

GUIDELINES FOR THE REVIEW AND FORMULATION OF OUTER SPACE TREATIES

By
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Abstract

We approach the 21st century with 40 years of international cooperation in maintaining peaceful exploration and beneficial uses of outer space and avoiding space wars. Nations have complied with UN-formulated principles for guiding space activities. Space law has become a recognized branch of international law. New trends are developing, particularly in space commercialization which is outpacing governments in space operations. New relationships are likely to develop between governments and the private sector, national and international. Five space treaties are on the agenda of the Legal Subcommittee of the UN Committee on the Peaceful Uses of Outer Space for review. A list of subjects, compiled from many sources, indicates the nature of proposed revisions and extensions of treaty concepts. Suggestions are made on how to approach the task of review in preparing for the future of space law.

Introduction

At this time, there are two movements influencing appraisals of existing space law and proposals for formulating new international agreements: (1) the accumulation of recommendations for defining and extending concepts of space law which has already achieved the status of an agenda item on the UN COPUOS Legal Subcommittee as "review of the Status of the Five International Legal Instruments governing Outer Space"; and (2) the rapid increase in space commercialization which portends changes in the relations between governments and the private sector. These discernible trends are taking shape as we approach the 21st century, a dramatic event that encourages planning for the future. If we neglect to seize this propitious time for making decisions, global space commercialization could result in patterns of organization and

management of operations with minimal guidance and control by States, and not necessarily with a unifying core of basic principles such as we have observed in the past 40 years.

The purpose of this analysis is to identify the nature of the task that confronts those who are undertaking the review and formulation of future space treaties in terms of what has been accomplished, where we stand now, and factors to take into account in making decisions that will ensure the continuation of producing space benefits for mankind.

First, it is necessary to examine the policies and programs we have pursued since the Sputnik was orbited on October 4, 1957 to determine the reasons for our four-decade record of sustaining development of peaceful space benefits and, based on this appraisal, decide on policies to continue, amend, or abandon. Second, we must estimate future probabilities and be prepared to control them. This will require a discriminating analysis because, as we shall see, the task for future planning is more difficult now than it was in 1957 - 1958.

Motives and Forces for Peace Following Sputnik

Worldwide reactions to Sputnik's dramatic opening of outer space was amazement of this technological feat of rocketry, quickly followed by the dread of space wars.¹ Fear was the motive that launched the drive that galvanized three action groups to merge their powers to use rocketry for international security from war and preserve the new environment for beneficial exploration and uses. These influential groups were (1) the organization of the International Geophysical Year (IGY); (2) leading nation States; and (3) the United Nations.

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The International Geophysical Year²

I have chosen to describe the IGY first because both the Soviet Union and the United States conducted rocket research in connection with the program of this 67-nation organization that selected an 18-month period (July 1, 1957 - December 31, 1958) to conduct interdisciplinary global studies of the Earth, oceans, atmosphere and outer space. This organization of the international scientific community was an outstanding example of cooperation among nations, scientific disciplines, civilian and military entities, and dedication to peaceful research for the benefit of mankind. Scientists and engineers could explain to political decisionmakers the variety of benefits that could be expected from the exploration and uses of outer space, *i.e.*, communications, contributions to meteorology, remote sensing, navigation and expanding knowledge of the solar system and the Universe. Values that came to be included in space law, particularly benefits to mankind and future generations, can find their roots in guidelines of the international scientific community. This was a strong factor in balancing the scales against space wars and influencing nations to relinquish some sovereign rights to remove potential causes of international conflicts.

The first States that developed space technology, the USSR and the United States, did not consider separate national monopolies but moved toward international space cooperation, a policy indeed dictated by the factual characteristics of satellites that orbited the Earth in about 90 minutes and required a network of national tracking stations for receiving and sending information for uses on the Earth. They developed cooperative arrangements with other nations and, despite differences, managed to cooperate with each other within the United Nations on formulating space law by consensus.

United States National Space Program³

The United States moved quickly to separate civilian from military space programs by creating the National Aeronautics and Space Administration (NASA) on July 29, 1958, stating that "The Congress hereby declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind." The NASA Act

provides for cooperation with nations and groups of nations and in the peaceful application of the results. The U.S. began in 1958 to conclude bilateral agreements with other nations on such matters as satellites, experiments on NASA satellites, solar eclipse experiments, manned flight, deep space, optical, moonwatch, data acquisition, resident research associateships, international fellowships, the training of persons at NASA centers, etc. By 1965, 69 nations were involved, a number that expanded to over 100 in later years and included additional subjects.⁴ The U.S. Senate Committee on Aeronautical and Space Sciences required a weekly report from NASA on the progress of its international cooperation program. The motivating philosophy was that any nation could participate in space activities even if it started with only one scientist or engineer.

On January 31, 1958, the U.S. Representative to the United Nations requested the Secretary General to place on the General Assembly agenda the "Program for International Cooperation in the Field of Outer Space" proposing the establishment of an Ad hoc Committee on the Peaceful Uses of Outer Space to make studies and recommendations "to assure that outer space will be used solely for the benefit of all mankind."⁵ This initiative came to fruition on December 13, 1958 when the Ad hoc Committee was created.⁶

The United Nations

The permanent Committee on the Peaceful Uses of Outer Space was established on December 12, 1959⁷ when it was agreed that decisions would be made by consensus and without the need for voting. The United Nations became the focal point for international cooperation in the peaceful uses of outer space, the forum which succeeded in extending international law and the UN Charter into outer space, and negotiating space treaties that have become part of a specialized branch of international law.

The organization and practices of COPUOS will continue into the future. The necessity for adjusting legal principles to the unique characteristics of outer space is recognized by the role of the Scientific and Technical Subcommittee which can review some referred matters before consideration by the Legal Subcommittee. The fact that all Committee

members are also represented on both subcommittees, and that decisions are made by consensus, strengthens compliance with the results. Formulating new agreements and conventions by extending general principles into more specific documents when developments cause problems to ripen for solutions, and repeating basic provisions of the Outer Space Treaty in each case, are factors that ensure consistency in the development of space law. The policy of adopting declarations which may evolve into treaties is also a forward planning procedure. The United Nations Office for Outer Space Affairs has an outstanding record of professional assistance to delegates charged with the responsibility for formulating principles to maintain beneficial conditions for space management and operations.

COPUOS was charged by the General Assembly "to study the nature of legal problems which may arise from the exploration of outer space" and the initial decisions, as well as satellite operations, were pragmatic in adjusting legal considerations to technology. No delay in operations was caused by the lack of defining the difference between airspace and outer space, and activities proceeded on the basis that airspace extended to the height planes can fly and outer space began where space objects can go into orbit. No nation objected to the rapid satellite overflights which were perceived by States as not harmful, a situation that developed into common law.

No attempt was made to establish a world space organization which was deemed premature, and instead it was recognized as realistic to emphasize the existing roles of functional institutions: the International Telecommunication Union (ITU) and the World Meteorological Organization (WMO).⁸ Attention was directed to outer space as an area within which functions were to be performed and States were considered responsible for supervision. There was general agreement and complete acceptance of the fact that space activities require regulation, considering that adjustments must be made to outer space as a dangerous expensive environment where it is necessary to keep track of orbiting objects and such factors as the allocation of radio frequencies for communications. It was so essential to engineers to monitor satellites that

the U.S. and Soviet Union began registration with the United Nations even before the Registration Agreement of 1975.

Throughout the period of developing space law the practice has been to make adjustments to the laws of physics and other technical requirements for successful operations. Planes could legally be shot down in sovereign airspace and aviators imprisoned, but space law accorded astronauts every assistance in case of accident, and provided that damaged space objects must be returned to the country of origin.

Ninety-three nations have adopted the basic guidelines in the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (October 10, 1967).⁹ These principles are familiar to the legal community but a reminder of the main points is necessary for other groups and individuals evaluating the effectiveness of our present system. Outer space is considered "the province of all mankind" with exploration and use carried out for the benefit and interests of all countries; no claims of sovereignty are permitted "by means of use or occupation or by any other means"; international law and the UN Charter are extended to outer space; the Moon and other celestial bodies are to be used "exclusively for peaceful purposes"; military bases are prohibited but military personnel may engage in scientific research on the Moon and other celestial bodies; astronauts become "envoys of all mankind"; States Parties are internationally responsible for national space activities, including authorization and supervision of governmental and nongovernmental entities; international liability for damage is required for each State that launches, procures launchings or uses its territory for launchings of a space object and its component parts that damage another State Party (its natural and juridical persons) located on the Earth, air, in outer space or on the Moon and other celestial bodies; States retain jurisdiction and control over their registered launched objects; international cooperation is required; the UN Secretary General is to be informed of space activities; a basis of reciprocity between States and consultations must govern projected visits to space stations on the Moon and other celestial bodies.

General principles were expanded specifically in the next four treaties: Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (April 22, 1968)¹⁰; Convention on International Liability for Damage Caused by Space Objects (March 29, 1972);¹¹ Convention on Registration of Objects Launched into Outer Space (January 14, 1975);¹² and Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (July 11, 1984).¹³ Principles have been adopted for International Direct Television Broadcasting, Remote Sensing, and Nuclear Power Sources in Outer Space.¹⁴

The Moon Agreement

Review of the Moon Agreement is a special case which requires a different approach from that of the previous four treaties because in almost 20 years it has been ratified by only 9 nations (and no spacefaring State) and is obviously unacceptable to the international community. Allowing more time will not achieve the kind of preponderant support required for compliance with space law, and leaving it irresolutely pending would amount to neglecting the analysis of problems it was intended to solve. We have had the experience of changing the perception of a problem in the case of direct broadcasting satellites and this is what is required for future planning for the uses of resources in outer space. The Moon Agreement was drafted at a time when the Moon was first briefly explored and the problem was perceived as preventing exploitation of natural resources by providing criteria for a future institution based on a specific view of the common heritage of mankind (CHM). THE CHM concept is subject to so many different interpretations that it is difficult to select a meaning that can achieve consensus. The value of sharing benefits among nations is involved and since the Moon Agreement was drafted the United Nations has been able to define practical guidelines more closely in the General Assembly Resolution of December 13, 1996 which provides that --

States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. Contractual terms in such cooperative ventures should be fair and reasonable

and they should be in full compliance with the legitimate rights and interests of the parties concerned, as, for example, with intellectual property rights.

The uses of outer space resources require clarification not only for the Moon but for all celestial bodies, including asteroids, and outer space. A review could probably make progress if the Moon were not lifted out of context, so to speak, and treated separately, while all other celestial bodies and outer space areas (such as orbital paths) are ignored as far as management and operation of uses are concerned. Comparisons with Antarctica, which adopted a system covering both scientific research and commercialization, are lacking.

Nature of Proposals for Legal Revisions

Considering the success of international space cooperation in maintaining peace and dependable conditions in outer space for 40 years, anyone might wonder why there is criticism of legal provisions and proposals for revision. The causes may be the expansion of space technology into fields which created new problems, omission of some subjects, and a tendency to spin general principles into specific terminology. The following list reveals the scope of suggestions for revising the space treaties: the list is not inclusive or arranged in priority order, and some of the subjects are interrelated.

- ◆ Definitions of where airspace ends and outer space begins; limits of sovereignty.
- ◆ Role of the International Telecommunication Union (ITU) in allocating the radio spectrum and geostationary orbit.
- ◆ Provisions based on functions of spacecraft and/or area in which they operate.
- ◆ Sovereignty and remote sensing.
- ◆ Space exploration and uses for the benefit of all countries, including sharing.

- ◆ Concerns regarding developing countries
- ◆ Relation of “province of all mankind” to “common heritage of mankind.”
- ◆ Relation of national governments to the private sector.
- ◆ Effects of increase in commercialization, national and international.
- ◆ Selection of activities for regulation and responsible entities; Enforcement and deregulation.
- ◆ Responsibility for space debris.
- ◆ Insurance and liability for damage.
- ◆ Settlement of disputes.
- ◆ Influence of regional agreements.
- ◆ Registration of space objects; Selection of additional information
- ◆ Integrating national space laws with international space law.
- ◆ Protection of intellectual property.
- ◆ Extension of arms control provisions.
- ◆ Protection of Space and Earth environments from contamination.
- ◆ Creation of new international institutions, including a world space agency.
- ◆ Terminology: meaning of terms such as space object, appropriate state, peaceful, benefits, launching authority, term for outer space, etc.

Opinions and recommendations on these subjects have been expressed in meetings of the UN COPUOS, legislatures of States, conferences of space organizations such as the European Space

Agency, American Institute of Aeronautics and Astronautics, International Astronautical Federation, International Academy of Astronautics, International Institute of Space Law, leading law journals, i.e., “Journal of Space Law”. Notable books are “Perspectives on International Law” edited by Nandasiri Jasentuliyana, and “Outlook on Space Law Over the Next 30 Years” edited by Gabriel Lafferranderie and Daphne Crowther.¹⁵

Difficulties for Future Space Law Planning

As we have observed in casting back to the beginning of the space age when we had a clean slate, at that time the essential political, economic, scientific technological and legal elements merged quickly to shape space policies, organizations and implementing programs. This degree of unity no longer exists and it will be more difficult to get agreement on global space systems and the integration of national entities. The difficulties must be identified so that they can be overcome.

Peace is now taken for granted and there is no longer the spur of fear from orbiting weapons and other methods of disrupting satellite launchings and orbital flights. There is a disconnect between space scientists/engineers, politicians, and lawyers, partly because the objective of an International Geophysical Year no longer links the scientific community to national and international decisionmakers, and partly because many space lawyers have been immersed in the meaning of words adapted to earthly problems and with little regard for new situations created by adapting technology to outer space. Now we must be concerned not only with the relationship between law and science/technology, but also with international economic trends and national political factors. Review of treaties is not the kind of subject that is considered first by the Scientific and Technical Subcommittee and then transferred to the Legal Subcommittee; instead, it would seem that the Legal Subcommittee would act first in seeking advice from scientists and engineers, especially about any segment that requires regulation.

Originally, there was agreement, practically without question, that space activities required regulation, a function performed by States. Now we live in a period where there is a

psychological political atmosphere favoring deregulation, and commercial interests that hold this point of view can be expected to take advantage of the situation. The scope of space activities has broadened to a variety of uses, a global movement that can be expected to continue, and it will be difficult to define what is embodied in the concept of space law as a special branch of international law, a problem that requires a realistic conception of the difference between general and specific legal provisions. General provisions should be sufficiently precise so they are not subject to many interpretations, but broad enough to serve as an umbrella under which many different functions can exist.

Satellite-oriented information is used to solve or mitigate problems on the Earth and it is only natural that Earth-oriented legal problems may require solutions from other sources than space law. This will become evident as specific cases accumulate and form patterns. There are so many calls for revision and amendment of existing international space law that efforts for improvement can scatter in different directions and it will be difficult to maintain unity of purpose. There is the danger of new parts not adding up to the whole, and we must be careful not to cripple the system we have before we can be sure of improvement.

Decisions will be required on the order in which recommended changes are placed on the agenda: is this to be chronological order of treaty dates of ratification, or by selecting similar provisions that occur in more than one treaty?

Dealing with the extension of arms control in outer space and on celestial bodies is complicated by the institutional division in the United Nations between disarmament as a whole and the part that occurs in COPUOS, so ways and means must be found for coordination.

Even after agreement is reached on the wording of revisions, there is the problem of getting all States Parties to ratify the new texts. If the 1967 Outer Space Treaty is considered first for review, there is the danger of losing some of the values we now have. Also, even if consensus on a revision is attained, there is the possibility that advances in space science and technology can render it obsolete before long, so attention must

be given to the flexibility of general provisions for covering different specific situations. It becomes obvious when reading some of the suggested revisions that there is a weak link, sometimes nonexistent, between legal guidelines and technical space operations.

There are, however, some positive features which favor space law planning at this time. The growing preponderance of the private sector in global space activities will force some changes in relations between industry and States Parties to the treaties and this movement requires direction and control. There is the responsibility of the UN COPUOS Legal Subcommittee to undertake the task of reviewing the treaties. Identifying conditions essential for the management and operation of space programs could assist in the formulation of practical principles for maintaining dependable orbits and communications facilities. Two kinds of regulation are available for productive space activities: those that are practically self-enforcing because they provide for compliance with the unchangeable laws of physics and necessary protective conditions; and those that require an organization with personnel to manage operations. The Legal Subcommittee can formulate international standards and recommended practices that are highly self-enforcing and regulatory because they ensure safe efficient operations needed by all participants. Models to study are the International Telecommunication Union and the International Civil Aviation Organization for management procedures.

Comments

My review of many studies on the five UN-formulated space treaties leads to the following additional comments.

We have preempted outer space for beneficial purposes to such an extent that peace is taken for granted and little or no attention is being given to arms control. Among other types of potential disruptive forces, space debris is the greatest concern for scientists, engineers, lawyers and commercial entities, and can be expected to continue to receive priority attention. It would be prudent to codify all the elements necessary to preserve outer space as a dependable orderly environment, including measures for arms control.

There is a lack of knowledge among some lawyers about the unique characteristics of the outer space environment and the ways in which it is radically different from the Earth, air and oceans. This can result in proposals that are based on assumptions projected from Earth-oriented habits that do not adequately cover unusual aspects created by space technology. Outer space as an area has positive influences which we can use, such as radio waves for communications, and negative effects we must guard against, notably lethal radiation. Scientists term outer space a vacuum, but this does not mean it is a void, as in nothingness. There is a high but not complete vacuum so space vehicles operate in microgravity, a condition that enables valuable research that cannot be done on Earth. The Earth has a magnetosphere, ionosphere and upper atmosphere which thins at higher altitudes. The vacuum is measured by the unit Torr in honor of the inventor of the barometer, Evangelista Torricelli (1643). Attention must be paid to influences from the solar wind of electrons, protons and subatomic particles, bursts of energy from solar flares, cosmic rays. There are the Van Allen radiation belts, gases, plasmas and other phenomena which are subjects of constant research. Astronauts must be protected from radiation and satellites constructed to perform specific functions in certain orbits and avoid destructive conditions. Orbital mechanics is an exact discipline, permitting the placement of satellites in precise orbits for their designed functions. All the principles in UN space treaties apply to the area of outer space as well as celestial bodies. A variety of legal problems can arise, and legal planning cannot proceed on the basis that there is nothing in outer space in addition to the celestial bodies. We need to anticipate, for example, legal problems connected with the construction and management of a solar power system.¹⁶

We should consider whether to carry over to the next century a discussion of the meaning of "peaceful". The policy decision at the beginning of the space age was to ensure peace and not war, the same objective as that of the United Nations, and well understood when the word "Peaceful" was included in the name of the Committee on the Peaceful Uses of Outer Space. The basis for argument was created when "peaceful" was opposed to the word "military"

which was assumed to be entirely destructive. But "military" is subject to different meanings, i.e., a force engaged in war, a government defense department, a deterrent to war and other violent actions, military personnel, military equipment, etc. In this author's opinion the requirements for space law cannot be met by defining "peaceful" as "non-military", especially when no definition is offered for "military"; nor is it adequate to use "non-aggressive" because apparently its meaning is not obvious for space law purposes. It should be noted that the Soviet Union's space program has been operated by its military department according to international cooperation for peaceful purposes, and continues to do so. The U.S. Department of Defense, as well as such establishments in other countries, has a deterrent-to-war function to keep the peace, engages in humanitarian disaster relief, and more recently put its Global Positioning System, with its many civilian applications, at the disposal of all countries without charge. There is no use in posing an argument in imprecise terms that can be continued indefinitely without fruitful results, especially considering the remarkable beneficial nondestructive record of space activities since 1957. Insofar as space law purposes are concerned, future provisions controlling selected military matters could be precisely defined as they are in parts of Article IV of the 1967 Outer Space Treaty. We must keep in mind that guarding against destructive forces involves more than military matters.

Defining the difference between sovereign airspace and nonsovereign outer space has been a continuing concern for lawyers seeking a definite basis for legal situations involving airplanes and satellites. COPUOS sought, but found it impossible to obtain, a scientific basis for demarcation. Meanwhile, space activities flourished on the basis that airspace extends to the height planes can fly while outer space begins where satellites can go into orbit. Proposals for an artificial line have not found acceptance, probably because there have been no problems since the space age began that required for their solution a line between airspace and outer space. One part of the debate has been on whether matters of management, control, and settlement of disputes, could be handled according to (1) area or functional criteria, or

(2) primarily by area with functions considered secondarily. This line of thought appears to overlook the fact that when the space age started two types of institution developed: organizations concerned only with space, such as NASA and INTELSAT; and organizations with functions that are space-related, such as the ITU with communications and the WMO with the weather, both functions also organized nationally throughout the world. The debate has often been abstract about area/functions without mention of all the separate functions that are managed according to their own statutes.

The probability of spaceplanes that can fly in both airspace and outer space will add a new dimension to this problem, and it will be necessary to find out what functions such an object performs and how it is to be regulated. Another point to consider is that the Global Positioning System can locate an object precisely in a short time, and a monitoring system could have information about its function. We shall need a new definition of the entire problem: the relation of this new technology to sovereignty; the effects on the International Civil Aviation Organization, and how spaceplanes fit into regulation for international security.

Outer space benefits "taking into particular account the needs of developing countries" is on the agenda of the Legal Subcommittee. Space activities have developed a broad spectrum of benefits, general and specific. Examples of general benefits for all countries are uses of remote sensing for information that will protect the environments of Earth, oceans, the atmosphere and outer space; weather predictions that save lives and property in cases of disaster; and research in microgravity that results in health improvement. Such general benefits are usually taken for granted in spite of their worldwide applications. There are specific benefits from bilateral and multilateral agreements for cooperative space projects on communications, meteorology, health, education, etc. There is a long list of spinoff benefits from space technology with commercial applications. Benefits to mankind are broadly distributed and the term cannot be confined to space technology. The scope and variety of benefits, and opportunities for strengthening the capabilities of States for solving problems, is evident in the program planned for the Third

United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) to be held in Vienna, Austria from July 19 - 30, 1999. One of the primary objectives of UNISPACE is "to strengthen the capabilities of the Member States, in particular developing countries, to use the applications of space research for economic and cultural development."

Conclusions

Regulation of space activities is the priority problem now and for the future. Uncontrolled deregulation of launchings, orbits and functions must not be allowed to develop and imperil the orderly dependable system that has been built up by international cooperation during the past 40 years. However, no participants want more regulation than is required for conducting beneficial purposes. Existing practices have been guided by States according to values legally enshrined in treaties whose compliance is based on factual requirements of space science and technology for operations in outer space. At the beginning of the space age the necessity for regulation was evident and is reflected in the 1967 Outer Space Treaty, notably Article VI, which provides for the relationship between States and their nongovernmental entities as well as international organizations. Article VI is a general principle which provides that --

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 States Parties to the Treaty participating in such organization.

It should be noted that in accordance with the U.S. Constitution, Article VI of the 1967 Outer Space Treaty has become part of the "supreme law of the land." The growth of the private sector in space operations raises the question of how to interpret Article VI in specific ways that assure smooth relations between the government and private entities. It is obvious that the role of government will be paramount in certain areas, i.e., the conduct of foreign relations, especially in international agreements required for joint projects with other nations and for ground segments throughout the world; matters relating to national defense; government licenses for use of launching facilities, etc. Also, it would be unacceptable for States to be absolutely liable for damages resulting from private ventures, an area which requires attention also to provisions in the Convention on International Liability for Damage Caused by Space Objects. Those in charge of nongovernmental entities, both national and international, need to know what to expect from supervision by States.

Leadership is essential for analyzing all aspects of this problem and proposed recommendations for solution. This task can be undertaken by the United Nations Committee on the Peaceful Uses of Outer Space' Legal Subcommittee in combination with the Scientific and Technical Subcommittee. In addition, national governments that are primarily involved with private sector and international space organizations should expedite proposals for specific interpretations of existing space law, especially if needed before any new legal provisions could become effective.

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³ International Cooperation and Organization for Outer Space. U.S. Senate Committee on Aeronautical and Space Sciences. Senate document No. 56. 89 Congress, 1st session. August 12, 1965. 580 p.

⁴ Ibid., pp. 11-34. NASA 26 Years of International Programs. As of January 1, 1984. Washington, D.C. 135 p.

⁵ UN Doc. A3902. Sept. 2, 1958.

⁶ UN Res. 1348 (XIII) Dec. 13, 1958.

⁷ UN Res. 1472 (XIV) Dec. 12, 1959.

⁸ UN Res. 1721 (XVI) Dec. 20, 1961.

⁹ 18 UST 2410; TIAS 6347; 810 UNTS 205.

¹⁰ 19 UST 7570; TIAS 6599; 672 UNTS 119.

¹¹ 24 UST 2389; TIAS 7762; 961 UNTS 187.

¹² 28 UST 695; TIAS 8480; 1023 UNTS 15.

¹³ 18 ILM 1434; 1363 UNTS 3.

¹⁴ United Nations Treaties and Principles on Outer Space Office for Outer Space Affairs, Vienna, Austria. New York, United Nations. A/AC. 105/572/Rev 1 1996. 73 p.

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