

SOME PROBLEMS OF STATE RESPONSIBILITY
IN OUTER SPACE LAW

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I. General Remarks

The expansion of man's activities into outer space and celestial bodies constitutes a new and important phase in the history of our civilization. With the beginning of the Cosmic Era it has become obvious that these activities require specific legal regulations that take into account the dangers that threaten not only the interest of individuals or particular countries, but life on Earth as a whole. One source of danger is created by scientific and technical experiments which can lead to biological, chemical or radioactive contamination of the air space, outer space, or contamination of the Earth. A form of contamination in outer space is done by satellites which have already fulfilled their mission, but are still orbiting the Earth and emitting useless signals.¹

At present the greatest potential danger is the launching of artificial space objects. Prior to January 1978 more than 10,000 objects had been placed in outer space and the number is increasing rapidly. The risk connected with this activity, even if performed with great accuracy and strict observance of international law, is enormous. It should be noted that on several occasions parts of outer space objects have already fallen to Earth. Other problems may arise when direct television broadcasting by satellite is implemented, for serious concerns exist that some countries may use this means of communication for subversive propaganda or interference in the internal affairs of other countries.² Also, remote sensing of the Earth from space opens the possibility of exploiting information obtained by these means in a way not compatible with the interests of other countries. The necessity for special legal regulation of outer space results from the fact that these activities are conducted in an area that is not subject to the State's sovereignty and could threaten the entire international community.

The first step in the process of establishing outer space law and also in establishing principles of State responsibility was made in 1963 when the General Assembly of the UN adopted the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space.³ These principles of international responsibility

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¹G.P. Zhukov, *Kosmicheskoye pravo* (Outer Space Law) 160 (Moscow, 1966).

²K. Wiewiorowska, *Prawnomiedzynarodowe i polityczne aspekty bezposrednich transmisji satelitarnych* (Legal and Political Aspects of Direct Television Broadcasting by Satellites), *Sprawy Miedzynarodowe* (International Affairs), No. 3 (1974).

³Paragraphs 5 and 8 of the UN General Assembly Resolution of 1962/XVIII. dated December 13, 1963, state:

were stated in Articles VI⁴ and VII⁵ of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies; and in a separate Convention on International Liability for Damage Caused by Space Objects, signed March 29, 1972.⁶

The question of States' responsibility has become an important issue in the discussions (aimed at the elaboration of new international agreements) conducted within the forum of the UN Committee on the Peaceful Uses of Outer Space (COPUOS) and its Legal Sub-Committee. Controversies have arisen during the discussions of the Draft Moon Treaty, the legal implications of remote sensing of the Earth from space, and on the draft principles governing the use by States of artificial earth satellites for direct television broadcasting. The question was, who should be responsible for activities conducted in outer space; States only, or also international organizations and

5. States bear international responsibility for national activities in outer space, whether carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried on in conformity with the principles set for in the present Declaration. The activities of non-governmental entities in outer space shall require authorization and continuing supervision by the State concerned. When activities are carried on in outer space by an international organization, responsibility for compliance with the principles set forth in this Declaration shall be borne by the international organization and by the States participating in it.

8. Each State which launches or procures the launching of an object into outer space, and each State from whose territory or facility an object is launched, is internationally liable for damage to a foreign State or to its natural or juridical persons by such object or its component parts on the earth, in air space, or in outer space.

⁴Article VI states:

States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty. When activities are carried on in outer space, including the moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the State Parties to the Treaty participating in such organization.

⁵Article VII states:

Each State Party to the Treaty that launches and procures the launching of an object into outer space, including the moon and other celestial bodies, and each State Party from whose territory or facility an object is launched, is internationally liable for damage to another State Party to the Treaty or to its natural or juridical persons by such object or its component parts in the earth, in air space or in outer space, including the moon and other celestial bodies.

⁶The Convention on International Liability for Damage Caused by Space Objects, March 29, 1972, [1973] 24 U.S.T. 2389, T.I.A.S. No. 7762 (effective Oct. 9, 1973). Hereinafter referred to as Convention of 1972.

nongovernmental entities that have appeared since the beginning of the outer space era. The Vith Article of the Outer Space Treaty of 1967 leaves no doubt that only States and international organizations can bear international responsibility for activities in outer space.⁷ It should be stressed however, that the statement "outer space activities" can create difficulty in establishing whether the activity which engaged the responsibility was actually conducted in outer space. This results from the fact that binding outer space agreements lack: one, a definition and a delimitation of outer space, and two, a definition of outer space objects and of outer space activities. Therefore, do harmful experiments conducted in the upper layers of the ionosphere infringe upon the principles of Outer Space Law which either oblige restraint from activities that could cause harmful interference in the peaceful activities of other countries in outer space, or those which require that exploration of outer space be in the interests of all countries and for the benefit of mankind as a whole?⁸ Problems of this kind were partly eliminated by the Convention of 1972.

The Convention states that a launching State bears international liability for damage caused by its space objects. According to Article I of the Convention the term "launching state" means:

A state which launches or procures the launching of a space object; A state from whose territory or facility a space object is launched. The term 'space object' includes component parts of a space object as well as its launch vehicle and parts thereof.⁹

But still the problem of defining a space object remains unsolved.¹⁰

II. The Subject of Responsibility

States bear responsibility for their activities in outer space whether such activities are conducted by governmental agencies or by non-governmental entities. The imputing to a State of a particular act or omission is indispensable to determining the States' responsibility. It is a generally recognized principle of international law that States bear the responsibility for acts or omissions of their agencies, officers and employees of all kinds.¹¹ The problem of a State's responsibility for activities of their

⁷The problem of responsibility of international organizations will be postponed as it is beyond the scope of the subject of this article.

⁸On the problem of the definition and delimitation of the Outer Space, see M. Lachs, *The Law of Outer Space: An experience in Contemporary Law Making* 55 (Leiden, 1972).

⁹*Supra* n. 6, Art. I.

¹⁰See *International Space Law* 127 (Piradow ed., Moscow, 1975).

¹¹On the "Act of State" theory, see Rapport R. Ago, *le délit international*, 2 *Revue de droit contemporain* 415-554, (1939); UN Doc. A/CN.4/246 Add. 1, 3-37 (April 7, 1971).

natural and juridical persons or even foreigners seems more controversial.¹² According to the prevailing opinion,¹³ a State is responsible for a person's activities only when: it approves his illegal acts; when a State, as the result of a lack of supervision to which it is obliged, did not prevent the damage; or when a State does not search for the guilty person.¹⁴ Some authors also take into account a State's responsibility for the activities of juridical and natural persons conducted on behalf of the State.¹⁵ It is recognized that a State may authorize an institution to fulfill certain governmental functions and thus the State will be responsible for it as well as for the activities of its own organs. In this situation the behavior of these persons is subject to the general rule that a State is responsible for the acts and omissions of its organs.¹⁶

That portion of Article VI of the Outer Space Treaty of 1967 which reads:

States Parties to the Treaty shall bear international responsibility for national activities in Outer Space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities

has been interpreted in several different ways. J. Rajski states that "The Treaty of 1967 set a principle, according to which the exploration and exploitation of the outer space and celestial bodies can be carried on only by subjects of international law."¹⁷ The quoted author believes that the need for such a solution is justified on one hand by the international implications of this kind of activity, and on the other, by the need for assuring that it will be carried on exclusively for purposes advantageous to mankind as a whole. A country may conduct this activity either directly or indirectly by authorizing subordinated natural or juridical persons.

The authorization confines the country with definite obligations. The basic ones concern the continuing supervision of those natural and juridical persons and the bearing of international responsibility if these persons conduct activities contradictory to the international law.¹⁸

¹²See the conclusions of the International Law Commission; U.N. Doc A/8010, at 99 (August 4, 1970).

¹³See Article 4 of the Draft of the International Law Commission, UN Doc. A/CN.4/246, at 103 (1970).

¹⁴J. Symonides, *Odpowiedzialność państwa w prawie międzynarodowym* (The State's Responsibility in International Law). *Studia Prawnicze* (Law Studies) 54-55 (1971).

¹⁵*Supra* n. 11.

¹⁶B. Greafrath, E. Oeser, P.A. Steiniger, *Völkerrechtliche Verantwortlichkeit der Staaten* 88 (Berlin, 1970).

¹⁷J. Rajski, *Odpowiedzialność międzynarodowa za szkody wyrządzone przez obiekty kosmiczne* (International Liability for Damages Caused by Space Objects) 58 (Warsaw, 1974).

¹⁸*Id.*

It seems to follow from the above that Mr. Rajski recognizes the concepts asposued in Article VI of the Outer Space Treaty of 1967 for conducting outer space activities by natural persons and nongovernmental entities in the State's name, or by order of the State, which according to the accepted view of international law, involves the State's responsibility.

M.G. Marcoff believes that in space law a broadening of a State's responsibility has taken place and changes have occurred in previously accepted principles concerning the possibility of imputing to a State a certain act of omission of a natural or juridical person.¹⁹ M. Lachs rightly states that in space law, States bear direct responsibility, and that "the acceptance of this principle removes all doubts concerning imputability. The importance of this will be appreciated by those familiar with the serious difficulties to which this issue has so frequently given rise in practice."²⁰

It seems that in assessing whether the given activity or omission can be imputed to a State, the interpretation of the statement, "national activities" is of great importance. In the doctrine of outer space law the term "national activities" is interpreted as meaning that States bear international responsibility for the activities of its citizens and nongovernmental entities under its jurisdiction and control or, that States bear international responsibility only for activities of such persons and entities in the limits of its territorial jurisdiction. J. Fawcett²¹ believes the second view is correct. J. Rajski is of the opinion that the criterion for a State's responsibility should be the granting of an authorization to conduct certain activities in Outer Space.²² M.G. Marcoff states that "*le terme activites nationales, peut designer, a part les activites etatiques, celles de toute personne soumise a sa competence territoriale ou personnelle.*"²³

The following problem concerns the requirements provided by the Outer Space Treaty for granting of authorization to nongovernmental entities to carry on space activities. None of the outer space agreements define the form of the authorization nor the forms of supervision. There is an opinion expressed that an authorization of this kind can be granted "in any way, even per facta includienta, although in principle such situations should not take place."²⁴ The matter of a time limit, for which such an

¹⁹M.G. Marcoff, *Droit International Public de l'Espace* 532 (Paris, 1973).

²⁰M. Lachs, *op. cit. supra* n. 8 at 122; see also *Tendencya razwiteya Kosmicheskogo prava* (Trends of the development of the Outer Space Law) 237 (Moscow, 1971).

²¹J. Fawcett, *International Law and Use of the Outer Space*, 44-45, (Manchester, 1968).

²²J. Rajski, *op. cit. supra* n. 17 at 57-59.

²³ M.G. Marcoff, *op. cit. supra* n. 19 at 553; see also I.A. Csabafi, *The Concept of State Jurisdiction in International Space Law* (The Hague, 1971).

²⁴J. Rajski, *op. cit. supra* n. 17 at 59.

authorization may be granted, falls within the internal competence of a State. However, the authorization procedure should cover continuing State supervision as an indispensable condition for non-governmental entities to carry on outer space activities.²⁵

The events of the past few years have stressed the significance of international cooperation in the framework of non-governmental organizations.²⁶ The problem of responsibility for the activities of these organizations has not been explicitly formulated in the instruments of outer space law. But since the Declaration of 1963, the Outer Space Treaty of 1967 and the Liability Convention of 1972 relate only to the responsibilities of State and intergovernmental organizations there exists a convergence of opinions in the doctrine that States whose institutions or citizens participate in non-governmental organizations will bear the responsibility for activities carried on by these organizations.²⁷

Considerably more complicated questions are posed by outer space activities carried on by the so-called mixed enterprises²⁸ or public-private users.²⁹ In these ventures States can participate (through their organs), as well as the non-governmental entities, intergovernmental organizations and multinational corporations. According to I. Diederiks-Verschoor and P. Gormley:

At such time as financial contributions, insurance coverage, production facilities, technological contributions and even consultation are added to the list of participation, the possible combinations of governmental and non-governmental entities, as they cooperate with intergovernmental organizations, seem endless.³⁰

The increasing role of cooperation among governmental agencies, international organizations and non-governmental entities should be stressed. They cooperate not only in outer space activities but also in a number of other domains, for example, in the exploitation of the sea bed beyond the limits of national jurisdiction. It seems then, that the problem of responsibility for this kind of activity calls for detailed examination.

²⁵International Space Law, *op. cit. supra* n. 10 at 97.

²⁶I.H.Ph. Diederiks-Verschoor, W. Paul Gormley, *The Future Legal Status of Nongovernmental Entities in Outer Space*, 5 J. Space Law. 125 (1977).

²⁷See International Space Law, *op. cit. supra* n. 10 at 98, J. Rajski, *op. cit. supra* n. 17 at 53, I.H.Ph. Diederiks-Verschoor, W. Paul Gormley, *op. cit. supra* n. 26 at 129, G.P. Zhukov *op. cit. supra* n. 1 at 149.

²⁸M. McDougal, H. Lasswell, I. Vlasic, *Law and Public Order in Space* 10 (1963).

²⁹C. Christol, *The International Law of Outer Space* U. S. Naval War College International Law Studies [1962], 86-88 (1965).

³⁰I.H.Ph. Diederiks-Verschoor, W. Paul Gormley, *op. cit. supra* n. 26 at 142.

The Liability Convention of 1972 aside from stating principles concerning individual States' liability also contains principles regulating joint liability. This liability occurs in three cases:

- 1) In case a jointly launched object causes damage;
- 2) In case damage is caused to a third State by an object launched individually by different countries;
- 3) If the liability is born by an international organization and States members of such an organization.³¹

According to Article V of the 1972 Convention, if two or more countries launch a space object together they are jointly charged with liability for any resulting damage. The Convention though does not specify the contents of the notion of "solidarity". But paragraphs 2 and 3 of Article V can serve as guidelines to an interpretation.³² These paragraphs allow the conclusion that the content of the notion "joint liability" means that a State party claiming compensation has the right to full indemnification from all States of the joint launching or each one separately, and that the payment of the compensation by one of them frees the obligation of all others. The State which has paid the compensation then utilizes the law of recourse to recover from the remaining members of the joint launching.

This formula provides adequate protection for the interests of the claimant State. But during the sessions of the Legal Sub-Committee of the COPUOS, it was noted that the equal treatment of all States participating in the joint launching can lead to unfair consequences. At the present state of development the participation of a number of countries may be minimal. Therefore it was proposed that principles be established determining the priority of liability.³³ The principles contained in Article V, paragraph 2 of the Convention are based on the reasonable assumption that the problem of the priority of liability should be solved by the launching States rather than by the claimant

³¹The problem of joint responsibility of States and international organizations is not discussed as it is beyond the scope of this article. See Article XXII of the 1972 Convention.

³²Paragraphs 2 and 3, Article V of the Convention on International Liability for Damage caused by Space Objects of 1972 state:

2. A launching State which has to pay compensation for damage shall have the right to present a claim for indemnification to other participants in the joint launching. The participants in a joint launching may conclude agreements regarding the apportioning among themselves of the financial obligation in respect of which they are jointly and severally liable. Such agreements shall be without prejudice to the right of a State sustaining damage to seek the entire compensation due under this Convention from any or all of the launching States which are jointly and severally liable.

3. A State from whose territory or facility a space object is launched shall be regarded as a participant in a joint launching.

³³J.D. Theraulaz, *op. cit. infra* n. 47 at 265.

States. To avoid ambiguity in this area the article states that the agreement signed by States cooperating in joint launching does not infringe upon the rights of the claimant State.

The second of the cases of joint liability foreseen by the Convention could take place as a result of the collision of two space objects belonging to two States which in turn harms a third State. The basis of the joint liability of these States will vary. According to the principles of the Convention of 1972, States bear absolute liability for damages caused to the third States on the Earth's surface or to an airplane in flight. On the other hand, in the case of damages caused beyond the Earth's surface, liability is based on fault. According to Article IV, paragraph 2 of the Convention:

In all cases of joint and several liability referred to in paragraph 1, the burden of compensation for the damage shall be apportioned between the first two States in accordance with the extent to which they were at fault; if the extent of the fault of each of these States cannot be established, the burden of compensation shall be apportioned equally between them.

III. *Responsibility for Wrongful Acts*

According to the prevailing view in outer space law, the term "international responsibility" means all forms of new legal relations which might arise as a result of a wrongful act imputed to a State.³⁴ These relations might arise among a State, which committed a wrongful act and a State or States or other subjects of international law which are passive subjects of responsibility. There is a question, however, as to whether every wrongful act committed by a State is followed by international responsibility or only those wrongful acts as a result of which the damage arose. It is accepted in the doctrine of international law that violating the law means not only violating the treaties or international customary law but also the general principles of international law.³⁵ The violation of the decisions of international organizations and unanimously adopted resolutions of the General Assembly of the UN containing the confirmation and broadening of principles of international law is also considered a violation of law.³⁶

³⁴R. Ago, *op. cit. supra* n. 11; Oppenheim, *International Law: A Treatise*, ed. by H. Lanterpucht, Vol. I, 356 (1955); A. Verdross, *Völkerrecht* 398 (Wien, 1964); D.B. Levin, *Otwietstviennost gosudarstv w. sowremennom miedzunarodnom prawye* (States' Liability in Contemporary International Law) 9-10 (Moskwa, 1966).

³⁵Schwarzenberger *International Law*, Vol. I, 6 (3rd edition, London, 1957); A Manual of International Law 110, (London, 1960); H. Briggs, *The Law of Nations* 45 (London, 1952); K. Strupp, *Wörterbuch des Völkerrechts*, Bd. I, 330 (Berlin, 1960); Tunkin, *Forty Years of Coexistence and International Law* 15 (A.S.D.I., 1958).

³⁶On the legal character of the UN resolution, see among others: I.A. Csabafi, *The UN General Assembly Resolution on Outer Space as Source of Space Law. Proceedings of the VIII Colloquium on the Law of Outer Space* 336 (1966); Y.O. Asamoah, *the Legal Significance of the Declarations of the General Assembly of the United Nations* (The Hague, 1966).

These statements can be fully justified on the basis of outer space law. According to the UN Declaration of 1963 and Article III of the Outer Space Treaty of 1967, international law, along with the United Nations Charter is applied in outer space. There are some doubts though as to the extent which international law is applied in outer space. The doctrine of international law uniformly holds that because of the variety of activities in outer space, international law cannot be applied mechanically.³⁷ I.A. Csabafi states, that Article III of the Outer Space Treaty of 1967 should be interpreted as:

1. Certain rules and principles of general international law directly (*ipso jure*) govern activities in space including celestial bodies;
2. Certain concepts of general international law are applicable to and indispensable for international space law;
3. Certain principles of general international law are applicable or analogous.³⁸

According to the quoted author the following principles of general international law are not applicable in outer space and on celestial bodies:

- those which as *lex specialis* govern one or some of the other environments only,
- those which have been replaced or modified by a rule of international space law.³⁹

In the doctrine of outer space law the view has been expressed that some bilateral or multilateral agreements could be applied in outer space after certain adaptations. I.A. Csabafi, as an example, states that the Chicago Convention of 1944 on International Civil Aviation, if modified, could be applied to the transportation of cargos, passengers and mail in outer space.⁴⁰ M. Lachs sites treaties on non-aggression⁴¹ and I. Brownlie the Fifth Hague Convention of 1907, the NATO Pact and the Warsaw Treaty.⁴²

In outer space law then, the violation of law which entails international responsibility is the violation of the rules of international law (taking into account the above mentioned considerations) as well as the specific rules of the outer space law contained in the Outer Space Treaty of 1967, the Convention of International Liability for Damage Caused by Space Objects of 1972, the Agreement on the Rescue of

³⁷See M. Lachs *op. cit. infra* n. 8, G.P. Zhukov, Problems of Space Law at the Present Time, *Proceedings of the V Colloquium on the Law of Outer Space* (1962); D. Krivickas, A. Ruis, Soviet Attitude Toward Space Law, *Soviet Space Program* 493-528 (1962-65).

³⁸I.A. Csabafi, The Concept of State Jurisdiction, *op. cit. supra* n. 23.

³⁹*Id.*

⁴⁰*Id.* at 40.

⁴¹M. Lachs, *op. cit. supra* n. 8 at 42.

⁴²I. Brownlie, The Maintenance of International Peace and Security in Outer Space, *British Yearbook of International Law* 25 (1964).

Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space of 1968,⁴³ and the Convention on the Registration of Space Objects,⁴⁴ as well as bilateral and multilateral agreements and the resolutions of the UN General Assembly related to outer space.

IV. Responsibility for Risk

Aside from responsibility arising as a result of wrongful acts, international law also considers responsibility for lawful acts. This kind of responsibility, the so-called responsibility for risk is connected with very dangerous activities. However, while in the doctrine of general international law responsibility resulting from lawful acts is still being questioned, in the doctrine of outer space law the existence of such responsibility is without question. It is even stated that "the scientific and technical progress will inevitably lead to the multiplication of cases of such responsibility."⁴⁵

J.M. Kolosov expresses similar views.⁴⁶ I.D. Theraulaz underlines the significance of the new concept of objective responsibility which appears in outer space law and which is being more and more broadly applied in international law.⁴⁷ Responsibility for risk appears in conventions concerning the use of nuclear energy, in agreements concerning the protection of the environment, and is postulated in reference to the exploitation of the sea bed and ocean floor beyond the limits of national jurisdiction.

In the case of responsibility for risk the most important factor is the determination of the term "damage" as an inevitable premise of the responsibility. In the doctrine there exists a great divergence of opinions on this matter.⁴⁸

According to the definition accepted in Article I, paragraph (a) of the Convention of 1972:

⁴³The Agreement on the Rescue of Astronauts, The Return of Astronauts, and The Return of Objects Launched into Outer Space. April 22, 1968 entered into force for The United States on December 3, 1968. [1968] 19 U.S.T. 7570, T.I.A.S. No. 6599, 672 U.N.T.S. 119.

⁴⁴Convention on Registration of Objects Launched into Outer Space. U.N.G.A. Res. 3235 (XXIX) (1974). For text of the Convention, see 3 J.Space L. 99 (1975).

⁴⁵See *Myesbdunarodnye Pravo* (International Law) 558 (Moscow, 1974).

⁴⁶J.M. Kolosov, *Orvietsviennost v miegdunarodnom pravye* (Responsibility in International Law) 51-52 (Moskwa, 1975).

⁴⁷J.D. Theraulaz, *Droit de l'espace et responsabilité* 217-220 (Lausanne, 1971).

⁴⁸This divergence of opinions is presented by A. Favre, *Cours de droit de gens professe à l'Université de Fribourg*, 213 (Vol. 2, 1967-68).

The term damage means loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations;

The problem of defining damage was the subject of several controversies during the development of the text of the 1972 Convention by the Legal Sub-Committee of COPUOS.⁴⁹ The accepted definition of damage is of a general nature. This approach seems reasonable because damage that can be caused by space objects varies and due to the rapid development of technology, is often unpredictable.⁵⁰ The formulation of the term "damage" accepted in the Convention of 1972 includes the concepts of *damnum emergens* as well as *lucrum cessans*.⁵¹ The inclusion of *lucrum cessans* in the term damage is in full concordance with the recent international judicature.⁵² Furthermore, the securing of effective defense of the rights of the injured, was a base of the Convention of 1972. Because nuclear sources of energy are being placed on board satellites, it is important to include in the notion of "damage caused by space objects" the so-called nuclear damages. This regulation, stated in the Convention of 1972, departs from the past tendency to separately regulate the liability for damages caused due to exploitation of nuclear energy.⁵³ This had been one of the reasons why the definition of damage was subject to severe controversy.⁵⁴

⁴⁹See G.P. Zhukov, *op. cit. supra* n. 1 at 121; J.D. Theraulaz, *op. cit. supra* n. 47 at 237; A.A. Rubanow, *Mezhdunarodnaja kosmichesko-prawowaja imuszczestwiennaja otwiestwiennost* (International Liability in Outer Space Law) 61 (Moskwa, 1977), M.G. Marcoff, *op. cit. supra* n. 19 at 549; J. Rajski, *op. cit. supra* n. 17 at 73.

⁵⁰The broad definition was postulated in the legal doctrine. See among others, J.D. Theraulaz, *op. cit. supra* n. 47 at 237.

⁵¹See J. Rajski, *op. cit. supra* n. 17 at 73. A different stand is held by J.D. Theraulaz, *Le projet de convention sur la responsabilité internationale pour les dommages causés par les objets spatiaux - resultat des travaux du sous-comité juridique des Nations-Unis, Revue Générale de l'Air et de l'Espace* 271 (No. 3, 1971); and M. G. Marcoff, *op. cit. supra* n. 19 at 550. O. Ogunbanwo, *International Law and Outer Space Activities* 153 (The Hague, 1975), points out the interpretational difficulties connected with the including in term "damage" the so-called indirect damage.

⁵²E. Jimenez de Arechaga, *International Responsibility in Manual of Public International Law*, ed. by M. Srensen 569-570 (London, 1968); D. O'Connell, *International Law*, Vol. II, 1114 (London, 1970); G. Schwarzenberger, *International Law as Applied by International Courts and Tribunals*, Vol. I, 671 (3rd ed. London, 1957) and judicature quoted in these works. See also: Ch. Rousseau, *Droit international public* 130 (3rd ed., Paris, 1965); and I. Seidl-Hohenveldern, *Völkerrecht* 263 (Köln-Bonn-München, 1965).

⁵³J.D. Theraulaz, *op. cit. supra* n. 47 at 238; O. Ogunbanwo, *op. cit. supra* n. 51 at 153; Bin Cheng, *Liability for Spacecraft, Current Legal Problems* 230 (London, 1970).

⁵⁴See U.N. Doc. A/AC.105/C.2/SR.48, SR 67, SR 92, SR 94; I. Diederiks-Verschoor, *The Convention on International Liability for Damage Caused by Space Objects*, Proc. of the XV Colloquium on the Law of Outer Space 96 (1972); M. Grzegorzczak, *Odpowiedzialność za szkody kosmiczne (Responsibility for Damages Caused by Space Activities)*, *Nowe Prawo (New Law)*, No. 11 at 1672 (1972). O. Deleau, *La convention sur la responsabilité internationale pour les dommages causés par les objets spatiaux* 17 *Ann. fran. droit int'l* 78 (1971).

Aside from the broad scope of the term "damage", the Convention of 1972 covers damages caused by space objects in all environments - on the Earth's surface, in the atmosphere and in outer space.⁵⁵ The limitations of the scope of the Convention are on one hand the application of it to damages caused only by space objects and on the other hand only to damages caused to States (their property or persons) or the property of their natural and juridical persons⁵⁶ and international organizations.

Absolute liability is the basic principle of the Convention. This term however is not precise because as the Convention provides in Article VI, paragraph 1;

... exoneration from absolute liability shall be granted to the extent that a launching State establishes that the damage has resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant State or of natural or juridical persons it represents.

This rigorous regime of liability, which has as its goal the assurance of an effective defense of the interests of States endangered by outer space activities, cannot be justified in the case of damage caused in outer space. The acceptance of the principle of fault as the basis of liability for damages caused in outer space was postulated in the doctrine⁵⁷ and is accepted in Article III of the Convention.⁵⁸ In the doctrine of outer space law it is disputable whether damage may be only the collision of space objects,⁵⁹ or may also be the interference of the activities of these objects; e.g. forcing the change of the flight

⁵⁵The acceptance of such a solution allowed the signing of the Convention without the necessity of the previous solving of the disputable question of the delimitation of the air space and outer space.

⁵⁶According to the article VII of the 1972 Convention:

The provisions of this Convention shall not apply to damage caused by a space object of a launching State to:

- a. Nationals of that launching State;
- b. Foreign nationals during such time as they are participating in the operation of that space object from the time of its launching or at any stage thereafter until its descent, or during such time as they are in the immediate vicinity of a planned launching or recovery area as the result of an invitation by that launching State.

⁵⁷See L. Goldie, Liability for Damage and the Progressive Development of International Law, 4 Int'l and Comp. L. Q. 1223 (1965). W. Jenks: Space law 288 (London, 1965); V. Kopal, Problems of Legal Responsibility for Space Activities. *Studie z mezinarodniho pravo* (Studies on International Law) 94 (No. 4, 1971).

⁵⁸According to the article III of the 1972 Convention:

In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.

⁵⁹See M. Grzegorzcyk, *op. cit. supra* n. 54 at 149; J.D. Theraulaz, *op. cit. supra* n. 47 at 253-254; O. Deleau, *op. cit. supra* n. 54 at 878.

route.⁶⁰ It seems that because of the wide scope of the term "damage" accepted in the Convention, the second of the two stands is more justified. Some authors feel that liability based on fault can also be applied in the case of damages caused on the Moon's surface (for example by harming a Moon station of another State) or on other celestial bodies. "In such a case the risk would be carried by the authority launching the space object and the authority leading the activities held on the Moon."⁶¹ Questions concerning responsibility for activities held on the Moon or other celestial bodies will probably be solved by the Treaty on the Moon, which is currently under consideration by COPUOS.⁶²

V. *Exoneration from Responsibility and the Effects of Responsibility*

The possibility of exoneration from liability for damages caused by space objects depends on the place where the damage was caused. As was already stated for damages caused by space objects on the Earth's surface or to an aircraft in flight, States bear absolute liability. According to Article VI, paragraph 1;

. . . . exoneration from absolute liability shall be granted to the extent that a launching State establishes that the damage has resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant State or of natural or juridical persons it represents.

The objectionable behavior of a State was determined in the Convention to be "gross negligence" and "an act or omission with intent to cause damage". There is no clarification of these terms in the Convention which leads to difficulties in their interpretation. To eliminate all doubts it is necessary to accept a criterion distinguishing "gross negligence" from "negligence". In civil law either rules of neat behavior or psychological elements concerning the behavior of the injured are accepted as the criteria.⁶³ In the context of international responsibility the first criterion seems more adequate. The adoption of this criterion requires the determination of the kind and measure of neat behavior. This problem was not solved in the Convention and up to now was more broadly considered in space law doctrine.

According to Articles III and IV of the 1972 Convention;

In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space

⁶⁰See J. Rajski, *op. cit. supra* n. 17 at 107.

⁶¹M. Gregorczyk, *op. cit. supra* n. 54 at 149.

⁶²For text of the Draft Treaty Relating to the Moon, see U.N. Docs. A/AC.105/101 (1972), A/AC.105/115 (1973), reprinted in 1 J. Space L. 170 (1973).

⁶³See J. Rajski, *op. cit. supra* n. 17 at 99.

object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.

In all cases of joint and several liability the burden of compensation for the damage shall be apportioned between the States in accordance with the extent to which they were at fault; if the extent of the fault of each of these States cannot be established, the burden of compensation shall be without prejudice to the right of the third state to seek the entire compensation due under this Convention from any or all of the launching States which are jointly and severally liable.

It should be stressed that the discussed principles of exoneration do not cover situations where the damage was caused by a wrongful act. According to Article VI, paragraph 2 of the Convention of 1972;

No exoneration whatever shall be granted in cases where the damage has resulted from activities conducted by a launching State which are not in conformity with international law including, in particular, the Charter of the United Nations and the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

An example of this may be the shooting down of a space object on which were placed weapons of mass destruction. The State which shot down the object and then was damaged deserves the right to compensation from the State which placed on board the space object the weapons of mass destruction.

According to the doctrine of space law, the result of liability is compensation. The type of damage caused determines the form of compensation. The compensation may have the form of *restitutio in integrum* or may be natural or financial. However, *restitutio in integrum* is the main form of compensating damages and application is not always possible. Therefore in practice considerably more financial compensation may take place. This form of compensation is also treated prioritatively in the 1972 Convention. According to Article XIII of the Convention "Unless the claimant State and the State from which compensation is due under this Convention agree on another form of compensation, the compensation shall be paid in the currency of the claimant State. . . ."

Financial compensation has several practical advantages since it allows a quick compensation of claims and allows the claimant to fix the damages caused to its natural or juridical persons. Some doubts may arise concerning the convertibility of various currencies. The Convention of 1972 solves this problem by stating in Article XIII ". . . the compensation shall be paid in the currency of the claimant State or, if that State so request, in the currency of the State from which compensation is due." During the last few years, in a number of conventions on liability for damages resulting from lawful acts, a principle of compensation limited to a certain ceiling has been introduced. This principle is not applied to damages caused by space objects.

Article XII of the Convention of 1972 provides:

The compensation which the launching State shall be liable to pay for damage under this Convention shall be determined in accordance with international law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will restore the person, natural or juridical, State or international organization on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred.

According to what was stated above on the notion "damage", the compensation should cover *lucrum cessans* as well as *damnum emergens* which the injured State could have obtained if the damage had not been caused.

VI. Final Remarks

The goal of the above considerations, due to their limited scope, was only to point out some of the problems connected with the responsibility of States for activities carried on in outer space.

First of all, attention is called to the fact that although the stipulation of Article VI of the Outer Space Treaty of 1967 that "States bear international responsibility for national activities in outer space . . ." seems to be absolutely clear, some doubts may arise in connection with the imputing of a given act or omission to a State.

It was also pointed out that joint responsibility of States is becoming of greater importance due to the development of international cooperation in outer space. This problem is becoming more complex because of the involvement of multinational corporations and non-governmental entities, aside from States and international organizations, in outer space activities. In case of various contributions in the joint undertaking, the signing of special agreements on the sequence of responsibility may be necessary.

The next problem discussed in the article is the problem of responsibility for wrongful acts connected with outer space activities. The reflections are focused on the notion of "violation of the law", which entails State responsibility. It should be stressed that due to the rapid development of outer space activities the problem of State responsibility for wrongful acts (for example contamination of outer space), deserves further detailed consideration.

The main aspects of responsibility based on risk were presented in the article in relation to the principles of the Convention of 1972. But since the Convention concerns only liability for damages caused by space objects, a problem arises whether responsibility for risk in outer space is limited only to damages caused by space objects. Will a State bear responsibility for damage not caused by the launching or attempted launching of a space object which is not a wrongful act? The interpretation of the documents of international law does not lead the author to a concrete conclusion.

In relation to the problem of exoneration, there is lacking a clear explanation of the term "gross negligence" as it is used in Article VI, paragraph 1 of the Convention of 1972. Therefore the necessity of working out criteria which would allow the differentiation of the terms "negligence" and "gross negligence" was stressed. This determination seems of great importance for the exoneration of the State which caused the damage.⁶⁴

⁶⁴The only case of limiting compensation is when the damage has resulted from gross negligence or intentional fault of claimant State or of natural or juridical persons it represents.