 1984) and Russia (Law of the Russian Federation on Space Activities № 5663-1 of 1993), decided to enact national space laws, national licensing systems and national supervision mechanisms in order to ensure that private space activities were under control both of the government and international space law. At that moment the combination of international space treaties and national space legislation and regulation was sufficient for proper private space

activities functioning (Von der Dunk, 2011, 147).

Space tourism and private spaceflight represent the third development stage. As a legal category, space tourism is a quite vague notion. It underlines only motivation (people are engaged in this activity for pleasure and entertainment, rather than for scientific or training purposes) as a key indicator that distinguishes space tourism from traditional spaceflight. In addition, space tourism can be divided into orbital one and suborbital one. The first orbital touristic spaceflight took place in April 2001, when Dennis Tito arrived with a one-week visit to the Russian module of the ISS at a ticket price of 20 million U.S. dollars. Since that time at least seven private orbital touristic space trips have been taken on a private basis. Nevertheless, in legal terms one cannot define orbital touristic spaceflight as a purely private enterprise at least for technical reasons. If the private character of passengers is out of question, still only public spacecraft are technically viable to travel to the ISS, which is also a public destination itself (Von der Dunk, 2011, 147). In turn, the suborbital touristic spaceflight implies a few-hour trip to the edge of outer space and back. Such a ride legally falls into the category of private space tourism beyond any doubt, as spacecraft in use are completely financed, owned and operated by private companies (such as Virgin Galactic, XCOR and Rocketplane) and the motivation (that is for pleasure) is absolutely clear. The term “private spaceflight” has a broader meaning, since such a flight can be taken not exclusively for touristic purposes. Most generally, lawyers define private spaceflight as suborbital spaceflight, whose primary task is to offer individuals the opportunity to fly on board private spaceship to a place of destination (or from one place to another). To save a

considerable amount of time, in the process of such a trip an individual can enter, traverse and leave the edge of outer space. In future some companies (e.g. Bigelow Aerospace) even plan to build, launch and operate space hotels, which are likely to be legally defined as private destinations in outer space (Von der Dunk, 2011, 148).

On the whole, because of the state orientation of current international space law, the legal status of private operators and their activities is defined primarily through national legislation. The development of private space activities goes much faster than the development of international space law. It seems very unlikely that in the nearest future the state-orientated model will be substituted by the state-plus-private-sector orientated one. However, technical advances may soon demand from international space law to set up necessary universal legal framework for private space activities. Among most disputable issues at the international level in this case will be the ones of certification, space traffic management, authorization, control, registration and liability arrangements (Von der Dunk, 2011, 152).

Apart from the above mentioned controversial issues, there remains another serious legal gap: the concept of "astronaut", as defined in international space treaties, does not fit well with contemporary proposals for commercial space tourism. By now, astronauts have been described in all the international space documents as highly trained state-employed professionals with a specific range of duties and responsibilities, rather than as ordinary untrained people (clients of private space companies). With the development of space tourism the ambit of the term "astronaut" becomes unclear (Lyall, 2010, 1614-1615). The USA has already imposed national rules for space

tourism that make undubious distinction between a space crew and space flight participants (Commercial Space Law Amendments Act of 2004; Human Space Flight Requirements for Crew and Space Flight Participants: Final Rule of 2006). The American initiative is rather comprehensible, as it specifies the type and the grade of responsibility each individual on board bears. Consequently, it would be reasonable if this idea was made applicable at the supranational level.

All in all, the majority of methods of space activities regulation, which continue to be widely used today, were worked out either by American or Soviet lawyers in the second part of the XX century. For many years the agenda of space activities regulation has been defined by key clauses of Outer Space Treaty of 1967. Theoretically, international space legal documents signed in 1970s-1990s dealt with the issue of maintenance of the space co-management system between the USA and the Soviet Union and with the issue of prevention of space militarization. Practically, they answered the purpose of closing legal gaps of Outer Space Treaty of 1967. In 1990s-2000s the situation on the world arena has changed. America's achievement of the undoubted leadership in space put an end to the balanced system of international space co-management. Private space activities development confirmed that the international legal system of space activities regulation based on Outer Space Treaty of 1967 and subsequent international legal documents became completely obsolete. Today the paucity of mutual understanding among countries over space issues is a huge problem. If the international community does not return to the negotiation table and does not elaborate contemporary international space laws, negative

consequences might be expected. On the one hand, these consequences may have economic implications, such as intensification of competition over commercial activities in space, shifting of liability for outer space private and commercial activities from state to private companies or vice versa. On the other hand, such consequences may lead to higher risks in global space security, fragmentation and segmentation of space, appropriation of space objects, which is likely to be achieved through open military confrontation. The renewal of international legal documents should be run in full accordance with international principles of law. The involvement of international bodies into this process, primarily the United Nations Organization, is required.

References

- Arbatov, A. & Dvorkin, V. (2009) *Outer Space: Weapons, Diplomacy and Security*. Moscow: ROSSPAN.
- Bogutarov, A. (2011) *International Relations of the Russian Federation in New Political Spaces*. Moscow: URSS.
- Fenenko, A. (2008) *Space Race and International Security*. *International Trends*, Vol. 6, №3 (18), pp. 26-41.
- Lyall, F. (2010) *Who is an Astronaut? The Inadequacy of Current International Law*. *Acta Astronautica*, Vol. 66, pp. 1613-1617.
- Von der Dunk, F. (2011) *Space Tourism, Private Spaceflight and the Law: Key Aspects*. *Space Policy*, Vol. 27, pp. 146-152.