SPACE LAW: INTERNATIONAL LIABILITY FOR DAMAGES
CAUSED BY SPACE OBJECTS

THE 1972 LIABILITY FOR DAMAGES CONVENTION

by

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To my father, son, and wife.
There is one thing stronger than all the armies in the world -- an idea whose time has come.

-- Victor Hugo
I. INTRODUCTION

The most insistent question in the law of space today must be how the peoples of the world can best clarify the necessary general community policies, for resolution of the many important problems arising from their interactions in space, in a way which will appropriately reflect their genuine, common interests.1

As in the great age of discovery and exploration, when man, confident of his intuition and skill, dared to confront the dangers of the seas, man has once again started to search for new frontiers of knowledge and progress. He has now penetrated deeply into the solar system and the universe, and has asserted his place in outer space and, in the process, proven his mastery of the most sophisticated machines and scientific instruments.2

A few years earlier, the study of an entirely new branch of international law, that of the law of outer space, might have been regarded as fantastic or Utopian; and yet space science and technology has made such surprising progress that it has been deemed essential for international cooperation for the law to keep pace with those technological advances. Such advances constantly create new legal problems that require solutions. Professor Lachs, speaking on the occasion of his appointment as chairman of the Legal Sub-Committee of the United Nations Committee on the Peaceful Uses of Outer Space3 (COPUOS), declared:
Law had always followed man in the relationships among individuals and nations and in any new adventures undertaken on land, water, or in the air. Every product of man's genius and labor has been followed by law, and the corpus juris gentium has been the result. 4

As a matter of fact, a writer in the Economist of March 1966 described space lawyers as:

. . . [The] current lunatic fringe of the profession. While they debate, the space litter-louts continue to clutter up the void around us with dead dogs and cats, old rockets, spent boosters, worn out satellites, some of them still transmitting gibberish, bomb detritus, and scattered needles. It is enough to make an angel weep. 5

Professor Goedhuis answered the writer of the Economist article declaring that:

[T]he angels will now be drying their tears and will be smiling realizing that far from being a dismal failure, international law has on the contrary made a very promising start in the governing of human space activities. . . . If the writer of the Economist article had had an opportunity to study the stream of legal publications on space development, he would have been struck not only by the really remarkable speed of the revolutionary technological developments but also by the considerable influence they have exerted on the political space scene. 6

Lawyers know better than to fall into the error of those who find in the absence of formal treaties and conventions an absence of law applicable to outer space. To those who hold this view, the response must be that international law consists not only of the positive enactments found in international conventions, but also embraces those patterns of international conduct that are so
regularly followed that they give rise to a firm expectation of future behavior by the members of the community of nations. Viewed from this perspective, space law has been steadily evolving from the time of the first satellite launching.

It is this writer's opinion that the imagined legal vacuum is well filled by international experience and custom and by general principles of internationally accepted law. There are, as I hope to demonstrate, since the launching of the first man-made satellite and before, guidelines and limits, firmly based on international law, standardizing what nations may and may not do between and among themselves in the domain of outer space.

As will be examined in the subsequent chapters, there are fully established principles with respect to outer space, even in the absence of international agreements dealing specifically with the legal aspects of space activities. The first of these principles is that no participant is to be accorded a continuing, comprehensive, exclusive competence arbitrarily to exclude other participants from access to and enjoyment of the shared resources of outer space by all mankind. As a result, each State is authorized freely to enjoy access to space for lawful purposes and is accorded competence unilaterally to decide whether or not to seek such access.

The more important ancillary principles of jurisdiction supporting the principle of freedom of access are: (1) the
principle that each State has competence to apply its authority to spacecraft on which it has conferred nationality;
(2) no State may apply its authority to the craft of other States, save for violations of inclusive prescription;
(3) every State has the competence to protect the craft bearing its nationality from unlawful coercion by other States.

Moreover, (4) the principle of minimum order, as embodied in the Charter of the United Nations and other generally accepted prescriptions, is already extended -- without necessity for a special, more explicit agreement -- to all of man's interactions wherever they occur.

Fifth is the principle that the sharable resources of space, like those of the earth, are to be held free of exclusive appropriation and open to enjoyment by all on the basis of equality of access.

Consequently, "... the critics who so clamantly bemoan that there is as yet [1963] no law of space are needlessly, and dangerously, destructive of existing achievement."7

Further, one of the main goals of this thesis is to consider whether the unanimously adopted United Nations General Assembly resolutions on outer space, namely Resolutions 1721 (XVI) and 1962 (XVIII), have a status that ranks them among the primary sources of space law; and, if so, to determine their legal nature.

A brief review of the authority of the General
Assembly according to the provisions of the Charter of the United Nations demonstrates that this body has no legislative power comparable to that of the municipal legislatures of States. However, this does not mean that the General Assembly cannot pass resolutions that bind Member States or resolutions that contribute to the creation and development of the principles and rules of international law. The broad purposes of the United Nations and the powers conferred on the General Assembly by the Charter indicate that the General Assembly can make certain decisions that bind Member States and certain recommendations or declarations that contribute to the creation and development of principles and rules of international law.

Among various theses attributing legal significance to resolutions of the General Assembly, the thesis that the resolutions contribute to the development of customary international law is perhaps the most cogent and important. The advocates of this thesis, represented by international law scholars and judges of the International Court of Justice, are of the opinion that the activities of States in the General Assembly of the United Nations facilitate the process of the creation of customary international law. Professor Mallison, in explaining the role of the United Nations as international law maker, observed that:

The fact that the General Assembly, which is representative of the community of States, is a political body like a national legislature does not diminish its role as a prescriber of
international law. The widespread use and reliance upon resolutions of the General Assembly . . . which are intended to have a law making effect provide convincing indication that the matters relied upon constitute, at the least, important evidence of the existence of particular rules of principles of international law.9

Moreover, both Judge Tanaka and Professor Higgins are of the opinion that the General Assembly provides a forum of the expression of the will of international community and a very clear, very precise focal point for practice by the Member States; therefore, its resolutions may be used as evidence of customary international law.10

International law is based on the relationship between technological development and the present status of the law. With the advance of technology comes a concomitant expansion and thus a change in international law. This proposition is supported by the following analysis:

In man's development, the acquisition of scientific knowledge comes first. This casts new light upon the consent which he has hitherto given to established law. Next comes a modification of the law to accord with his new appreciation of the reality or necessity for consent -- producing new consents or new laws by which he wishes to be bound. This interaction of science upon the law has continued throughout the centuries.11

The enormous advance of modern science and technology that has occurred over the last decades of our age made possible the development of space exploration that has opened great possibilities for the use of outer space for the benefit of mankind. This new sphere of human
activity, accompanied by courage and ingenuity of men, involves, however, a considerable, potentially very dangerous risk of damage that endangers all States and people. This danger will increase parallel with the growing number of States and international organizations taking part in space exploration and use, and with the intensification of their activities, despite the precautionary measures to be taken by them as a collective.

Thus, the urgent need to elaborate effective international rules and procedures concerning liability for damage caused in connection with space activities and to ensure, in particular, the prompt payment under the terms of an international convention of a full and equitable measure of compensation to victims of such damages, was regarded as being of immediate concern to the world community.

Establishing an appropriate system of legal rules and procedures concerning liability for damage caused by the launching of space objects into outer space has required a new approach, differing from traditional concepts of liability for damage elaborated in domestic systems of law of particular States, as well as from international law pertaining to liability issues. Such law, applicable to outer space, has to be based on a just and equitable balance between the interests of all members of the international community of States and has to protect the legitimate interests of victims of space activities in which they have taken no part, while also taking into account the
common interests of all mankind in furthering the exploration and use of outer space for peaceful purposes.

A fundamental precept of any legal system is that a person who causes personal injury, death, or property damage should be required to provide compensation to the victim. Throughout the development of the law applicable to activities in outer space, no one has seriously challenged the need to establish criteria for determining liability and procedures for assuring compensation in the event of damage caused by the launching of a space object. Through their domestic laws, States are able to fashion appropriate rules for compensating their nationals who are affected by space accidents. However, the movement of objects in outer space is not constrained by national boundaries, and the return of such objects to a designated location cannot always be assured.

The international consequences of outer space activity are readily apparent. Professor Dembling observed that:

In view of the possibility that residents of any state might suffer personal injury or property damage caused by the space activities of another state, the development of a broad multinational consensus on criteria and procedures governing international liability is thus required.

As early as 1932, before the launching of the Soviet Sputnik in 1957, a European scholar, Vladimir Mandl, proposed liability without limitation with respect to all personal injury and property damage caused by space objects. Moreover, in 1956, speaking at the 50th annual
meeting of the American Society of International Law, Professor Quincy Wright asked:

If a satellite is sent up, goes around the earth several times, then comes down, and does not burn up in the atmosphere but lands in the middle of Westminster Abbey, and if it was known to have been launched from the United States, is the United States bound to pay the damage? . . . Is there liability without fault? 5

In fact, very little was done or even written on the subject of liability for space activities until the Soviet Union launched the first artificial satellite, Sputnik I, on October 14, 1957. 16 There was no question that this event caught international law scholars by surprise. Further, it became obvious to the whole world that "heavier pieces of space vehicles or spacecraft launched into outer space would not be entirely consumed in the earth's atmosphere upon return." 17 Professor Andrew Haley accurately stated in 1958 the dilemma the world was in:

Never before in the history of mankind has the necessity arisen so quickly to state legal parameters in connection with a vast new area of social change. The legal problems presented by the advent of space flight have been climactic, and technology has far outstripped the formulation of legal rules. The gap has widened to the point that the peace of the world may be threatened. . . . Space law still completely awaits development. 18

Following the launching of Sputnik I, many efforts were made in the field of international law to evaluate existing rules of customary international law, general principles of laws of nations, and conventions to determine whether
problems associated with outer space, such as liability for damage caused by space objects, could be adequately handled, or whether international agreements were needed. The vast majority of the studies undertaken and literature written were in agreement that there was a lack of adequate international laws to assess properly international liability for damage or injury caused by space activities.

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.

On September 26, 1958, the second stage of a Vanguard rocket reentered the earth's atmosphere and reportedly burned up over Central Africa. In December of that same year, Pioneer III reentered the earth's atmosphere over French Equatorial Africa. Then in 1960 fragments from United States satellites reentered earth's atmosphere and hit the ground, with fragments landing in the Orienti Province in Cuba in December 1960 and fragments landing on farmland in Transvaal, South Africa, on September 25, 1960. No claims have ever been submitted in relation to these incidents.
The United States was not the only country to have its space objects survive reentry into earth's atmosphere. In 1962, a piece of the Soviet Union's satellite Sputnik IV crashed in Manitowoc, Wisconsin. In 1965, fragments from another Soviet satellite crashed in Seville, Spain. In 1969 fragments from space objects fell on a Japanese freighter off Dekastri Port in the Soviet Union and on a German ship while it was sailing in the Atlantic Ocean.

On January 24, 1978, the Soviet Union satellite Cosmos 954 reentered the earth's atmosphere north of Queen Charlotte Islands on Canada's Pacific Coast. After an approximately three-minute burn-up period during reentry, debris from the satellite was deposited in the sparsely populated portion of Canada's Northwest Territories of Alberta and Saskatchewan.

In 1979, the United States satellite Skylab disintegrated over Australia, and portions of the satellite hit Australia. There were over thirty claims filed by injured individuals from all over the world; however, not one claim has been filed by Australia or any other country.

Therefore, the community of nations turned to the United Nations as the forum in which space law would be developed. The United Nations regarded the question of liability for damage caused by spacecraft as being of great concern to the world community. Although some of the legal problems arising from activities in outer space could be solved by analogies to air, maritime and
nuclear law, the United Nations realized that problems of space law have to be dealt with from a different point of view due to the unique nature of outer space activities.

On December 13, 1958, the General Assembly of the United Nations, via Resolution 1348 (XIII), created an Ad Hoc Committee on the Peaceful Uses of Outer Space. The Committee was charged, *inter alia*, with preparing a report concerning "the nature of legal problems which may arise in carrying out of programs to explore outer space." At its first session, the Ad Hoc Committee reported that the issue of "liability for injury or damage caused by space vehicles" would arise in the exploration, use, and exploitation of the space environment. The issue of liability was considered a priority issue, and the following problems were identified:

First of all there is the question of the type of interest protected; that is, the kind of injury for which recovery may be had.

Second, there is the question of the type of conduct giving rise to liability: should liability be without regard to fault for some or all activities, or should it be based upon fault?

Third, should a different principle govern, depending on whether the place of injury is on the surface of the earth, in the air space or in outer space?

Fourth, should liability of the launching State be unlimited in amount?

Finally, where more than one State participates in a particular activity, is the liability joint or several?
By Resolution 1472 (XIV) of the General Assembly on December 12, 1959, the Ad Hoc Committee was converted into a permanent body, known as the Committee on Peaceful Uses of Outer Space (COPUOS). The COPUOS was asked, among other things, to "study the nature of legal problems which may arise from the exploration of outer space." However, concrete proposals were not forthcoming until 1963, when the General Assembly adopted Resolution 1962 (XVIII), entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space." The fifth principle of the resolution held that States bear international responsibility for national activities in outer space. The eighth principle reads as follows:

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.

By this Resolution the General Assembly requested the COPUOS "to arrange for the prompt preparation of international agreement on liability for damage caused by objects launched into outer space. . . ."

Constant attention was given by COPUOS to the formulation of an agreement on liability for damage. The United Nations Resolutions from 1965 to 1967 continued to stress the desperate need to formulate an agreement on liability for outer space activities.
On December 9, 1966, the United Nations General Assembly approved the text of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies ("Space Treaty"). Article VII of the Space Treaty states that:

Each State Party to the Treaty that launches or 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 on the earth, in air space or in outer space, including the Moon and other celestial bodies.

It was agreed by the members of COPUOS that the purpose of Article VII was to state a general principle of liability, knowing that further details would be addressed in a specific liability agreement. However, it was agreed that to ensure that the general principle was not weakened and would stand on its own, no reference was made to any future agreement to be negotiated pertaining to liability.

Subsequent to the passage of the Space Treaty, COPUOS continued to work on a liability agreement. There was still an air of urgency in the United Nations Resolutions to complete a separate liability agreement as soon as possible. In November 1967, the United Nations urged COPUOS "to continue with a sense of urgency its work on the liability agreement." And one month later another
resolution was passed calling on COPUOS "to complete urgently the preparation of the draft agreement on liability for damage caused by the launching of objects into outer space and, in any event, not later than the beginning of the twenty-third session of the General Assembly and to submit it to the Assembly at that session." Accordingly, the legal Sub-Committee of COPUOS tried hard; its seventh session was almost exclusively devoted to the question of liability, and draft conventions were presented by many countries.

Although agreement on a number of questions was reached, the following important issues remained unsolved:

1. Whether the Convention should exclude nuclear damage.
2. Whether there should be any limitation of liability in amount.
3. Whether the Convention should provide compulsory third-party settlement of disputes.
4. The relationship between international organizations and the Convention.
5. The law applicable to measure of damages.
6. Unresolved aspects of joint liability.

The General Assembly could do little more than accept the situation. Its Resolution 2453B (XXIII) of December 20, 1968, contained a request similar to the previous resolution.

On the initiative of the Indian delegation, informal discussions took place at New Delhi in March 1969. The
results of those informal consultations between the sponsors of the various proposals were meager: "... the areas of disagreement were now smaller," but none of the five main important issues (the above-mentioned, except for the question of joint liability) was resolved.

These so-called "New Delhi points" were further discussed during the eighth session of the Legal Subcommittee, which was held from June 9 to July 4, 1969. It was agreed among the delegates that the New Delhi points should be settled as a "package deal."

The main unresolved issues, now reduced to four, were the subject of negotiations among the members of COPUOS in November 1969. An agreement was reached, particularly with respect to the question of "international organization" and "limit of liability." No agreement was reached on the two other issues, "settlement of claims" and "applicable law." In this respect, the General Assembly, at its twenty-fourth session, passed Resolution 2601 (XXIV) on December 16, 1969, which in part stated that the General Assembly:

4. Expresses its deep dissatisfaction that efforts to complete the Convention have not been successful and at the same time urges the Committee on the Peaceful Uses of Outer Space to complete the draft convention on liability in time for final consideration by the General Assembly during the twenty-fifth session;

5. Emphasizes that the convention is intended to establish international rules and procedures concerning liability for damage caused by the launching of objects into outer space and to ensure, in particular, the prompt and equitable compensation for damage.
The Legal Sub-Committee, in its ninth session, held from June 8 to July 3, 1970, conducted an extensive debate on the two main issues of the settlement of claims and the question of applicable law. Again, no agreement was reached.

The General Assembly deserves credit; at its twenty-fifth anniversary session it adopted a strongly worded resolution, 2733B (XXV), of December 16, 1970, which in part stated that the General Assembly:

2. Expresses its deep regret that, notwithstanding some progress towards this objective, the Committee on the Peaceful Uses of Outer Space has not yet been able to complete the drafting of a convention on liability, a subject which it has had under consideration for the past seven years;

3. Affirms that the early conclusion of an effective and generally acceptable convention on liability should remain the firm priority task of the Committee on the Peaceful Uses of Outer Space and urges the Committee to intensify its efforts to reach agreement;

4. Notes in this connexion that the main obstacle to agreement lies in differences of opinion within the Committee on the Peaceful Uses of Outer Space on two main issues: the legal rules to be applied for determining compensation payable to the victims of damage and the procedures for the settlement of claims;

5. Expresses the view that a condition of a satisfactory convention on liability is that it should contain provisions which would ensure the payment of a full measure of compensation to victims and effective procedures which would lead to the prompt and equitable settlement of claims;

6. Urges the Committee on the Peaceful Uses of Outer Space to make a decisive effort to reach early agreement on texts embodying
the principles outlined in paragraph 5 above with a view to submitting a draft convention on liability to the General Assembly at its twenty-sixth session.

At the tenth session of the Legal Sub-Committee, held June 29, 1971, a proposal submitted by Belgium, Brazil, and Hungary on the two outstanding issues received approval of the great majority of the delegates and finally led to an agreement at the Legal Sub-Committee's sixteenth meeting on June 29, 1971, on a Draft Convention on International Liability for Damage Caused by Space Objects.50

The draft was subsequently submitted to the COPUOS. COPUOS gave its approval to the draft and decided to submit it to the General Assembly for consideration and final adoption. On November 29, 1971, the General Assembly adopted the draft resolution by a vote of 93 in favor, none against and 4 abstentions (Canada, Iran, Japan and Sweden).51 Resolution 2777 (XXVI), to which the Convention is annexed, read (in part):

2. Requests the Depositary Governments to open the Convention for signature and ratification at the earliest possible date;

3. Notes that any State may, on becoming a party to the Convention, declare that it will recognize as binding, in relation to any other State accepting the same obligation, the decision of a claim commission concerning any dispute to which it may become a party;

4. Expresses its hope for the widest possible adherence to this Convention.

On March 29, 1972, in London, Moscow and Washington, there was opened for signature the "Convention on Inter-
national Liability for Damage Caused by Space Objects" (Liability Convention), which entered into force on September 1, 1972, and which by March 1982 had been ratified by sixty States. 52

This brief historical overview shows that prior to the formulation of the Liability Convention by the community of nations, there was generally a need for rules and principles to govern damages caused by outer space activities. This is not to say that before the formulation of outer space agreements there were no customary rules of international law applicable to outer space activities.

The outer space agreements are a big step forward towards bringing uniformity of application of rules in areas that are of deep concern to the international community. Included are such areas as liability for damage caused by space activities, rescue and return of astronauts, nuclear weapons in outer space, etc.

This thesis, following the introductory section, in Chapter II, will describe and analyze the role of the United Nations General Assembly COPUOS and its Legal Sub-Committee in the evolution of international space law, examine its working methods, and cite its accomplishments in the field.

Chapter III will deal in detail with the minority view that the absence of international agreements that deal specifically with the legal aspects of outer space activities signifies a total lack of legal order in the
field. Contrary to this view, the task of this thesis will be to demonstrate that the outer space domain has never been a legal vacuum or a lawless area, even in the absence of international agreements dealing specifically with the legal aspects of space activities, but has been subject to international law all along.

Chapter IV will discuss the legal effect of the United Nations General Assembly resolutions, particularly the unanimously adopted resolutions on outer space, namely Resolutions 1721 (XVI) and 1962 (XVIII). The analysis will focus on whether these resolutions have a status that ranks them among the primary sources of space law, and if so, what characterizes their legal nature.

Chapter V will examine the provisions of the Liability Convention to determine whether, in fact, it elaborates "effective international rules and procedures concerning liability for damage caused by space objects" and ensures "prompt payment of a full and equitable measure of compensation to victims of such damage. . . ."53

The final chapter provides a summary of findings and conclusions about the relevance of international law to outer space in the context of the United Nations and in Member States' resolutions on the subject.
II. SPACE LAW AND THE UNITED NATIONS:
THE WORK OF THE LEGAL SUB-COMMITTEE OF THE
U.N. COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

The rapid technical evolution and progress of science in the field of exploration of outer space has fostered a belief among the international community that the exploration and use of outer space is of such vital significance for all mankind that the creation of a new legal order is necessary to safeguard relations between States that engage in activities in outer space.

Creating new rules of international law has always been the prerogative of States, and it is they who are primarily responsible for applying them. However, the development of international cooperation in this century has given international organizations such as the United Nations an increasingly important role to play in this legislative process. The tendency is particularly evident with space law, which was grafted onto the tree of international law some 27 years ago and has now grown into a branch in its own right.

The manner in which international organizations are involved in space law varies widely. For instance, such organizations provide the framework within which sovereign States come together to work out rules that will govern
future activities in outer space. This is also the approach used at the United Nations.

The United Nations, as the most advanced and most universal form of expression of humanity's interdependence today, constitutes a natural organizational basis and framework to ensure that this worldwide spreading of technology is carried out in such a way as to minimize potential friction among nations. Thus, momentum towards resolution of key problems of outer space activities has come from the United Nations, the organization that has been established "to maintain international peace and security," and whose General Assembly has been entrusted to "initiate studies and make recommendations for the purpose of ... promoting international cooperation in the political field and encouraging the progressive development of international law and its codification." The United Nations thus became the incubator for space law, and this is where it continues to be nurtured today. It is the purpose of this chapter to discuss the manner in which the United Nations has treated international regulation of the uses of outer space.

A. Creation of the Ad Hoc Committee on the Peaceful Uses of Outer Space

Because of its enormous size as a deliberative body and the volume of business with which it must deal, it is mandatory for the General Assembly to have some division
of labor. For this purpose, the General Assembly establishes committees to organize the work and prepare the many agenda items for final discussion in plenary sessions. The General Assembly is authorized under Article 22 of the Charter and Rules 98, 104, and 162 to establish as many subsidiary organs as it deems necessary for the performance of its functions. The Rules of Procedure provide for four categories or types of committees: (1) the main committees, comprising representatives of all the member countries, and which deal with matters of substance; (2) procedural committees, whose functions are to organize the work and conduct business; (3) the Standing Committee, performing duties of a continuing nature; and (4) the ad hoc committees or commissions, which meet between sessions of the General Assembly and serve to work on special problems.

It was the problem of disarmament and the need for a legal framework in outer space that made the United States and the Soviet Union consider international cooperation in this field at the United Nations. In the early stages, both Space Powers' proposals for international cooperation in outer space reflected their interests in disarmament in general.

The idea of "the peaceful uses of outer space" was first introduced in the United Nations General Assembly by the United States in a memorandum dated January 12, 1958, which proposed disarmament and a reliable control system of outer space missile and satellite development.
It suggested that:

... the first step toward the objective of assuring that future development in outer space would be directed exclusively to peaceful and scientific purposes would be to bring the testing of such objects as satellites and missiles under international inspection and participation. 60

This proposal of establishing an international control system of outer space activities was further developed by Western States when they submitted, in August 1958, to the subcommittee of the Disarmament Commission a working paper proposing an international inspection system for tests conducted in outer space. This working paper also called for the establishment of a technical committee "to study the design of an inspection system which could make it possible to assume that the sending of objects through outer space will be exclusively for peaceful and scientific purposes." 61 This proposal was unacceptable to the Soviet Union, which viewed the inspection system as a potential means for espionage, and it accused the West of attempting to destroy Soviet ICBM weapons while maintaining its own (the West's) arsenal in other fields. 62

Although the idea of exploring and making use of outer space had occupied man's mind since ancient times, the launching of the first artificial satellite, Sputnik I, by the Soviet Union on October 4, 1957, with all its political, military, scientific and economic implications, forced the United States and other countries to set out as a matter of urgency the principles on which the carrying on of
activities in space should be based. In the political climate of the time, it was essential that the first of these principles should be the use of space for peaceful purposes.

On October 10, 1957, Mr. Lodge, the United States Ambassador to the United Nations, addressing the First Committee, reiterated the Western proposal submitted to the Disarmament Commission. He stressed the danger of outer space missiles armed with nuclear warheads and called for an international control system of outer space activities. 63

International concern for control of the development of outer space was so urgent that the General Assembly adopted the Western proposal as Resolution 1148 (XII) on November 4, 1957. The Resolution urged giving priority to reaching a disarmament agreement providing "for the joint study of an inspection system to ensure that sending of objects through outer space shall be exclusively for peaceful and scientific purposes." This resolution was adopted over the Soviet bloc's objections, which kept a negative attitude towards inspection and control. 64

The successful launching of the first U.S. earth satellite, Explorer I, on January 31, 1958, strengthened the U.S. position in the negotiations with the Soviet Union on a control system for outer space exploration. Consequently, on February 1, 1958, Soviet Premier Bulganin sent a letter to President Eisenhower in which he agreed to the banning
of thermonuclear weapons and the cessation of tests of such weapons in outer space. However, the Premier asserted that the elimination of foreign military bases (of the U.S.) should be carried out before reaching any agreement on the use of outer space exclusively for peaceful purposes.

Early in 1958 the General Assembly was presented with proposals from both the U.S.S.R. and the U.S. laying down basic guidelines that would apply to the peaceful use of outer space. The United States proposal aimed, among other things, at the necessity of developing a solid base for international cooperation in the peaceful uses of outer space and establishing an ad hoc committee to study the problem of formulating rules of law and peace in space.

On November 13, 1958, a twenty-power draft resolution was submitted to the General Assembly. The draft resolution called for the establishment of an ad hoc committee that would report to the General Assembly's 1959 session on:

(1) The activities and resources of the United Nations, its specialized agencies and other international bodies relating to the peaceful uses of outer space; (2) the areas of possible international cooperation in this field which would be undertaken under UN auspices for the benefit of States, irrespective of their degree of economic development; (3) future United Nations organizational arrangements to facilitate international cooperation in this field; and (4) the nature of legal problems which might arise in carrying out the programmes to explore outer space.

On December 13, 1958, the General Assembly adopted the twenty-power draft resolution as Resolution 1348
over Soviet bloc opposition. By this resolution the General Assembly of the United Nations established an Ad Hoc Committee on the Peaceful Uses of Outer Space, which consisted of representatives of eighteen nations. One of the purposes of the Ad Hoc Committee was to explore "the nature of legal problems which may arise in the carrying out of programmes to explore outer space." The Ad Hoc Committee came into being one year after the launch of Sputnik I and almost simultaneous with the birth of NASA.

The Ad Hoc Committee met for the first time on May 6, 1959. To facilitate procedures, it established a Legal Sub-Committee "which held five formal meetings and adopted a report which became part of the final report of the Ad Hoc Committee approved on 25 June 1959."

Much of the discussion in the Legal Sub-Committee concerned the identification of legal problems that came within its jurisdiction. There was general agreement that it was not possible to identify all of the legal problems pertaining to the peaceful uses of outer space, but some of them deserved priority treatment. Six such problems were listed in the report:

1. Question of freedom of outer space for exploration and use;
2. Liability for injury or damage caused by space vehicles;
3. Allocation of radio frequencies;
4. Avoidance of interference between space vehicles and aircraft;
(5) Identification and registration of space vehicles and coordination of launchings;

(6) Reentry and landing of space vehicles.\textsuperscript{72}

The Committee was criticized for not having included some other important problems in its priority list; for example, the definition of outer space was not ranked as a high priority item, although the Committee recognized the necessity of its eventual settlement.\textsuperscript{73} Professor Cooper has held that the definition of the boundaries was a prerequisite for establishing a rule of law with certainty.\textsuperscript{74} The problem of the protection of public health and safety by safeguarding against contamination of or from outer space was also classified as a non-priority item. Haley argues that the Committee's concern for the formulation of an international standard was seriously undermined by its designation of the contamination problem as a non-priority item.\textsuperscript{75}

Although the Ad Hoc Committee has been criticized for not being ambitious in its work in relation to the legal aspect, it nonetheless made two extremely important observations: It considered the United Nations Charter and the Statute of the International Court of Justice as including activities in outer space and recognized that the peaceful uses of outer space should be carried out for the benefit of States irrespective of the level of their economic or scientific development.\textsuperscript{76}
B. The Creation of the Committee on the Peaceful Uses of Outer Space (COPUOS)

One year after establishing the Ad Hoc Committee, the General Assembly of the United Nations created the present Committee on Peaceful Uses of Outer Space. The Committee consisted of twenty-four designated members who were to serve in 1960 and 1961. The mandate of this Committee, like its predecessor, included the obligation to study ways and means of promoting international cooperation in the peaceful uses of outer space, and to study the nature of the legal problems that might arise from the exploration of outer space. The number of representatives was increased in 1961 to twenty-eight, in 1974 to thirty-seven, and finally was extended to forty-seven member nations after the 1978 United Nations session. Today, it comprises fifty-three members and one non-member. According to Professor Hosenball, the present General Counsel of NASA:

These recent increases in membership evidence the ever-growing international interest in the purposes for which outer space is explored and used and in the achievement of an orderly basis for the conduct of space activities. They also demonstrate that many nations are eager to participate directly through international cooperation in various aspects of outer space in such applications as those involved in scientific research, weather forecasting, communications, and remote sensing.
The General Assembly's Committee on the Peaceful Uses of Outer Space is a focal point of the United Nations' action in this field. Reflecting its interest in both the legal and other aspects of international cooperation regarding outer space, the Committee has a legal Sub-Committee and a Scientific and Technical Sub-Committee. The Legal Sub-Committee was entrusted with the task of studying legal problems that may arise from the exploration and use of outer space. This new dimension, like those which man penetrated earlier, could not remain in a legal vacuum for long, the nature of which will be discussed later in this chapter.

(1) The COPUOS Working Methods

The most interesting feature of the Committee on the Peaceful Uses of Outer Space and of its two subcommittees is that their work was done by the "consensus method," a decision-making process used solely by this U.N. Committee. Consensus is one of the methods that allows a group of individuals or legal entities, including States, to arrive at a decision without using a system of votes which would require a simple or qualified majority or unanimity. The fact that in this special case there is no requirement on every member of the Committee to take a definite action -- i.e. to vote for or against -- means that there is greater flexibility and makes it possible to apply the maxim that "silence signifies consent."
Furthermore, the consensus method is:

[A] practice under which every effort is made to achieve unanimous agreement; but if that cannot be done, those dissenting from the general trend . . . simply . . . make their position or reservations known and placed on the record.81

The decision to use a consensus method rather than formal voting was made after long and difficult negotiations surrounding the establishment of the Committee. In March 1962, the Chairman of the Committee announced that:

[T]hrough informal consultations, it has been agreed among the members of the Committee that it will be the aim of all members of the Committee and its subcommittees to conduct the Committee's work in such a way that the Committee will be able to reach agreement in its work without need for voting.82

The consensus method has made it possible for the five agreements that, at present, form the "corpus" of space law to be drafted and adopted by the General Assembly, prior to being opened for signature by the States.83

The consensus method offers certain advantages.84 In the first place, it suits the special nature of space law, since human activities in space necessarily transcend national frontiers and thus oblige all nations to agree among themselves that these activities will be carried out in a peaceful fashion and in the interests of mankind as a whole. Similarly, space law can be evolved only by taking a multidisciplinary approach, one in which technical factors are intermingled with political, economic, and cultural factors to demand the legal formulation of a
number of rules. Moreover, as a negotiating method, consensus leads to a tendency to form a shared viewpoint, whereas voting implies that the opinion of the majority has triumphed over that of the minority.

On the other hand, it must be recognized, however, that this method does lead to unusually long delays before concrete results can be achieved. It tends to prolong discussion of problems that have already been fully debated, and on which a solution can be reached only through political compromise. Such compromises mean that solving problems of space is dependent on factors outside the subject being discussed, so that a solution can be obtained only if conditions are favorable elsewhere. For instance, the adoption of the Space Treaty of 1967 was a direct consequence of the East-West debate of that time.

(2) Accomplishments of the Committee on the Peaceful Uses of Outer Space (COPUOUS)

What have COPUOS and its subsidiary bodies actually accomplished in 25 years?

The early work of COPUOS, although brought to a halt several times as the result of cold war tensions, eventuated in General Assembly Resolution 1721 (XVI) in December 1961, which declared that international law, including the Charter of the United Nations, applies to outer space and celestial bodies and that outer space
and celestial bodies are free for exploration and use by all States in conformity to international law, and are not subject to national appropriation. Thus, for the first time, certain general legal principles governing the exploration and use of outer space received the formal imprint of a General Assembly Resolution. This resolution also invited the COPUOS "to study and report on the legal problems which may arise from the exploration and use of outer space." Following several meetings of the COPUOS, a draft declaration of principles was submitted to the General Assembly of the United Nations for consideration and was unanimously adopted on December 13, 1963, as Resolution 1962 (XVIII), entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space." This landmark resolution declared, inter alia, that the activities of States in the exploration and use of outer space are to be carried on in accordance with international law, including the Charter of the United Nations; that States bear international responsibility for national activities in outer space, whether carried on by governmental agencies or by non-governmental entities; and that in the exploration and use of outer space, States shall be guided by the principles of cooperation and mutual assistance.

This resolution additionally provided that the State on whose registry an object launched into outer
space is carried shall retain jurisdiction and control over such object and any personnel thereon while in outer space. Further, each State that 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.

Finally, and most importantly, the resolution set forth that outer space and celestial bodies are free for exploration and use by all States on the basis of equality and in accordance with international law, and are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

On the other hand, discussions in the Legal Subcommittee of COPUOS have resulted in five international agreements that form the basis of space law.

By the end of the twentieth session of the General Assembly in 1965, there emerged a consensus among member States that an international treaty on "General Principles" should be established. Thus, on December 21, 1965, the General Assembly, by unanimous vote, adopted Resolution 2130 (XX). The resolution urged the COPUOS to give consideration, inter alia, to "incorporating in international agreement form, in the future as appropriate, legal principles governing
the activities of States in the exploration and use of outer space."

COPUOS, on December 8, 1966, produced a draft "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies." The General Assembly, on December 19, 1966, adopted it unanimously in the Annex to Resolution 2222 (XXI). The Space Treaty was opened for signature on January 27, 1967, in London, Moscow, and Washington, and it entered into force on October 10, 1967. The Space Treaty provides that space exploration shall be carried out for the benefit of all countries, irrespective of their degree of economic or scientific development; that outer space shall be the province of all mankind, free for exploration and use by all States on a basis of equality and in accordance with international law, and not subject to national appropriation; and that the moon and other celestial bodies shall be used exclusively for peaceful purposes. State Parties to the Space Treaty undertake not to place in orbit around the earth any objects carrying nuclear weapons or any other weapons of mass destruction. The Space Treaty also provides for international responsibility of State Parties for all national activities in outer space, whether such activities are carried out by governmental agencies or by non-governmental entities.
The Legal Sub-Committee of COPUOS, in its Special Session convened December 14-15, 1967, completed a draft "Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space." The General Assembly adopted it and opened it for signature in London, Moscow, and Washington on April 22, 1968, and it entered into force on December 3, 1968. The Rescue Agreement provides, inter alia, for: cooperation between the launching authority and a contracting party to effect a prompt rescue of the personnel of a spacecraft which is owing to accident, distress, emergency or unintended landing; the obligation of the contracting parties to extend assistance in search and rescue operations for such personnel who have alighted on the high seas or in any other place not under the jurisdiction of any State; the safe and prompt return of such personnel to representatives of the launching authority; and the obligation of each contracting party having jurisdiction over the territory in which a space object or its component parts have been discovered to take steps to recover the object or its component parts as well as the return of objects or their component parts found beyond the territorial limits of the launching authority to representatives of that authority.

The 1972 Liability Convention, which was adopted by the General Assembly in its Resolution 2777 (XXVI) of November 29, 1971, provides, inter alia, for rules of international liability for damage caused by space objects
and a procedure for the presentation and settlement of claims. Accordingly, the Liability Convention deals with the numerous matters relevant to the formulation of a system of liability and a procedure for compensation.\(^{93}\)

The 1975 Convention on the Registration of Objects Launched into Outer Space\(^{94}\) provides, \textit{inter alia}, for a central register of objects launched into outer space to be established and maintained on a mandatory basis by the Secretary-General of the United Nations, which would, in particular, assist in the identification of space objects and contribute to the application and development of international law governing the exploration and use of outer space.

The 1979 Agreement Governing Activities of States on the Moon and Other Celestial Bodies\(^{95}\) elaborates in more specific terms the principles relating to the moon and other celestial bodies set out in the Space Treaty and establishes the basis for the future regulation of exploration and exploitation of natural resources thereof.

In conclusion, the United Nations' interest in the peaceful uses of outer space was first expressed in 1957, soon after the launching of the first man-made satellite and has grown steadily with the advance of space technology. The United Nations' concern is that space be used for peaceful purposes and that the benefits from space activities be shared by all the international community members. A year later (1958) a special item on outer space was placed before the General Assembly. It
was then that the Ad Hoc Committee on the Peaceful Uses of Outer Space was set up. By resolution the General Assembly later established COPUOS, to succeed the Ad Hoc Committee. COPUOS established two subcommittees, designated legal and Scientific.

The history of COPUOS demonstrates that it is a dynamic body with an enviable record of achievement. Its work since 1959 resulted in five international agreements, discussed above, that form the basis of space law.
III. CUSTOMARY INTERNATIONAL LAW AND OUTER SPACE

Just as outer space activities themselves are earth-based, so the disputes that such activities may engender will undoubtedly arise because of the conflicting interests of peoples on earth. There will be disputes and debates between and among Nation States that will need to be settled in accordance with customary legal principles and procedures recognized by the international community. These principles need not be unique precepts legislated by man for the newly found domain of outer space. Rather, they will be, in the main, the product of a process as old as law itself -- the process of extending and adopting existing legal categories and concepts to a new dimension of human activity. Lending support to this thesis, Professor McDougal stated:

There is no separate arena of space, realistically distinguishable from that of the earth. There is no separate social process in space. The same people who are acting on earth . . . are acting in space. The same people who dispose of effective power on earth dispose of it in space. Their objectives in space activity are the same as on earth.96

Thus, it would be wrong to conclude that the absence of international agreements that deal specifically with the legal aspects of outer space activities signifies a total lack of legal order in the field. From the beginning, as this chapter will illustrate, space activities have
been included within a customary legal framework. The activities of nations do not escape the reach of law merely because they are projected into an environment that heretofore has not been the subject of explicit international agreements.

With respect to this problem, Professor McDougal, in his article "The Emerging Customary Law of Space," dated 1963, stated that:

Perhaps the most pervasive, certainly the most destructive, misconception is that which insists that we do not yet have any law of space at all. This particular misconception is, further, commonly accompanied by a clear call for the assembling of a great multilateral conference to create a vast new law -- perhaps even to agree upon a comprehensive code for the regulation of all space activities.

In his article, Professor McDougal provided two examples of such "destructive" misconceptions. The first appeared in a recent editorial in the generally more enlightened New York Times. In that editorial, written after the launching of Telstar, the Times complained that despite all man's great technological accomplishments, we still have no law governing outer space; in other words, the editorialist considered outer space a kind of legal vacuum. The editorial stated that:

... the cosmos today is a lawless dimension and there is no universal agreement even on so elementary a question as where space begins -- no boundary line between the region in which existing national and international law holds sway and the region in which it does not.
Summarizing some of the disputes and debates between nations, the editorial concluded:

But in the absence of space law, the cosmos bears some resemblance to a jungle. Each nation with space capabilities does as it pleases. Such license must surely become intolerable with the rapid expansion of man's capabilities in this new arena of human action and with the certain increase in the years ahead of the nations able to launch satellites, luniks and the like.99

The second example cited by McDougal was that of Professor John C. Cooper, who in 1961 wrote:

It is quite impossible to apply international legal principles in a satisfactory manner in any geographic area whose legal status is unknown. Today the legal status of outer space is as vague and uncertain as was the legal status of the high seas in the centuries before Grotius who, in the Mare Liberum, focused attention on the need of the world to accept the doctrine of the freedom of the seas.100

Cooper concluded:

My own view has . . . long been that no general customary international law exists covering the legal status of outer space.101

In explaining the danger and the effect of these misconceptions on what the international community has already achieved in the field, Professor McDougal, in an excellent analysis, stated:

They [the previous two writers and others of similar views] grievously undercut an existing consensus among states about a great many problems, and by their overemphasis on explicit agreement and underemphasis upon custom in the creation of international law, may make more difficult the taking of appropriate measures to achieve a still greater consensus. What these misconceptions ignore is that in
any legal system, formalized agreements are of much less importance in affecting people's expectations about the requirements of future decision than is the whole flow of their cooperative behavior and communication in the shaping and sharing of values, sometimes called custom, in which they must perforce at least approximate a realistic common interest.

Lawyers know better than to fall into the error of those who find in the absence of formal treaties and conventions an absence of law. We must recall that law and lawyers and judges and courts are not the only organs functioning to protect international societal values. As Professor McDougal put it:

When we think of legal process, I submit that most of us who are lawyers do not think simply of rules in books. We think of a whole process of authoritative decision. By a process of authoritative decision we mean several things: first, that the important decisions in a community are made by the people who are established to make them. Secondly, that these decisions are made in accordance with certain uniformities, reflecting community expectations about how they should be taken.

Moreover, just as Justice Felix Frankfurter, in his last major opinion, reminded us that "... there is not under our Constitution a judicial remedy for every political mischief," we must recognize that there will always be lapses or deficiencies in any regime of international law designed by men to cope effectively and peacefully with political mischief.

Further, even when we find in the American Constitution or the laws made pursuant to it, words promising solutions to specific problems, we must often look beyond the words to the actual life and experience of men and States to
breathe meaning into the legislation or the written opinions of the Common law courts. So, too, in the international field we cannot rely too much on formal written charters, conventions, treaties, and agreements.

To those who argue that the absence of formal treaties dealing specifically with the legal aspects of space activities signifies a total lack of a legal order in this field, the response must be that international law consists not only of the positive enactments found in international conventions, but also embraces those patterns of international conduct that are so regularly followed that they give rise to a firm expectation of future behavior by the members of the community of nations. Viewed from this perspective, it should be clear that a law of outer space has been steadily evolving from the time of the first satellite launching.

We need to be reminded that historically the law of nations -- which is regarded by States as binding them in their relations with one another in a legally ordered society of States -- is to be deduced from treaties, customs, and general principles.

International legal experts know, as Justice Holmes observed, that the "life of the law has not been logic; it has been experience, reflecting the felt necessities of the time, the prevalent moral and political theories, intuitions of public policy, avowed or unconscious." In other words, law, especially international law, embodies
the story of mankind's development through many centuries and cannot be treated as if it contained only the axioms and corollaries of a book of mathematics. To know what it is, we must know what it has been and what it tends to become. We must alternately consult history and existing principles and theories of law. But the most difficult labor will be to understand the combination of the two as they evolve into new products at every stage. The substance of the law at any given time approximates what is understood at a given time to be "convenient"; but its form and machinery, and the degree to which it is able to work out desired results, depend very much upon its past.¹⁰⁸

We need in our work on space and international law to orient ourselves to experience or to legal realism. "The past is a safer guide to the future than are orgiastic visions of a new society."¹⁰⁹ Observation of experience, the facts, and their necessary implications will aid our legal thinking and avoid confusion academically, pragmatically, and politically.

It is this writer's opinion that the imagined legal vacuum is well filled by international experience and custom and by general principles of internationally accepted law. There are, as I hope to demonstrate, since the launching of Sputnik I and before, guidelines and limits, firmly based on international law, standardizing what nations may and may not do between and among themselves in the domain of outer space. The purpose of this chapter is to examine
the premise that in the absence of international agreements dealing specifically with the legal aspects of the new domain of outer space, there is a total lack of a legal order in the field -- a premise the writer will dispute.

Let us take a look at this group of problems related to outer space, to see whether we have the lawless chaos, or lack of guiding expectations, so often referred to by people who do not work in the field.

A. Inclusive Access to and Competence in the Space Domain

Consider the problem relating to inclusive access to the domain of space. There hardly has been a suggestion since 1957 that there is not complete freedom of access to space in the same way as oceans.

The overwhelmingly significant feature of outer space for policy purposes is its vastness that makes it preeminently suitable for shared use by all who can attain the necessary capabilities, which implies that competence over activities in the domain should be shared by all participants.110

Although there may be an absence of explicit and formal international agreements, Professor McDougal observed that:

[T]he process of authoritative decisions about the lawfulness of access to space today moves forward in the traditional forms by which customary international law has been
immemorially created and applied: that is, by the projection by participants in a common arena of claims of right, with promise of reciprocity, and by their mutual, habitual acceptance and honoring of such claims, accompanied by informal clarification of common interest and specifications of community expectation about the requirements of authority.\textsuperscript{111}

The development of a consensus in general community expectations that all peoples share inclusive rights of access to outer space coincided approximately with the launching of the first Soviet \textit{Sputnik} in October 1957. The practice of equality in right of access has not been questioned, much less protested, since then.

The actual behavior of both space powers as well as all the other members of the community of nations between 1957 and 1962 is most significant. Neither the United States nor the U.S.S.R. proceeded on the basis of obtaining prior consent of other States in the conduct of their space activities. Beginning with the launching of the first man-made space object in October 1957, during the International Geophysical Year, numerous earth-orbiting satellites were launched by both the U.S. and the U.S.S.R. No permission was sought in advance by the launching State, none was expressly given by any other State, and not a single protest has been registered by any State since that time.\textsuperscript{112}

The United Nations Ad Hoc Committee on Peaceful Uses of Outer Space was therefore fully justified in concluding that:
... during the International Geophysical Year 1957-1958 and subsequently, countries throughout the world proceeded on the premise of permissibility of the launching and flight of the space vehicles which were launched, regardless of what territory they passed [over] during the course of their flight through outer space.113

The expectations that equality in access to the domain of outer space may be demanded as a "right," as additional participants -- States, private associations, etc. -- acquire the necessary technological capability:

... have been characterized [by] a practical universality, both the implicit assumptions and the explicit, relevant utterances of all authorized general community spokesmen -- both official (national and international) and unofficial (scholarly, and other professional) -- of the widest geographical and culture range.114

A brief discussion of the development of contemporary consensus from 1957 to the present will show that the right of inclusive access to outer space has so fully crystallized into customary law, "that any successful future challenge to [it] can only be based on naked force, and not on criteria of [legal] authority."115

During the thirteenth session of the General Assembly of the United Nations, held at the end of 1958, the problems of peaceful inclusive uses of outer space received their first extensive international discussion on a high official level. Many delegates at the United Nations noted with satisfaction that the exploration of space was proceeding with apparent consent of all States. Professor Amborosini,
the head of the Italian delegation, made it clear that a "tacit and unanimous agreement obtained between these States in the sense of allowing, during the geophysical year, the launching and circulation of rockets and artificial satellites which practically overflew all the territories of various States without any protest being made on the grounds of violation of sovereignty." Moreover, the Yugoslavian Ambassador to the United Nations was one of a number of speakers who, referring to the question of "openness of outer space and of freedom of movement in it," invoked the principle of a common domain as the only appropriate community policy in regard to this great new, rich resource:

By virtue of its very nature, and of the fact that penetration into it has been brought about by the common efforts and progress of the whole of mankind, no less so than by virtue of the fact that its abuse could be fatal to the whole world, outer space can only be regarded as res communis.117

Furthermore, the representative of Austria, Mr. Waldheim, found no difficulty in espousing the view held by many delegations that outer space is a "res communis omnium that all States may use freely and without interference" -- a principle that "international practice has in the meantime corroborated." This is a very encouraging development," Mr. Waldheim added, "for it proves that the principle of free use of space has already now, even in the absence of a respective international convention, gained tacit recognition by all the world community." [emphasis added].
On the same issue, the Argentine delegate commented that:

We understand fully that this statement of the equality of States must be affirmed now and should not be postponed. . . . It is therefore essential that from the outset, and leaving no room for misinterpretation, this great body, where eighty-one members of the international community of nations are represented, must state categorically that the use of outer space will always be open to all states and no one may claim preferential rights on the grounds of being the first occupant. [emphasis added]

More important is that the two space powers did endorse, though with varying degrees of explicitness, the position espoused by all other members of the international community of nations, namely that outer space was freely open to access for peaceful purposes. The United States position was explained in a statement made by then Senator Lyndon Johnson:

Today outer space is free, it is unscarred by conflict. No nation holds a concession there. It must remain this way.

We of the United States do not acknowledge that there are landlords of outer space who can presume to bargain with the nations of the earth on the price of access to this new domain.121

The 1959 United Nations debates represent a clear confirmation of the proposition advanced by the Ad Hoc Committee in 1958, that the principle of free access to, and enjoyment of, outer space was becoming irrevocably authoritative through remarkable uniformities in the practice and announced expectations of member States.
This trend was best described by Dr. Bisbe of Cuba:

Since artificial satellites had passed over the territories of different States and no protest had been made, the basic principle had been accepted that in the peaceful uses of outer space all States, on a footing of equality, could freely use outer space in accordance with existing or future international law or agreements. The concept of freedom of space had superseded the principle governing the use of air space, whereby each State held sovereignty over the air space immediately above its territory.\textsuperscript{122}

In the words of the United States representative, Mr. Lodge, the practice of the "openness and availability of outer space had won wide acceptance in the United Nations in recent years and is becoming a generally accepted principle."\textsuperscript{123}

The officials of international governmental organizations, who are among the most authoritative of all general community spokesmen, have addressed themselves to the issue and given unrestrained support to the principle of free access to space. The former Secretary-General of the United Nations, Mr. Hammarskjold, in May 1958 observed that:

The precedents which have been set during the International Geophysical Year would seem to indicate tacit acceptance that outer space, as distinct from air space, is "res communis." \ldots That means that outer space has been considered as belonging to no one and as not being subject to appropriation or to sovereignty. In that respect a parallel might be drawn with the high seas, which, likewise, are considered as not capable of appropriation.\textsuperscript{124}

The former director of the Legal Division of the U.N. Secretariat, Oscar Schachter, in April 1958, following
the placing of several satellites into orbit, stated that:

[I]t is not premature for the international lawyer to acknowledge the inception of the principle that outer space is not subject to appropriation by national states. Both the United States and the U.S.S.R. have obviously acted on this premise for the last few years; they have considered that their right to launch satellites in orbit is not dependent on the consent of subjacent states and, significantly, no state has objected to this assumption or has made any claim to sovereignty in the areas involved.

On these facts the international lawyer is probably justified in applying to outer space the traditional label of res communis, and drawing the analogy to the principle of freedom of the high seas.[125] [emphasis added]

C. Wilfred Jenks, the former deputy director of the International Labor Office, long before the launching of Sputnik I, took a position favoring freedom of outer space describing it as "res extra commercium" and "incapable by its nature of appropriation on behalf of any particular sovereignty."[126]

Mr. Jenks in 1958, commenting on the practice of States since the launching of the first man-made satellite, concluded that:

The principle of freedom of space, which until October 4, 1957, could be put forward only as a principle derived from the basic astronomical facts, already rests on a very solid basis of established practice supported by world-wide acceptance.[127] [emphasis added]

From the above it is very clear that among the highest officials of intergovernmental organizations there has been a near perfect unanimity that freedom
of outer space is an undisputable right of every State and that, "conversely, no claim by any state or group of states in contravention of this overriding community policy of shared use can be honored."\(^{128}\)

Private legal organizations, both national and international, also expressed their opinion on the issue. The International Law Association, at its 49th Conference held in August 1960 in Hamburg, in a resolution concerning "air sovereignty and the legal status of outer space," concluded that the "most important principle which can be formulated at the present time" is the proposition that "outer space may not be subject to the sovereignty or other exclusive rights of any State."\(^{129}\)

The American Bar Association adopted in 1959 a resolution in which it endorsed the suggestion indicated in the report of the United Nations Ad Hoc Committee to the extent:

That with the recent practice of states there may have been initiated the recognition and establishment of a generally accepted principle that outer space is freely available for exploration and use by all, and that the exclusive national sovereignty of states over air space does not extend to outer space.\(^{130}\)

Furthermore, evidence of community expectation about the inclusive use of space can be found in the opinions of eminent scholars in the field. For instance, Lipson and Katzenbach stated:

The pattern of acquiescence has now, however, continued well beyond the IGY and
has included a wide variety of objects with varying purposes. This continuing silence seems consistent only with the absence of claims to sovereignty in overlying space at the altitudes at which satellites have orbited and space probes have flown.131

Moreover, Professor Bloomfield pointed out that:

So far, at least, the principle that outer space—wherever it may begin—is essentially "free" and open to all is becoming generally recognized. Even since October 4, 1957, when Sputnik I went into orbit, a precedent has existed for the free use of outer space without objection by the state over which the satellite has passed.132

Soviet scholars are of the opinion that outer space is and should remain freely accessible by all international community nations. A corresponding member of the U.S.S.R. Academy of Science, P. S. Romashkin, summed up the views of the Soviet commentators concerning the freedom of outer space:

Soviet scholars... quite correctly consider that the sovereignty of a state ought not to extend to cosmic space. A declaration of sovereignty over this space could only hinder the conduct of the very valuable investigations and the acquisition of very important information about the Universe and lead to the aggravation of the international situation.133

J. Korovine, who, apart from his general eminence as an international lawyer, is Chairman of the Scientific Research Committee on the Legal Problems of Outer Space of the Institute of Law of the U.S.S.R. Academy of Sciences, rejects "any mechanical extension of the concept of sovereignty from the Earth or the global atmosphere to the Cosmos." He notes that "most scholars" from the
"capitalist countries" and the "socialist countries" alike deduce that "national sovereignty cannot be extended to the Cosmos [outer space] and thereby reject the right of any country to put cosmic space under its legislation, administration or jurisdiction"; he considers that there are "good astronomical reasons to back this viewpoint," since by reason of the rotation of the earth and the velocity of its motion, "sovereignty in the Cosmos may be enforced only at lightning speed and in continuous movement."\textsuperscript{134}

In sum, the Soviet commentators have thus shared the views of their Western counterparts on the most fundamental problem of public order in outer space, namely the problem of free access to the space domain.

In view of all this uniformity of opinion since the launching of \textit{Sputnik I}, it was not surprising that member States of the United Nations were able unanimously to agree by the end of 1961 on enunciating the following fundamental principles concerning outer space:

\begin{quote}
Outer space and celestial bodies are free for exploration and use by all States in conformity with international law and are not subject to national appropriation.\textsuperscript{135}
\end{quote}

The legal significance of this historic resolution will be discussed in detail later on in this Chapter as evidence of customary international law.

From the preceding discussion of the practice of the community of nations, and of the expressions of
expectations about authority made by different state spokesmen, it would appear that all traditional, technical requirements have been met for establishing a customary international law, namely that access to and the use of outer space are the inclusive right of all nations irrespective of their economic, military, or political power. In Professor McDougal's words:

All the necessary "material" element has been exhibited: the only states with space capability have projected, and uniformly acted upon, a claim of inclusive right, with promise of reciprocity, and even the states presently without space capability have in measure participated in the same uniform practice, both by their failure to protest the lawfulness of overflights and, often, by their positive supporting cooperative activity. The required "psychological" element, or community expectation of "right," is similarly no less evident: the expectation of inclusive right has . . . characterized all the relevant utterances of both national and international officials, as well as of all authoritative private spokesmen. 136

He added that:

Any future unilateral challenge of this inclusive right, we therefore conclude, can be based, not on considerations of authority, but only on naked power. 137

B. Inclusive Competence Over Activities in Space

In an excellent explanation of the close relationship between the inclusive access to space and the inclusive competence over activities in outer space, Professor McDougal observed that:
These same expectations of inclusive access also embrace, both implicitly and explicitly, certain ancillary expectations that . . . competence to prescribe and apply policies for particular activities in space must also be inclusive. 138

Further, human experience on the oceans suggests that inclusive rights of access to a sharable resource can only be secured and protected by an equally inclusive competence over the specific activities undertaken in exploitation of the resource. 139

Many explicit statements made by spokesmen with respect to the inclusive competence over activities in space can be traced from the United Nations discussions. Thus, Mr. Evans, the representative of the United Kingdom, pointed out:

In the case of the high seas, a regime of international law applies, to which effect is given mainly through the exercise of jurisdiction by states individually in respect to their own vessels. In the case of outer space, the same pattern could be followed. 140

The representative from the Netherlands, in reference to the well established practice developed on the oceans, stated:

The principle of the freedom of the seas and the cognate doctrine of non-interference with the right of others to make use of that freedom is equally pertinent to outer space. If, instead of "high seas" we read "outer space," we can without any difficulty transfer to cosmic space the rule of Article 2 of the Convention on the High Seas. 141

Similar concern for an inclusive competence over activities in outer space can also be derived from the numerous statements made by high-ranking officials of many
nations. For example, one of the statements on record explicitly calling for the necessity of a new customary international law was made by John A. Johnson, former General Counsel of NASA. He remarked:

The cautious language of the Committee [U.N. Ad Hoc Committee] hardly seems necessary today. I would suggest that a new principle of international law has already been established by the great powers engaged in this activity and the unanimous acquiescence of all other states. This principle is that outer space is not subject to claims of territorial sovereignty, that no state has the right to exclude other states from the use of any part of it, and that it is therefore freely available for exploration and peaceful use by all. [emphasis added]

The high officials of intergovernmental organizations are no exception in favoring the inclusive competence over activities in space. For instance, Oscar Schachter asserted both the uniformity in the attitudes of community nations with respect to the circulation of spacecraft and the usefulness of the maritime analogy. He stressed that "this analogy serves as a guide to other decisions, such as those relating to jurisdiction over space vehicles and those recognizing certain protective rights." International and national legal societies have given their full support to principles of shared competence over activities in the domain of space. Both the International Law Association and the American Bar Association have expressed the conviction that outer space cannot be subjected to either the exclusive use or exclusive competence of any particular nation, but must be treated
as a common domain of all mankind. In fact, "no organization of lawyers, either international or national, is known to have taken a substantially different position from that stipulated" by the I.L.A.

International law scholars recommending inclusive competence over outer space activities are many. S. S. Lall of India perceives in the principle of freedom of space a concomitant duty of "non-interference by one State with the spacecraft of another," which should secure to all States "equal rights to use outer space." Professor Bloomfield emphasizes the importance of nationality of space objects and appears to suggest that the flag State should, on the one hand, be made responsible for the conduct of its craft, and on the other, be entitled to expect from other nations respect for its particular interests in the object or craft. In a pertinent analogy, Professor McDougal observed that:

Just as no single state has even been able to dispose of the effective power permanently to close the vast expanses of the oceans to other states, and as the cooperation of many different states is required for the most productive exploitation of the oceans, so also it would appear that no single state will be able soon, if ever, to impose upon other states its own comprehensive, exclusive public order in the domain of space and that cooperation of many different states will be required for the most productive exploitation of the new resource.

To conclude, it is worth mentioning that what is important in the development of international law by custom is the crystallization of perspectives among both
peoples and effective decision makers of the world community that certain past uniformities in decisions will, and should, be observed in the future. Concerning the problem of inclusive competence over activities in space, Professor McDougal reached the conclusion that:

It would, accordingly, appear both an accurate description and realistic prophecy to conclude ... that the very same practice and expectations, so generally regarded as having established inclusive rights of access to outer space, have also established, in the course of creating such rights, an inclusive competence for their maintenance and protection. The very great advantages to all mankind, in security and other values, which inhere in inclusive right and competence would, further, appear to afford a very considerable guarantee that these expectations of at least a minimum inclusive competence will not be easily yielded.

C. The Maintenance of Minimum Order in Outer Space

Turning to the problem concerning the maintenance of minimum order, the minimization of unauthorized violence, we find again a very substantial consensus.

In the history of man, maintaining minimum order in social relations on earth first by custom and tradition and then by rational legal systems has been one of continuous struggle. Minimum order can be defined as freedom from deprivations by unauthorized coercion or violence or from expectations of such coercion or violence.

The space domain is no less fraught with this problem of minimum order, in that new instruments of destruction greatly exacerbate this dilemma and only add to the
difficulty of providing adequate safeguards to ensure such minimum order is obtained in the interests of all. 153

The United Nations Charter, by extension, applies equally to space as to earth in the maintenance of this first principle of minimum social order and is reflected in customary international law. The first comprehensive debate on the issue of space in the United Nations in 1958 also reinforced this concept. 154 The Netherlands delegate made the following observation:

So far as international law is concerned, there can be no doubt that the behavior of States towards each other must, even in outer space, continue to be subject to what the celebrated phrase in Article 38 of the Statute of the International Court of Justice calls "the general principles of law recognized by civilized nations." 155

In considering "the relevance to space activities of the provisions of the United Nations Charter and of the Statute of the International Court of Justice," Mr. Evans, the representative of the United Kingdom, referring to Article 38, saw "no reason to believe that these general principles or many of them may not be as applicable to the relations of States in outer space as on earth." 156

The U.N. Ad Hoc Committee on the Peaceful Uses of Outer Space unanimously agreed that "as a matter of principle those instruments [the Charter and the Statute of the I.C.J.] were not limited in their operation to the confines of the earth." 157 Moreover, in 1961 discussion of the First Committee of the General Assembly, U.S. Ambassador
Stevenson's appeal to "state explicitly that the rules of good international conduct follow [man] wherever he goes" was endorsed without opposition.158

The consensus among highly qualified scholars is no less explicit. For instance, Mr. Jenks commented that:

When man ventures into space he takes with him much of his earthly heritage, including the established rules of international law insofar as they are applicable. The Charter of the United Nations is not earthbound. The General Treaty for the renunciation of War and the Statute of the International Court of Justice, "international custom as evidence of a general practice accepted as law" and "the general principles of law recognized by civilized nations" are all applicable to human relations in space.159

Professor Zourek, the Czechoslovakian member of the International Law Commission, on the same issue, stated:

All basic principles of international law are valid also for the intercourse of states in outer space. These principles include the prohibition of the use of force or threats of force against the territorial integrity of states. . . . Using this space for aggression is inadmissible.160

Soviet commentators are no exception. They espoused the opinion that any unauthorized major coercion in outer space, or threat of such coercion, is impermissible. Professor Korovin, Chairman of the Space Law Commission, concludes that freedom of space does not mean that "acts endangering the security, life and property of people on the Earth, or infringing upon the universally recognized rights of any country are permitted there."161 Mr. Mhukov in 1954 observed that:
It would be wrong, however, to consider space as a kind of legal "vacuum" in which each state has absolute and unlimited freedom of action. . . .

In this connection, it should be . . . especially emphasized that in outer space as elsewhere countries should refrain from threatening and violating the territorial integrity and political independence of any state (U.N. Charter, Article 2(4)). In other words, each state has the right to make use of space as it sees fit, as long as it does not thereby infringe upon the interests of other states.162

Clearly enough, two eminent American publicists, Professors Lipson and Katzenbach, in relation to the principles of minimum order in space, in a very progressive way have observed that:

Articles 1 and 2 [of the U.N. Charter] oblige those nations that have and will have space capabilities to conduct their programs in a manner consistent with the principles and purposes of the Charter. It is clear that space itself and the knowledge gained from space exploration should not be used for aggressive purposes; that disputes that may arise from space activities should be settled "by peaceful means in such a manner that international peace and security and justice are not endangered"; that, in short, the mere fact that an activity is conducted in outer space does not release any nation from its existing international obligations to promote, and to cooperate with others in promoting, peace, justice and human dignity for mankind.163

More importantly, in a rather surprising exhibition of unanimity, the General Assembly of the United Nations adopted at its sixteenth session Resolution 1721 (XVI) on "International Cooperation in the Peaceful Uses of Outer Space," formally endorsing the principle that "International
law, including the Charter of the United Nations, applies to outer space and celestial bodies.\textsuperscript{164}

At this stage it is safe to state that there is wide consensus among the international community members that "coercions which would be considered impermissible in the earth arena are similarly impermissible in the domain of space."\textsuperscript{165} But what about the right of a State to apply appropriate coercion as a measure of self-defense against an aggressive action initiated by another State? Professor McDougal answered this question in a very logical and rational manner by observing that "the prevailing expectations are uniform that the cosmographic features of impermissible coercion must be matched by equally cosmographic features of permissible coercion, individual or collective."\textsuperscript{166}

The support of Professor McDougal's view derives from many different sources. Oscar Schachter, former director of the Legal Department of the United Nations Secretariat, asserts that, "if the activity involved is considered to be dangerously inimical to the security of a state . . . then it is certainly arguable that a state has the right to take protective measures, even though the activity occurs in outer space beyond its territorial area."\textsuperscript{167} The United States delegate to the U.N. Ad Hoc Committee, referring to Article 51 of the Charter, stated that "the inherent right of individual or collective
self-defense against armed attack is not restricted to the territorial arena." 168

Communist jurists hold the same views. For instance, Madame Osnitskaya asserted that:

In the event of the improper use of cosmic space any state has the right to take measures permitted by modern international law including, in the event of armed attack through space, measures of individual or collective self-defense as provided for in Article 51 of the U.N. Charter. 169

Mr. Sztucki of Poland insists that international law not only imposes on States a duty to refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations but also accords them the "right . . . to security." 170 He added:

This right and obligation remains in force irrespective of the geographical place from which such threat might derive, or from which the use of force may come. They are, therefore, fully applicable also to the threat of the use or to the use of force in outer space. 171

In sum, it appears that there is a consensus in opinion -- official and private, Eastern and Western -- that the principle of minimum order, as embodied in the Charter of the United Nations and other generally accepted prescriptions, are already extended, "without necessity for a special, more explicit agreement, to all of man's interactions wherever occurring." 172
D. Nationality of, and Control over, Spacecraft

When we turn to the problems of jurisdiction, we find again a crystallizing consensus derived from experience with the oceans. It is a common expectation, as will be shown later, that the shared enjoyment of space can be economically ordered, as it has been upon the oceans, by a few simple legal rules: every State may decide for itself whether to send spacecraft into outer space. No State may arbitrarily preclude any other State from sending its spacecraft out. Every nation may prescribe and apply its laws on the activities of its crafts. No State may apply its authority to the craft of other States, except for violations of international public order.

The claims to access to space are made through craft identified with States or groups of States. Freedom of access is simply defined: each State, or group of States, can send out its spacecraft without prohibition or interference by others. Also, shared competence implies that individual States, or groups of States, can develop and implement policy regarding activities of its spacecraft in space. Conversely, no State is authorized to develop or implement policy regarding the spacecraft of other States, except in case of clear violation of the principle of inclusive use of outer space. 173
The claims by States, made with promise of reciprocity, confer national character on spacecraft using criteria of their own choice, and to receive from every other State acquiescence to such designation. The only restriction international law imposed is that, if a national character has been legally designated on a spacecraft by a State, other States may not ascribe their national character to the same craft as long as the original character obtains. In relation to this, Mr. Justice Jackson stated in *Lauritien v. Larsen* that:

> Each state under international law may determine for itself the conditions on which it will grant its nationality to a merchant ship, thereby accepting responsibility for it and acquiring authority over it.

He concluded, "the regularity and validity of a registration can be questioned only by the registering state." Numerous bilateral and multilateral treaties concluded during the past century -- the contracting parties to which include almost all the world community -- show the universal acceptance of these principles.

The unanimity among jurists is no less than that found in the customary practice of States. In an authoritative statement made by Westlake:

> The conditions on which different states admit ships to their register, or otherwise grant them the right to carry their mercantile flag, are very various . . . but with such conditions international law has no concern: it suffices that, for whatever reasons, a state accepts the authority and responsibility which result from the ship's nationality.
Equally precise is Lauterpacht's Oppenheim: "a State is absolutely independent in framing the rules concerning the claim of vessels to its flag."

The Convention on the High Seas confirmed the principle of exclusive competence of each nation to determine the attribution of national character to its ships. Article 5 of this Convention provides, in part, that:

Each State shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. Ships have the nationality of the State whose flag they are entitled to fly.

Experience with aircraft is no less definitive in its support of the competence of each State to attribute its national character to aircraft. In 1929, Article 7 of the Paris Convention was drastically revised, expressing in its new version the principle of the exclusive competence of each State to determine for itself appropriate criteria for attributing nationality: "The registration of aircraft . . . shall be made in accordance with the laws and special provisions of each contracting State." Moreover, the 1944 Chicago Convention on International Civil Aviation leaves no room for doubt on the matter. Articles 17 and 19 of the Convention are crystal clear. Article 17 states: "Aircraft have the nationality of the State in which they are registered." Article 19 provides: "The registration or transfer of registration of aircraft in any contracting
State shall be made in accordance with its laws and regulations."

Further, Article 18, to avoid multiple nationality, prescribes that an "aircraft cannot be validly registered in more than one State."\(^{181}\)

Moreover, the question of registration of objects launched into outer space arose in the very first years of the Space Age, when there were only a few satellites in orbit around our planet. In June 1959, the U.N. Ad Hoc Committee on the Peaceful Uses of Outer Space adopted a report mentioning the desirability of establishing "a system of registration of the launching of space vehicles, their call signs, markings and current orbital and transit characteristics."\(^{182}\)

It is to be noted that even in this early report the registration of space objects was regarded, first and foremost, as a means to identify such objects. In this context, the report raised the question of "placing suitable markings on space vehicles so that, particularly in the event of their return to Earth, they may readily be identified."\(^{183}\) It further stated, however, that:

\[\ldots\text{registration would also serve a number of other useful purposes. For example, one serious problem is the potential overloading of tracking facilities. Registration of launching would help to avoid this. Registration might also afford a convenient means for the notification of launchings to other States.}\]
One may ask, what should be the purposes of the registration of a space object? A working document submitted by the delegation of Canada to the seventh session of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space rightly pointed out that "the need for a system of registration of objects launched into outer space arises in connection with the general international objective of promoting the orderly and responsible exploration and use of space." With this as the general premise, the main aims of the registration of space objects could be the systematic recording of launchings and the provision of information about them to all States so as to promote international cooperation in space exploration. Such a wording of the purposes of registration accords with the well known statement by Professor Jenks in his book *Space Law*: "The first step towards any effective legal regulation of happenings in space is the existence of some authentic record of what and who is presumed to be there."  

This interpretation of the main purpose of registering space objects does not preclude the possibility of using the registration data, along with other means, to identify objects so as to establish jurisdiction over specific space vehicles, render assistance to astronauts, establish the party liable for damage, etc.
The procedures for registering space objects were established by the Sixteenth Session of the U.N. General Assembly in Resolution 1721B (XVI) of December 20, 1961, which is still in effect. In this Resolution, the General Assembly:

1. Calls upon States launching objects into orbit or beyond to furnish information promptly to the Committee on the Peaceful Uses of Outer Space, through the Secretary-General, for the registration of launchings;

2. Requests the Secretary-General to maintain a public registry of the information furnished in accordance with paragraph 1 above. . . .

Resolution 1721B (XVI) thus provides for three main elements in the system for registering space objects:

1. Registration is to cover objects launched into Earth or beyond;

2. Information about such objects is to be supplied by the launching states to the U.N. Secretary-General on a voluntary basis, its scope being determined by the states themselves, and

3. The Secretary-General is to maintain a public registry based on this information.

The first data about space objects to start the U.N. registry were supplied to the Secretariat in March 1962 by the Soviet Union and the United States. Data about space objects launched have been submitted by the United Kingdom, France, Italy, Japan, and other States.

Fortunately, the relevant documents, such as the 1959 report of the U.N. Ad Hoc Committee, as well as the 1961 U.N. General Assembly Resolution 1721 (XVI), make
clear that the competence of each nation to attribute its national character to spacecraft is well established.

Further, "the attribution of nationality of space vehicles," states Dr. Seara Vazquez, "is the right of states which must be regulated by their internal legislations." No one has challenged the soundness of this policy conclusion.

Still prior to the launching of Sputnik I, Professor Cooper, invoking the analogy of ships and aircraft, recommended that the same principles should apply to space objects. He stated:

The whole theory of nationality, as derived from the law of the sea, is based on the concept that when a state gives to a ship the right to use its flag, such state assumes certain international responsibilities for the good conduct of that ship on the high seas and in foreign ports and at the same time acts as the protector of the ship to enforce its international rights. Under the Chicago Convention, aircraft are given the same characteristics of nationality. . . . While the application of the rule of nationality to rockets and satellites may be difficult, nevertheless if upper space is to be free like the high seas, then certainly a state must be prepared to be responsible for the international good conduct of its rockets and satellites; otherwise chaos might result.

E. Enjoyment and Acquisition of Resources in Outer Space

Considering now the problems about resources, it is with respect to these problems that contemporary expectations about future decisions have been most explicit and precise. As will be demonstrated in this section, customary law would appear already full blown.
In global interactions, States and their surrogates use resources as emblems of power and make claims of authority, scope, and duration of control. The more important resources include not only the land masses, but also oceans, air space, outer space, polar areas, and rivers. Some resources, such as oceans, air space over the oceans, and international rivers, which have a high degree of shared use by reasonable mutual consent, are customarily regarded as not subject to appropriation by a State or States. In first only claims that have been mutually respected in customary international law, shared access and accommodation among users were involved. Resources such as land masses and proximate waters and air space have been commonly viewed as admitting only to a modest extent shared use and competence, and States have reciprocally respected one another's claims to a comprehensive and continuing exclusive competence over such resources. The very concept of the contemporary State is imbued with a sense of exclusivity in the competence of a territorially organized group.\textsuperscript{189}

Professor McDougal observed that:

The policies followed by the general community in this allocation of resources between inclusive and exclusive authoritative control have, building upon the experience that inclusive use and competence most often achieve the greatest production and widest distribution of goods and services for the benefit of all, established a very strong presumption in favor of the inclusive control of sharable resources, with exclusive control
being protected only when it can be shown to contribute most to common interest.\textsuperscript{190}

The antecedents of inclusive enjoyment claims and use can be traced to demands of primitive nomadic tribes for inclusive access to broad grasslands.\textsuperscript{191} In more recent times, such claims to inclusive use and competence include oceans and air space over the oceans, international rivers, and the polar regions. Concomitantly, the antecedents of the claims to exclusive appropriation can be traced to the initial demands of peoples in an agricultural stage of social development for the exclusive use of the lands they harvested. Today such claims embrace claims of States for exclusive jurisdiction over land masses, proximate waters and air space, and internal rivers.\textsuperscript{192}

According to Professor McDougal, by a sharable resource we mean:

\begin{quote}
[O]ne with respect to which, within a given context, the greatest production and widest distribution of values can be achieved through inclusive use.
\end{quote}

and by a non-sharable resource we mean:

\begin{quote}
[O]ne with respect to which this same outcome can best be achieved by use that is exclusive.\textsuperscript{193}
\end{quote}

Like the resources of the earth, Professor McDougal classified resources of space into three categories, namely: (1) spatial-extension resources, such as the void of space, the surfaces of celestial bodies, and the contiguous space that surrounds such celestial bodies;\textsuperscript{194}
(2) flow or renewable resources that have successively available quantities becoming available at different intervals and are variously affected by human action, for example, the cosmic rays and other space radiations; and

(3) stock or non-renewable resources whose characteristic is that the total physical quantity does not increase significantly with time and which may be either abundant or scarce. Stock resources may include supplies or minerals or other useful material.

Further, with respect to the spatial-extension resources of space, Professor McDougal, in his comprehensive study, Law and Public Order in Space, reached the conclusion that:

Like the spatial-extension resources of the earth, the celestial bodies of space, including even the moon, are relatively vast in extent, and strategies in use by any one participant are not, therefore, likely to interfere with the strategies of others. An increase in the number of participants can accordingly be expected to bring an increase in production and distribution of values. The extreme difficulties in maintaining exclusive control over vast areas, and the high costs involved in comparison to the benefits achievable, should further, in space, as on earth, cause participants to prefer inclusive access.

With respect to the flow resources, he stated:

Like the flow resources of the earth, these resources are vast in extent and limitless in quantity. The addition of new participants in their exploitation would only add to the total quantity of values produced, without adversely affecting any participant.

He added:
Any attempt to establish exclusive appropriation of any of these flow resources of space . . . would be pointless. . . . Common interest would again appear to require, therefore, that these resources be held open for inclusive enjoyment by all.\textsuperscript{200}

With respect to the stock resources of space, Professor McDougal is of the opinion that:

\begin{quote}
[T]here would appear to be little to gain by subjecting them to exclusive acquisition. If their enjoyment is made sharable, an increase in participants would, as is the case with most other resources, increase productivity and sharing of benefits without adversely affecting the value processes of other participants.\textsuperscript{201}
\end{quote}

Professors McDougal, Jenks, and other international law experts are of the opinion that the expectations of the peoples of the world community would appear, happily, already to have crystallized into a consensus, as explicit and precise as customary consensus ever is, that the sharable resources of space, like those of the earth, are to be held free of exclusive appropriation and open to enjoyment by all upon a basis of equality.\textsuperscript{202}

The best evidence of this emerging consensus can be found in General Assembly Resolution 1962 (XVIII),\textsuperscript{203} which was adopted unanimously. It provides that:

\begin{quote}
Outer space and celestial bodies are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.
\end{quote}

It thereby reaffirms in somewhat more detailed terms General Assembly Resolution 1721 (XVI)A of December 20, 1961,\textsuperscript{204} which specified that "outer space and celestial
bodies . . . are not subject to national appropriation."

These two resolutions were not, however, without anticipation in the consistent utterances of State and international officials and publicists. For example, shortly after the Soviets struck the moon with their rocket, Chairman Kruschchev stated:

I represent a Socialist country where the word "mine" has long receded in the past and the word "our" has taken its place, and therefore when we launched this rocket and achieved this great thing, we look upon this as our victory, meaning the victory not only of our country but all countries of all mankind.205

In the same manner, President Eisenhower, in his address to the General Assembly of September 22, 1960, stated, "I propose that . . . we agree that celestial bodies are not subject to national appropriation by any claims of sovereignty."206

During the thirteenth session of the General Assembly of the United Nations, held at the end of 1958, many officials of other nations clearly expressed their expectations regarding the issue. Thus, many delegates stated the opinion that outer space should be open for the free use by all nations, and "made no distinction between the void of space and celestial bodies."207 The Italian representative, Professor Ambrosini, precisely referred to the problem of whether the celestial bodies should be subject to inclusive use or exclusive acquisition. He stated that:
In this sense our opinion differs from that which considers outer space as res nullius. We are opposed to this principle, for it would permit States to claim portions of outer space with whatever satellites, such as the Moon, may be found therein, on a basis of permanent title and sovereign powers. Moreover, the United Nations Ad Hoc Committee on the Peaceful Uses of Outer Space cautioned in its report that "serious problems could arise if States claimed, on one ground or another, exclusive rights over all or part of a celestial body." As to statements made by international officials, former Secretary-General of the United Nations, Mr. Hammarskjold, in an address in May 1958, opined: It would be my hope that the General Assembly as a result of its consideration, would find the way to an agreement on a basic rule that outer space, and the celestial bodies therein, are not considered as capable of appropriation by any state. Furthermore, Sir Leslie Knox Munro, president of the twelfth session of the General Assembly, in expressing the general expectations of the world community, stated, "I do not think that any state, within the ambit of the world's present laws, could lay claim to sovereignty over the moon or over any planet."

The consensus among "the most highly qualified publicists" is no less explicit. Thus, to name a few, Professor Jenks stated: Outer space is not subject to appropriation by reason of the facts of nature; while this may be also true of celestial bodies the
physical structure and environment of which precludes any human occupation, when such occupation is possible the prohibition of appropriation rests essentially on grounds of international public policy.212

The leading Soviet commentators have also espoused the view that "outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."213 Professor Priadov, in his book, International Space Law, stated that "the Soviet doctrine of space law was opposed from the outset to the national appropriation of outer space, the Moon or other celestial bodies."214 He further confirmed that Western jurists also recognize the principle that outer space belongs to humanity as a whole.215

Moreover, the International Law Association unanimously adopted a resolution that affirms that outer space, including the celestial bodies, may not be subject to exclusive acquisition by any State.216 The American Bar Association recommended to the United States government that its activities affecting outer space be in accordance with certain principles, one being that "celestial bodies should not be subject to exclusive appropriation."217 The Institute of International Law adopted unanimously on September 11, 1963, a resolution concerning the legal regime of outer space,218 which is of special importance by reason of the authority of the Institute and the fact
that it was adopted unanimously. The resolution declares that "outer space and the celestial bodies are not subject to any kind of appropriation" but "are free for exploration and use by all States for exclusively peaceful purposes."

From the above discussion, it appears that there is a complete consensus, explicit and precise, national and international, Communist and non-Communist, that the sharable resources of space, like those of the earth, are to be held free of exclusive appropriation and open to enjoyment by all on the basis of equality.

In summary, it can be concluded that the outer space domain has never been a legal vacuum or a lawless area, even in the absence of international agreements dealing specifically with the legal aspects of space activities but has been subject to international law. As demonstrated in this chapter, it would be wrong, however, to consider space as a kind of legal "vacuum" in which each State has absolute and unlimited freedom of action. On the contrary, as we have seen, there are fully established principles with respect to outer space. The first of these principles is that no participant is to be accorded a continuing, comprehensive, exclusive competence arbitrarily to exclude other participants from access to and enjoyment of the shared resources by all mankind. As a result, each State is authorized freely to enjoy access to space for lawful purposes and is accorded competence unilaterally to decide whether to seek such access or not.
The more important ancillary principles of jurisdiction supporting the principle of freedom of access have been (1) the principle that each State has competence to apply its authority to spacecraft on which it has conferred nationality; (2) that no State may apply its authority to the craft of other States, save for violations of inclusive prescription; and (3) that every State has the competence to protect the craft bearing its nationality from unlawful coercion by other States.

Moreover, (4) the principle of minimum order, as embodied in the Charter of the United Nations and other generally accepted prescriptions, are already extended, without necessity for a special, more explicit agreement, to all of man's interactions wherever they occur.

Last is the principle that the sharable resources of space, like those of the earth, are to be held free of exclusive appropriation and open to enjoyment by all on the basis of equality of ascent.

The author shares Professor McDougal's opinion that "...the critics who so clamantly bemoan that there is as yet [1963] no law of space are needlessly, and dangerously, destructive of existing achievement."
IV. THE UNITED NATIONS GENERAL ASSEMBLY RESOLUTIONS
ON OUTER SPACE AND THEIR LEGAL EFFECT

The purpose of this chapter is to consider whether the unanimously adopted United Nations General Assembly resolutions on outer space, namely Resolutions 1721 (XVI) and 1962 (XVIII), have a status that ranks them among the primary sources of space law, and if so, what is their legal nature. It is important to remember that the resolutions of the United Nations General Assembly are according to the provisions of the Charter recommendations and thus are not binding on the Member States as is a treaty between two or more parties, for example.

A brief review of the authority of the General Assembly according to the provisions of the Charter of the United Nations demonstrates that it has no legislative power comparable to that of the municipal legislatures of States. However, this does not mean that the General Assembly cannot pass resolutions that bind Member States, or resolutions that contribute to the creation and development of the principles and rules of international law. The broad purposes of the United Nations and the powers conferred on the General Assembly by the Charter indicate that the General Assembly can make certain decisions that bind Member States and certain recommendations or declarations.
that contribute to the creation and development of principles and rules of international law. 221

The broad powers of the General Assembly are set forth in Articles 10, 11 and 14, each of which empowers the General Assembly to act through "recommendations."

Article 10 delegates to the General Assembly the power to discuss and make recommendations on any questions or matters within the scope of the Charter or relating to the powers and functions of any organs, 222 save those restrictions that are stipulated in Article 12(1), i.e., it may not act when the Security Council is exercising the functions assigned to it "in regard to any dispute or situation relating to the maintenance of international peace and security." 223 Article 14 confers on the General Assembly the power to recommend measures for peaceful adjustment of any situation "which it deems likely to impair the general welfare or friendly relations among nations, including situations resulting from a violation of the provisions of the Charter setting forth the purposes and principles of the United Nations." 224

Given these broad powers of the General Assembly, Joyner observed that:

[B]y virtue of its representation and by power specifically granted in the Charter, it is the United Nations General Assembly which has most directly influenced the nature and substance of contemporary international law. 225
A. Legal Effects of Resolutions of the General Assembly of the United Nations

The problem of the legal effect of resolutions of the General Assembly has been widely debated by international law scholars and jurists. While the term "resolution" is applied to all determinations of the General Assembly, our discussion will concentrate only on the legal effect of resolutions embodying recommendations to Member States under Articles 10 and 14 of the Charter.

The legal effect of resolutions of the General Assembly is one of utmost complexity and controversy and has generated much debate that centers on two opposing views. The first asserts that resolutions of the General Assembly have no legally binding force and so they are merely regarded as having moral significance only. The second claims that resolutions of the General Assembly have legally binding force, but there is disagreement as to the legal nature and scope of the resolutions.226

The first view is one of skepticism about the legal nature of all resolutions. First it is emphasized that resolutions of the General Assembly are recommendations only, and these cannot be the source of legal rights and duties. Second it is assumed that law and politics are totally separate, mutually exclusive domains. The actions of States in the General Assembly of the United Nations are
regarded as politically motivated and in favor of advancing purely national interests. Third, the notorious instances of noncompliance with resolutions of the General Assembly justifies the conclusion that the resolutions have no legally binding force. Fourth, a doubt is expressed about the function of international organizations as legislative bodies. For example, Article 38 of the Statute of the International Court of Justice, which specifies the sources of law to be applied by the Court, does not include any reference to the practice of international organizations as a source of international law.227

In opposition to this view, a number of international law jurists are of the opinion that even though the resolutions of the General Assembly, in and of themselves, are not binding on Member States of the United Nations, such resolutions may have a legal "effect" on them by virtue of legal obligations derived from the traditional sources of international law, i.e. treaties, customs, or principles of law recognized by civilized nations. Moreover, some other jurists espouse the view that resolutions of the General Assembly are binding on Member States by virtue of the legal obligation derived from the process of creating international law itself.228

It is useful, in this regard, to review the various theses advanced by a number of distinguished jurists as a frame of reference within which the legal obligations
to comply with resolutions of the General Assembly are derived.

(1) **Authoritative Interpretation of the U.N. Charter**

A number of jurists postulate that in certain matters the General Assembly may make authoritative interpretation of the provisions of the Charter that are binding on Member States. For example, Professor Higgins believes that:

[I]nsofar as an organ is interpreting the provisions of the Charter to establish its jurisdiction or internal functioning, it has a clear authority so to do, and individual states which dissent may not reserve their position. But where the organ is passing on matters concerning the substantive rights and duties of states, it has the initial authority to interpret the Charter but the state may, in the non-regulatory area (that is, outside of Chapter 7 and Article 19) reserve its position, but only after considering the recommendation in good faith.

In explaining why the General Assembly can make such authoritative interpretations, Professor Higgins stated that:

This constitution [U.N. Charter] not only is an international treaty, but also contains many accepted concepts of international law. Interpretative decisions inevitably must reflect upon the meaning of international law.

In other words, the Charter of the United Nations contains not only provisions relating to its internal affairs but also clauses pertaining to general international law, some of which are the prohibition of the use of force between States in their international relations [Art. 2(4)], the inherent right of individual and collective
self-defense (Art. 51), and prohibition of the intervention in matters that are essentially within the domestic jurisdiction of any State. Such general international law has to be invoked, applied, and developed, often by the General Assembly in the context of treaty interpretation.

Moreover, Mr. Jorge Castaneda, a member of the International Law Commission of the United Nations, stated that:

The fiction that the Court resolves controversies according to law whereas the General Assembly and the Council settle political disputes, and therefore, that the resolutions of these organs cannot be sources of law, simply has no validity any longer. Frequently, individual political decisions of the United Nations organs are based on general legal conceptions. Moreover, these conceptions are sometimes invoked, thus implying an innovative and creative interpretation of the law.

He added:

Even when these resolutions concern political matters, they are often external manifestations of what an organ of the United Nations considers the applicable rule of international law. 231

A number of General Assembly Declarations may be given as examples of authoritative interpretations of the Charter. Professor Lach claims that the Declaration of the Granting of Independence to Colonial Countries and Peoples, adopted by the General Assembly in 1960, should be considered as "interpreting the principle of self-determination" indicated in Article 12 among the "purposes" of the United Nations. Professor Mallison asserted that the
Declaration on Principles of International Law Concerning Friendly Relations and Cooperation among States in Accordance with the Charter of the United Nations is a development of the principles of the U.N. Charter. Further, Professor Cassin claimed that the Universal Declaration of Human Rights may be considered as an authoritative interpretation of the Charter. In supporting his claim, he argues that according to the provisions of Articles 55 and 56 of the Charter, Member States agree to take measures in cooperation with the organization to promote universal respect for human rights. However, the Charter does not define what these human rights are, so the General Assembly is in a position to define them.

However, the Universal Declaration, per se, is not compulsory, and its legally binding force derives from the fact that the purpose of the Declaration is to define the content of a legal obligation imposed by the Charter on Member States.

(2) Expression of the Will of the International Community

According to the advocates of this thesis, the General Assembly, which consists of all the Member States of the United Nations, is regarded as having two distinct functions. In Professor Mallison's words:

The first is as a major political organ of the United Nations with a separate legal identity. The second is as a collective meeting of the States of the world community which comprise
its membership. In this second function the legal authority of the Assembly is derived directly from the Member States who have the same legal authority to develop and make international law in the General Assembly as they do outside of it. The advantageous feature of such activity in the Assembly is that it can be done more rapidly and efficiently than the same activity in a less institutionalized environment. 235

He further stated that:

The States of the world community since the early years of the United Nations have in fact used the General Assembly as an instrument to express consensus on major international legal issues by majorities substantially in excess of the two-thirds vote required by the Charter for important questions. 236

The significant role of the General Assembly as a forum for the expression of world public opinion has been cited by a number of Member States. For instance, the Secretary of State for Foreign Affairs of the United Kingdom in 1945, when reporting to the Parliament on the Charter of the United Nations, predicted that the General Assembly would become a great instrument for the forming of world public opinion that would be perilous for any State to ignore. 237 Similarly, Mr. Dulles, the United States representative, asserted that the General Assembly served as the town meeting of the world, and it was within its purview to make recommendations that reflect the moral judgment of conscience of the world community. 238

Furthermore, resolutions of the General Assembly themselves may mobilize world community public opinion. In unequivocal language, Sloan wrote:
In the marshalling of world opinion recommendations of the Assembly enjoy an advantage because of the opportunity, which is not always available in the sphere of international law, for full publicity and for a recorded vote. The force of a recommendation is not derived from a judgment made in an internal court of conscience, but from a judgment made by an organ of the world community and supported by many of the same considerations which support positive international law. The judgment by General Assembly as a collective world conscience is itself a force external to the individual conscience of any given state.239

It is worth mentioning that world community public opinion is one of the most effective sanctions of international law to bring about compliance with resolutions of the General Assembly. As Lande puts it:

The danger of external consequences, the reaction of other states, and the pressures of domestic and world opinion are thus important factors influencing government compliance with the Assembly's resolutions.240

In defending this thesis, Professor Ruiz wrote:

To maintain that the "will" of the Assembly is not law . . . and to maintain that the law-making function remains exclusively in the hands of States, would mean . . . to close one's eyes to the new realities and in particular to the "revolution" that the international community is undergoing.241

(3) Resolution of the General Assembly as Evidence of Customary International Law

The advocates of this thesis, represented by distinguished international law scholars and judges of the International Court of Justice, are of the opinion that the
activities of States in the General Assembly of the United Nations facilitate the process of the creation of customary international law. Professor Mallison, in explaining the role of the United Nations as international law maker, observed that:

The fact that the General Assembly, which is representative of the community of States, is a political body like a national legislature does not diminish its role as a prescriber of international law. The widespread use and reliance upon resolutions of the General Assembly . . . which are intended to have a law making effect provide convincing indication that the matters relied upon constitute, at the least, important evidence of the existence of particular rules of principles of international law. 242

Moreover, Professor Higgins is of the view that:

The United Nations is a very appropriate body to look to for indications of developments in international law, for international custom is to be deduced from the practice of states, which includes their international dealings as manifested by their diplomatic actions and public pronouncements. With the development of international organizations, the votes and views of states have come to have legal significance as evidence of customary law. 243

As to the importance of the United Nations resolutions and declarations, Judge Tanaka in the South West Africa Case (Second Phase) recognized that:

The appearance of organizations such as the League of Nations and the United Nations, with their agencies and affiliated institutions, replacing an important part of the traditional individualistic method of international negotiating by the method of parliamentary diplomacy . . . is bound to influence the mode of generation of customary international law. A State, instead of pronouncing its view to a
few States directly concerned, has the opportunity, through the medium of an organization, to know immediately their reaction on the same matter.\textsuperscript{244}

He added that:

\textellipsis each resolution, declaration, etc., being considered as the manifestation of the collective will of individual participant states, the will of the international community can certainly be formulated more quickly and more accurately as compared with the traditional method of the normative process.

In short, the accumulation of authoritative pronouncement surrounding resolutions, declarations, decisions, etc., concerning the interpretation of the Charter \textellipsis can be characterized as evidence of the international custom referred to in Article 38, paragraph 1(b) \textsuperscript{245} of the Statutes of the International Court of Justice.

The above-mentioned views and opinions have been objected to by some jurists. Their objection was based on the argument that the activities of States in the General Assembly cannot be regarded as the customary "practice" of States in the legal definition of practice that is required for the establishment of customary international law. Moreover, the practice of States in the General Assembly lacks another required element, namely the \textit{opinio juris sive necessitatis}. To support their view, those who argue that the activities of States in the General Assembly cannot be regarded as customary practice of States further argue that the practice of the General Assembly is politically motivated; thus, Member States usually vote for a resolution because
of their national interest or because the members of their bloc have decided to vote in a particular way. Consequently, the practice of States in the General Assembly as manifested in the form of a vote cannot be regarded as the practice of States required for the establishment of customary international law. Professor Schwebel and Professor Singha believe that votes of Member States cannot be regarded as the practice that will give rise to the development of customary international law because Member States in the General Assembly often vote for a resolution without opinis juris sive necessitatis. In Professor Schwebel's words:

General Assembly resolutions, however often repeated, are insufficient elements of state practice of themselves to establish international legal obligations.

Similarly, Professor Singha stated that:

[I]t is generally accepted under international law that the practice of states that becomes a rule of customary international law carries the conviction that states are legally bound by an action. It is difficult to say that a state's vote in favour of a resolution of the General Assembly carries its conviction that it is legally bound by the terms of the resolution. In fact, evidence exists that the practice is often different from the vote.

On the other side of the issue, a group of jurists, led by Professors McDougal and Higgins, are of the opinion that the opinio juris sive necessitatis that Member States hold at the time they cast their votes on the content of a resolution of the General Assembly is not as
important as their expectations (although their expectations fall short of the *opinio juris sive necessitatis*) that the content of the resolution would induce or control their subsequent behavior. Explaining his opinion, Professor Higgins wrote:

[T]he proposition that evidence of the existence of custom must rest not only on words and votes, but on other manifestations of state behavior, is wrongly described as positivism. Not being a naturalist, I feel that Community expectations are a proper guide to whether a practice is, or is not, "law"; and that national practice which runs counter to votes recorded at the United Nations may indeed make doubtful the claim that the resolutions of the Assembly are, in this particular circumstance, evidence of customary international law.250

Professor McDougal, with respect to community expectations as criteria to determine whether practice of States has attained the status of customary international law, wrote:

[C]ustom was supposed to arise when uniformities of behavior gave rise to expectations about authority and control in persons engaged over a long period of time in that behavior. Accordingly, the primary function of the longevity requirement was to clarify and substantiate what expectations were in fact held by members of the Community.251

Moreover, the significance of community expectations as a catalyst for the development of customary international law was envisaged by the Office of Legal Affairs of the Secretary-General of the United Nations. In a memorandum concerning the difference between a declaration and a recommendation, the Office of Legal Affairs stated that:
A "declaration" or a "recommendation" is adopted by resolution of a United Nations organ. As such it cannot be made binding upon Member States, in the sense that a treaty or convention is binding upon the parties to it, purely by the device of terming it a "declaration" rather than a "recommendation." However, in view of the greater solemnity and significance of a "declaration," it may be considered to impact, on behalf of the organ adopting it, a strong expectation that Members of the international community will abide by it. Consequently, insofar as the expectation is gradually justified by State practice, a declaration may become custom, recognized as laying down rules binding upon States.252

Although much international law has grown out of State practice, it is not accurate to think that this is the only way that such law can be created and developed. Professor Mallison provides us with an example drawn from the international humanitarian law governing armed conflict. According to Mallison, Article 9 of the unratified Brussels Declaration of 1874 provided that "irregular combatants who met certain specified criteria, not including governmental authorization but including adherence to the laws and customs of war, were to be accorded the privileged status of prisoners of war upon capture." This was incorporated into The Law of War on Land, published by the Institute of International Law at Oxford in 1880 as customary international law, although there was little or no evidence of use or practice of States applying Article 9 during the 15 years following its declaration in 1874.253 This provision of Article 9 was later incorporated into Article I of the Annexed Regulations to the Hague
Convention II of 1899 and in the Geneva Prisoners of War Convention of 1949. Each of these Conventions was widely ratified and became a multilateral treaty in force. However, in other matters, the practice of States consists mainly of rhetoric. For instance, the practice of States with regard to the legality of the use of nuclear weapons is essentially nonexistent; therefore, the value of a declaration of practice by States should not be ignored or underrated.

The advocates of the traditional theory about the requirements for formulating and establishing customary international law take the position that before any practice of States may become customary international law, such practice must be repeated for a considerable length of time. However, the significance of the repetition of States' practice can be reduced by the pragmatic requirements of international life.

In opposition to this view, a number of distinguished jurists, such as McDougal, Mallison, Waldock and Cheng, are of the opinion that the duration of practice of States is not the requisite component of the process wherein customary international law is developed. According to Professor McDougal:

The length of time required for the establishment of a customary prescription has, further, been related to the certainty with which contemporary expectations about the requirements of future decisions can be identified. In instances in which there has been no doubt about these expectations, a very short time
has been held to suffice. Thus, the doctrine of the "continental shelf," authorizing
a coastal state to monopolize the sub-soil riches of an adjacent shelf, was established
in less than ten years by a series of unilateral claims. . . .255

In his book Law and Public Order in Space, McDougal stated that:

It may also be emphasized that the length of time required for the development of
a customary prescription is a function both of general community objective and circum-
stances in context.

Time-honored practice, as Professor Ross has insisted, is not a necessary element
in customary international law; its importance is only as evidence, which may otherwise be supplied by contemporary expectations.256

Professor Mallison, in explicit terms, stated:

. . . it is not necessary that the usage or practice be continued for a long time. The
passage of time is only significant as to the existence of the practice which may also be evidenced in other ways.257

Professor Cheng is also of the same opinion:

Not only is it unnecessary that the usage should be prolonged, but there need also be no usage at all in the sense of repeated practice, provided that the opinio juris of the States concerned can be clearly established. Consequently, international customary law has in reality only one constitutive element, the opinio juris. Where there is opinio juris, there is a rule of international customary law.258

In short, the argument raised by some authors, that State practice must be repeated for a considerable period of time must be rejected due to the fact that the time element does not constitute, especially in present conditions, a factor exclusively determining the formation of a customary
norm for the law of nations. Consequently, the most important component in the process of developing customary international law, according to the opinion of most contemporary jurists, is the *opinio juris sive necessitatis*.

But another objection raised against the thesis that resolutions of the General Assembly contribute to the development of customary international law was that the practice of Member States, as expressed in the form of a vote, does not represent or reflect the *opinio juris sive necessitatis*. Member States, in voting for a particular resolution, do not conceive of themselves as creating, changing, or developing international law. Further, the advocates of this view argue that Member States' votes reflect their national interests, which are politically biased. Professor Schwebel, for example, argued that States often vote in favor of a resolution "not because they consider that their reiterated votes are evidence of a practice accepted as law, but because it is politically unpopular to vote otherwise." 259

Moreover, supporting this view, Professor Ruiz observed that:

As everybody in the United Nations is convinced that recommendations are per se not mandatory, States tend to embellish their image by putting forward draft resolutions. Other States tend naturally to support such drafts. And potential or natural opponents are often reluctant to face the risk of tarnishing or spoiling their own image by opposing the proposal openly or by casting a negative vote. 260
Consequently, a number of jurists hold the view that the resolutions of the General Assembly cannot be considered evidence of customary international law simply because of their lack of *opinio juris sive necessitatis*.

On the other hand, there are other jurists who are of the opinion that, even though it is difficult to find out whether States vote for a resolution of the General Assembly because of *opinio juris sive necessitatis*, it is not impossible to do so. In support of this statement, Professor Higgins argues that while voting in the General Assembly is influenced by psychological and political pressure, the *opinio juris* can be ascertained by looking at all available evidence surrounding the vote.\(^{261}\)

In relation to the traditional formulation of the requirements for establishing customary international law, Professor McDougal is of the opinion that the intention of the voters for a particular resolution is not as significant as the expectation about authority and control that the resolution has created for the larger community.\(^{262}\) Further, according to the same authority, customary international law was supposed to occur when "uniformities of behavior gave rise to expectations about authority and control in persons engaged over a long period of time in that behavior."\(^{263}\)

Professor Falk, in an attempt to explain the process of the creation of law within the context of international "normative" life, observed that "the characterization of a
norm as formally binding is not very significantly connected with its functional operation as law." Moreover, he found that some international norms are developed out of nonbinding undertakings. He wrote:

In the search for a basis of justification or objection it is clear that the resolutions of the Assembly play a crucial role -- one independent of whether their status is to generate binding legal rules or to embody mere recommendations. The degree of authoritativeness that a particular resolution will acquire depends upon a number of contextual factors, including the expectations governing the extent of permissible behavior, the extent and quality of the consensus, and the degree to which effective power is mobilized to implement the claims posited in a resolution.264

In sum, according to both McDougal and Falk, the opinio juris sive necessitatis must not necessarily exist at the time of the adoption of resolutions in the General Assembly. As long as such resolutions create expectation of authority and control of creation behaviors, then such authorities can be used as the basis for the formulation of customary international law.

(4) Resolutions 1721 (XVI) and 1962 (XVIII) on Outer Space

Since Member States, including the two space powers, chose the forum and machinery of the United Nations Organization to build up the legal regime of outer space, the examination of the nature of the U.N. Committee on the Peaceful Uses of Outer Space (COPUOS) may provide
some answers with regard to the legal effects and significance the Member States appear to attribute to the General Assembly Resolutions 1721 (XVI) and 1962 (XVIII).

An ostensibly pro forma, but in fact highly significant, feature of the work of the COPUOS is the agreement on the adherence to the unanimity rule, instead of the generally accepted majority rule. This gentlemen's agreement is based on the understanding that a resolution, although acceptable to an overwhelming majority of the members of the COPUOS but not to either or both of the space powers, would not be of value.

The members of the Legal Sub-Committee of the COPUOS apparently have accepted the following principles as procedural guidelines for the creation of the legal regime of outer space: (1) The elaboration of the rules of space law can be achieved only by a step-by-step approach, conditioned by the accord between the two space powers; (2) the two Space Powers, supported by the active cooperation of Member States, have chosen the COPUOS and the General Assembly as the competent forum to negotiate and establish the international rules concerning outer space; (3) though an agreement between the Space Powers has a decisive influence on the elaboration and recognition of certain rules of space law, the confirmative cooperation of other States is required in this international law-making process, which is actually being granted, inter alia, through the exercise of rights set forth in the United Nations Charter
Resolution 1721 (XVI) of December 20, 1961, was adopted unanimously by the First Committee on December 11, 1961, and then by the General Assembly on the following day. Its operative part is worded as follows:

1. Commends to States for their guidance in the exploration and use of outer space the following principles;

(a) International law, including the Charter of the United Nations, applies to outer space and celestial bodies;

(b) Outer space and celestial bodies are free for exploration and use by all States in conformity with international law and are not subject to national appropriation.

Resolution 1721 (XVI) of the General Assembly, in its operative part, clearly shows the crystallization of world community expectations. The Resolution represented an authoritative confirmation and recognition of the contents of norms belonging to the universal customary law of nations, which over the first few years of the space era were formed as a result of the States' uniform practice. To support our view, some eminent jurists' opinions, States' representatives' statements, and State practice are of importance.

The two Space Powers, which took the lead in the conquest of outer space from the beginning of the cosmic era due then to scientific and technical prowess, did not leave the slightest doubt in the official statements of their representatives as to their determination to treat
outer space as a region that must remain open for all States and cannot become an object of territorial claims made by any of them. On the part of the remaining members of the international community, there did not appear any act of protest against such an approach to the essence of the international regime of outer space or against concrete steps taken by the United States and the Soviet Union related to the peaceful conquest of outer space. This approach was reflected not only in a number of official statements made by particular States' representatives, but also, and this should be stressed, in the wording of the U.N. General Assembly Resolution 1721 (XVI) of December 20, 1961.

More importantly, both the Soviet Union and the United States treated the Resolution as binding. In Professor Cheng's words:

"... the former [Soviet Union] apparently because the resolution had been adopted unanimously by the General Assembly, and the latter [United States], it would seem, for the same reason, and because it considered the resolution to be declaratory of international customary law."

An explanation of the possible legal significance of a unanimous vote is embodied in the view of the United States' delegate:

"International agreements were not, however, the only sources of law. As stated in Article 38 of the Status of the International Court of Justice, decisions of international tribunals and the growth of customary law as evidenced by State practice should also be..."
taken into consideration. When a General Assembly resolution proclaimed principles of international law -- as resolution 1721 (XVI) had done -- and was adopted unanimously, it represented the law as generally accepted in the international community. 269

Furthermore, in the opinion of some eminent jurists, the principles proclaimed by Resolution 1721 (XVI) are now attaining the character of customary international law because they are acted upon or acquiesced to by States. For example, Johnson, former General Counsel of NASA, asserted that:

*Since the very beginning of the cosmic era, numerous satellites launched by both the United States and the Soviet Union have repeatedly passed over the territory of every nation on earth. No permission was sought in advance, none was expressly given by any states, and not a single protest has been registered by any other states. Therefore, no state has the right to exclude other states from the use of any part of outer space above this altitude.* 270 [emphasis added]

Oscar Schachter is of the same opinion. In the First McGill Conference on the Law of Outer Space, held in April 1963, he stated that:

*The fact that the General Assembly has not been granted competence to legislate (except on matters of internal organization) is not sufficient to divert the strong desire for an expression of international policy that would facilitate orderly and peaceful development. It is indeed of some significance that most of the world looks to the General Assembly as the one instrument which is available for this purpose, and that its resolution 1721 (XVI), which was adopted unanimously, is now generally considered to be a statement of the basic legal precepts governing outer space. The fact that it*
is a resolution and not a treaty has not deprived it of legal effect.\textsuperscript{271}

At the same Conference, with respect to Resolution 1721 (XVI), Professor McDougal expressly stated that:

I submit to you that when we have a resolution of the General Assembly saying that access to space is free and open to all without discrimination, no country can act to the contrary in the future without resorting to naked force, as contrasted with authority.\textsuperscript{272}

Moreover, Professor Cohen, director of the Institute of Air and Space Law at McGill University and the editor of \textit{Law and Politics in Space}, stated that "customary general principles: were "given further judicial status by Resolution 1721 (XVI)" of the General Assembly.\textsuperscript{273}

In sum, from the above discussion it can be concluded that General Assembly Resolution 1721 (XVI) of December 20, 1961, is a declaration of customary international law because: (1) it was unanimously adopted by Member States; (2) it was an expression of the will of the international community; (3) it clearly showed the crystallization of the world community expectations and represents an authoritative confirmation and recognition of the Member States' practice; and (4) it has a legal "effect" on world opinion about conduct of Member States in outer space.

On December 13, 1963, the General Assembly unanimously adopted Resolution 1962 (XVIII), which brought a more comprehensive list of rules of the States' conduct with regard to outer space.\textsuperscript{274} This resolution, entitled
"Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space," was a way of summing up of the preliminary stage in the formation of international space law. It was a concise synthesis of the opinions prevailing in the worldwide doctrine and trends observed in the previous policy of States. It declares six principles of law as governing the uses of outer space: equality, common use, State responsibility, ownership and control, and common humanity.

The immediate question to be asked is, what are the character and effect of Resolution 1962 (XVIII)? To answer this question, we will examine some of the legal principles it declares, followed by an analysis of statements made by State representatives and distinguished writers.

It declares that "outer space and celestial bodies are free for exploration and use by all States on a basis of equality and in accordance with international law." This principle of equality of States in their exploration and use of outer space no doubt reflects the principle of States' equality as established under Article 2(1) of the United Nations Charter, which reads:

The Organization is based on the principle of the sovereign equality of all its Members.

Resolution 1962 (XVIII) in its third principle states that "outer space and celestial bodies are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."
This principle (as explained in Chapter III of this thesis) is evidence or expression of customary international law. In other words, it represents the will of the international community that common use precludes appropriation. Moreover, this principle is supported by States' practice since the launching of *Sputnik I* in 1957, when the United Nations debates represented a clear confirmation of the proposition advanced by the Ad Hoc Committee in 1958, that the principle of free access to, and enjoyment of, outer space was becoming irrevocably authoritative through remarkable uniformities in the practice and announced expectations of States. This trend is supported by most of the officials of the United Nations. As a result, it is safe to say that Resolution 1962 (XVIII) at this point is evidence of customary international law and is consequently binding upon Member States.

The seventh principle is in relation to jurisdiction and control of spacecraft. This principle also is supported by both the customary practice of States and writings of eminent jurists. Therefore, Resolution 1962 (XVIII) provides the international community with norms, with respect to which the Member States of the United Nations, including the space powers, have achieved consensus. These principles are a reflection of the expectations of the world community, and they are a clear manifestation of the will of the Member States.
The nations of the world, as already pointed out, chose the United Nations as the competent forum to elaborate, declare, and confirm the norms of space law. Therefore, a brief discussion of the statements made by State representatives with regard to Resolution 1962 (XVIII) is appropriate.

When the draft resolution was presented to the First Committee, the United States delegate, who spoke first, in effect introduced the draft and was reported to have stated:

The United States Government considered that the legal principles contained in the draft Declaration reflected international law as accepted by Members of the United Nations and it was prepared to accept them. . . . 278

Thus, the United States government basically agreed that the resolution would be declaratory of international law as accepted by the international community.

The Soviet delegate, who spoke next, said:

The United States representative had said that in his Government's view the legal principles contained in the draft declaration reflected international laws accepted by the Members of the United Nations and that the United States for its part intended to respect them. The Soviet Union, in its turn, undertook also to respect the principles enunciated in the draft declaration if it were unanimously accepted. 279

The United Kingdom delegate drew the following distinction between an ordinary resolution and a unanimously adopted resolution, such as Resolution 1962 (XVIII). He stated:

Although as stated by the U.S.S.R. delegation, resolutions of the General Assembly were not required to be unanimous save in the exceptional
cases provided for in the Charter -- binding upon Member States -- a resolution, if adopted unanimously, would be most authoritative.\(^{280}\)

The Indian delegate went further. In his opinion, "A declaration had moral force and, when adopted unanimously, was generally accepted as part of international law."\(^{281}\) Similarly, the Canadian representative, referring to the draft Resolution 1962 (XVIII), stated:

[T]he legal principles contained in it reflected international law as it was currently accepted by Member States. It was significant in that connexion that the two major Space Powers had declared their intention, provided that draft declaration was approved by the General Assembly, to conduct their activities in outer space in conformity with these principles. His Government also undertook to do so.\(^{282}\)

Finally, the Australian representative stated:

While in our view a General Assembly Declaration of legal principles cannot itself be creative of legal duties, it is equally not the Australian delegation's view that such a General Assembly Declaration can have no part in the development or creation of international law. It is our view that a Declaration of legal principles by the General Assembly, especially if universally adopted and adhered to in practice, may be valuable evidence of international custom, which in turn is a most important source of law.\(^{283}\)

During the fourth session of the Legal Sub-Committee, held from September 20 to October 1, 1965, the retrospective statements made by the delegates are of great importance at this stage. In the course of the debates on the draft agreements on assistance to and return of astronauts and spacecraft, and on liability for damage caused by objects
launched into outer space, the delegates referred to Resolution 1962 (XVIII) as to an instrument in which the principles recognized as rules of international law found their expression. The two draft agreements were discussed in the legal framework established by Resolution 1962 (XVIII). The Soviet representative ranked the resolution among the recognized sources of international law when he argued as follows:

It would be contrary to the United Nations Charter, the Declaration of Legal Principles and the generally accepted rules of international law to demand that a State on whose territory a military device had fallen should return that device to the launching State.\(^{284}\)

Moreover, in regard to the legal nature of the Resolution, the following statements have importance. The Australian delegate held that the Resolution "might serve in part as a source of international law based on the practice of the States."\(^{285}\) The Czechoslovakian delegate was in agreement with the Australian statement in this respect and recalled that following the adoption of the Declaration, the governments of the United States and the Soviet Union had formally declared that they considered themselves bound by its principles.

As stated earlier, the intention and interest of the world community were to agree on the rules of space law. For this purpose the forum of the United Nations was used. Consequently, it may be permissible to say that Resolution 1962 (XVIII) is a representation or reflection
of the community of nations' expectations, and for this reason was adopted unanimously. Some Member States went further and regarded the legal principles contained in the Resolution as reflecting international law. Further, the Resolution is a "declaratory source of law" as well. It declares the provisions the States accept as binding under existing international law, and which they must regard as international law.

Furthermore, a number of eminent writers expressed their opinions about the legal status of Resolution 1962 (XVIII). For example, Professor Schachter, at the First McGill Conference on the Law of Outer Space, held the opinion that:

[D]eclarations adopted with general approval by the United Nations General Assembly which purport to set in terms of legal authority standards of conduct for States, can be regarded as an expression of "law" which is regarded as authoritative by governments and peoples throughout the world. 286

Professor Jenks is more explicit on the subject. He stated:

While Resolution 1962 (XVIII) is somewhat less than a treaty it must already be regarded as rather more than a statement of custom. It represents the Twelve Tables of the Law of Space... 287 [emphasis added]

Professor Ogunbanwo, in his book entitled International Law and Outer Space Activities, 288 stated that:

Resolution 1962 (XVIII) contains nine principles which may be regarded as the cardinal principles or magna carta of the international law of outer space. The Resolution introduced a solid base of generally accepted principles around which space law developed.
Further, on the evidence of the attitudes of States, Professor Goedhuis concluded that:

On the two basic principles of the resolution [1962 (XVIII)] *viz.* the freedom of outer space for exploration and use and the prohibition of national appropriation of outer space and celestial bodies, a consensus had emerged before the adoption of the resolution that these principles formed part of customary international law concerning space.289

Commenting on the Resolution and its legal effect, Professor Goedhuis observed that:

It is submitted that as regards the two basic principles laid down in the Resolution [1962 (XVIII)] and in Resolution 1721 (XVI), it cannot be said that only the Space Powers are in agreement as to the binding character of these principles. The common interest of all States in the free exploration and use of outer space and celestial bodies had become so widely self-evident that, as has been said, no State contradicted the need for this freedom by any inconsistent practice or any other manifestations of *opinio juris*. 290

From the above discussion, it can be concluded with respect to the legal effect of Resolution 1962 (XVIII) that it is declaratory of customary international law and the Charter of the United Nations; thus States are bound to it since: (i) it was unanimously adopted; (ii) supported by the practice of States; (iii) is an expression of customary international law as agreed to by the international community; (iv) for most Member States it is a logical legal extension of principles of the U.N. Charter itself.

From the above discussion, the study of the legislative power of the General Assembly of the United Nations according to the Charter, the dicta of international tribunals,
and the opinion of eminent jurists of various communities indicates that the General Assembly has no legislative power in the sense of that of national legislatures of various States. Aside from some internal administrative matters, the General Assembly can only pass resolutions that are of the character of recommendations. Resolutions of the General Assembly are not in and of themselves binding upon Member States of the United Nations.

Nevertheless, resolutions of the General Assembly, particularly of the declaratory type, do have great moral and political force, since they are the solemn declarations of virtually all representative bodies of the international community. In case the resolutions or declarations are adopted by consensus, they may be regarded as the expression of the will of the community of nations. They may also have legal force if they are authoritative interpretations of the Charter of the United Nations, or the declaration of existing customary international law. Furthermore, they may facilitate the process of the development of customary international law by serving as the indicator of the practice of States, repetition of such practice, and the opinio juris sive necessitatis. In short, resolutions of the General Assembly may have legally binding force by virtue of the legal obligation derived from the already accepted sources: the Charter of the United Nations, and principles and rules of customary international law.
The contribution of resolutions of the General Assembly to the development of customary international law is probably most discernable in its Resolutions 1721 (XVI) and 1962 (XVIII) concerning outer space.
V. INTERNATIONAL LIABILITY FOR DAMAGES
CAUSED BY SPACE OBJECTS:
THE 1972 LIABILITY FOR DAMAGES CONVENTION

The general topics of outer space exploration and legal liability are not new. Outer space has been discussed, according to Professor Frokosch, "since before Icarus flew with wings of wax and feathers fashioned by his father Daedalus," and legal liability has been the subject of much discussion and dissention before it was supposedly put to rest by the Space Treaty and the Liability Convention.

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 to the world community 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 also life on Earth as a whole. Professor McDougal stated that:

Collision involving spacecraft may seem to some improbable. Because of the mere handful of space vehicles operating in the vast reaches of space, one might expect collision or interference only as an extreme rarity. However [as was indicated previously in Chapter I of this thesis], the hazards of collision and other forms of interference involving spacecraft do exist, and such a possibility has been generally recognized.
Twenty-seven years ago the thrill of *Sputnik I*, followed twelve years later by man's giant step on the Moon, triggered consternation among the nations of the world because of one of its several consequences. That consequence involved the liability of nations and international intergovernmental organizations for damages attributable to, or stemming from, their activities. The fear of this consequence, among others, had to be balanced against the desire, even need, to explore, conquer, and exploit the new frontiers of the outer space domain; and separately, the super powers intruded their military views.

The result was the initial search for a general stop-gap solution not only to the liability problems, but also to interrelated matters such as the adoption of the Space Treaty. It was believed that once the Space Treaty was ratified, the time bought would then result in carefully constructed, separate conventions particularly geared to each of the other problems, for example, the Rescue Agreement and the Liability Convention. 293

Since 1958, the United Nations has been the focal point for the establishment of an international legal regime for the space environment. It was perceived from the beginning that space activities would produce injuries for which recovery should be allowed. Following a series of proposals presented by the United States and the Soviet
Union, agreement was reached by the General Assembly on January 25, 1967, when it adopted Resolution 2222 (XXI) containing the Space Treaty.\(^\text{294}\)

Articles 3, 6 and 7 of the Space Treaty have direct application to the matter of damages. Article 3 states that:

State Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding.

Article 3 requires that such activities conform to the general principles of law as they have found their way into international law, customary international law, and such subsidiary sources as the holdings of international tribunals and the writings of publicists.\(^\text{295}\)

Article 7 provides that:

Each State Party to the Treaty that launches or 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 on the Earth, in air space or in outer space, including the moon and other celestial bodies.

This provision is based on paragraph 8 of Resolution 1962 (XVIII).\(^\text{296}\) Article 7 of the Space Treaty has created a general principle of tortious liability for damages on the part of States that launch or from whose territories objects are launched into outer space. Since this is
a general principle of liability, the Space Treaty has left unresolved such questions as the kind of injury for which recovery may be had; should liability be without regard to fault for some or all activities, or should it be based on fault; and should the liability of the launching State be unlimited in amount?

An assessment of the terms of Articles 3 and 7 of the Space Treaty makes it clear that international law is generally relevant to the liability of States for launching space objects and for the space activities resulting from those launchings. Because international law is applicable to such conduct, it is important to identify some international principles concerning space activities that do not derive from formal treaties.

Article 3 of the Space Treaty allows for the application of customary international law to space activities. The following statement supports the validity of this conclusion:

In the absence of any specific agreement to the contrary, there is a customary rule of international law which provides that States, either individually or together with other States in international organizations, are liable for damages caused to other States through acts committed within their jurisdiction particularly where those acts are committed with a high degree of State participation and supervision. Launching of space objects would appear to fall within that kind of category.297

Customary international law has found expression in the declarations of international conferences, such as in Principle 21 of the 1972 United Nations Conference on
the Human Environment, which asserts that States have "the responsibility to ensure that activities within their jurisdiction and control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction." Moreover, this principle was confirmed by General Assembly Resolution 2996 (XXVII) on December 14, 1972, as "laying down the basic rules governing" the international responsibility of States concerning the preservation and protection of the environment.298

The duty to avoid causing damage to other States and to natural persons, as well as the duty to pay compensation for damage, has also been established in international case law. In the well known Corfu Channel case, the International Court of Justice held that there is an obligation of every State "not to allow knowingly its territory to be used for acts contrary to the rights of other states."299 The same principle, coupled with the duty to pay monetary damages for identified harm to property, was promulgated in the earlier Trail Smelter arbitration.300 The foregoing resolutions and judicial holdings must be taken into account both in identifying the duty under international law to compensate for harm and for their influence on the formulation of standards relating to the measure of damages.

Moreover, the representative of Argentina to COPUOS in 1966 stated that: "States should bear international responsibility for damage caused to other States as a result
of their space activities and those of international organizations to which they belonged." Consensus in COPUOS was quickly reached that liability should extend to both natural and juridical persons and to damage caused by a space object or a component part on the earth, in air space, and in outer space, including the moon and other celestial bodies.

At the time the Space Treaty was being reviewed by the United States Senate, attention was given to the meaning to be assigned to Article 7. Ambassador Arthur Goldberg, the principal United States negotiator, told the Committee on Foreign Relations that those who launch space objects are "internationally liable for damage to another state party by such object or its component parts on earth, in air space, or in outer space. I think any reasonable interpretation of that clause would mean physical damage." Article 6 of the Space Treaty is based on paragraph 5 of Resolution 1962 (XVIII). Article 6 provides that international responsibility for national activities in outer space shall be borne by State parties to the Space Treaty, whether such activities are carried out by governmental agencies or by nongovernmental entities. The responsibility for compliance with the terms of the Space Treaty shall be borne by the State concerned. By this provision, national entities cannot escape the international
implications of their activities in outer space, since only States are subject to international law. Further, Article 6 provides that the activities of nongovernmental entities in outer space require the authorization and continuing supervision by the appropriate State Party to the Space Treaty.

The third sentence of Article 6 made international organizations and State Parties to the Space Treaty jointly responsible for the activities in outer space by such organizations. Since international organizations are not parties to the Space Treaty, and in order to strengthen the effectiveness of Article 6, Article 8 made State Parties responsible for making international organizations of which they are members comply with the provision of the Space Treaty.\textsuperscript{305}

Under the doctrine of sovereign equality of States, the sovereign State is regarded as the only real subject of international law. However, in modern times, treaties have become common forms of creating rights and duties, e.g. treaties to which international organizations are parties. It will be recalled that in the Advisory Opinion on "Reparations for Injuries Suffered in the Service of the United Nations,"\textsuperscript{306} the International Court of Justice affirmed the international personality of the United Nations. Under the terms of the Space Treaty, international organizations are accorded international personalities that
will enable them to discharge effectively the purposes and functions of their organizations. This in fact means that international organizations engaging in space activities will be subject to international law and capable of possessing international rights and duties without becoming parties to the Space Treaty.

Since Article 7 of the Space Treaty merely establishes a general principle of liability, it was recognized that further work will have to be done to establish a specific agreement on liability for damages caused by space objects launched into outer space. In Professor Dembling's words:

Although the Outer Space Treaty contains a provision making any state party to the Treaty internationally liable for damage to another state as a result of its outer space activities, it was generally recognized by the 28 member nations of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space and by the General Assembly that it was necessary to fashion a separate convention on liability.307

Moreover, while Article 7 formally established the principle of liability for damage, it did not "specify the conditions under which liability is to be assessed and paid."308

The subject of liability for damage caused by space objects has received a great deal of attention in legal circles and was the subject of discussions at a number of international conferences.309 Extensive consideration has been given to it by the United Nations through COPUOS.310 After many years of detailed study and extensive negotiations on many complicated problems involving conflicting interests
of different States, the Legal Sub-Committee of COPUOS was able to agree on a Draft Convention on International Liability for Damage Caused by Space Objects, and the Draft was finally adopted by the General Assembly on November 29, 1971. 311

The Liability Convention in its Preamble and 28 Articles added substantially to the enlargement of the international law of outer space. It extended and supplemented the provisions of the Space Treaty rather than derogating from or replacing them. Consequently, this chapter will examine the provisions of the Liability Convention to determine whether, in fact, it elaborates "effective international rules and procedures concerning liability for damage caused by space objects" and ensures "prompt payment of a full and equitable measure of compensation to victims of such damage." 312

A. Purpose and Definitional Problems

(1) "Victim-Oriented" Convention

Although the objects of a treaty may be gathered from its operative clauses taken as a whole, the preamble is the normal place in which to embody, and the natural place in which to look for, any express or implicit general statement of the treaty's objects and purposes. 313

The various stages the draft convention went through in this regard show a marked development from a rather
broadly described purpose to a precise and clear guideline for the application and interpretation of the Liability Convention.

From the very outset the central theme distinguishable in the views of the delegates as to this purpose was the protection of the victim. The first U.S. draft sought "to establish a simple and expeditious procedure to provide financial protection against damage." The United States delegate stated that "the international community would [thus] have some assurance that the powers which were already engaged in outer space activities were ready to meet their responsibilities and to compensate injured persons."314 Further, another delegate "stressed the need to ensure maximum protection for the possible victims."315

The Belgian and Hungarian drafts equally recognized the need for rules to ensure protection against damage caused by objects launched into outer space. The Hungarian draft contained the following preambular paragraph:

Believing that the establishment of such rules and procedures would facilitate the taking of the greatest possible precautionary measures by States and international organizations involved in the launching of objects into outer space to protect against damage inflicted by objects launched into outer space.

Various representatives expressed their concern for the fate of the innocent victim: "The desired goal was to establish a simple and expeditious procedure governing financial compensation for damage suffered by persons [not connected with space activities]."316
The General Assembly gave its first guideline to COPUOS with respect to the contents of the Liability Convention. Resolution 2601 (XXIV) of December 16, 1969, provided in operative paragraph 5:

... the convention is intended to establish international rules and procedures concerning liability for damage caused by the launching of objects into outer space and [to ensure], in particular, the [prompt and equitable compensation for damage].

Accordingly, the "victim-oriented" character of the convention was firmly established.

Again, the General Assembly laid down in even more detail the objective sought by the Liability Convention. Resolution 2733B (XXV) of December 16, 1970, provided that:

... a condition of a satisfactory convention on liability is that it should contain provisions which would ensure the payment of a [full] measure of compensation to victims and [effective] procedures which would lead to the prompt and equitable settlement of claims.

The fourth paragraph of the Liability Convention Preamble as agreed to reads as follows:

Recognizing the need to elaborate effective international rules and procedures concerning liability for damage caused by space objects and to ensure, in particular, the prompt payment under the terms of this Convention of a full and equitable measure of compensation to victims of such damage. 317

According to Fitzmaurice, the preamble of a treaty can legitimately have interpretational character and effect in two ways:
(1) in order to elucidate the meaning of clauses the purpose of which might otherwise be doubtful;

(2) to indicate the juridical "climate" in which the operative clauses should be read, whether for instance liberally or restrictively, broadly or strictly.318

In the context of the above preambular paragraph the "juridical climate" seems to be clear; the operative clauses of the Liability Convention should be read in such a way that the victim receives complete justice. In sum, the interpretation of the provisions that follow should be as victim-oriented as possible.

(2) Definitional Problems

(a) The Meaning of Damage

There are a number of questions that may appropriately be raised in connection with damage under the Liability Convention. First, what is the meaning of "damage"? How broadly or narrowly is the term to be interpreted? Does damage cover only physical injury or also injury affecting mental or social well being? Specifically, does it include loss of consortium, mental anguish, pain and suffering, invasion of the right to privacy? Second, is it to include only direct or also consequential damage where the damage does not flow directly and immediately from the act, but only form the consequences of such act, such as loss of future earnings and profit or damage indirectly resulting
from spatial reconnaissance? Furthermore, does it encompass
damage caused by atomic radiation or other advanced energy
sources? These questions could undoubtedly be further
expanded, but enough has been said to initiate the scope
of our inquiry pertaining to the concept of damage under
the Liability Convention. Professor Dembling observed that:

> While it is quite clear that compensation
should be provided for death of, or physical
injury to, a human being, or physical damage
to property, it is not clear that compensation
should be afforded for every type of damage
that might be perceived. . . .

> [T]o what extent should loss of use of property
be compensable, as distinguished from damage
to the property itself? Should psychic injury
to human beings be compensable? How does one
measure the damage caused by pollution of the
atmosphere by toxic fuels, or radiation?
Should some form of what has been called
"moral" damages be assessed?

All draft proposals submitted to the Legal Sub-
Committee included liability for damage occurring on
the surface of the earth, in the air, and in outer space.
According to Article I(a) and Article II of the United
States Draft proposal, the term "damage" means loss of
life, personal injury or destruction or loss of or damage
to property on earth, in air, and in outer space. Article II
of the Belgium Draft convention defines the term "damage"
as follows: "Any loss of which compensation may be claimed
under the national law of the injured person, including
judicial and legal costs and interests."

The term "damage" as referred to in Articles II, III,
and IV of the Liability Convention is defined in Article I(a)
of the Liability Convention as the "loss of life, personal injury or other impairment of health; or loss of or damage to property." As this Article provides a relatively broad definition, the question arises as to what kind of damages are covered by this provision. In fact, many questions are left open with this general definition, and intentionally so; it would have been impossible to agree on all the various kinds of damages for which there would be compensation.

Article I of the Liability Convention enumerates four kinds of recoverable harm; namely, loss of life, personal injury, other impairment of health, and loss of or damage to property. "These all fall within the actual, direct, general, foreseeable, or compensatory classification."\(^{322}\) According to Professor Christol, "a claimant would be required to show that the harm flowed directly or immediately from, and as the probable or natural result of, malfunctioning of the space object."\(^{322}\)

Professor Foster, in referring to personal injuries, has concluded that recovery can be had when the harm results from physical impact with the debris of a space object or from contamination emanating from such an object, and that compensable harm does not require "physical impact with a space object."\(^{324}\) Relying on the broad terminology of Article I(a), he concludes that "it is clear that all injuries to persons are covered whether or not they are accompanied by objective or substantially harmful
physical or psychopathological consequences provided they at least result in an 'impairment of health.'"\(^{325}\) The World Health Organization has identified health as "a state of complete physical, mental, and social well being."\(^{326}\) Accordingly, the terms of the Liability Convention -- "other impairment of health" -- can be interpreted as extending beyond the harm associated with loss of life and physical injury. "Impairment of mental resources or faculties would support claims for monetary compensation."\(^{327}\) It is clear that direct damages -- those resulting from an act without the intervention of any intermediate controlling cause -- are covered by the Liability Convention.

(b) Moral Damage

During the Liability Convention negotiations, the issue of "moral damage" was raised. The question was whether moral damages are to be compensated under the Liability Convention, since not all municipal legal systems provide for such damages. For example, the legal systems of Western countries provide liability for that kind of damage; on the other hand, those of communist countries do not accept any liability for immaterial damages.

According to Article II of the Hungarian Draft Proposal, "a claim for damage may be advanced on the ground of loss of profits and moral damage whenever compensation for such damage is provided by the law of the State liable for
The Hungarian proposal made sure that States that did not recognize moral damage would not have to pay for it. The consequence of such a theory would be that if damage were caused in a State whose national law recognizes moral damages, a compensation for immaterial damage would be granted. On the other hand, if the damage occurred in a State that did not accept moral damage, no compensation would be offered.

For example, suppose a fragment of a space vehicle launched by the United States caused moral damage or other immaterial losses to a citizen of a country that does not accept the compensation of moral damage. It would be unjust on the part of that citizen's government to take advantage of the different legal system of the other country and claim moral damage.

With respect to moral damage, it was argued by the Soviet Union that compensation for moral or immaterial damages (pain and suffering) was a form of punishment of the person, in casu a State, who had inflicted damage. Since all States were sovereign and equal, it was not within their jurisdiction to punish other States; the Soviet Union, therefore, did not accept this concept and gave support to the Hungarian proposal, at the same time assuring that it "would not insist that Soviet citizens should be compensated for moral damage even in cases where such damage was recognized by the law of the State liable for the damage."
In international law a moral injury has been contrasted to a material injury. "The former would consist of injury to the dignity of sovereignty of a state, while the latter would involve damage to persons or property." Illustrated of a moral injury in international law would be the breach of a treaty obligation. The mere breach would not cause material injury. However, the moral injury would oblige the respondent State to make suitable "monetary amends to the injured state." Furthermore, moral damage is recognized in municipal laws of both civil and common law countries. This does not mean that all municipal laws contain provisions for awarding compensation in the area of moral damage. Among the types of recovery allowed by international tribunals has been the value of lost or destroyed property, including compensation for lost profits. In cases where claims have been based on personal injuries, recovery has included "medical expenses, loss of earning, pain and suffering, and mental anguish." Writing on the moral damage issue, Foster stated that: This issue was not discussed in any great detail in the Legal Subcommittee, nor does the Convention specifically deal with it. Thus, it can be said that, despite the problems involved in placing money values on pain and suffering and loss of capacity to enjoy life, compensation may be awarded for such losses. The United States has espoused Foster's view. In offering testimony to the Senate Committee on Foreign Relations, the
spokesman for the Department of State said that:

• . . . claims covering moral damage aspects are well known in international legal and United States domestic practices, and hence the United States would not hesitate to include them in claims we might present. 334

Further, this position has been affirmed by the General Counsel for NASA. He stated that "the U.S. position is that we would not hesitate to include them [moral damages] in the claims we may present." 335 Moreover, Professor Alexander has interpreted the Liability Convention as permitting recovery for moral damages in the form of pain and suffering experienced by a person injured by a space object and also for mental anguish on the part of a survivor of a person who perished. 336 In conclusion, it is certain that the foregoing illustrations of moral damage are compensable under the Liability Convention.

(c) **Indirect Damage**

The question has been raised whether the Liability Convention covers indirect, consequential, remote, or unforeseeable consequences (delayed damage). These concepts relate to harm produced by a tortious act that flows naturally but not directly from the wrongful act; 337 in other words, they are not the direct result of the activity. For example, does a heart attack resulting from the impact of space debris near the victim constitute indirect injury recoverable under the Liability Convention?
The question was discussed at some length during the seventh session of the Legal Sub-Committee (1968), and, although there was some support among socialist delegations to expressly exclude compensation for indirect damage because the concept was deemed ambiguous, a substantial number of delegates agreed with the Japanese delegation that it was better not to refer to indirect damage in the convention, since it would lead to serious complications. If such reference were omitted, the notion of damage would remain, and that, according to Japan:

... should be considered in the light of the relationship between cause and effect, between the launching of the space object and the damage that occurred. If such a relationship were established, the term "damage" would be sufficient under the proposed Convention without the need to discuss whether it was direct or indirect.

In short, the majority of delegates in the Legal Sub-Committee were of the opinion that the question of indirect damage should be left open to be dealt with as individual cases might arise.

In international tort law, causation conditions the allocation of damages for harm. Articles II and III of the Liability Convention specify that "damages can only be recovered if the harm is caused by space object of a launching state." As mentioned earlier, no indication was given by the Liability Convention as to whether claims will be for both direct and indirect damage. According to Foster's view, "nothing could have been achieved by attemp-
ting a strict distinction between direct damages and its association with foreseeability, on the one hand, and indirect damages and its association with unforeseeable consequences, on the other hand." In Foster's words:

These considerations, it is suggested, are irrelevant to a determination of whether compensation should be paid for specific damage arising out of a space object accident. The word "caused" should be interpreted as merely directing attention to the need for some causal connection between the accident and the damage, while leaving a broad discretion so that each claim can be determined on its merits and in the light of justice and equity, for it is difficult, if not impossible, to foresee all the circumstances that may result in damage.

Matte also concluded that the delegates did not determine precisely if indirect damage was to be compensable; as a result, if there were the required degree of causality to bring about liability, the damage would be "decided in such case by the parties concerned, or, failing their agreement by a claims commission." Peter Haanappel has used the Cosmos 954 incident to illustrate how clean-up costs might be considered as indirect or consequential damage. This "illustration assumes that the presence of nuclear debris in Canada did not cause measurable damage and that precautions taken by Canada were designed to prevent possible damage."

Nevertheless, Haanappel concludes that:

It could be argued that Canada's search and rescue costs were caused by fulfilling its common law duty to mitigate probable damages and that these costs would therefore qualify
as indirect or consequential damage in the sense of Article VII of the Outer Space Treaty.\textsuperscript{345}

According to Christol, the term "caused by" needs to be examined from two perspectives:

It might be interpreted as providing that only a direct hit by space debris would allow for the recovery of damages. Or, more reasonably, it would allow for the additional consequences produced as a result of the initial hit. Thus, this expression would allow for the recovery of damages both for a direct hit and for the indirect or consequential aspects of a space object accident.\textsuperscript{346}

On the other hand, the term "caused by" also can be interpreted as "merely directing attention to the need for some causal connection between the accident and the damage."\textsuperscript{347}

Since no conclusion was reached among the delegates as to "direct" versus "indirect" cause, the word "cause" should only require a causal connection between the accident and the damage. As stated by Foster, it will be difficult, if not impossible, to foresee all the circumstances that may result in damage.\textsuperscript{348} Therefore, there has to be a broad discretion so that each claim can be determined on its merits and in light of justice and equity. Further, it may be anticipated that the Liability Convention covers both direct and indirect damages resulting from the malfunctioning of a space object and its component parts.

(d) Nuclear Contamination Damage

Regarding the crash of the Soviet satellite \textit{Cosmos 954} over Canadian territory in 1978, the question arises whether
nuclear damages resulting from nuclear reactors of space objects are included within the scope of the Liability Convention. In order to answer this question, a brief discussion of the two methods of treaty interpretation seems appropriate.

(1) **Plain Meaning v. Multi-Factor Analysis.** The "plain meaning" approach is the belief that words in treaties have absolute, literal, plain or natural meanings. In other words, some jurists are of the opinion that there is only one true meaning for a particular word, that a word speaks for itself and with a single meaning. This is called univocalism or plain meaning approach. In Professor Kelsen's words:

> [T]he view that the verbal expression of a legal norm has only one "true" meaning which can be discovered by correct interpretation is a fiction, adopted to maintain the illusion of legal security, to make the law-seeking public believe that there is only one possible answer to the question of law in a concrete case.

On the other hand, the multi-factor analysis is being used widely as a method of interpreting treaties. In explaining this method, Judge Anzilotti stated:

> . . . every legal text must not be considered alone, but in connection with other provisions of the act of which it is a part. The text is clear only if it is quite consistent with the object of the act. Only if this be the case, there is no occasion to resort to intrinsic evidence and preparatory work.
Accordingly, one must consider the entire text in order to determine the meaning of any particular word within the text.

Harvard Research has for a period of time adopted rules of treaty interpretation contrary to univocalism:

[T]he bare words of a treaty have significance only as they may be taken as expressions of the purpose or design of the parties which employed them; they have "meaning" only as they are considered in the light of the whole setting in which they are employed. To purport to attribute a "clear," a "natural," or a preexisting meaning to them apart from the setting is to ignore the fact that words may be given any meaning which the parties using them may agree to give them; and that few words have an exact and simple meaning. Such is the inevitable imperfection and ambiguity of all human language, that the mere words alone of any writing, literally expounded, will go a very little way towards explaining its meaning.352

Further, Harvard Research states that:

The process of interpretation, rightly conceived, cannot be regarded as a mere mechanical one of drawing inevitable meanings from the words in a text, or of searching for and discovering some pre-existing specific attention of the parties with respect to every situation arising under a treaty.353

Professor McDougal, an advocate of the multi-factor analysis, has explained "giving a meaning to a text" as a responsibility that:

. . . . each generation must, whatever its preference, in considerable measure interpret its legacy of agreements, as well as other authoritative doctrine, in terms of contemporary conditions and objectives. Interpreters differ most strikingly only in the degree to which they are conscious of this necessity.354
Professor McDougal concluded that, "the principle of interpretation most widely supported by disinterested authorities today is that international agreements must be interpreted primarily in terms of the major, general purposes they are intended to serve." The "giving a meaning to a text" is a "meaning which, in light of the text under consideration and all the concomitant circumstances of the particular case at hand, appears . . . to be the one that is logical, reasonable, and most likely to accord with and to effectuate the larger general purpose which the parties desired the treaty to serve."

Professor Lauterpacht goes a little further and observes that to give effect to the intention of the parties, one must remember the important principle:

... that the treaty must remain effective rather than ineffective. Res magis valeat quam pereat. It is a major principle, in the light of which the intention of the parties must always be interpreted, even to the extent of [disregarding] the letter of the instrument and of reading into it something which, on the face of it, does not contain.

In sum, the multi-factor analysis espoused by Professor McDougal is nothing more than determining the general purpose of the treaty by finding out what the framers intended the purpose to be. Keeping in mind that the framers could not anticipate all the events of the future, treaties should remain effective rather than ineffective. Thus, there is no one clear, unambiguous meaning to a word,
and hence one must interpret the treaty in light of the contemporary conditions extant at the time of interpretation.

Our task is to decide whether the Liability Convention was intended to cover nuclear damages such as contamination of the ground, even though the contamination did not injure life forms or damage property in the traditional definition accorded to the term "damage" in the Liability Convention.

Professor Dembling, in his article "Cosmos 954 and the Space Treaties," in reference to the definition of damage in the Liability Convention, concluded that "interpreting the definition strictly, an argument may be made out that there was no such damage since there was no loss of life, no personal injuries involved, or other impairment of health." However, he comments that another argument could be made "that the radiation did result in damage to Canadian property and therefore the Soviet Union is liable." Further, Professor Dembling characterizes the measures taken by Canada in locating and removing of radioactive debris as "precautionary measures" so that "[i]t is not clear what precautionary measures taken by a contracting party are covered under the [Liability] Convention. However, such actions which may be taken may mitigate eventual resulting damage and perhaps should be considered." It is quite clear from Professor Dembling's discussion that he does not preclude the possible interpretation that
the Liability Convention could include radiation contamination as damage. On the other hand, his characterization of Canada's searching and cleaning action as "precautionary measures" indicates that he does not believe that contamination *per se* is damage to property, which means that it is covered under the Liability Convention.

Professor Grove, in his article "Cosmos 954: Issues of Law and Policy," concluded that "[i]njury or damage caused by atomic radiation or fallout emanating from man-made atomic power sources . . . would appear to be covered by the general phrase [of the Liability Convention] of 'loss of or damage to property.' At the same time, loss of use of property may be regarded as covered by the phrase 'loss of or damage of property,' if broadly interpreted." However, he states that the "damage must be caused directly by the space object in the sense of physical damage or impact. . . . [T]he Soviet satellite did not cause direct injury to people or damage to property." As for Canada's recovery of radioactive debris, Professor Grove espoused Professor Dembling's view that those efforts taken by Canada were "precautionary measures," but that Canada's actions to recover the radioactive debris were "reasonably necessary under the circumstances to prevent or mitigate damages."

Professor Haanappel is no exception and concludes that there was no physical or property damage suffered by
the Canadian people and no measurable damage to the Canadian environment; therefore, the Liability Convention is "inapplicable because of the narrow definition of 'damage' contained in the [Liability] Convention." 367

Professor Haanappel, like the other authors, states that when there is no damage to property, then there is no recovery under the Liability Convention. He further states that because the definition of damage in the Liability Convention is narrow, and is not applicable to Canada's claim. He does not discuss at all what "damage" means nor does he examine the purpose and intent of the Liability Convention.

From the above discussion, it is clear that the interpretive method used by the previously mentioned writers is one of the best examples of the plain meaning or univocalism method, that is, that the word "damage" has one meaning and it is clear. Damage to property does not mean contamination of property. They do not even discuss the purpose and intent of the Liability Convention. In other words, they fail to perceive the overall purpose and intent of the Liability Convention. These writers espouse the opinion that there must be more than contamination of the ground to come within the definition of "damage" given in the Liability Convention.

On the contrary, it is this author's view that radioactive contamination is per se damage to property and is
covered under the Liability Convention. This was the intent of the Liability Convention.

The general purpose of the Liability Convention can be determined by considering the entire convention and all its articles together. To determine the intended meaning of a word by merely looking at that word separately from the whole text leads to wrong conclusions. Therefore, in analyzing the Liability Convention, the interpretation should consider such factors as the intent of the drafters, general purpose of the treaty, contemporary situation at the time of the interpretation, and also the long-term result that will be achieved by the interpretation, that is, the maintaining of minimum values of well being and security.

The Preamble to the Liability Convention lays down some general goals that the international community hopes to be achieved through the Liability Convention. The Preamble identifies a need to elaborate effective international rules and procedures concerning liability for damage caused by space objects. The objective was to "... ensure ... the prompt payment under the terms of this Convention of a full and equitable measure of compensation to victims of such damage." To ensure that this would be done, the framers in Article VI made a launching State "absolutely liable to pay compensation for damage caused by its space object on the surface
of the earth," unless it is established that the damage resulted wholly or partially from gross negligence or from an act of omission on the behalf of the claimant state. 371

As previously mentioned, the Liability Convention is a victim-oriented convention. 372 The evidence of this is the elaborate claims procedure delineated in Articles VIII through XX, in which a claimant State is allowed to revise its claim and submit additional documents when the full extent of the damage is known.

Article XXI is evidence of the drafters' fear of nuclear damage. It states:

> If the damage caused by the outer space object presents a large scale danger to human life or seriously interferes with the living conditions of the population or the functioning of vital centers, the State Parties shall examine the possibility of rendering appropriate and rapid assistance to the State which has suffered the damage. . . . 373

This broad principle was drafted in a climate of nuclear awareness. It is not difficult to envision this Article coming into play when there is a serious nuclear incident.

Moreover, the definition of "damage" in Article I of the Liability Convention, considering the intent of the drafters and the purpose of the Liability Convention, is intentionally broad, not narrow, as some writers pointed out, and is meant to cover all damages caused by space objects. It is submitted in general because it is impossible to delineate, and it would have been impossible to agree
on all the various kinds of damage for which there would be compensation. More important is that the definition of damage, in part, is "... loss of or damage to property of states...". There is nothing in this definition or in the Liability Convention that leads one to conclude that nuclear contamination of the ground is not damage to property, so it is covered under the Liability Convention.

Lastly, the majority of delegates in COPUOS felt that damage from outer space objects posed unique problems and did not want the decision on compensation to rest solely on justice and equity. They wanted to ensure the Liability Convention would specifically allow for full compensation to restore the victim (individual or State) to the condition that would have existed if the damage had not occurred. The delegates also believed that the Chorzow Factory Case (1918) contained language that the Legal Sub-Committee should learn from. The case maintained, in part:

The essential principle contained in the actual notion of an illegal act -- a principle which seems to be established by international practice and in particular by the decisions of arbitral tribunals -- is that reparation must, as far as possible, wipe out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed.

It is very clear that the intent of COPUOS members was that full compensation should be awarded to a victim injured or damaged by a space object.
by most members of the socialist delegations. To support their position the following reasons were given:

(a) It would facilitate agreement on the convention, and in particular on the setting of a limit on the amount of compensation to be paid by the liable State. These delegations linked the question of limitation of liability to that of nuclear damage, suggesting that inclusion of nuclear damage would make such limitations necessary, because damage caused by nuclear activities might be "immeasurably greater" than that caused by "normal" space activities (and launching States apparently needed protection against the high claims!). This leads to another reason:

(b) The "very specific," "entirely different" nature of nuclear damage, as compared with damage of another kind, such as that caused by space activities: "the two categories of damage had nothing in common." And it was pointed out in this respect that:

(c) It would be in accordance with established practice to deal with nuclear damage in a separate agreement, witness the nuclear energy conventions of Paris (1960), Brussels (1960), and Vienna (1963). In other words, nuclear damage came under a particular field of liability whatever the conditions whereby it occurred.

Further, as an alternative the socialist countries proposed to amend the above-mentioned Vienna Convention on Civil Liability for Nuclear Damage to include nuclear space
The majority of the delegates, however, were not convinced by these arguments and expressed a strong preference for inclusion of nuclear damage in the Liability Convention. They argued that:

(a) The Space Treaty does not exclude nuclear damage. Canada pointed out that "world opinion" was in favor of inclusion of such damage in the convention and drew attention to the psychological effect on the community of nations if the Legal Sub-Committee decided not to include a domain already covered by the Space Treaty.

(b) As for the argument that nuclear energy was traditionally dealt with in separate agreements, the delegation of France retorted by pointing out that there was an essential difference between nuclear damage caused by a space device and that covered by normal nuclear law: The former was impossible to foresee and even more impossible to assess in advance, "whereas the victims of damage caused by reactors or other terrestrial atomic devices would not be caught entirely unprepared since they accepted the proximity of those devices and therefore the risk, which could be assessed according to its gravity."

At the beginning of the eighth session, the Soviet Union declared itself prepared to agree with the Western standpoint. At the same session, Bulgaria appeared prepared to compromise and to revise its position. The United Kingdom consequently formally proposed to accept the
position that "nuclear damage should not be excluded from the forms of damage covered by the Liability Convention." \(^{384}\)

The issue of nuclear damage did not appear among the main "outstanding issues," and the question was not raised again at the ensuing sessions of the Legal Sub-Committee. In short, nuclear damage therefore falls under the definition of "damage" and is covered by the Liability Convention.

(e) "Space Object"

The Liability Convention does not give a definition of "space object," but merely provides in Article I(d) that:

The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof.

Several draft definitions were submitted and discussed in the Legal Sub-Committee, but none of them received enough support to be accepted. The reason for this appears to be that all the proposals submitted invariably referred to "outer space," an as yet undefined concept, which would have put the definition on too uncertain a basis. \(^{385}\)

Moreover, the undefined term "space object" was the result of the acceptance by the Legal Sub-Committee of the suggestion that "space object" had a reasonably understood and accepted meaning and that it was only necessary to include in a definition all the component parts and equipment of a space object that could cause damage. \(^{386}\)

Nevertheless, some guidance as to the meaning of the term "space object" can be derived from the various draft
definitions submitted to the Legal Sub-Committee.

Article I(3) of the Hungarian Draft\(^3\) defined space object as being any device which is designed for movement in outer space and was sustained there other than by reaction of air. A similar definition was suggested by the Indian delegate,\(^4\) who also referred to space object as any devices or objects "designed for movement in outer space and intended to sustain there otherwise than by the reaction of air. . . ."

Accordingly, the element which all drafts appear to have in common is that of being designed for or capable of movement in outer space.\(^5\) Further, the wording of Article III of the Liability Convention -- "... damage . . . to a space object . . . or to persons or property on board such a space object. . . ." -- supports this conclusion: the expression "on board" is generally used for moving objects. In other words, the minimal requirement of a space object is that it be an object designed for movement in outer space. According to this definition, the Liability Convention does not apply to damages caused by permanent installations, or the persons or property occupying them, on the moon or another celestial body.\(^6\)

Further, does the term "space object" encompass objects designed solely for movement on the surface, or within the "atmosphere" of the moon or other celestial bodies? For example, the "Lunar Rover," a battery-powered
vehicle used on the moon by the astronauts of the Apollo project, was not designed for movement in outer space but was designed to move solely on the surface of the moon. According to Professor Foster, "such objects are not provided for in the convention." 391

Sounding rockets are used for research of the upper atmosphere, do not go into orbit or beyond, but in describing a ballistic path, reach altitudes high enough to be considered "outer space" and then return to earth. Are these rockets "space objects" in the meaning of the Liability Convention? It is submitted that they are, since they appear to meet the criterion mentioned in this respect, namely that they are capable of or designed for movement in outer space. However, it is worth mentioning that some commentators do not agree with this conclusion. 392 Dr. Bodenschatz argued that Article VII of the Space Treaty speaks of the launching of an object into outer space and that "the launch of rockets into a ballistic path through outer space cannot be compared therewith." 393 It can be argued here that the rocket is not merely passing through but shares with the deep space probe and orbiting satellite its purpose, namely, "exploration and use of outer space."

During the discussions in the Legal Sub-Committee with respect to the question of the definition of "space object," sounding rockets were not expressly excluded, and
the United States delegate appeared to be in favor of including them in the definition. Moreover, proposals made by Argentina at the ninth session were based on the explicit presumption that sounding rocket launches fall under the Liability Convention.

Finally, it is well established that the Liability Convention's main objective is to protect persons on the ground against the harmful effects of space activities; the launching of sounding rockets forms an important part of such activities.

B. Elements of Liability for Damage Caused by Space Objects

(1) The Principle of Absolute Liability

The manifold developments of science and technology, which have completely transformed human life in our time and profoundly modified the basic elements of international relations, create some dangerous hazards the consequences of which may be so far-reaching that special rules concerning the liability for such activities should be established if serious injustice and hardship are to be avoided. The rules of law should not be an excessive deterrent to the development of such activities, as it would hamper the progress of our civilization. On the other hand, the burden of the harmful consequences of such activities should not be placed on the victims. This is the reason
why severing the rules of liability for such damages appears to be a fully justified solution. 394 Professor Jenks, six years before the Adoption of the Liability Convention, stated that:

Liability should be, in principle, irrespective of fault. Whatever theoretical controversies there may be in the matter, only the principle of liability irrespective of fault places the burden of loss resulting from activities in space where it properly belongs as one of the costs of the venture to be taken into account when deciding whether, to what extent, and under what conditions, to undertake such activities; it is, moreover, a natural extension to activities in space of the principle already accepted in respect of aviation and nuclear accident. 395

The discussion in the Legal Sub-Committee revealed from the very outset a remarkable unanimity among the delegations with regard to the principle of absolute liability for space activities. All draft conventions contained this concept, and no objections to the principle were voiced at the meetings. Moreover, most writers on space law advocated the same principle as the basis of liability. 396

The incorporation of the principle of absolute liability into the Liability Convention is provided by Articles II and IV 1(a). 397 Article II makes the launching State absolutely liable for damage caused by its space object on the surface of the earth or to aircraft in flight. Article IV 1(a) reads:
If the damage has been caused to the third State on the surface of the Earth or to aircraft in flight, their liability [the launching State's] to the third State shall be absolute.

According to Professor Foster, the incorporation of the concept of absolute liability into the Liability Convention "marks the first time that an international agreement has sought to impose such a liability regime on states in their capacity as states." He adds:

In the past international agreements have restricted the imposition of strict and absolute liability to operators and enterprises and have only incidentally imposed such liability on states in their capacity as operators.

According to the principle of absolute liability, in order to receive compensation for injury or damage, the claimant need only prove that the damage was caused by the space object or any component or substance therein. The claimant is not required to prove that the launching State was guilty of negligent or willful misconduct. Consequently, the claimant is relieved of the prohibitive burden of proof imposed by the traditional negligence test. In Professor Foster's words:

The objective of the [Liability] Convention would largely have been defeated if the claimant state were required to produce evidence of fault, for not only would the necessary evidence be complex and technical but also such evidence, where it existed, might well be known only to the launching state and be impossible to obtain.

Moreover, the inclusion of the principle of absolute liability has been justified on different grounds.
(a) **The Theory of Risk for Ultra-Hazardous Activities**

The principle of absolute liability may be based on the theory of risk for ultra-hazardous activities. The expression "ultra-hazardous" refers to the fact that:

[T]he consequences [of an] . . . exceptional and improbable event . . . may be so far reaching that special rules concerning the liability for such consequences are necessary if serious injustice and hardship are to be avoided. 401

Further, the theory of risk implies that:

Who, for his pleasure or for his profit introduces a dangerous thing into society becomes liable for any accident arising from it, even if no fault . . . is imputable to him. 402

The introduction of this theory was proposed by many delegates during the discussions of the Legal Sub-Committee. For example, the Austrian delegate stated that 403 space activities, as hazardous activities, could only be tolerated if the persons or States engaged in such activities assumed responsibility for any damage "whether attributable to fault on [their] part or to mere accident."

As previously mentioned, under the principle of absolute liability, the defendant is liable even though the harm to the plaintiff occurred without any intention or negligence on the defendant's part. 404 The leading common-law case on absolute liability is *Rylands v. Fletcher*, decided in England in 1865. 404 In this case the defendants, who were found to be without fault, maintained a reservoir
from which water escaped and flooded a neighboring coal mine. The original decision was that anyone who keeps on his land "anything likely to do mischief if it escapes... is prima facie answerable for all the damage which is the natural consequence of its escape." On appeal, however, the House of Lords sharply limited this broad rule to situations of "non-natural" use, emphasizing the abnormal and inappropriate character of a reservoir in coal-mining country, rather than the mere tendency of all water to escape. The principle of absolute liability was laid down in the case as follows:

If a person brings or accumulates on his land anything which if it should escape may cause damage to his neighbours, he does so at his peril. If it does escape and cause damage, he is responsible however careful he may have been and whatever precautions he may have taken to prevent damage. . . . 406

In the century of Anglo-American legal development since Rylands v. Fletcher, the trend has been to expand the exceptions to the traditional rule that liability must be based on fault. 407 Under the doctrine of Rylands v. Fletcher and its extensions, 408 liability is imposed without fault for harm resulting from "ultra-hazardous activities" on the ground that such activities, although socially useful, expose the community to undue risk even if every reasonable precaution is taken. In effect, therefore, certain ultra-hazardous activities are permitted because of their social utility, but only on condition that liability
is imposed if harm results. Typical examples are blasting, keeping wild animals, and -- at least until recently -- launching space objects.

The rule in *Rylands v. Fletcher* has been accepted by leading American writers. On the other hand, the American Law Institute's Restatement of Tort applies the doctrine of absolute liability to damage caused by activities of an abnormal ultra-hazardous nature. It lays down that one who carries on an ultra-hazardous activity is liable for the damage caused to another as a result of the carrying out of the ultra-hazardous activity even though utmost care is exercised to prevent the damage. Ultra-hazardous activity is defined as an activity that necessarily involves a risk of serious harm to the person, land, or chattels of others that cannot be eliminated by the exercise of utmost care and is not a matter of common use. This latter description would appear to fit the launching of space objects, both because of the highly experimental character of the activity itself, and because of the many unknown factors as to the environment in which it takes place.

Consequently, since the primary interest to be promoted is the protection and compensation of persons whose rights are invaded by space activities, and who cannot prevent injury to themselves or damage to their property, there is good reason to impose a system of absolute liability.
Further, the practical difficulties of proving fault weigh heavily in favor of absolute liability. Proof of negligence is apt to be very difficult and may be known only to the government of the launching State, and protected by rules of military security or at least executive privilege. Moreover, the problem of evidence is probably sufficient reason for simplifying and reducing requirements of proof, by recognizing the principle of absolute liability to outer space activities causing such damage.

The application of the theory of risk was criticized because any justification for considering activities in space ultra-hazardous derives from a lack of knowledge of their dangers rather than from a record of damage-causing accidents. In addition, the theory of risk cannot be held to extend to international law because the International Court of Justice concluded in the Corfu Channel case that there must be a clear breach or non-observance of international law and some element of fault.

In contrast to this argument, the principle of risk of establishing liability for ultra-hazardous activities is applied in different international conventions. For example, a classic statement of absolute liability is provided in Article I of the Convention on Damage Caused by Foreign Aircraft to the Third Party on the Surface, concluded in Rome in 1952. Under that article:
Any person who suffers damage on the surface shall, upon proof only that the damage was caused by an aircraft in flight or by any person or thing falling therefrom, be entitled to compensation.

Furthermore, according to Professor Dembling, "the treaties dealing with liability to third parties in the field of nuclear energy may also be viewed as precedents." An example of those treaties is the 1962 Brussels Convention on the Liability of Operators of Nuclear Ships. Article II states that:

The operator of a nuclear ship shall be absolutely liable for any nuclear damage upon proof that such damage has been caused by a nuclear incident involving the nuclear fuel of, or radioactive products or waste produced in, such ship.

In one of his articles, Professor Dembling stated that the principle of absolute liability was adopted by implication in Paragraph 7 of Resolution 1962 (XVIII) entitled "Principles Governing the Activities of States in the Exploration and Use of Outer Space." In connection with the approval of the above-mentioned Conventions, Professor Dembling stated that, "[I]t was believed that the exposed public must receive adequate protection against unknown dangers." This leads us to the conclusion that space activities involve extraordinary, incalculable risks for other States and their population. Therefore, the launching State is absolutely liable for damage caused by its space activities, even if all safety precautions were taken.
(b) **Liability for Lawful Acts**

It is well established that space activities causing damage or which are likely to cause damage are dangerous but not unlawful. As Foster puts it, "[I]n imposing absolute liability for damages caused by space object incidents, the world community recognizes that space activities are lawful and beneficial." In this context it was proposed that the party benefitting from the space vehicle is required to be liable for any damage caused by it. Only the application of the principle of absolute liability could ensure that third States suffering damages but having neither participated in nor exerted any influence on the space activity of the launching State do not have to bear losses. Article I of the Space Treaty, however, refers to the question of benefitting from space activities with respect to the idea that the "exploration and use of outer space . . . shall be carried out for the benefit and in the interest of all countries . . . and shall be the province of all mankind." This provision indicates that any space activity should be for the benefit of all nations and not for the benefit of the launching State only. In view of this, the question arises whether in that case the argument of absolute liability for damages from space activities is acceptable. According to Professor Foster:
The validity of this reasoning is questionable, for it has often been stated that the... exploration and use of outer space... shall be carried out for the benefit and in the interest of all countries... and shall be the province of all mankind.423

In practice, States other than those engaged in space activities benefit, and will continue to benefit, from such activities.424 For example, suppose State A launches a satellite for telecommunications and radio and television transmissions. The satellite moving in the geo-stationary orbit is used by many nations for telecommunications. All those nations do benefit from the launching of the satellite. In case the satellite decays from orbit, breaks apart in the atmosphere and some pieces of it make an impact on the surface of Country B, which also used the satellite for telecommunications, it is questionable whether the principle of absolute liability can be established merely because launching State A benefits from the advantage created by the launching of the satellite.

Another argument for establishing the principle of absolute liability places the burden of risk on the party that is able to absorb the loss.425 This means that the launching State is in the best position to foresee the risk involved in its space activities. The argument, however, that a State is financially able to pay for damages caused by its space activities cannot be used as a reason for establishing liability. This leads us to a
situation where wealthy states would be held liable for damages merely because they are wealthy.

Last, one of the main reasons for the inclusion of the principle of absolute liability is a purely practical one. In the case of space accidents, the claimant State would have to prove fault or negligence on the part of the launching State in order to obtain compensation. In this respect, the British delegate pointed out that, "... in case of space vehicles ... it would be impossible or at least extremely difficult to prove fault or negligence."326 In addition to this, the claimant State would often not be capable of obtaining details from the launching State regarding the cause of the accident. How, then, is the claimant able to prove a negligent act on the part of the launching State?

In sum, it should be emphasized that although it is lawful to launch a space object or to procure the launching, the launching State is liable for damages occurring on the surface of the earth or to an airplane in flight. Therefore, Articles II and IV 1(a) as well as Article VII of the Space Treaty establish the principle of absolute liability, and they thereby attempt to maximize the protection of the claimant State.

(2) The Principle of Full Compensation

Although it has to be admitted that space activities require the establishment of absolute liability, the
question arises whether a limit should be set on the amount of compensation to be granted by the launching State in case of liability.

Two draft conventions were advanced in favor of the adoption of a limited amount of compensation. Article IX of the United States Draft reads: "The liability of the launching state shall not exceed $ with respect to each launching." The proposal did not mention any specific figure. Furthermore, Article 11(1) of the Hungarian Draft provides that liability "under this Convention" should not exceed a certain amount of money. However, the Hungarian delegation, at the end of the sixth session, had come to the conclusion that a ceiling on the amount had more drawbacks than advantages. These two Drafts are the only ones providing a limitation to compensation if a launching State is subject to absolute liability.

The main arguments on which the United States and other supporting delegations based their positions were the following:

(i) The combined principle of absolute and unlimited liability could result in a grave financial risk for certain developing countries, and thus discourage them from accepting the Liability Convention or from engaging in joint space ventures.

(ii) It was argued that absolute liability, being independent of fault, should in all fairness always be
accompanied by a limitation of its amount. It was pointed out that such a solution has been adopted in all conventions establishing uniform rules on liability for damages caused in connection with certain kinds of activities that can be regarded as ultra-hazardous, e.g. in the 1962 Brussels Convention on the Liability of Operators of Nuclear Ships; in the 1963 Vienna Convention on Civil Liability for Nuclear Damage; and in the 1952 Rome Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface. 430

(iii) The principle of full compensation would be unjust to the launching State because launchings are technically so complicated that insufficient data could result in a space accident. The launching State should not bear the risk of these minor factors. 431 If liability were absolute, absolute compensation could imply financial disaster. Suppose a U.S. space object crashed due to misinformation by a U.S. direct tracking station in Mexico; the country in which damages occurred could assert a claim against both the U.S. and Mexico. In case the claim came to a very large amount of money, Mexico "would find itself in a very difficult financial situation." 432

On the other hand, there were numerous objections against any limitation of the liability of a launching State. It was argued that, although the Vienna Convention on Civil Liability for Nuclear Damage provides a financial limit on liability, this principle cannot be used as
an argument for providing limited compensation for damage caused by space objects for the following reasons:

(i) The spirit of that Convention is entirely different, namely, to enable underdeveloped countries to make better use of nuclear energy for peaceful purposes; therefore, the amount of compensation is limited; the Liability Convention has mainly a victim-oriented purpose.

(ii) The Vienna Convention provided safety and precautionary standards that do not exist in space activities.

(iii) The risks in the case of nuclear damage are better known, and to some extent accepted, whereas a space incident may happen at any time in any place.

Moreover, it was argued that a fixed ceiling is not practicable because the fixed amount might be considered too high by certain countries, whereas others might regard it as being too low (Western and Eastern countries).

Further, the United Nations General Assembly, according to Cocca, had favored the idea of full compensation. In his words:

This idea [full compensation] may also be found within the Preamble of the Convention on International Liability for Damage Caused by Space Objects when establishing in para. 4 "Recognizing the need to elaborate effective international rules and in particular, the prompt payment under the terms of this Convention of a full and equitable measure of compensation to victims of such damage."

In supporting the principle of "full compensation," Rajski stated:
Being the basic principle of the law of damages, it expresses the humanitarian tendency in modern law, which tends to create the best protection of the interest of the injured person.

The base of the principle of compensation for the damage can be found in Article XII of the Liability Convention, which states:

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.

Accordingly, the drafters intended that a victim of damage be awarded full compensation sufficient to wipe out, if possible, the consequences of the act that caused the damage.

In conclusion, the principle of full compensation is an additional element to the principle of absolute liability, and one of the greatest merits of the Liability Convention.

(3) Fault Liability

It is difficult to foresee what concept of liability other than that of fault could be applied to cases where damage is caused by a space object of one launching state to a space object of another launching state. The position of both parties in this situation is equal; in undertaking space activities they must implicitly be understood to have accepted the risks involved. Nor is there any reason to favour one launching state over another.436
Accordingly, there is no justification for absolute liability but rather each party should bear his own loss, unless negligence of fault of either party can be proven. The arguments used in support of absolute liability are clearly not applicable. If both States involved in the accident are engaged in space activities, the whole question of inequality of positions in protecting the helpless, unprepared victim does not arise. Both States have accepted the risks involved in their "hazardous" endeavor, and both are -- at least in theory -- equally able to absorb the possible losses. Thus, there is no justification for absolute liability but rather each party should bear his own loss, unless negligence or fault of either party can be proven. 437

The maritime practice may serve as a useful example. 438 The Brussels Convention of 1910 regarding collisions of ships at sea provides:

Article 2. If the collision is accidental, if it is caused by force majeure, or if the cause of the collision is left in doubt, the damages are borne by those who have suffered them.

Article 3. If the collision is caused by the fault of one of the vessels, liability to make good the damages attaches to the one which has committed the fault. 439

In conformity with these observations, Article III 440 of the Liability Convention provides that, 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 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. Moreover, Article IV(b) provides for the case of damage occurring other 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) by a space object of another State. The damage caused hereby will create another damage to a third State or to its natural or juridical persons. In that case the first two States shall be jointly and severally liable to the third State if the damage has been caused to a space object of the third State or to persons or property on board that space object other than on the surface of the earth, and if the acts of the first two launching States are based on the fault of either of the first two States or on the fault of persons for whom either is responsible. 441

For example, due to the collision of two satellites, one of the colliding satellites causes damage to a third satellite not involved in the original collision. In that case, the launching State of the third satellite may present its claim to the launching States of the first two satellites if the damage is due to the fault of either of these States, according to Article IV 1(b).

Finally, the claimant State has to prove that the act of the launching State was due to the failure to
exercise that kind of prudence that has to be considered reasonable under the circumstances.\textsuperscript{442} Thus, the Liability Convention establishes a dualistic system of liability -- absolute liability and liability based on fault.

(4) Exoneration from Liability

Taken literally, "absolute" liability would mean that in all cases where a victim can establish a causal link between the space object and his damage, the launching State will have to pay compensation. Although some delegates were in favor of imposing this unparalleled burden on a liable State, most delegations suggested some exceptions to the principle, as will be explained.

Article VI of the Liability Convention stipulates an exception to the principle of absolute liability as provided in Articles II and IV 1(a). Article VI (1) provides that:

\begin{quote}
Exoneration from absolute liability shall be granted to the extent that a launching state establishes that 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 judicial persons it represents.
\end{quote}

During the discussions, many delegates favored exoneration in cases where through its conduct the claimant State contributed to the damage. Justification for this lies in the theory that an absolute liability regime should not permit a State to profit from its own tortious
or willful acts. Paragraph I of the Canadian proposal reads: "The Convention should provide for exoneration from liability only where an injured party had wilfully and recklessly exposed himself to the dangers . . . which he could have avoided." Article III(1) and (2) of the United States draft proposal provided that gross negligence on the part of the presenting State or persons whom it represents shall diminish or expunge the obligation of the launching State to pay compensation. The Hungarian proposal stipulates in Article VI that exoneration shall only be granted if the damage results from gross negligence on the part of the State suffering the damage in case the damage occurred on the surface or in the atmosphere.

As can be seen in these proposals, there was a strong preference for limiting exoneration to cases where the claimant was grossly negligent.

Gross negligence is a concept derived from the Anglo-Saxon legal system. Negligence means a culpable omission of a positive duty. Within the scope of the Liability Convention it can be defined as signifying something more than carelessness, inattention or inadvertence, and something less than intent to harm.

According to Article VI(1) of the Liability Convention, the launching State bears the burden of establishing that it should be exonerated from liability. This burden cannot be discharged by proof of mere fault or negligence.
on the part of the claimant State or a person it represents. And even where the launching State is able to establish gross negligence or an intentional act of omission, it does not mean that it will be discharged of all liability. For Article VI(1) provides that exoneration can only be granted to the extent that the launching State is capable of proving that "the damage resulted either wholly or partially" from gross negligence or from an intentional act or omission on the part of the claimant State. In this context, Professor Foster observed that:

[F]or a launching state to avoid all liability, it would have to establish not only the necessary wrongful conduct on the part of the claimant state or a person it represents, but also that it was not itself at fault. If the launching state could not prove this latter fact, it would not have shown that the "damage resulted wholly" from the other's gross negligence or intentional act or omission, and it would therefore be entitled only to partial exoneration from liability. Partial exoneration would also be available to a launching state where it could prove that the claimant state had failed either through its gross negligence or an intentional act or omission, to mitigate its damage.448

For example, suppose a satellite of State A crashed due to gross negligence on the part of a judicial person being represented by State B. Another reason for the crash of the satellite might be an act of the launching State A based on fault, causing damage to an airplane of State B. The question arises whether under these conditions launching State A can be exonerated wholly from liability according to Article VI of the Liability Convention.
According to Professor Foster's interpretation of Article VI, the launching State is entitled only to partial exoneration. In Foster's words:

Partial exoneration would be available to the launching state where it could prove that the claimant state had failed either through its gross negligence or an intentional act or omission, to mitigate its damage.449

It is this writer's opinion that this theoretical view espoused by Professor Foster might cause practical difficulties due to the lack of any definition of "partial exoneration." The usual argument "depending on the circumstances" would not solve the problem because it is almost impossible to make an appropriate distinction between the degree of fault of the launching State and the degree of negligence of the claimant State. Further, it is usually hard to obtain the kind of information necessary to prove "partial exoneration" from States involved.

Furthermore, Article VI(1) of the Liability Convention provides that the gross negligence or intentional act or omission must be that of the claimant State or of natural or judicial persons it represents.450 According to Professor Foster:

This provision is of interest in that normally the acts of individual subjects of a state other than those of certain governmental officials are not regarded as the acts of the state; they cannot affect a state's legal position on the international plane. This general rule cannot be invoked by a claimant state.
171

The claimant State is specifically made responsible by the Liability Convention for the acts of persons "it represents," and not "merely for the acts of those persons for whom it would be responsible under general international law." For example, suppose a space object launched by State A crashes above State B. The damage occurred wholly resulted from the fact that C, who is a citizen of State B, acted with gross negligence, causing the crash of the object. Under Article VI(1) the acts of C that caused the crash have to be considered acts of State B, although C was not acting as a government official of State B. In the writer's opinion, one of the reasons for introducing this relationship between the State and its citizens was the fact that it is improbable to assume that only State officials could cause damage and act with gross negligence.

In our example, the launching State A is completely exonerated from any claims presented by claimant State B because the damage was caused by gross negligence of C, a citizen of claimant State B.

According to Article VI(1) of the Liability Convention, a launching State would also be entitled to complete exoneration if the damage were caused by a permanent resident of the claimant State or by "a natural or judicial person it represents." The meaning of the latter expression is controversial. It is proposed that this expression
should include all those persons, natural or judicial, suffering damage on the territory of the claimant state. This interpretation is dismissed by Foster, who interprets the expression in a restrictive way:

[I]t must be assumed that by the phrase "a natural or judicial person it [the claimant] represents" must be meant a national of the claimant state or at most a person on whose behalf a state actually presents a claim. To interpret the phrase to mean any person on whose behalf a state may be entitled to make a claim under the terms of the Convention would be to give Article VI(a) a far-reaching and undesirable effect.

The author agrees with Professor Foster's view that the expression "to represent" has to be interpreted in a restrictive way, including only citizens or judicial persons of the State in question.

(a) Exceptions to the Principle of Exoneration

The Hungarian drafts were the first and for some time the only ones providing for liability without any exoneration whatsoever in case of damage resulting from an "unlawful activity" in outer space or a launching for unlawful purposes. Further, the Indian draft proposal provided in Article III that no "exemption from the principle of absolute liability will be granted in cases where the respondent has conducted activities which affect the rights of other states under international law."

At the seventh session, the Legal Sub-Committee adopted a revised text, which became Article VI(2) of the
Liability Convention:

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 [Space Treaty].

Professor Foster, in explaining the above-mentioned Article, stated:

While it is clear that the violation of international law must be with respect to the space activity that causes the damage -- that is, the breach of a rule of international law regulating space activities in respect of the launching, operation or recovery of one space object, will not taint the other space activities of a launching state -- no indication is given as to the nature of the violation required to deprive a launching state of the benefit of Article VI(a). The wording of Article VI(2) suggests that non-compliance with any relevant rule of international law will be sufficient to bring about this result.

Accordingly, if a space object of the launching State A carrying nuclear weapons into orbit crashes and causes damage to State B due to the gross negligence of a citizen of State B, no exoneration will be granted, because Article IV of the Space Treaty states that no nuclear weapons may be placed in orbit. 457

The sanction provided by Article VI(2) of the Liability Convention, consisting of "truly" absolute liability, applies of course only to breaches of those rules of international law where the State concerned is subject either because it is an obligation of general (customary) international law or because it is contained in a treaty to
which that State is a party. Consequently, a clear act of aggression performed through means of a space object will bring absolute liability for the damage so caused on the surface of the earth, and an intentional action on the part of the defending State will in no way exonerate the aggressor State.

Moreover, neither the Liability Convention nor the Space Treaty provides exoneration from Liability in the case of force majeure. According to Article II of the United States Draft Proposal,\textsuperscript{458} absolute liability is imposed on the launching State for any kind of accident. On the other hand, the Hungarian drafts provided for "... exemption from liability ... insofar as the state liable produces evidence that the damage has resulted from natural disaster(s)...."\textsuperscript{459}

At the seventh session, Hungary announced that it was prepared to eliminate this exception from its draft. The Liability Convention consequently does not contain any such exoneration.

No other exceptions to the principle of absolute liability, such as armed conflict, civil disturbance, insurrection, or acts of a third party were adopted. It was generally believed that to exonerate a launching State from liability in such circumstances would largely nullify the effect of the principle of absolute liability.

In sum, despite the foregoing emphasis on protection for claimant States, the Liability Convention is certainly
not devoid of consideration for States against which claims will be made -- i.e., the launching States. The one provision obviously designed to protect the launching States is Article VI, which cross-references Article II. Article VI provides for exoneration from Article II's absolute liability upon a showing of gross negligence or intentional infliction of damage on the part of the claimant State or the parties represented by it. Article VI places an affirmative burden of proof on the launching State, but it nonetheless eases the severity of Article II's absolute liability.

C. The Parties Responsible

(1) The Launching State

Article II of the Liability Convention provides that "A launching State shall be absolutely liable to pay compensation for damage caused by its space object. . . ." This provision is qualified in the case where only one State is involved in the launching; i.e., where a State owns both the launching apparatus and the space object and launches from its own territory and facilities without any assistance or participation of other States.

On the other hand, in practice this is a very rare situation. Most of the launches now involve more than one State. For example, in the United States-Italian joint San Marco project, launchings have taken place in the United States with an Italian launching team supplied and
paid for by the United States and space vehicles made and paid for by Italy. 460

Therefore, the Legal Sub-committee realized the need for criteria that dealt with the subject in question. In the course of the discussions, the following criteria for defining the launching State were advanced:

The launching State is the one:

(1) which launches or procures the launching;
(2) whose territory or facilities are used;
(3) which exercises control over the orbit or trajectory of an object launched;
(4) which owns or possesses the object;
(5) which participates in a launching;
(6) which registered the object. 461

The first two criteria gained some acceptance, because both appeared in General Assembly Resolution 1962 (XVIII) and in Article VII of the Space Treaty.

At the end of the sixth session the delegates came up with the following:

In defining the term "launching State" the following elements should be included:

1. the State which launches or attempts to launch the space object or the space device;
2. the State from whose territory the space object or space device was launched;
3. the State from whose facility the space object or space device was launched. 462
It was the French delegation that first raised the question of whether the "States" mentioned above should be treated equally liable or a distinction made between them. In this respect, at the seventh session the French delegation submitted a proposal that stated:

States which launched or procured the launching of a space object should be primarily liable, while states which lent their territories or facilities for the launching of space objects should bear only secondary liability.463

According to the same proposal, States which lent their territories or facilities to another State would be held liable only if for any reason the launching or procuring State could not be identified or was not a party to the Liability Convention.464 The French delegation gave two justifications for its proposal: (1) it would be unfair to impose primary liability on a State that did not play an active role in the launching -- liability must be borne by the one benefitting from the activity concerned (a State that merely allowed its territory bears only secondary liability); and (2) many States would be dissuaded from lending their territory or facilities if they automatically incurred the same liability as the launching State.465

On the other hand, an aspect the French proposal did seem to take into consideration was the fact that a territorial State may very well play a more important role in the launching than merely lending its territory, in which case there would be little rationale for secondary liability.
A more restrictive proposal was submitted by the United Kingdom, which laid primary liability on "A State which launches or which actively and substantially participates in the launching . . .," and secondary liability on "the State whose territory or facilities were used for the launching of a space object, but which has not actively and substantially participated in the launching." No agreement on the subject could be reached in the seventh session.

The discussion during the eighth session of the Legal Sub-Committee resulted in the following description of the State liable. Article I(C) of the Liability Convention reads:

The term "launching State" means:

(1) A State which launches or procures the launching of a space object;
(2) A State from whose territory or facility a space object is launched.

This definition gives the claimant State several criteria on the basis of which it can hold a State liable for damage, thus facilitating its task of seeking compensation, particularly in cases where more than one State is involved. For it may well be that a State that falls under one of the above criteria either cannot be identified or is not a party to the Liability Convention. In such a case, insofar as the other States involved can be considered "launching States," the claimant can, at its option, present its claim to any of them.
It should be emphasized at this stage of the discussion that "prima facie only states can be held liable under the Liability Convention -- prima facie, because the Liability Convention does provide that international intergovernmental organizations may be regarded as 'launching States' in certain circumstances." However, no provision has been made with regard to, for example, private corporations, educational institutions, or individuals, which may launch or procure the launching of space objects. This situation is not surprising because, according to Article VI of the Space Treaty, "State parties to the treaty shall bear international responsibility for national activities in outer space . . . whether such activities are carried on by governmental agencies or by non-governmental entities." This provision of the Space Treaty, according to Professor Foster, imputes responsibility to States for space activities carried out by non-governmental entities. He further maintains that:

Although imputability is a basic notion of state responsibility, for states, being juridical persons, can act only through their agents and representatives, there are certain generally accepted limitations to the concept. According to Foster, the most important limitation in relation to our case is that "states do not act through individuals but through governments. The acts of individual subjects of a State are not the acts of the State." According to this analysis, in principle a State is not
responsible for acts of individuals as individuals, or for private entities as such, but only for acts of State organs. Consequently, under the concept of imputability, it is clear that a State would be responsible for the space activities carried out by its governmental agencies. On the other hand, in a free enterprise system, it is not difficult to foresee space activities being conducted by persons or entities who would not qualify as governmental officials or agencies within the traditional bounds of the principle of imputability and for whose acts a State would not normally be responsible.

Finding a solution to the above issue, Professor Foster stated: 473

[T]he Outer Space Treaty in imposing responsibility on states for all national space activities, whether governmental or non-governmental, must be regarded as extending the concept of imputability and as such binding only on those states party to the [Space] Treaty.

It is questionable whether or not a State party to the Liability Convention but not to the Space Treaty will be held liable for the space activities of its nongovernmental agencies. The answer to this question, in Foster's view, lies in the answer to another question: "Does the Space Treaty embody principles that are now recognized as general principles of international law binding on all States whether or not they are parties to the Treaty?" He adds, "[i]f a state is a party to both the [Space Treaty] and the
Liability Convention, there can be no doubt as to its responsibility and liability for all national space activities.\footnote{475}

This writer disagrees with Professor Foster's findings, and is of the opinion that damage resulting from private launchings -- individuals or private entities -- is covered by the Liability Convention as well as the Space Treaty. Articles I and II of the Liability Convention make a State liable for damage caused by the space object that was launched from its territory or facility. However, no distinction has been made between objects launched by or on behalf of the government and those launched by private corporations, institutions, or individuals. Launchings of the latter category are therefore covered by the Liability Convention and entail liability if they cause damage. Consequently, no matter whether a State is party to both the Liability Convention and the Space Treaty or to one of them, the launching State is liable for all national space activities taken by governmental or non-governmental agencies such as private corporations, educational institutions, individuals, and so forth.

(2) Launching Involving More Than One State

(a) Joint Launchings

With the adoption of the definition of "launching State," not all problems were solved. Although on the
basis of the agreed definition several participants in a joint launching could be liable as "launching States," the State involved in a claim could argue that it was only liable for a part of the total sum. For instance, it could admit to being held liable for one third, there being two other participants. Therefore, it was necessary to establish a separate provision dealing with joint launchings to give the claimant State a better position in this respect.

In the course of the discussions, basically two suggestions were made:

(1) to designate one of the participating States as being liable for the total amount;\(^476\)

(2) to allow the claimant State to claim from any of the participants the full amount of the damage.\(^477\)

Virtually without exception, the delegations agreed at the outset to use the second approach, *inter alia*, because it provided greater guarantees for the victim.

The United States draft, submitted at the fourth session of the Legal Sub-Committee, spelled out in the text exactly what was intended. It provided:

> If under this Convention more than one launching State would be liable, the Presenting State may proceed against any or all such States individually or jointly for the total amount of damage, and once the amount of liability is agreed upon or otherwise established, each such State proceeded against shall be liable to pay that amount.\(^378\)
After lengthy discussions, common agreement was reached, leading to the adoption at the seventh session of the Legal Sub-Committee of what later became Article V(1) of the Liability Convention:

Whenever two or more States jointly launch a space object, they shall be jointly and severally liable for any damage caused.

According to Professor Foster, the wording of Article V(1) is unsatisfactory because:

[I]t does not speak of "launching States which jointly launch a space object" but of "States [which] jointly launch a space object." When regard is [given] to the definition of "launching States," it is seen that states that launch space objects are merely one of three categories of states that fall within the definition.* It can therefore be argued that, by referring to states that jointly launch a space object, the application of the principle of joint and several liability prima facie is restricted to those states that actively take part in the launch -- that the principle does not apply to those states whose only contribution is passive.479

This conclusion is supported by Article V(3), which asserts that "A State from whose territory or facility a space object is launched shall be regarded as a participant in a joint launching." The only reason for the express inclusion of this latter category of States as a participant in a

* (i) A State that launches a space object;
(ii) A State that procures the launching of a space object;
(iii) A State from whose territory or facility a space object is launched.
joint launching, in Foster's opinion, "Can be to ensure the application of the principle of joint and several liability to such states notwithstanding that their only contribution to the joint venture is purely passive -- namely the mere loan of their territory or facility." 

Further, it is argued that a State that "procures the launching of a space object" but does not actively participate in the launching is not subject to the principle of joint and several liability. This argument would be in contrast to the principle of absolute liability of the launching State according to Article II, which is one of the basic elements of the Liability Convention.

The incorporation of the principle of joint and several liability in the Liability Convention allows the claimant State to choose against which State or States it intends to proceed. The claimant State can make use of the following possibilities: On one hand it can present its claims to any of the launching States being jointly and severally liable. If the claimant State proceeds in this way and does not recover the whole compensation from one of the liable States, it is entitled to proceed against any one of the other liable States; moreover, the claimant State may proceed against all of the liable States.

Where a claimant State does elect to proceed against one of the launching States involved in the joint project, the launching State, according to Article V(2), has "...
the right to present a claim for indemnification to other participants in the joint launching." This means that the right to indemnification is available to any launching State against all other launching States involved in the joint project. Furthermore, the right to indemnification is not limited in its application to States to which the principle of joint and several liability applies.

On the other hand, Article V(2) of the Liability Convention provides that States involved in a joint launching may "conclude agreements ... apportioning among themselves ... the financial obligation in respect of which they are jointly and severally liable." However, it was believed by many delegations that apportionment agreements were a matter of internal relations between the States concerned, which should not entail any consequences for the victims. Therefore, Article V(2) emphasizes that:

Such agreements shall be without prejudice to the right of the 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.

(b) Independent Launching Jointly Causing Damage

Another application of the principle of joint liability is given in Article IV of the Liability Convention, which provides that where damage results to a third State from an accident occurring elsewhere than on the surface of the earth involving the space objects of two (or more)
launching States, these States "shall be jointly and severally liable to the third State."\textsuperscript{482}

Suppose there is a collision in orbit between a satellite of State A and a satellite of State B that results in the crash of the satellite of State B, causing damage to an airplane in flight of State C.\textsuperscript{483} In that situation the launching States A and B will be jointly and severally liable to State C. Their liability shall be absolute according to Article IV(1)(a) of the Liability Convention, which maintains:

\textbf{If the damage has been caused to the third State on the surface of the earth or to aircraft in flight, their liability to the third State shall be absolute.}

The same principle is applicable if the damage has been caused on the surface of the earth.

On the other hand, according to Article IV(1)(b), "if the damage has been caused to a space object of the third State or to persons or property on board that space object elsewhere than on the surface of the earth," the launching State's liability to the third State shall be based on the fault of either of the launching States or on the fault of persons for whom either is responsible. Accordingly, the claimant State needs only to establish the presence of fault on the part of one (or all) of the launching States involved without having to indicate which of such States is at fault.
Finally, if the claimant State decides to proceed against one of the launching States, Article IV(2) stipulates that "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." In case fault cannot be established, "the burden of compensation shall be apportioned equally between them." However, the position of the claimant State is protected by the Liability Convention, which provides that its rights shall not be prejudiced by any apportionment of liability that may be made between the launching States.

D. The Claimant

The Space Treaty in Articles VI and VII refers to "International responsibility" and to States being "internationally liable." According to one of the delegates, this meant liability "as between international juridical persons." Further, since it was obvious to the majority of delegates that a State could claim compensation in the case where it sustained damage itself, the question became on behalf of which persons a State could present a claim to the launching State.

According to Article VIII of the Liability Convention, a State may present a claim for damage to (a) its territory, property or nationals (natural or juridical); (b) foreign nationals where they sustain damage in its territory
provided that their State of nationality has not presented
a claim; (c) foreign nationals permanently residing in
its territory provided that their State of nationality
and the State in whose territory such foreign nationals
suffered the damage have neither presented claims nor
given notice of their intention to present claims.

Article VIII entitles a State to present claims either
on behalf of its nationals or on behalf of foreign nationals
who suffered damage while staying in that particular
State, provided the foreigner's own State did not present
a claim. In this way, the number of presented claims
is restricted without any disadvantage to the victim,
since in any case there will be a State presenting claims
on behalf of that particular victim. On the other hand,
the launching State does not have to deal with a large
number of claims presented by different States on behalf
of the same victim.

Further, the expression "a State which suffered
damage . . . may present . . . a claim" (Article VIII,
para. 1) has to be analyzed in the light of Article VII,
which states:

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.

Consequently, Article VIII recognizes, on one hand, the primary right of a State to present claims on behalf of its nationals and, on the other hand, the right of all persons (subject to two exceptions contained in Article VII) to compensation notwithstanding that their State of nationality may not be prepared to submit a claim on their behalf or that they may be "stateless persons."

The wording of article VIII does not clearly say within what time limit a claimant State, State of nationality, or the State in whose territory the damage is sustained has to present its claim. As this question is not settled by the Liability Convention, a State on whose territory the damage occurs may claim compensation on behalf of foreign nationals if the native State of the victim does not present a claim or notify its intention of doing so within a reasonable period of time. With regard to the nationals of the claimant State, Article X limits the time for presenting compensation claims to one year following the date of occurrence of the damage, or, as in paragraph 2, one year following the date on which the State might reasonably be expected to have learned about the facts by way of exercising due diligence in case it did not know about the occurrence of the damage.
Finally, although international intergovernmental organizations suffering damage caused by space objects are entitled to compensation, they are not entitled to present a claim on their own. According to Article XXII (4), these claims must be presented by a State that is a member of the organization and party to the Liability Convention.

E. International Intergovernmental Organizations and the Liability Convention

For most States with limited resources, participation in the exploration and use of outer space is only possible through an international organization that offers them the opportunity to participate collectively in space affairs. The European Launcher Development Organization (ELDO) and the International Telecommunication Satellite Consortium (INTELSAT) were created for these very reasons. The existence of these organizations, among others, makes regulation of their activity necessary.

According to the Advisory Opinion on "Reparations for injuries suffered in the Service of the United Nations,"487 the International Court of Justice affirmed the international personality of the United Nations. Under the terms of the Space Treaty, international organizations are accorded international personalities that will enable them to discharge effectively the purposes and functions of their
organizations. This in effect means that international organizations engaging in space activities will be the subjects of international law and capable of possessing international rights and duties without becoming parties to the Space Treaty.

While it was generally agreed among the delegates of the Legal Sub-Committee that international governmental organizations should be held liable for damages caused by their space activities,

... and that international intergovernmental organizations sustaining damage in a space object accident should be compensated, agreement upon the method by which these objectives were to be accomplished was not so readily forthcoming, but eventually a formula acceptable to all was devised.488

The Liability Convention under Article XXII(1) provides that:

... with the exception of Articles XXIV to XXVII, references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the State members of the organization are State parties to this Convention and to the [Space Treaty]. ...

Accordingly, Article XXII stipulates that its provisions shall be deemed to apply to any international intergovernmental organization which conducts space activities (i) if the organization declares its acceptance of the rights and obligations provided for in the Liability Convention,
(ii) if a majority of the State members of the organization are State parties to the Liability Convention and (iii) to the Space Treaty. Further, it appears from the wording of the provision that an organization may make the declaration at any time, but the declaration would not be effective until the other two conditions were fulfilled.

Further, Article XXII (2) imposes the obligation on State members of an organization and parties to the Liability Convention to take all appropriate steps to ensure that the organization makes a declaration of acceptance with the above-mentioned provisions.

Where damage is caused by the space activities of an international intergovernmental organization, its liability will be determined in the same way as if the damage had arisen from space activities undertaken by a State. According to Article XII:

If an international intergovernmental organization is liable for damage . . . that organization and those of its members which are State Parties to this Convention shall be jointly and severally liable; provided, however, that:
(a) any claim for compensation in respect of such damage shall be first presented to the organization; and
(b) only where the organization has not paid, or determined to be due as compensation for such damage, may the claimant invoke the liability of the members which are State Parties to this Convention for the payment of that sum.

Here again the Liability Convention uses the concept of joint and several liability in a "somewhat unorthodox manner." According to the above provision, the issue
of liability and the amount of compensation payable must be settled between the organization liable and the claimant State. When the two mentioned issues are settled, the claimant State must first seek to recover from the organization. If the organization fails to pay the compensation within a period of six months, the claimant State can approach the members of the organization, but only after seeking compensation from the organization.

Although an international organization has neither "nationals" nor "territory" in the usual sense of these words, an organization that conducts space activities will have property in the form of laboratories, offices, and space objects which may be damaged. At the eighth session it was therefore provisionally agreed that the organization should be entitled to compensation for such damages to its property.

Article XXII(4) of the Liability Convention provides that:

Any claim, pursuant to the provision of this Convention, for compensation in respect of damage caused to an organization which has made a declaration in accordance with paragraph 1 of this article shall be presented by a State member of the organization which is a State Party to this Convention.

This means that an international intergovernmental organization that sustains damage in a space object accident cannot itself present a claim to the responsible launching State. The claim must be presented by a State member of the
organization that is also a State party to the Liability Convention. This left the protection of the personnel or staff of the organization to the State of their respective nationalities, a situation which prompted Mexico to say that such a rule would disregard the status as a legal entity that most international organizations possess, and would be contrary to the 1949 Advisory Opinion of the International Court of Justice concerning compensation for damage incurred during service with the United Nations. This reasoning was apparently convincing, because Article XXII(4) of the Liability Convention, which deals with the presentation of an organization's claim, does not limit this right any more to claims with respect to damage to property of the international organization, but speaks of damage caused to an organization. Since Article XXII(1) does not exclude Article I of the Liability Convention from being applicable to organizations, the definition of "damage" as given under Article I(a), "... loss of life, personal injury or other impairment of health...," applies and covers cases where the staff of an organization is involved.

It is worth mentioning that the application of the Liability Convention to international organizations is in conformity with General Assembly Resolution 1962 (XVIII), which contains the following principle in paragraph 5:
When activities are carried on in outer space by an international organization, responsibility for compliance with the principles stated in this declaration shall be borne by the international organization and by the States participating in it.

And also in conformity with Article VI, last paragraph, of the Space Treaty, which reads:

When activities are carried on in outer space, including the moon and other celestial bodies, by international organizations, 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.

F. The Applicable Law

One of the problems about which there had been continuing deadlock until the very last session of the Liability Convention was that of the law to be applied for the assessment of damage and the determination of compensation. Three main proposals were presented. The United States drafts provided that "compensation ... shall be determined in accordance with applicable principles of international law, justice and equity"; 491 Article II of the Hungarian draft stipulated that "... compensation for such damage is provided for by the law of the State liable for such damage"; 492 and a Belgian draft referred in the first instance to the use of the national law of the victim's state, and secondly to international law, for the purpose of assessing compensation." 493 None of these proposals met with much approval.
International law, for example, was regarded as vague, imprecise, insufficiently developed, and open to many interpretations. It was also argued that no complete system of rules on the measure of compensation in international law can be found. This was apparently the reason why it appeared to be necessary to supplement generally recognized principles of international law by reference to principles of justice and equity.

The law of the launching State, as suggested by Hungary, was unacceptable to all Western States; it was felt that "in a victim-oriented Convention there was little place for a provision which would favour the launching state's law." It was also argued that States would pass special legislation in order to limit their liability in cases of damage caused by their space objects. Moreover, applying the launching State's law would cause new problems if a space object launched by an international organization. On the other hand, the application of the law of the victim could lead instead to the passing of laws in favor of the nationals of given States. Furthermore, applying this principle would result in different legal treatment of the individual victims depending on their nationality.

The French draft, which referred to the law of the place where the damage occurred (lex loci), was also criticized on the grounds that its application would make
the regulation of a measure of damage purely a matter of chance. Article XII of the Liability Convention states that:

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 principle 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.

This Article contains both the law that is to be applied in assessing the "quantum of compensation payable by a liable launching state and the objective that should be achieved by an award of compensation."495

According to Belgium, the sponsors had had three considerations in mind when drafting the above Article:496 In the first place, the rule should be "victim-oriented; second, the injured party should be able to make use of every factor calculated to restore the status quo ante; third, the text should be in keeping with the spirit of General Assembly Resolution 2733B (XXV) of December 16, 1970, which in paragraph 5 stated that:

[A] condition of a satisfactory convention on liability is that it should contain provisions which would ensure the payment of a full measure of compensation to the victims.

According to Rajski and Foster, the advantage of the use of international law, justice, and equity is the uniformity in the assessment of compensation. It provides an equal treatment of both launching and claimant States, for both
are treated regardless of nationality, place where the accident occurred, and identity of the launching State. However, it was argued that reference to principles of justice and equity is hardly certain or precise, since it appears that these notions mean different things in different societies. In Rajski's view:

[T]his argument loses most of its validity, when the problem is considered from an international point of view, as the reference to the principles of justice and equity should be understood as a reference to internationally recognized standards and not to that of a particular society.

Further, the second part of Article XII establishes the fundamental principle, which should guide the parties and the Claims Commission, that the aim to be pursued in applying international law, justice, and equity is that it will restore the victim to the condition that would have existed if the damage had not occurred; the rules that are invoked should therefore be applied and interpreted in a way which is as "victim-oriented" as possible.

Finally, as Article XXIII(2) of the Liability Convention provides that nothing contained in the Liability Convention shall prevent States from concluding international agreements that reaffirm, supplement, or extend the provisions of the Liability Convention, the launching and claimant States have the right to issue other rules of procedure in addition to or extending the rules of international law, justice, and equity to compensate for possible damage. But in the absence of agreement, Article XII pertains.
Article VIr of the Liability Convention states that unless the claimant State and the State from which compensation is due under the Liability Convention agree on another form of compensation, the compensation shall be paid in the currency of the claimant State, or, if that State so requests, in the currency of the State from which compensation is due.

G. Claims Procedure

(1) Presentation of the Claim

(a) Diplomatic Channels

Once it had been established that the question of liability under the Liability Convention was a matter to be dealt with by the States rather than the individuals involved, the first step towards the settlement of damage claims became logically the traditional one; namely, that of diplomatic action. All drafts made reference to the "presentation of the claims through diplomatic channels."499

If the claimant and the launching States do not maintain diplomatic relations, then the claimant State may either "request another State to present its claim . . . or otherwise represent its interests," or, where both the claimant and the launching State are members of the United Nations, "present its claim through the Secretary-General of the United Nations."500
(b) **Time Limit for the Presentation of Claims**

The claims for compensation of damages must be presented to a launching State not later than one year following the date of the occurrence of the damage or the identification of the launching State which is liable, or within one year following the date on which the claimant State learned of the aforementioned facts. The last period, however, should in no event exceed one year following the date on which the State could reasonably be expected to have learned of the facts through the exercise of due diligence. 501

Moreover, the above-mentioned time limit applies even if the full extent of the damage has not been known (for example, where the injuries are caused by nuclear or some other kind of contamination). In this event, however, the claimant State is entitled to revise the claim and submit additional documentation after the expiration of such time limits until one year after the full extent of damage is known. 502

(c) **Local Remedies**

It is an established principle of international law that before a State has the right to present an international claim on behalf of one of its nationals to a State alleged to be responsible for an injury to him, the person involved should first have exhausted all remedies available to him under the domestic local law of the
latter State. 503 As Professor Dembling states:

Under international law, claimants are often required to exhaust remedies available under domestic law of the state that caused the damage before resorting to diplomacy or other international procedures. In order to afford claimants an expeditious and effective remedy, the presentation of a claim through diplomatic channels should not require the exhaustion of local remedies. However, a claimant should not be permitted to prosecute its claim concurrently in a domestic forum and before an international tribunal. 504

The principle of the above-mentioned rule is that a State is entitled to have a full and proper opportunity of doing justice in its own way before international justice is demanded of it by another State (Interhandle Case). 505 Another policy behind this rule is the interest of the individual in having a quick and cheap remedy.

Article XI(1) of the Liability Convention does not require the prior exhaustion of any local remedies that may be available to the claimant State, or the natural or juridical persons it represents, provided in the laws of the launching State responsible for the damage. On the other hand, according to Article XI(2), a claimant State and its natural or juridical persons are not precluded by the Liability Convention "from pursuing a claim in the courts or administrative tribunals or agencies of the launching State." 506 Moreover, a claim cannot be brought simultaneously under the Liability Convention and other relevant agreements to which both the claimant and the launching States are parties.
(2) **Claims Commission**

It may be assumed that in many cases claims will be settled exclusively through diplomatic negotiations. Nevertheless, the possibility exists that the claimant and the respondent State will not reach an agreement on the matter, and this of course adversely affects a victim's chances of receiving compensation within a reasonable time after the occurrence of the damage. A supposedly victim-oriented convention in particular should therefore provide for additional means to settle the claim. In fact, many delegations expressed the opinion that the most important guarantees the space powers could give potential victims, whether natural or juridical persons or States, were effective remedies for the settlement of claims for compensation.

Establishing an appropriate procedure for settling disputes that have not been settled through diplomatic channels appeared to be the most controversial issue in the discussions of the Legal Sub-Committee. According to one point of view, the settlement of disputes in such cases should be limited to negotiation and arbitration. On the other hand, according to another view, the Liability Convention should provide for a compulsory third-party settlement of disputes. Therefore, a fair compromise between the conflicting views had to be found, which later came under attack from a small group of non-socialist countries as not being sufficiently "victim-oriented."
Article XIV of the Liability Convention, in providing a solution to the above controversy, states that:

If no settlement of a claim is arrived at through diplomatic negotiations as provided for in Article IX, within one year from the date on which the claimant State notifies the launching State that it has submitted the documentation of its claim, the parties concerned shall establish a Claims Commission at the request of either party.

(a) **Composition of the Claims Commission**

According to Article XV of the Liability Convention, the Claims Commission shall be composed of three members irrespective of the number of claimant States or launching States joined in any one proceeding: One member appointed by the claimant State(s), one appointed by the launching State(s), and the third member, the chairman, to be chosen by both parties jointly. Each party is given two months to appoint his individual members, and the appointment of the chairman must be made within four months of the appointment of the other members. If no agreement is reached within that period on the choice of the chairman, either party may request the Secretary-General of the United Nations to appoint the chairman within a further period of two months.

Further, Article XVI(1) of the Liability Convention expressly states that "If one of the parties does not make its appointment within the stipulated period, the chairman shall at the request of the other party constitute a single-member Claims Commission." It also stipulates,
in paragraph (2), that "Any vacancy which may arise in the Commission for whatever reason shall be filled by the same procedure adopted for the original appointment."

The Claims Commission, once established, is to determine its own procedure, the place or places where it shall sit, and all other administrative matters. 509

According to Article XVIII of the Liability Convention, the main function of the Claims Commission is to "decide the merits of the claim" and to "determine the amount of compensation payable, if any" according to the terms of the Liability Convention in particular, and to international law, justice and equity in general. 510

(b) The Decision of the Claims Commission

The most disputed question, however, was not so much the settlement procedure, but the legal characterization of the resulting award. The drafts of Belgium, the United States, Italy, and India all included provisions stipulating that the decision of the arbiters was final and binding, 511 and most Western States agreed that without this the Liability Convention would be virtually meaningless and of little value to non-space powers, for whose protection it was intended. The socialist countries, however, were diametrically opposed to such a provision, "which violated the important principle of State sovereignty." "No settlement could be imposed on a sovereign State against its wishes." 512 The Soviet bloc would stick to this view, although it was pointed out in this respect that one of the principles
embodied in the report of the Drafting Committee of the 1970 Committee on Principles of International Law Concerning Friendly Relations and Cooperation among States, which had been unanimously adopted, stated:

International disputes shall be settled on the basis of the sovereign equality of States and in accordance with the principle of free choice of means. Recourse to, or acceptance of, a settlement procedure freely agreed to by States with regard to existing or future disputes to which they are parties shall not be regarded as incompatible with sovereign equality. 513

The citation did not impress these delegations. Hungary argued that there was no need for such a provision: moral and political pressures generally played an important part, for "international public opinion would bring pressure to bear on the space powers to induce them to satisfy the claims of the small countries." 514

At the ninth session of the Legal Sub-Committee, the Brazilian delegate was the first during that session to make the necessary concession, with the following proposal: 515

The award of the commission shall be final and binding if the parties have so decided, otherwise the commission will render a final and recommendatory award.

At the same session the Belgian delegate expressed his willingness to accept a decision which was binding, not legally, but "from the political and moral standpoints." 516 The publication of decisions is in that respect an important factor, it would appear; it gives the decision greater moral weight in the eyes of public opinion, and the prospect
of having the decision made public may also encourage the parties to reach agreement in the earlier stage of direct negotiations. At the end of the ninth session, the United States joined Belgium, Brazil, and France in accepting that the decisions of the Commission would only be considered as recommendations.

At the tenth session, agreement was reached. Article XIX(2) of the Liability Convention provides that if the parties agree, the award of the Commission will be final and binding; otherwise, the Commission can only render a final award in the form of a recommendation, which the parties shall consider in good faith.

To allay to some extent the fears that, in the absence of binding decisions, implementation of the award would completely depend on the unilateral good will of the liable State, several delegations suggested that there should be a specific provision that would require the parties to carry out promptly and in good faith the provisions of the Liability Convention. It was believed that reference to this principle would, by moral pressure, induce States to pay the amount of compensation due, without affecting the recommendatory nature of the awards. Consequently, Article XIX(2) provides that parties to a dispute shall consider the Commission's recommendatory award "in good faith." However, without the compromise of Article XIX(2), the Liability Convention as a whole would apparently not have been accepted.
Article XIX(4) of the Liability Convention states that:

The Commission shall make its decision or award public. It shall deliver a certified copy of its decision or award to each of the parties and to the Secretary-General of the United Nations.

In support of this provision, Brazil and France emphasized that, in the absence of a legally binding force, it was essential, in order to give the conclusions of the Claims Commission all possible moral and political weight, to make these public. Further, the victim-oriented character of the Liability Convention appears to lend support to the idea that the potential victims, natural or juridical persons, should know what decisions have been with respect to claims for "space damage."

The competence of the Commission according to Article XVIII is limited to the settlement of claims; and disputes arising from the interpretation of application of the Liability Convention which are unrelated to a claim for damage are not the Claims Commission's concern.

A decision on the merits of the claim would involve such questions as the facts of the accident, the causal relationship between the damage and the space object, and possible exonerating circumstances such as gross negligence on the part of the claimant State.

For its guidance in these difficult matters the Commission has at its disposal -- and by virtue of Article XIX of the Liability Convention, has to apply -- "international
law and the principles of justice and equity" and the objective of *restitutio in integrum* of the victim, as outlined in Article XII of the Liability Convention.

The decisions and awards of the Commission must be handed down "as promptly as possible, no later than one year from the date of its establishment," unless the Commission finds an extension of this period necessary.521

It is important to note that some members of the Legal Sub-Committee were dissatisfied because of the failure to adopt in the Liability Convention the rule that the decision of the Claims Commission should be final and binding in all cases. To meet their demands the General Assembly, in its resolution commending the Liability Convention, noted that "any State may on becoming a party to the Convention, declare that it will recognize as binding, in relation to any other State accepting the same obligation, the decision of a Claims Commission concerning any dispute to which it may become a party."522 According to Professor Foster, this statement "adds nothing to the dispute settlement provisions of the [Liability] Convention."523

Finally, "it was claimed that the decisions and awards [of the Commission] would be binding in fact, though perhaps not in law, because of the political and moral realities of the situation."524 In addition, the publication of the decisions and awards would ensure that the responsible State(s) would fulfill its obligation in good faith because
it would be in its interests to do so. It was also stated that in the absence of any "coercive power there could be no possibility of enforcing a final and binding decision even if one were provided for in all instances." Consequently, the efficacy of even a final, binding decision would depend on the responsible States' will or good faith.
VI. CONCLUSION

The ambition of man to become winged and free himself from the bonds of the earth is not a contemporary phenomenon. This ambition has been preceded by the ancient Greek myth of Daedalus and his son Icaros. The story of Icaros symbolizes man's first step in conquering infinite space. The work and the missions of astronauts will stand out in history as the most daring human contribution to science and technology.

The most important contribution to the formulation and development of the law of outer space was made by our major international organization, the United Nations, including the General Assembly as well as COPUOS and its Legal Sub-Committee, which have extensively participated in the drafting of resolutions, treaties and other international agreements concerned with the law of outer space.

It would be wrong to conclude that the absence of international agreements that deal specifically with the legal aspects of outer space activities signifies a total lack of legal order in the field. From the beginning, as was illustrated in Chapter III, space activities have been included within a customary legal framework. The activities of nations do not escape the reach of law merely because they are projected into an environment that heretofore
has not been the subject of explicit international agreements. Moreover, international law consists not only of the positive enactments found in international conventions, but also embraces those patterns of international conduct that are so regularly followed that they give rise to a firm expectation of future behavior by the members of the community of nations. Viewed from this perspective, it should be clear that a law of outer space has been steadily evolving from the time of the first satellite launchings. This leads to the conclusion that outer space, from the very day it was entered by man-made instruments and man himself, has been subject to the rule of law. It has never been a lawless area or a legal vacuum. The imagined legal vacuum is well filled by international experience and custom and by general principles of internationally accepted law. As Professor McDougal stated:

Despite the frequent uninformed lament that the Cosmos is today a "lawless realm" or "jungle" the participants in earth-space social process quite obviously already have at their disposal for the resolution of conflicting claims about the enjoyment of space and its resources precisely the same process of authoritative decision which they have established for resolution of their conflicting claims about their more terrestrial activities.526

He adds that those who say there are no legal precedents in the domain of space not only are uninformed about existing progress in the field but act to undermine this progress because they are unenlightened in this respect.527
The study of the legislative power of the General Assembly of the United Nations according to the Charter, the dicta of international tribunals, and the opinion of eminent jurists of various communities indicates that the General Assembly has no legislative power similar to that of national legislatures of various States. Aside from some internal administrative matters, the General Assembly can only pass resolutions that have the force of recommendations. Resolutions of the General Assembly are not in and of themselves binding upon Member States.

Nevertheless, resolutions of the General Assembly, particularly of the declaratory type, do have great moral and political force, since they are the solemn declarations of virtually all representative bodies of the international community. In case the resolutions or declarations are adopted by consensus, they may be regarded as the expression of the will of the community of nations. They may also have legal force if they are authoritative interpretations of the Charter of the United Nations, or the declaration of existing customary international law. Moreover, they may facilitate the process of the development of customary international law by serving as the indicator of the practice of States, repetition of such practice, and the opinio juris sive necessitatis. In short, resolutions of the General Assembly may have legally binding force by virtue of the legal obligations derived from the already accepted sources:
the Charter of the United Nations and principles and rules of customary international law.

The contribution of resolutions of the General Assembly to the development of customary international law is probably most discernable in its Resolutions 1721 (XVI) and 1962 (XVIII) concerning outer space.

In 1964 the COPUOS Legal Sub-committee was formally given the task to prepare a draft convention on liability for damage caused by objects launched into outer space. It took eight years of discussions and negotiations before the Legal Sub-Committee could submit a draft on which its members were able to reach agreement. One of the major reasons for this long delay was the fact that the views of various groups representing different interests and widely divergent legal and political systems had to be reconciled.

The Liability Convention, taking its place alongside the Space Treaty, the Rescue Agreement, and the 1979 Moon Treaty, is a major contribution to the progressive development of international space law. The particular importance of the Liability Convention consists of establishing a legal regime of international liability for damages caused by space objects, which ensures in spite of certain imperfections, sufficient protection of legitimate interests of victims suffering harmful consequences of this type of particularly dangerous activity. The main elements of this legal regime consists, in this writer's opinion, of:
(i) the wide scope of its application, which includes all types of damage caused by space objects or in connection with their launching, including nuclear damage;

(ii) a differentiation of the basis of this liability according to the risks involved by space activities and the character of damage caused, which liability is based on the principle of absolute liability for damages caused on the earth's surface or to aircraft in flight;

(iii) the adoption of the principle of full compensation irrespective of the amount of damage;

(iv) basing the determination of the compensation of damages on the rules of international law and the principles of justice and equity, which guarantee the full protection of the interests of the victims and appears to be best suited to the international character of established liability.

Finally, it can be asked whether the Liability Convention meets the conditions set by the General Assembly. Does it elaborate "effective" rules and procedures governing liability, and does it "ensure" the prompt payment of a full and equitable measure of compensation to the victim
of space object damage? A small group of "victim-oriented" countries answered this question negatively, both with respect to the provision on the applicable law and that on the settlement of disputes. On the other hand, the great majority of the members of the Legal Sub-Committee appeared to be confident that these provisions met, to an important extent, the above requirements and were, in any case, the best that could possibly be achieved.

It is this writer's contention that those who take it upon themselves to launch objects into space should accept total responsibility for any possible injury, to persons and property and the environment.
FOOTNOTES


3 By Resolution 1472 (XIV) of the General Assembly on December 12, 1959, the Ad Hoc Committee was converted into a permanent body, the Committee on the Peaceful Uses of Outer Space (hereinafter referred to as COPUOS).


6 Id. at 28 and 32.

7 Supra note 1, at 640.


9 W. T. Mallison and Sally V. Mallison, "The Juridical Competence of the Political Organs of the United Nations," material distributed to students at George Washington University Law Center for academic purposes, at 7.

10 See Chapter 4 of this thesis.


13 Id. at 36.

14 Id. at 34.


17 Supra note 12, at 34.


22 Id. at 1312.


24 1961 Symposium, supra note 21, at 1325.


30 Id.


34 Id.

35 Id. at 64.
36 G. A. Res. 1962 (XVIII), December 13, 1963, entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space" (hereinafter referred to as Resolution 1962 (XVIII)); for text see Appendix B.

37 G. A. Res. 2130 (XX), December 21, 1965. This resolution urged COPUOS to continue with determination the preparation of a draft international agreement on liability for damage caused by objects launched into outer space.


39 The Space Treaty is annexed to G. A. Res. 2222 (XXI) of December 19, 1966; also in T.I.A.S. No. 6347, 610 U.N.T.S. 205 (1967). The Treaty came into force on October 10, 1967 (hereinafter referred to as Space Treaty); for text see Appendix C.


41 Id.

42 G. A. Res. 2260 (XII), November 3, 1967. This resolution called upon COPUOS to continue with a sense of urgency its work on the Liability Convention.

43 G. A. Res. 2345 (XXII), December 19, 1967.

44 A/AC. 105/C.2/L.51, Report 45 (Subm. by Argentina, Australia, et al.).

45 G. A. Res. 2453 (XXII), December 21, 1968.


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53 Liability Convention, Preamble. For text see Appendix D.

54 U.N. Charter art. 1, para. 1.

55 U.N. Charter art. 13, para. 1(a). For text see Appendix A.

56 See Appendix E.

57 The seven main committees of the General Assembly consist of the following:

First Committee (Political and Security Committee)
Second Committee (Economic and Financial Committee)
Third Committee (Social, Humanitarian, and Cultural Committee)
Fourth Committee (Trusteeship Committee)
Fifth Committee (Administrative and Budgetary Committee)
Sixth Committee (Legal Committee)
Special Political Committee (which was established to share the excessive agenda items referred to the First Committee).

58 General Committee and Credentials Committee.

59 Advisory Committee on Administrative and Budgetary Questions, the Committee on Contributions.


64 Supra note 9, at 9.
Staff Report prepared for the Committee on Aeronautical and Space Sciences, United States Senate, "International Cooperation and Organization for Outer Space," 164-165 (August 12, 1965).

Id.


Supra note 32.


Id.


Supra note 72 at 33.


Supra note 70, at 96.


The rules of procedure of the other U.N. committees and conferences generally provide for the possibility of deciding by majority vote even if the participants in fact try to have decisions reached by a consensus.


Quoted from Galloway, supra note 79, at 5.

Id. at 7.
84 Id. at 11.
85 U.N.G.A. Res. 1721 (XVI), December 20, 1961; for text see Appendix A.
86 See Hosenball, supra note 70, at 97.
87 Supra note 85.
88 Supra note 36.
90 Id.
92 Liability Convention, supra note 52.
93 Id.
97 Supra note 1, at 618.
98 N.Y. TIMES, July 12, 1962, p. 28, Col. 1.
99 Ibid.
101 Id. at 25.
102 Supra note 1, at 619.
103 Id. at 619, 620; Cohen, M., Law and Politics in Space, 106-107 (1964).
Justice Holmes has taught us that "... the provisions of the Constitution are not mathematical formulas having their essence in their form. ... [T]heir significance is vital, not formal; it is to be gathered not simply by taking the words and a dictionary, but by considering their origin and the line of their growth." United States v. Monia, 317 U.S. 409, 431 (1943).

I.C.J. Stat., art. 38(1)a,b, and c. Subsection "d" lists judicial decisions and legal writings as subsidiary sources.


Id.; Fenwick's characterization of international law as "mortgaged to its past" epitomizes the matter. FENWICK, INTERNATIONAL LAW, 3 (3d ed. 1948).


McDougal, Lasswell, and Vlasic, supra note 96 at 199.

Id. at 200.

Id. at 238.


McDougal, Lasswell, and Vlasic, supra note 96, at 200

Id. at 201.


Id. at 18-20.


223

122 U.N. Gen. Ass. 14th Sess., 1st Comm. 13-14 (A/C. 1/SR. 1079 (1959)) (hereinafter all reference to the proceedings of the First Committee at the 14th Session will be only by date and by the U.N. symbol).


124 1961 Symposium, supra note 21, at 263.


128 McDougal, Lasswell, and Vlasic, supra note 96 at 217.


131 Quoted from McDougal, Lasswell, and Vlasic, supra note 96, at 220-221.


134 1961 Symposium at 1064, 1065.

135 Supra note 85.

136 McDougal, Lasswell, and Vlasic, supra note 96, at 227.

137 Id.

138 Id. at 229.

139 Id.

See McDougal, Lasswell, and Vlasic, supra note 96, at 231 n. 106.


Supra note 125, at 245-246.


McDougal, Lasswell, and Vlasic, supra note 96 at 233.


Supra note 132 at 150, 160.

McDougal, Lasswell, and Vlasic, supra note 96 at 238.

Id. at 243.

Id.

Id. at 360.

Id.

Id. at 437.


Supra note 140 at 10.


160 Zourek, "What is the Legal Status of the Universe?" 1961 Symposium 1109, 1116.
165 McDougal, Lasswell, and Vlasic, supra note 96, at 440-441.
166 Id. at 441.
167 Supra note 125 at 245-248.
171 Id. at 1169.
172 McDougal, Lasswell, and Vlasic, supra note 96 at 442.
173 Id. at 513.
174 Id. at 550.
175 345 U.S. 571, 584 (1953).
176 Id.
177 McDougal, Lasswell and Vlasic, supra note 96, at 551.
178 WESTLAKE, INTERNATIONAL LAW, 169 (2d ed. 1910).
181 Id.
183 Id.
184 Id.
185 JENKS, SPACE LAW, at 221-22 (1965).
186 Supra note 85.
187 VAZQUEZ, INTRODUCTION TO THE INTERNATIONAL LAW OF SPACE, 58 (1961).
189 McDougal, Lasswell, and Vlasic, supra note 96, at 749.
190 Id.
192 McDougal, Lasswell and Vlasic, supra note 96, at 750.
193 Id. at 774-775.
194 Id. at 819.
195 Id. at 825.
196 Id. at 826.
197 Id.
198 Id. at 819-20.
199 Id. at 825.
200 Id.

201 Id. at 826.

202 Id. at 821; Jenks stated that "The general principle that outer space and celestial bodies are not subject to national appropriation can therefore, and indeed must, now be regarded as firmly established." Supra note 185 at 200; PIRADOV, INTERNATIONAL SPACE LAW, 86 (1976).

203 Supra note 36.

204 Supra note 85.

205 N.Y. TIMES, September 17, 1959, p. 18, col. 6.

206 1961 Symposium, 1009; see McDougal, Lasswell and Vlasic, supra note 96, at 822.

207 Id. McDougal, Lasswell, and Vlasic, at 822.


211 Munro, "Law for the 'Heav'n's Pathless Way,'" 1961 Symposium 216. Schachter recommended as early as 1952 that outer space, including celestial bodies, be open to mankind. See McDougal, Lasswell and Vlasic, supra note 96 at 823.

212 Supra note 185 at 200.

213 Supra note 36.

214 A. S. Piradov, supra note 202, at 86.

215 Id. at 85; see McDougal, Lasswell, and Vlasic, supra note 96 at 824 n.175.


217 McDougal, Lasswell, and Vlasic, supra note 96, at 824 n.175.

218 Jenks, supra note 185, at 230.

220. Supra note 8, at 452.

221. In one of his articles, Vallat wrote that the General Assembly: "... has certain powers the exercise of which may create legal obligations for Member States either directly or indirectly, but these do not confer on the General Assembly powers of legislation which would make it competent to lay down authoritative interpretations of the provisions of the charter by the process of law-making." Vallat, "The Competence of the United Nations General Assembly," 97 Recueil Des Cours 208 (1959).

222. U.N. Charter, art. 10.


225. Supra note 8, at 448.


227. Id. at 3.

228. As an advocate of this view, Professor McDougal views rules of international law as expectation of pattern of behavior and uniformity of practice resulting from reciprocal tolerance of the decision makers in international relations, McDougal and Schlei, "The Hydrogen Bomb Tests in Perspective: Lawful Measures for Security," 64 Yale L. J. 658 (1955).


234 Id.
235 Supra note 9, at 7.
236 Id. at 7-8.
242 Supra note 9, at 4.
243 Supra note 230, at 2.
245 Id. at 290.
248 Supra note 246, at 302.
249 Singha, supra note 247, at 117.
250 Supra note 230, at 47.
253 Supra note 9, at 3.

254 Id.

255 Supra note 1 at 27.

256 McDougal, Lasswell, and Vlasic, supra note 96, at 118-119.

257 Supra note 9, at 2.


259 Supra note 246, at 301.

260 Supra note 241, at 455.

261 Supra note 230, at 40.

262 Supra note 251, at 328.

263 Id.


265 Contrary to this view, Cheng seems to favor the conclusion that "Once agreement is reached between the Super Powers, there is a tendency to take agreement of the other States for granted." Supra note 258, at 47.

266 Supra note 85.

267 "Resolution 1721 (XVI) laid down certain principles which were binding upon all States. . . . Members of the United Nations had clearly shown, by their unanimous approval of the resolution, that they recognized the need to lay down binding legal principles." U.N. Doc. A/AC. 105/C.2./SR. 14 (196.62), p. 2.

268 Supra note 258, at 25.


271 Schachter, in COHEN, LAW AND POLITICS IN SPACE, 96 (1964).
272 McDougal, Id. at 115.
273 Cohen, Id., at 14.
274 Supra note 36; see Appendix B.
275 Id., para. 2.
276 Id., para. 3.
286 Schachter, in Cohen, supra note 271, at 98.
287 Supra note 185, at 186.
290 Id. at 115-116.
291 Forkosch, OUTER SPACE AND LEGAL LIABILITY, 27 (1982).
292 McDougal, Lasswell, and Vlasic, supra note 96, at 593.
293 Supra note 52 and Appendix F.
294 Supra note 39.
Article 38 of the Statute of the International Court of Justice; Whiteman, 8 Digest of International Law 813 (1967), notes that customary international law and general principles of law may be taken into account in dealing with the subject of damages.

See supra note 36.

STAFF OF SENATE COMM. ON AERONAUTICAL AND SPACE SCIENCES, 92d Cong., 2d Sess., REPORT ON CONVENTION ON INTERNATIONAL LIABILITY FOR DAMAGE CAUSED BY SPACE OBJECTS, ANALYSIS AND BACKGROUND DATA 44 (Comm. Print 1972).


See Appendix C for text.

Supra note 36.

For text see Appendix C.

1949, I.C.J. Reports, at 174.

Supra note 12 at 34.


The problem of liability for damages caused by space objects was extensively discussed during the XIIth Colloquium held in Mar del Plata in October 1969, and during the XVIth Colloquium held in Vienna in October 1972.

See Chapter II of this thesis.

Supra note 52.

Supra note 53.


Austria, Id., at 38.


Supra note 53.

Supra note 313.

Supra note 12, at 40-41.

U.N. Doc. A/AC.105/C.2/6.8 Rev. 3; see also, McDougal, Lasswell and Vlasic, supra note 96, at 613.


Id.


Id.


Supra note 322, at 95.


Supra note 322, at 98; 1 FRIEDMANN, LISSITZYN, AND PUGH, CASES AND MATERIALS ON INTERNATIONAL LAW, 843 (1969), citing OPPENHEIM, 1 INTERNATIONAL LAW [8th ed. Lauterpacht, 352 (1955)].

Id.

Id.; Friedmann, Lissitzyn and Pugh, at 845.
333 Supra note 324, at 173.
334 Supra note 308, at 9.
335 Hosenball, supra note 50, at 151.
337 Supra note 322, at 95.
338 Supra note 324, at 158 n.65.
340 Supra note 322, at 98.
341 Id.
342 Supra note 324, at 158. According to Professor Christol, such an approach, by focusing on causality and avoiding the direct-indirect debate, would allow for the greatest amount of flexibility in determining individual cases.
344 Supra note 322, at 97.
346 Supra note 322, at 97.
347 Supra note 324, at 158.
348 Id.
349 See McDougal and Gardner, "The Veto and the Charter: An Interpretation for Survival," 60 Yale L. J., 258-92 (1951); compare W. MALLISON AND S. MALLISON, STUDIES IN THE INTERNATIONAL HUMANITARIAN LAW OF ARMED CONFLICT, 42-102 (1980). (this work is an excellent example of the use of multifactor analysis method.) Contra Gross, "Voting in the Security Council: Abstention from Voting and Absence from Meetings," 60 Yale L. J., 209-57 (1951). (This article is an example of the plain meaning or univocalism approach of interpretation.)
235

350 McDougal and Gardner, Id., at 262 no. 23.

351 Friedmann, Lissitzyn and Pugh, supra note 330, at 391 n.386.

352 McDougal and Gardner, supra note 349 at 264 no. 30.

353 Id. at 266, no. 36.

354 Id. at 266.

355 Id. at 267.

356 Id. at 267 n.28.


359 Id.

360 Id.

361 Id.


363 Id. at 140.

364 Id. at 141.

365 Id.

366 Id.

367 Supra note 345, at 148.

368 Supra note 53.

369 Id.

370 Id.

371 Id.

372 See supra note 317.

373 Supra note 52.
374 Id. For text see Appendix D.


386 Id.; Belgium, "... everyone knew what was meant by 'space object.'"


389 The word "movement" was criticized, because it can be argued that synchronous geostationary satellites do not move (in relation to the earth).

390 Supra note 324, at 146.

391 Id. at 147.


393 Id.

395 Id. at 152.

396 See, Haley, supra note 75; Dembling, supra note 12; Jenks, supra note 394.

397 See Appendix D.

398 Supra note 324, at 150.

399 Id.

400 Id., at 151.


402 , MANUAL OF PUBLIC INTERNATIONAL LAW, 538 (1978).


406 Id.

407 Prosser, Torts, sec. 59, p. 331-334 (1959), states as of 1955 that the doctrine of Rylands v. Fletcher is followed in 20 American states, and that many other states reach similar results on different grounds.


409 See PROSSER, LAW OF TORTS, 527 (1955).

410 AMERICAN LAW INSTITUTE, RESTATEMENT OF LAW, TORT, Sec. 519 (1938).

411 Id. at sec. 520.


413 I.C.J. Rep. 4-169 (1949).

414 See supra note 12, at 37.

415 Id.

Supra note 36; Dembling, supra note 12, at 38.

Supra note 12, at 38.

Supra note 324, at 151.


Supra note 39. For text see Appendix C.

Supra note 324, at 151.

Id.


Supra note 12, at 43-44.


Id.


Supra note 324, at 154-155.
See Lay and Taubenfeld, supra note 425, at 174; McDougal, Lasswell and Vlasic, supra note 96, at 624.

See McDougal, Lasswell, and Vlasic, supra note 96, at 620.

Quoted from McDougal, Lasswell, and Vlasic, Id., at 621.

See Appendix D.


Supra note 324, at 160 no. 76.

Id. at 161.

Id.

Id.

Supra note 324, at 161.

Id.

Id.


Supra note 324, at 162.

For text see Appendix C.


Supra note 324, at 163-165 no. 83, 84.


Quoted from Foster, supra note 324, at 163, no. 84.

Id. at 163.

Id. at 163-164 no. 84.


U.N. Doc. A/AC. 105/C.2/SR. 45, p. 5.; it is not clear what the reason was.

See Article XXII of the Liability Convention, Appendix D.

Supra note 324, at 164.

Space Treaty, Art. VI. See Appendix C.

Supra note 324, at 164.

Id.

Id.

Id.

Id. at 165.


Supra note 324, at 166.

Id.


Liability Convention, Article IV(1); for text see Appendix D.
For other examples see CHENG, MANUAL ON SPACE LAW, 122 (1978).

For text see Appendix C.


Supra note 324, at 179.


Supra note 324, at 171.

The text of Article XII was formulated by Belgium, Hungary and Brazil, Belgium introducing the proposal, U.N. Doc. A/AC. 105/C.2/SR. 162, at 73.

Rajski, supra note 435, at 252; supra note 324, at 172.

Id. Rajski, at 252.


Liability Convention, Art. IX; see text, Appendix D.

Id., Art. X(1) and (2).

Id., Art. X(3).
See generally AMERASHINGHE, STATE RESPONSIBILITY FOR INJURIES TO ALIENS, 169-269 (1967).

Supra note 12, at 45-46.


Liability Convention, Art. XI(2).

Id., Art. XV(1).

Id., Art. XVI(1).

Id., Art. XVI(3) and (4).

Id., Arts. XVIII and XIX(1).


U.N. Doc. A/AC. 125/L. 86, p. 7; Declaration of these principles was later unanimously adopted (Res. 2625 (XXV)).


U.N. Doc. A/AC. 105/C.2/L. 32/Rev. 1 art. XI.


Liability Convention, Art. XIX(2).


Liability Convention, Art. XIX(3).


Supra note 324 at 176.

Id.

Id.

McDougal, Lasswell, and Vlasic, supra note 96, at 94.

Supra note 1, at 640.
APPENDIX A

RESOLUTION 1721 (XVI)

The General Assembly,

Recognizing the common interest of mankind in furthering the peaceful uses of outer space and the urgent need to strengthen international co-operation in this important field,

Believing that the exploration and use of outer space should be only for the betterment of mankind and to the benefit of States irrespective of the stage of their economic or scientific development,

1. Commends to States for their guidance in the exploration and use of outer space the following principles:
   
   (a) International law, including the Charter of the United Nations, applies to outer space and celestial bodies;
   
   (b) Outer space and celestial bodies are free for exploration and use by all States in conformity with international law and are not subject to national appropriation;

2. Invites the Committee on the Peaceful Uses of Outer Space to study and report on the legal problems which may arise from the exploration and use of outer space.
APPENDIX B:

General Assembly Resolution 1962 (XVIII)

DECLARATION OF LEGAL PRINCIPLES GOVERNING THE ACTIVITIES OF STATES IN THE EXPLORATION AND USE OF OUTER SPACE


The General Assembly
Inspired by the great prospects opening up before mankind as a result of man's entry into outer space,
- Recognizing the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes.
Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development,
Desiring to contribute to broad international co-operation in the scientific as well as the legal aspects of the exploration and use of outer space for peaceful purposes.
Believing that such co-operation will contribute to the development of mutual understanding and to the strengthening of friendly relations between states and peoples,
- Recalling its resolution 110 (II) of November 3, 1947, which condemned propaganda designed or likely to provoke or encourage any threat to the peace, breach of the peace, or act of aggression, and considering that the aforementioned resolution is applicable to outer space,
Taking into consideration its resolutions 1721 (XVI) of December 20, 1961, and 1802 (XVII) of December 14, 1962, adopted unanimously by the States Members of the United Nations,
Solemnly declares that in the exploration and use of outer space States should be guided by the following principles:
1. The exploration and use of outer space shall be carried on for the benefit and in the interests of all mankind.
2. Outer space and celestial bodies are free for exploration and use by all States on a basis of equality and in accordance with international law.
3. Outer space and celestial bodies are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.
4. The activities of States in the exploration and use of outer space shall be carried on in accordance with international law, including the Charter of the

Resolution 1962 (XVIII).
United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding.

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 forth in the present Declaration. The activities of non-governmental entities in outer space shall require authorisation and continuing supervision by the State concerned. When activities are carried on in outer space by an international organisation, responsibility for compliance with the principles set forth in this Declaration shall be borne by the international organisation and by the States participating in it.

6. In the exploration and use of outer space, States shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space with due regard for the corresponding interests of other States. If a State has reason to believe that an outer space activity or experiment planned by it or its nationals would cause potentially harmful interference with activities of other States in the peaceful exploration and use of outer space, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State which has reason to believe that an outer space activity or experiment planned by another State would cause potentially harmful interference with activities in the peaceful exploration and use of outer space may request consultation concerning the activity or experiment.

7. The State on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and any personnel thereon, while in outer space. Ownership of objects launched into outer space, and of their component parts, is not affected by their passage through outer space or by their return to the Earth. Such objects or component parts found beyond the limits of the State or registry shall be returned to that State, which shall furnish identifying data upon request prior to return.

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.

9. States shall regard astronauts as envoys of mankind in outer space, and shall render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of a foreign State or on the high seas. Astronauts who make such a landing shall be safely and promptly returned to the State of registry of their space vehicle.

128th Plenary Meeting
December 13, 1963
APPENDIX C: TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES OF STATES IN THE EXPLORATION AND USE OF OUTER SPACE, INCLUDING THE MOON AND OTHER CELESTIAL BODIES, JANUARY 27, 1967

"Space Treaty")

The States Parties to this treaty,

Inspired by the great prospects opening up before mankind as a result of man's entry into outer space,

Recognizing the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes,

Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development,

Desiring to contribute to broad international co-operation in the scientific as well as the legal aspects of the exploration and use of outer space for peaceful purposes,

Believing that such co-operation will contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples,

Recalling resolution 1962 (XVIII), entitled "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space," which was adopted unanimously by the United Nations General Assembly on 13 December 1963,

Recalling resolution 1884 (XVIII), calling upon States to refrain from placing in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction or from installing such weapons on celestial bodies, which was adopted unanimously by the United Nations General Assembly on 17 October 1963,
Taking account of United Nations General Assembly resolution 110 (II) of 3 November 1947, which condemned propaganda designed or likely to provoke or encourage any threat to the peace, breach of the peace or act of aggression, and considering that the aforementioned resolution is applicable to outer space,

Convincing that a Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, will further the Purposes and Principles of the Charter of the United Nations,

Have agreed on the following:

Article I

The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be a province of all mankind.

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation.

Article II

Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

Article III

States Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding.
Article IV

States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.

The moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration of the moon and other celestial bodies shall also not be prohibited.

Article V

States Parties to the Treaty shall regard astronauts as envoys of mankind in outer space and shall render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas. When astronauts make such a landing, they shall be safely and promptly returned to the State of registry of their space vehicle.

In carrying on activities in outer space and on celestial bodies, the astronauts of one State Party shall render all possible assistance to the astronauts of other States Parties.

States Parties to the Treaty shall immediately inform the other States Parties to the Treaty or the Secretary-General of the United Nations of any phenomena they discover in outer space, including the moon and other celestial bodies, which could constitute a danger to the life or health of astronauts.

Article VI

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.

Article VII

Each State Party to the Treaty that launches or 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 on the Earth, in air space or in outer space, including the moon and other celestial bodies.

Article VIII

A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth. Such objects or component parts found beyond the limits of the State Party to the Treaty on whose registry they are carried shall be returned to that State Party, which shall, upon request, furnish identifying data prior to their return.

Article IX

In the exploration and use of outer space, including the moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space, including the moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty. States Parties to the Treaty shall pursue studies of outer space, including the moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of
the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the moon and other celestial bodies, may request consultation concerning the activity or experiment.

Article X

In order to promote international co-operation in the exploration and use of outer space, including the moon and other celestial bodies, in conformity with the purposes of this Treaty, the States Parties of the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States.

The nature of such an opportunity for observation and the conditions under which it could be afforded shall be determined by agreement between the States concerned.

Article XI

In order to promote international co-operation in the peaceful exploration and use of outer space, States Parties to the Treaty conducting activities in outer space, including the moon and other celestial bodies, agree to inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of such activities. On receiving the said information, the Secretary-General of the United Nations should be prepared to disseminate it immediately and effectively.
Article XII

All stations, installations, equipment and space vehicles on the moon and other celestial bodies shall be open to representatives of other States Parties to the Treaty on a basis of reciprocity. Such representatives shall give reasonable advance notice of a projected visit, in order that appropriate consultations may be held and that maximum precautions may be taken to assure safety and to avoid interference with normal operations in the facility to be visited.

Article XIII

The provisions of this Treaty shall apply to the activities of States Parties to the Treaty in the exploration and use of outer space, including the moon and other celestial bodies, whether such activities are carried on by a single State Party to the Treaty or jointly with other States, including cases where they are carried on within the framework of international inter-governmental organizations.

Any practical questions arising in connection with activities carried on by international inter-governmental organizations in the exploration and use of outer space, including the moon and other celestial bodies, shall be resolved by the States Parties to the Treaty either with the appropriate international organization or with one or more States members of that international organization, which are Parties to this Treaty.

Article XIV

1. This Treaty shall be open to all States for signature. Any State which does not sign this Treaty before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland, and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

3. This Treaty shall enter into force upon the deposit of instruments of ratification by five Governments including the Governments designated as Depositary Governments under this Treaty.
4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Treaty, the date of its entry into force and other notices.

6. This Treaty shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article XVI

Any State Party to the Treaty may propose amendments to this Treaty. Amendments shall enter into force for each State Party to the Treaty accepting the amendments upon their acceptance by a majority of the States Parties to the Treaty and thereafter for each remaining State Party to the Treaty on the date of acceptance by it.

Article XVI

Any State Party to the Treaty may give notice of its withdrawal from the Treaty one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.

Article XVII

This Treaty, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Treaty shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.
The States Parties to this Convention,

Recognizing the common interest of all mankind in furthering the exploration and use of outer space for peaceful purposes,

Recalling the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,

Taking into consideration that, notwithstanding the precautionary measures to be taken by States and international intergovernmental organizations involved in the launching of space objects, damage may on occasion be caused by such objects,

Recognizing the need to elaborate effective international rules and procedures concerning liability for damage caused by space objects and to ensure, in particular, the prompt payment under the terms of this Convention of a full and equitable measure of compensation to victims of such damage,

Believing that the establishment of such rules and procedures will contribute to the strengthening of international cooperation in the field of the exploration and use of outer space for peaceful purposes,

Have agreed on the following:

Article I

For the purposes of this Convention:
(a) 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;

(b) The term "launching" includes attempted launching;

(c) The term "launching State" means:

(i) A State which launches or procures the launching of a space object;

(ii) A State from whose territory or facility a space object is launched;

(d) The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof.

Article II

A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.

Article III

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 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.

Article IV

1. 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 by a space object of another launching State, and of damage thereby being caused to a third State or to its natural or juridical persons, the first two States shall be jointly and severally liable to the third State, to the extent indicated by the following:

   (a) If the damage has been caused to the third State on the surface of the earth or to aircraft in flight, their liability to the third State shall be absolute;
(b) If the damage has been caused to a space object of the third State or to persons or property on board that space object elsewhere than on the surface of the earth, their liability to the third State shall be based on the fault of either of the first two States or on the fault of persons for whom either is responsible.

2. In all cases of joint and several liability referred to in paragraph 1 of this article, 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. Such apportionment 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.

**Article V**

1. Whenever two or more States jointly launch a space object, they shall be jointly and severally liable for any damage caused.

2. A launching State which has paid 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.

**Article VI**

1. Subject to the provisions of paragraph 2 of this article, 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.
2. 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 of Principles Governing the Activities of States in
the Exploration and Use of Outer Space, including the Moon and
Other Celestial Bodies.

Article VII

The provisions of this Convention shall not apply to damage
carried 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.

Article VIII

1. A State which suffers damage, or whose natural or juridical
persons suffers damage, may present to a launching State a claim
for compensation for such damage.

2. If the State of nationality has not presented a claim, another State may, in respect of damage sustained in its territory by any natural or juridical person, present a claim to a launching State.

3. If neither the State of nationality nor the State in whose
territory the damage was sustained has presented a claim or
notified its intention of presenting a claim, another State may, in respect of damage sustained by its permanent residents, present a claim to a launching State.

Article IX

A claim for compensation for damage shall be presented to a
launching State through diplomatic channels. If a State does
not maintain diplomatic relations with the launching State concerned, it may request another State to present its claim to
that launching State or otherwise represent its interests under
this Convention. It may also present its claim through the
Secretary-General of the United Nations, provided the claimant State and the launching State are both Members of the United Nations.

**Article X**

1. A claim for compensation for damage may be presented to a launching State not later than one year following the date of the occurrence of the damage or the identification of the launching State which is liable.

2. If, however, a State does not know of the occurrence of the damage or has not been able to identify the launching State which is liable, it may present a claim within one year following the date on which it learned of the aforementioned facts; however, this period shall in no event exceed one year following the date on which the State could reasonably be expected to have learned of the facts through the exercise of due diligence.

3. The time-limits specified in paragraphs 1 and 2 of this article shall apply even if the full extent of the damage may not be known. In this event, however, the claimant State shall be entitled to revise the claim and submit additional documentation after the expiration of such time-limits until one year after the full extent of the damage is known.

**Article XI**

1. Presentation of a claim to a launching State for compensation for damage under this Convention shall not require the prior exhaustion of any local remedies which may be available to a claimant State or to natural or juridical persons it represents.

2. Nothing in this Convention shall prevent a State, or natural or juridical persons it might represent, from pursuing a claim in the courts or administrative tribunals or agencies of a launching State. A State shall not, however, be entitled to present a claim under this Convention in respect of the same damage for which a claim is being pursued in the courts or administrative tribunals or agencies of a launching State or under another international agreement which is binding on the States concerned.
Article XII

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.

Article XIII

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 or, if that State so requests, in the currency of the State from which compensation is due.

Article XIV

If no settlement of a claim is arrived at through diplomatic negotiations as provided for in Article IX, within one year from the date on which the claimant State notifies the launching State that it has submitted the documentation of its claim, the parties concerned shall establish a Claims Commission at the request of either party.

Article XV

1. The Claims Commission shall be composed of three members: one appointed by the claimant State, one appointed by the launching State and the third member, the Chairman, to be chosen by both parties jointly. Each party shall make its appointment within two months of the request for the establishment of the Claims Commission.

2. If no agreement is reached on the choice of the Chairman within four months of the request for the establishment of the Commission, either party may request the Secretary-General of the United Nations to appoint the Chairman within a further period of two months.

Article XVI

1. If one of the parties does not make its appointment within
the stipulated period, the Chairman shall, at the request of the other party, constitute a single-member Claims Commission.

2. Any vacancy which may arise in the Commission for whatever reason shall be filled by the same procedure adopted for the original appointment.

3. The Commission shall determine its own procedure.

4. The Commission shall determine the place or places where it shall sit and all other administrative matters.

5. Except in the case of decisions and awards by a single-member Commission, all decisions and awards of the Commission shall be by majority vote.

Article XVII

No increase in the membership of the Claims Commission shall take place by reason of two or more claimant States or launching States being joined in any one proceeding before the Commission. The claimant States so joined shall collectively appoint one member of the Commission in the same manner and subject to the same conditions as would be the case for a single claimant State. When two or more launching States are so joined, they shall collectively appoint one member of the Commission in the same way. If the claimant States or the launching States do not make the appointment within the stipulated period, the Chairman shall constitute a single-member Commission.

Article XVIII

The Claims Commission shall decide the merits of the claim for compensation and determine the amount of compensation payable, if any.

Article XIX

1. The Claims Commission shall act in accordance with the provisions of article XII.

2. The decision of the Commission shall be final and binding if the parties have so agreed; otherwise the Commission shall render a final and recommendatory award, which the parties shall consider in good faith. The Commission shall state the reasons for its decision or award.
3. The Commission shall give its decision or award as promptly as possible and no later than one year from the date of its establishment, unless an extension of this period is found necessary by the Commission.

4. The Commission shall make its decision or award public. It shall deliver a certified copy of its decision or award to each of the parties and to the Secretary-General of the United Nations.

Article XX

The expense in regard to the Claims Commission shall be borne equally by the parties, unless otherwise decided by the Commission.

Article XXI

If the damage caused by a space object presents a large-scale danger to human life or seriously interferes with the living conditions of the population or the functioning of vital centers, the States Parties, and in particular the launching State, shall examine the possibility of rendering appropriate and rapid assistance to the State which has suffered the damage, when it so requests. However, nothing in this article shall affect the rights or obligations of the States Parties under this Convention.

Article XXII

1. In this Convention, with the exception of articles XXIV to XXVII, references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with the preceding paragraph.

3. If an international intergovernmental organization is
liable for damage by virtue of the provisions of this Convention, that organization and those of its members which are States Parties to this Convention shall be jointly and severally liable; provided, however, that:

(a) Any claim for compensation in respect of such damage shall be first presented to the organization;

(b) Only where the organization has not paid, within a period of six months, any sum agreed or determined to be due as compensation for such damage, may the claimant State invoke the liability of the members which are States Parties to this Convention for the payment of that sum.

4. Any claim, pursuant to the provisions of this Convention, for compensation in respect of damage caused to an organization which has made a declaration in accordance with paragraph 1 of this article shall be presented by a State-member of the organization which is a State Party to this Convention.

Article XXIII

1. The provisions of this Convention shall not affect other international agreements in force in so far as relations between the States Parties to such agreements are concerned.

2. No provision of this Convention shall prevent States from concluding international agreements reaffirming, supplementing or extending its provisions.

Article XXIV

1. This Convention shall be open to all States for signature. Any State which does not sign this Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

3. This Convention shall enter into force on the deposit of the fifth instrument of ratification.
4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Convention, the date of its entry into force and other notices.

6. This Convention shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article XXV

Any State Party to this Convention may propose amendments to this Convention. Amendments shall enter into force for each State Party to the Convention accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party to the Convention on the date of acceptance by it.

Article XXVI

Ten years after the entry into force of this Convention, the question of the review of this Convention shall be included in the provisional agenda of the United Nations General Assembly in order to consider, in the light of past application of the Convention, whether it requires revision. However, at any time after the Convention has been in force for five years, and at the request of one third of the States Parties to the Convention, and with the concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention.

Article XXVII

Any State Party to this Convention may give notice of its withdrawal from the Convention one year after its entry into force by written notification to the Depositary Governments. Such withdrawal shall take effect one year from the date of receipt of this notification.
Article XXVIII

This Convention, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Convention shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.
APPENDIX E

ARTICLE 22 OF THE
UNITED NATIONS CHARTER

The General Assembly may establish such subsidiary organs as it deems necessary for the performance of its functions.

RULES OF PROCEDURE
OF THE GENERAL ASSEMBLY

Rule 98

The General Assembly may set up such committees as it deems necessary for the performance of its functions.

Rule 104

Each committee may set up sub-committees, which shall elect their own officers.

Rule 162

The General Assembly may establish such subsidiary organs as it deems necessary for the performance of its functions. The rules relating to the procedure of the committees of the General Assembly as well as rules 45 and 62, shall apply to the procedure of any subsidiary organ, unless the General Assembly or the subsidiary organ decides otherwise.
The Contracting Parties,

Noting the great importance of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, which calls for the rendering of all possible assistance to astronauts in the event of accident, distress or emergency landing, the prompt and safe return of astronauts, and the return of objects launched into outer space,

Desiring to develop and give further concrete expression to these duties,

Wishing to promote international co-operation in the peaceful exploration and use of outer space,

Prompted by sentiments of humanity,

Have agreed on the following:

Article 1

Each Contracting Party which receives information or discovers that the personnel of a spacecraft have suffered accident or are experiencing conditions of distress or have made an emergency or unintended landing in territory under its jurisdiction or on the high seas or in any other place not under the jurisdiction of any State shall immediately:

(a) Notify the launching authority or, if it cannot identify and immediately communicate with the launching authority,
immediately make a public announcement by all appropriate means of communication at its disposal;

(b) Notify the Secretary-General of the United Nations, who should disseminate the information without delay by all appropriate means of communication at his disposal.

Article 2

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party, it shall immediately take all possible steps to rescue them and render them all necessary assistance. It shall inform the launching authority and also the Secretary-General of the United Nations of the steps it is taking and of their progress. If assistance by the launching authority would help to effect a prompt rescue or would contribute substantially to the effectiveness of search and rescue operations, the launching authority shall co-operate with the Contracting Party with a view to the effective conduct of search and rescue operations. Such operations shall be subject to the direction and control of the Contracting Party, which shall act in close and continuing consultation with the launching authority.

Article 3

If information is received or it is discovered that the personnel of a spacecraft have alighted on the high seas or in any other place not under the jurisdiction of any State, those Contracting Parties which are in a position to do so shall, if necessary, extend assistance in search and rescue operations for such personnel to assure their speedy rescue. They shall inform the launching authority and the Secretary-General of the United Nations of the steps they are taking and of their progress.

Article 4

If, owing to accident, distress, emergency or unintended landing, the personnel of a spacecraft land in territory under the jurisdiction of a Contracting Party or have been found on the high seas or in any other place not under the jurisdiction of any State, they shall be safely and promptly returned to representatives of the launching authority.
Article 5

1. Each Contracting Party which receives information or discovers that a space object or its component parts has returned to Earth in territory under its jurisdiction or on the high seas or in any other place not under the jurisdiction of any State, shall notify the launching authority and the Secretary-General of the United Nations.

2. Each Contracting Party having jurisdiction over the territory on which a space object or its component parts has been discovered shall, upon the request of the launching authority and with assistance from that authority if requested, take such steps as it finds practicable to recover the object or component parts.

3. Upon request of the launching authority, objects launched into outer space or their component parts found beyond the territorial limits of the launching authority shall be returned to or held at the disposal of representatives of the launching authority, which shall, upon request, furnish identifying data prior to their return.

4. Notwithstanding paragraphs 2 and 3 of this article, a Contracting Party which has reason to believe that a space object or its component parts discovered in territory under its jurisdiction, or recovered by it elsewhere, is of a hazardous or deleterious nature may so notify the launching authority, which shall immediately take effective steps, under the direction and control of the said Contracting Party, to eliminate possible danger of harm.

5. Expenses incurred in fulfilling obligations to recover and return a space object or its component parts under paragraphs 2 and 3 of this article shall be borne by the launching authority.

Article 6

For the purposes of this Agreement, the term "launching authority" shall refer to the State responsible for launching, or, where an international inter-governmental organization is responsible for launching, that organization, provided that that organization declares its acceptance of the rights and obligations provided for in this Agreement and a majority of the States members of that organization are Contracting Parties to this Agreement and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.
Article 7

1. This Agreement shall be open to all States for signature. Any State which does not sign this Agreement before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Agreement shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Governments of the United States of America, the United Kingdom of Great Britain and Northern Ireland and the Union of Soviet Socialist Republics, which are hereby designated the Depositary Governments.

3. This Agreement shall enter into force upon the deposit of instruments of ratification by five Governments including the Governments designated as Depositary Governments under this Agreement.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Agreement, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Depositary Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification of and accession to this Agreement, the date of its entry into force and other notices.

6. This Agreement shall be registered by the Depositary Governments pursuant to Article 102 of the Charter of the United Nations.

Article 8

Any State Party to the Agreement may propose amendments to this Agreement. Amendments shall enter into force for each State Party to the Agreement accepting the amendments upon their acceptance by a majority of the States Parties to the Agreement and thereafter for each remaining State Party to the Agreement on the date of acceptance by it.

Article 9

Any State Party to the Agreement may give notice of its withdrawal from the Agreement one year after its entry into force by written notification to the Depositary Governments. Such
withdrawal shall take effect one year from the date of receipt of this notification.

Article 10

This Agreement, of which the English, Russian, French, Spanish and Chinese texts are equally authentic, shall be deposited in the archives of the Depositary Governments. Duly certified copies of this Agreement shall be transmitted by the Depositary Governments to the Governments of the signatory and acceding States.


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**Has signed the Moon Treaty**

**Has ratified the Moon Treaty**

**Has not signed or ratified the Moon Treaty**
The States Parties to this Convention,

Recognizing the common interest of all mankind in furthering the exploration and use of outer space for peaceful purposes,

Recalling that the Treaty on principles governing the activities of States in the exploration and use of outer space, including the moon and other celestial bodies of 27 January 1967 affirms that States shall bear international responsibility for their national activities in outer space and refers to the State on whose registry an object launched into outer space is carried,

Recalling also that the Agreement on the rescue of astronauts, the return of astronauts and the return of objects launched into outer space of 22 April 1968 provides that a launching authority shall, upon request, furnish identifying data prior to the return of an object it has launched into outer space found beyond the territorial limits of the launching authority,

Recalling further that the Convention on international liability for damage caused by space objects of 29 March 1972 establishes international rules and procedures concerning the liability of launching States for damage caused by their space objects,

Desiring, in the light of the Treaty on principles governing the activities of States in the exploration and use of outer space, including the moon and other celestial bodies, to make provision for the national registration by launching States of space objects launched into outer space,
Desiring further that a central register of objects launched into outer space be established and maintained, on a mandatory basis, by the Secretary-General of the United Nations,

Desiring also to provide for States Parties additional means and procedures to assist in the identification of space objects,

Believing that a mandatory system of registering objects launched into outer space would, in particular, assist in their identification and would contribute to the application and development of international law governing the exploration and use of outer space,

Have agreed on the following:

Article I

For the purposes of this Convention:

(a) The term "launching State" means:

(i) A State which launches or procures the launching of a space object;

(ii) A State from whose territory or facility a space object is launched;

(b) The term "space object" includes component parts of a space object as well as its launch vehicle and parts thereof;

(c) The term "State of registry" means a launching State on whose registry a space object is carried in accordance with article II.

Article II

1. When a space object is launched into earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain. Each launching State shall inform the Secretary-General of the United Nations of the establishment of such a registry.

2. Where there are two or more launching States in respect of any such space object, they shall jointly determine which one of them shall register the object in accordance with paragraph 1 of this article, bearing in mind the provisions of article VIII of the Treaty on principles governing the activities of
States in the exploration and use of outer space, including the moon and other celestial bodies, and without prejudice to appropriate agreements concluded or to be concluded among the launching States on jurisdiction and control over the space object and over any personnel thereof.

3. The contents of each registry and the conditions under which it is maintained shall be determined by the State of registry concerned.

Article III

1. The Secretary-General of the United Nations shall maintain a Register in which the information furnished in accordance with article IV shall be recorded.

2. There shall be full and open access to the information in this Register.

Article IV

1. Each State of registry shall furnish to the Secretary-General of the United Nations, as soon as practicable, the following information concerning each space object carried on in registry:

(a) Name of launching State or States;

(b) An appropriate designator of the space object or its registration number;

(c) Date and territory or location of launch;

(d) Basic orbital parameters, including:

   (i) Nodal period,

   (ii) Inclination,

   (iii) Apogee,

   (iv) Perigee;

(e) General function of the space object.

2. Each State of registry may, from time to time, provide the Secretary-General of the United Nations with additional information concerning a space object carried on its registry.
3. Each State of registry shall notify the Secretary-General of the United Nations, to the greatest extent feasible and as soon as practicable, of space objects concerning which it has previously transmitted information, and which have been but no longer are in earth orbit.

Article V

Whenever a space object launched into earth orbit or beyond is marked with the designator or registration number referred to in article IV, paragraph 1 (b), or both, the State of registry shall notify the Secretary-General of this fact when submitting the information regarding the space object in accordance with article IV. In such case, the Secretary-General of the United Nations shall record this notification in the Register.

Article VI

Where the application of the provisions of this Convention has not enabled a State Party to identify a space object which has caused damage to it or to any of its natural or juridical persons, or which may be of a hazardous or deleterious nature, other States Parties, including in particular States possessing space monitoring and tracking facilities, shall respond to the greatest extent feasible to a request by that State Party, or transmitted through the Secretary-General on its behalf, for assistance under equitable and reasonable conditions in the identification of the object. A State Party making such a request shall, to the greatest extent feasible, submit information as to the time, nature and circumstances of the events giving rise to the request. Arrangements under which such assistance shall be rendered shall be the subject of agreement between the parties concerned.

Article VII

1. In this Convention, with the exception of articles VIII to XII inclusive, references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on principles governing the activities of States in the exploration and use of outer space, including the moon and other celestial bodies.
2. States members of any such organization which are States Parties to this Convention shall take all appropriate steps to ensure that the organization makes a declaration in accordance with paragraph 1 of this article.

Article VIII

1. This Convention shall be open for signature by all States at United Nations Headquarters in New York. Any State which does not sign this Convention before its entry into force in accordance with paragraph 3 of this article may accede to it at any time.

2. This Convention shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Secretary-General of the United Nations.

3. This Convention shall enter into force among the States which have deposited instruments of ratification on the deposit of the fifth such instrument with the Secretary-General of the United Nations.

4. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Convention, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

5. The Secretary-General shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession to this Convention, the date of its entry into force and other notices.

Article IX

Any State Party to this Convention may propose amendments to the Convention. Amendments shall enter into force for each State Party to the Convention accepting the amendments upon their acceptance by a majority of the States Parties to the Convention and thereafter for each remaining State Party to the Convention on the date of acceptance by it.

Article X

Ten years after the entry into force of this Convention, the question of the review of the Convention shall be included in
the provisional agenda of the United Nations General Assembly in order to consider in the light of past application of the Convention, whether it requires revision. However, at any time after the Convention has been in force for five years, at the request of one third of the States Parties to the Convention and with the concurrence of the majority of the States Parties, a conference of the States Parties shall be convened to review this Convention. Such review shall take into account in particular any relevant technological developments, including those relating to the identification of space objects.

Article XI

Any State Party to this Convention may give notice of its withdrawal from the Convention one year after its entry into force by written notification to the Secretary-General of the United Nations. Such withdrawal shall take effect one year from the date of receipt of this notification.

Article XII

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all signatory and acceding States.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto by their respective Governments, have signed this Convention, opened for signature at New York on the fourteenth day of January one thousand nine hundred and seventy-five.
# Appendix I: Members of COPUOS, 1982

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