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**Cosmic
International
Law**

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Law

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Wayne State University Press

Detroit 1965

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of the "Palais de la Paix" in the Hague, became the main source from which I was able to draw my first conclusions for my doctoral thesis, *Etudes de Droit Interplanetaire*, presented April 29, 1959.

2. After 1959, studies on the legal problems of space began to multiply, and I was able to incorporate a large mass of bibliography into my work, which I modified here and enlarged there, so that the Spanish edition, *Introduccion al derecho internacional cosmico* (Introduction to Cosmic International Law), National University, Mexico, 1961, might reflect the status of space law as it existed in the early part of 1961.

3. At present, the problem involved in making a study of the legal aspects of the exploration and conquest of space is exactly the opposite of the one I had to overcome in 1958. The extraordinary proliferation of works on this subject makes it very difficult to keep up with them, and at times it is impossible to pick out from this great mass what is truly representative, since the majority of these works merely repeat others that have appeared before them, in a kind of sleight-of-hand in which ideas are tossed back and forth repeatedly before the eyes of students. Trying to keep within a strict and selective criterion, I have revised the Spanish edition of this book, making modifications where I deemed it advisable, and adding certain aspects I had not gone into because at the time they had not yet been sufficiently developed. In addition, the documentary section, while having a certain value in the Spanish edition, because of the difficulty of finding the material in this language has been dropped for the English edition.

In preparing the Spanish edition, I decided to change the title originally adopted, and I should like to keep the new title in the English edition, because it reflects the orientation I should like to give to this study and the limits I have imposed upon it. In fact, I find the various names usually given to studies of this nature far from satisfactory, as I indicated in the preliminary note to the Spanish edition. 1. "Astronautical Law" really refers to laws of navigation in outer space. 2. "Interplanetary Law" (the title I first took) should have as its object the study of relationship between inhabitants of different planets. 3. "Transair Law" (a term created by Escobar Faria) referring as it does to laws governing air navigation, does not adequately cover the contents of this book, which are actually more accurately revealed by the title "Astronautic Law". 4. A. G. Haley's "Metalaw", which attempts to make an overall survey of law as it exists in order to adapt it to relationships with intelligent beings different from man who may exist in other worlds, is too broad a term.

Actually, without discrediting the value of each of the above titles, and of others not quoted (such as "The Law of Space" or "The Law of Outer Space") all of which may have a precise purpose or a concrete point, none of them is exactly right for this book. The name I have chosen is the one that expresses to my satisfaction the purpose of my study. I am not unaware of the necessity or the advisability of studying the various problems which may arise with regard to human relationships in space, but I desire to confine myself to the international aspects of such activities, and above all to the problems that may arise between nations as a result of their activities in outer space. This is the reason I have chosen the title *Cosmic International Law*.

In studying this book, the reader will undoubtedly encounter problems that it will not always be possible to solve at the moment, but I shall try at every step to point out the difference between mere conjecture and wishful thinking, and what is actually subject to laws that are in effect. My position is clearly distinct from those held by two types of

jurists: those who believe that activities in cosmic space represent a field that can well be left absolutely to the freedom of the states because of the absence of regulations; and those who make up their own regulations as they please. These two attitudes do not tally with the facts of the matter. It is true that up to now, with exceptions which I shall point out in my study, there are no laws which have been created specifically for activities in space. But it is also true that the principles of international law, whose purpose is to regulate relationships between states, are in force, and these principles apply to these relationships, no matter where they may take place. Therefore, we cannot speak categorically of a legal vacuum in outer space, since international law is applicable there.

I have thus wished to bring to my study what I consider a rigorous scientific method, making a clear distinction between problems of *lege lata* and those which belong more appropriately to *de lege ferenda*.

There is no legal vacuum in outer space, but we must be careful not to confuse outer space with air space, as some do who refuse to admit it, and we must keep in mind that it is not permissible under any circumstances for an individual to manufacture new rules to suit his purpose or inclination.

Introduction

Chapter I

The Modern Scene

Section I

Modern Technology

Technology has placed undreamed-of forces at man's service. His field of knowledge is expanding all the time, and he finds himself ever at new cross-roads without any guideposts to tell him which road to take. Travels through interplanetary space, once the dream of poets and novelists with over-active imaginations, have become cold facts, mathematical certainties, and precise physics. Speeds which one hundred years ago were measured in terms of leagues are today computed in terms of thousands of miles per hour. The steam engine, electric energy, the radio, television, and atomic energy are changing the face of the world and all of life in general.

Repose is no longer sought as a means of attaining nirvana. It is speed and an atomic nirvana that are attempting to govern the earth and space. It is not our purpose here to pronounce judgment on the moral value of progress, merely to acknowledge its existence and its influence on the life of man. As technology advances, it creates new situations, and all of life itself seems to change with the introduction of new elements. If up to now the discovery of America has represented a highly important milestone in the history of the world, the space age will represent a still more outstanding one.

It represents the collapse of physical astronomic theories, the birth of a new order of commercial and political relationships, the opening up of fresh and unlimited fields of action for man. Out-distanced by his own technological achievements, man has a mentality at least three hundred years behind the times, and this is the reason why all his previously prevailing systems have been turned upside down and his institutions have become superannuated.

As long as man does not adapt his moral and legal orders to the new circumstances, a terrible threat hangs over him.¹

Section 11

The Law and Technology

The change that has overtaken our lives, resulting from technological progress, has had repercussions on the laws that regulate our existence. International law is facing new problems.

The appearance of air navigation gave rise to the controversy on the use of air space, and posed the problem of the prohibition of the use of planes for warfare. The solution given to these problems is nothing but a compromise between opposing interests-the sovereignty of the state and the usefulness of the community of nations. Later came the problem of disarmament, which included the abandonment of nuclear tests, even those undertaken for purely peaceful purposes.

On the world scene, the technological revolution is a primordial factor.² It represents a basic change in traditional strategy and international politics. Arms are becoming more and more expensive, and their use is taxing the economic resistance of nations. The small nations, which once were able to have arrows or guns as good as

¹ "Le développement de la technique appelle l'instauration d'un ordre international asscz fernze, assez efficace." (M. Bourquin:Pouuoir scientifique et Droit International," Recueil de Cours Academie de Droit Internationale, 1947, 70, 335) p. 394. (Hereafter referred to as R.C.A.D.I.)

² "Not since the Midcl]e-Age have men scanned the sky so eagerly for portents" ("Both Sides of the Moon": The Economist, Oct 12, 1957).

those of the large ones, are today obliged to be content with what weapons the large nations see fit to offer them. In this way a hiatus between great and small powers has been produced, and it is growing wider all the time. The policy of the balance of power, at one time used for the advantage of small countries, has no more reason for being, and these small countries are being forced to become mere spectators at a tragedy in which, in spite of their non-participation, their fate is being decided.

The plurality of powers has been replaced by a bipolarity of forces whose poles of attraction are two great-powers-the United States on one side, and the U.S.S.R. on the other; and now this is beginning to be replaced by a triple structure.

New developments are appearing on the world scene, such as the European unification, which, although born of economic necessity, was originally brought about by technological progress. This does not exclude all the other causes which may have exerted an influence in the creation of this Alliance, but the technological causes, nevertheless, are the fundamental ones.

The mapping out of space lanes has brought man face to face with the problem of how to use them. An event appears first, and then comes the need to solve the problem of its regulation by law. There is no doubt of the necessity for constructing a general theory of law governing space and the celestial bodies and for attempting to forestall the problems that may arise. Practical common sense would indicate such a course. Interplanetary law is still in and does not yet have much effect on national interests. For this reason, it would be easier to find a just solution to problems now, in an atmosphere of greater spiritual independence, than when economic, political, and military considerations, etc., are intermingled with purely legal ones³.

³ Bauzá Araujo does not believe that "astronautic law should be prefabricated." Rather, he is in favor "of studying in advance the legal problems that can reasonably be foreseen and of formulating a few basic and elementary principles upon which the first scaffolding of astronautic laws can later be erected." (See Bauzá Araujo: *Derecho Astronáutico*, Montevideo, 1961, p.27.) Jenks points out the urgent necessity of solving this problem in his work "International Law and Activities in Space," *International and Comparative Law Quarterly*, Vol.5, 1956, p.99.

The Two Ways of Focusing
the Study of
Cosmic International Law

Section I
Through Classic International Law

Cosmic international law can be considered the law which regulates relationships between nations on matters related to interplanetary space. In this light, the differences between it and international law are minimal, and we can think of it either as a branch of international law or as a discipline independent of international law, but inspired by it. They both have the same basis. And here we encounter a labyrinth of theories seeking a basis of international law.¹

According to Grotius, this basis should be sought in natural law in the first place, and then in voluntary law, the implied consent of the nations. Vitoria maintains, more or less, the same theory, and so do Pufendorf and the school of natural law. Bynkershoek prefers the common consent of nations. Jellinek speaks of the self-limitation of nations, and Triepel of the collective will. Kelsen and Verdross defend the existence of an obligatory ethical standard: "pacta sunt servanda." Saleilles and Le Fur offer us a new concept of international law, based on two statements:

1. The obligation to respect contracted commitments, agreeing here with Kelsen and Verdross;
2. The obligation to make reparation for any damage caused. None of these statements mention any of the new theories which attempt to explain international law as originating

¹ Podesta: Manual de derecho internacional público, Buenos Aires, 1947.

in "certains faits d'ordre psychologique et social," new theories, which, however, had already been sketched by the Spaniard Suarez in the sixteenth century.²

Therefore, if cosmic international law is part of international law, the same basis can be attributed to both. Actually, there is no denying the intimate relation that exists between international law and cosmic international law.

The problem is to determine whether cosmic international law is not big enough to lead us to expect that, if not at present, at least in the future, it might become an independent branch of the law. Today the problems of cosmic international law are geared to relationships between nations. In other words, all questions involve relationships between sovereign states in cosmic space. However, we might conceive of acts whose legal consequences would cause legal relationships other than those between nations.

At the present time space law is not being studied except for the purpose of setting limits to the freedom of actions of nations and regulating relationships between them. And, since it is international law that is concerned with relationships between nations, we have a resulting dependence of cosmic international law Upon international law.

M. Reuter thinks that it is impossible to ignore international law when the time comes to establish the law of cosmic space. We cannot make up a set of principles taken at random from any source in order to constitute space law. Francisco de Vitoria was able to create modern international law, since it did not exist. But at present international law is actually in existence and it would be impossible to pretend that it was not. We are in agreement with M. Reuter. One objection can be made: to say that cosmic international law cannot be established as a new theory is to say either that this law already exists, or that it is only a branch of international law, which is disputable, to say the least.

To construct a theory of cosmic international law there are two alternatives:

1. Begin with international law and try to apply its principles to relationships in space, using a method of analogy and applying it to situations that have already come up or that might come up;

2. Study, by taking into consideration the present state of law, what would most probably be the way cosmic international law might be formulated. In other words, it would be necessary to abandon all legal exclusivisms and see in what way the regulation of outer space might be attained.

There are two concepts of international law.

I. A collection of immutable principles, independent of the will of man and superior to it, regulating legal relationship between international persons. According to this concept we assume that international law is based on principles of justice with a force of their own, independent of the power of coercion.³

² Mme Paul Bastid: *Cours de droit international public approfondi*, Paris, -58, p. 37

³ See Verdross: "Principes généraux du droit dans la jurisprudence internationale" (R.C.A.D.I., 1935, 52, 189).

2. A collection of positive standards which regulate the relationships of international persons—that is to say, international law, the result of treaties, custom and other similar sources. There is thus a dichotomy between ideal international law and practical international law.

An international treaty is merely a test of power (or of diplomatic ability) in which one state seeks the greatest number of advantages possible in the teeth of whatever resistance the other states can make. No one can honestly say that such treaties rest upon true international law.

There is one fundamental objection: even if nations were disposed to acknowledge ideal international law, how would they know what standards to apply in a concrete case? And we would come to the conclusion that only an agreement between nations would be able to determine this. Thus, after going around in a circle, we would come back to the same place.

We do not claim that it is possible to determine exactly which international law is the right one to apply. We merely state that international law in its state is not law in its true sense,⁴ but should be called, rather, a codification of obligatory moral principles in international politics, in what pertains, of course, to international public law. The conclusion to be drawn from this is that international law is created by large nations for small nations, and in this we agree with the Soviet authors.⁵

The strict application of the principles of international law that are in effect can give us no precise idea of what cosmic international law might be. To get a clearer idea it will be necessary to study international politics as it exists and the attitude of chancery offices toward problems of cosmic space.

Section II

Trough the Existing Political Scene

An examination of the formation of international law reveals that political considerations have more weight there than do purely legal ones.⁶

⁴ According to Scelle, the right to live is not dependent on law, as can be seen from his observation: "La violation ou l'inefficacité du droit n'empêche pas la règle de droit d'exister, même si ces violations deviennent fréquentes et habituelles" (théorie et pratique de la fonction exécutive en droit international", R.C.A.D.I. 1936, 55, 91). On the other hand, Krilov states: "On sait que le droit sans coercition est nul." (Serge Krylov: "La doctrine soviétique en droit international", R.C.A.D.I. 1944, 70, 411; p. 417.

⁵ See Jean-Yves Calvez: Droit international et souveraineté en URSS, p. 114.

⁶ "L'historien du Droit, doit s'attacher plus aux actes des Etats souverains qu'aux arguments des juristes pour déterminer les règles acceptées du Droit International Public." ("Espace navigable et satellites," Communication présentée par John Cobb Cooper à la Section Britannique de l'International Law Association, le 27 Nov. 1957 à l'Institute of Advanced Legal Studies, Université de Londres).

There is nothing to prevent lawyers from working out theories on cosmic international laws that are more or less in conformity with international law, What is difficult is to make a practical application of these theories, for, although they may be well worked out, they tend to be purely academic.

In fact, problems will be coming up so fast (some of them have already come up) that we cannot wait for a slow evolutionary process to lead us to the formation of a cosmic international law drawn from a combination of usages or customs recognized by all the states.⁷

An international agreement will be necessary on controversial matters.

These agreements, bilateral or multilateral, are apt to be based fundamentally on Political considerations, which, we must admit, tend at present to be concerned with justice in the decisions to be made. In fact, the voting system at the UN has brought out the importance of the votes of the small powers, and because of this the great powers sometimes adopt resolutions which, while not necessarily to their individual advantage at present, may be to their benefit later on. Nor should we underestimate the importance to the growing concept of international solidarity of the increasing economic interdependence among nations, as well as the cultural unification which is making greater advances all the time in the world, and which is the result of technological progress that facilitates travel and the interchange of ideas by radio, press, and television.⁸

The struggle between the two great powers, equal in strength but holding opposing views, to increase their influence on the smaller ones and attract them to their sphere of control, striving to keep the smaller nations from going over to the other camp and thereby upsetting the balance in each one's favor, is the source of our international tension.

Clausewitz has defined war as "la continuation de la politique par d'autres moyens". International law is also the continuation of politics by other means, which might be termed legal ones.

The nations that create international law and are responsible for its application are also subject to this law. In other words, they are judge and party at the same time, and justice cannot be expected to hold a favorable seat. M. Scelle speaks of this in his theory of "Dédoublement fonctionnel".⁹

⁷ Bornecque Winandy: "La doctrine de l'échape", Revue générale de l'air, Paris, 1959, No. i, p. 59.

⁸ "Interdependence is a fact growing more intense all the time, a phenomenon incoercible and universal which is putting ever greater restrictions on sovereignty, first in the field of economics and then in that of politics". (Podestá: International Public Law, p.4).

"Quelles que soient les différences qui existent entre eux, tous les Etats subissent l'action du phénomène: leur souveraineté diminue." (Bourquin: op. cit., p. 348).

⁹ Scelle: "Théorie et pratique de la fonction exécutive en droit international," R.C.A.D.I., 1936, 55. 91.

As long there is no sufficiently powerful international organization- a sort of super-national state-capable of imposing its decision, by force if necessary, international law will not be law in the true sense of the word but, at best, a collection of standards of conduct, somewhat moral in nature, the observation of which, excluding a state of war, depends on the will of the states.¹⁰

Thus, cosmic international law would be made up of a series of rules established by treaties made by the nations of the world. A series of usages would be found to be consolidating into a set pattern that would later on be accepted as a rule.¹¹ No prognosis can be made as to the relative justice of the accepted rules, but the following can be foreseen:

- a) Each nation will try to impose points of view most in line with its own purpose.
- b) A series of circumstances will occur which will to some extent force a nation to change its first statement and make certain concessions to smaller states which would not otherwise have been considered.

Finally, of the problems dealt with in this book, that of national sovereignty will be dealt with in purely legal terms. However, we shall take into consideration the stand which the great powers seem to be taking, and make clear in advance that anything we might say with regard to boundaries in air space and zones in outer space is merely hypothesis awaiting international agreement, the only source of definitive solutions.

With reference to the legal status of space craft, it will also be necessary to speculate on the possible conclusion of international treaties.

The second part of this book will necessarily be more hypothetical, and belongs to the realm of pure theory.

The most crucial legal question is perhaps that of responsibility, for which, in spite of everything, we hope for new juridical concepts.

The control of space is a purely political problem and it does not look easy to solve. We greatly fear that the enormous mass of unresolved matters will continue to pile up along with the hundreds of proposals that have already been studied on disarmament.

Beside this dark picture of the political scene, there remains a possibility that men may turn their efforts to other areas of endeavor and, finding a fit outlet for their energies in the purely technological pursuit of the conquest of space, put an end at last to their wars on earth. But this is hard for us to believe.

¹⁰ "Il est évident que la liberté de décision de colosses comme les Etats Unis et l'Union Soviétique est beaucoup plus considérable que celle des autres États". (Bourquin: op. cit., p.348)

¹¹ "No 'lex lata' exists until a general consent of States is achieved either tacitly by way of a custom or expressly through an international treaty." (Bin Cheng: "International Law and High Altitude Flights: Balloons, Rockets and Man-made Satellites")

FIRTS PART

Legal Problems of Space Navigation

Book I

The Legal Status of Space

Chapter I

Sovereignty over Air Space

Section I

Evolution of the Concept of Sovereignty over Air Space

Air space is that part of space subject to the sovereignty of a state.

1. The subject of this right of sovereignty is the underlying state. We call draw two statements from this:

- a) That part of air space directly above the territory of a state is subject to the sovereignty of that state.
- b) No state may exercise sovereignty over space which is not directly above its territory.

2. The object of sovereignty is the air space above its territory, which appears to be bounde:

- a) horizontally by a plane which has the territorial frontiers for its boundaries;
- b) vertically up to a height where the word "air" can no longer be used.¹ In other words, those regions of space where there is no air or atmosphere cannot be called air space.

It must not be imagined that the principle of sovereignty over air space has been accepted without discussion. It has been the subject of heated controversy and has been undergoing evolution to the present time.

In Roman law, in the field of private law, we find an early definition of the right to space. It was the Roman concept of vertical property. The owner of a piece of land, by the very fact that it was his, owned a column of land going down to the center of the earth and a column of air extending vertically to infinity. The width of this column was equal to the length of the land possessed. _In other words, the property extended "usque ad coelum et ad inferos".

In the ancient Anglo Saxon law the same principle is found again: *cuius es solum, eius est usque ad coelum*".

This principle derived undoubtedly from a circumstance, or, rather, from the absence of a circumstance—the possibility of the utilization of space. No one then had

¹ For Bin Cheng, air space is that part of space "where air can be found." (Bin Cheng: "International Law and High Altitude Flights: Balloons, Rockets and Man-made Satellites.")

any objection to the idea that everyone could stake out a claim in regions of space, for this was of course a purely academic claim.

The question took on a completely different aspect when the discovery of space navigation brought man face with the problem of the use of space. The ensuing discussions immediately focussed on the atmosphere, and the Roman principle of vertical property was brushed aside by the tacit admission of freedom beyond a certain altitude. Nevertheless, there were jurists who still clung to the Roman principle, as in the case of the French lawyer, Clunet.

A rapid survey of the theories and the conferences on space law will give us an idea the evolution that sovereignty over air space has undergone.²

In 1889 the first International Congress of Aeronautics was held in Paris on the occasion of the International Exposition, with the participation of Brazil, the United States, France, Mexico, the United Kingdom, and Russia. The following year there was another International Congress of Aeronautics.

In 1900 Fauchille addressed the Institute International Law which met in Neufchatel, asking that an International Air Code be drawn up,³ and in 1902 he presented a set of regulations consisting of thirty-two articles to the Institute of International Law which met in Brussels. Fauchille was an ardent defender of freedom of the air and stated that "Les Etats n'ont sur l'air aucun droit autre que celui nécessaire à leur propre conservation"; and in 1906, at a meeting of the Institute of International Law in Ghent, he and M. Nys attacked the theories of the Anglo Saxons, represented by Westlake, who upheld the right of sovereignty of the underlying state, while admitting the right of free peaceful transit. In 1911 at the meeting of the Institute of International Law in Madrid, Fauchille and Von Bar again attacked the theories of the Anglo Saxons.⁴

Possibly the first to uphold the principle of sovereignty was Lychlama a Nijeholt.

² McNair finds basically four theories on air space:

1) "That the air space is free, subject only to the rights of states required in the interests of their self-preservation;

2) "Upon the analogy of the maritime belt or territorial waters, there is over the land and waters of each state a lower zone of territorial air space, and a higher and unlimited zone of free air space:

3) "The third theory, that a state has complete sovereignty in its superincumbent air space to an unlimited height, this applying the *cuius est solum maxim* in its crude form;

4) "The fourth theory was the third with the addition of a servitude of innocent passage for foreign non-military aircraft."

(McNair: *The Law of the air*, p.6) See also Pépin: "Le Droit Aérien"

(R.C.A.D.I., 1947, 71, 481). On the attitude of publicists with regard to sovereignty over air space, see also Daniel Goedhuis: "Questions of Public International Law" (R.C.A.D.I., 1952, 81. 205) specially p. 281 and following.

³ See Fauchille: *Le domaine aérien et le régime juridique des aérostats*, Paris 1901.

⁴ That same year Hazeltine published his work *The Law of the Air* (University of London Press) in which he maintained the sovereignty of states over the atmospheric space above their territory-land and territorial waters. - This opinion was also expressed by Anzilotti and Zittelmann.

In the conclusions of the International Law Association at their meeting in Madrid in 1911, the most widely-held opinions among the jurists of that period were expressed.

1. States have the right to regulate traffic over their territory (land and sea).

2. However, while reserving this right, they should permit free transit to airships of all nations.

In 1913, France and Germany signed the first treaty on air law. In it, sovereignty of the state over its air space was maintained.⁵

But the first great convention was that of 1919, signed in Paris by thirty-three states. It became valid in 1922, and established two principles:

1. The full and exclusive sovereignty of each state over the atmospheric space above its territory;

2. Freedom of peaceful transit for private planes of the contracting states, in times of peace.

We must point out the case of Peru, which proclaimed freedom of navigation above 3,000 miles (decree of November 15, 1921). Its example was not followed. The states were not concerned with anything but to establish clearly the principle of their sovereignty over air space, without fixing any limit. Peru has, however, ratified the Chicago Convention of 1944.

The Ibero American Convention of Madrid in 1929 was inspired by the same principles as that of Paris in 1919.

The Chicago Convention of 1944 finally consecrated the principle of the sovereignty of underlying states.⁶

In the near future we shall witness an evolution of the concept of sovereignty over air space, an evolution whose aspects cannot yet be foreseen but which appears to be moving toward the establishment of supra-national air spaces.

An early attempt to create supra-national air space is attributable to Count Sforza, Italian Minister of Foreign Affairs. He planned the designation of a joint European air space for the nations in the E.E.C., and presented it to the Council of Europe on March 4, 1951.⁷

⁵ There had been no agreement on the principle of sovereignty in the 1910 conference. France and Germany agreed to recognize it in the 1913 conference (Mme Bastid: "Le Territoire dans le droit international contemporain," Cours de Droit International Public, Paris, 1953-54).

⁶ "The contracting states recognize that every state has complete and exclusive sovereignty over the atmospheric space above its territory." (Art. 1, Chicago Convention, December 7, 1944); "No national aircraft of a contracting state may fly over the territory of another state, or land on it, without having obtained authorization." (Art. 3, c: Chicago Convention, 1944.)

⁷ See Daniel Goedhuis: "Questions of Public International Air Law" (R-C-A!-D-I., 1952, 81, 205).

Furthermore, a study is being made of the possibility of establishing a European agency to be called Eurocontrol for the control of air traffic above an altitude of 6,000 meters. What is interesting about this organization is that the means of control will be held in common. There should be some circumscription of sovereignty, and the organization should in practice have the effect of creating a supranational air zone. The conversations which have begun in Rome have been attended by the ministers in charge of civil aviation of France, Italy, Belgium, Germany, and Luxemburg.⁸

Section II

The Limitation of Air Space

The sovereignty of the underlying state cannot be absolute or unlimited.⁹ It is justified by reasons of security and of utility.¹⁰ The state undoubtedly has a legitimate right to intervene in air navigation, which may pose a threat to its security, not only from a political or military standpoint, but also from the point of view of the personal security of its subjects, who might be injured by the fall to earth of craft which have not complied with the necessary conditions for flying. But there are other reasons founded on the maxim of utility, since it is the state which can most benefit from the air space above its territory.¹¹

The state derives from this the right to regulate navigation through its air space, and not only to regulate it, but also to establish whatever limits it deems appropriate. It might be thought that this power to regulate does not imply sovereignty, and that a state might very well engage in the regulation of navigation without thereby having its sovereignty acknowledged. However, sovereignty is an attribute of the state, and it tends to be unlimited rather than otherwise. In other words, sovereignty denotes in principle the power to act which is not subject to limitations on the part of another state.

Today the concept of sovereignty as an absolute power is in regression because of the increasing interdependence of states. In any case, at the present moment the exception to sovereignty is nothing more than that - an exception - and sovereignty continues to be an unlimited power in principle.

⁸ The conversations are also concerned with the cooperation of the airline companies, which will certainly have an effect on the process of supra-national unification and should have a place within the more general framework of the unification of Europe (See *Le Monde* of March 2, 1959).

⁹ Kislov and Krylov do not agree. They remain faithful to the principle *usque ad coelum*. See their article, "sovereignty of the State in Air Space," *International Affairs*, Moscow, 1956, n. 3.

¹⁰ According to Haupt, the interest of the state justifies its right to fix the altitude of the zone subject to its sovereignty. (Haupt: *Der Luftraum*, Breslau, 1931)

¹¹ See Spencer M. Beresford: "The Future of National Sovereignty," report presented in the space Law Colloquium, London, Lincoln's Inn, September 4, 1959.

If it is then accepted that a state has the power to regulate navigation over its air space, this power should be understood in its broadest possible sense, and if this faculty is so understood, it can have no source other than sovereignty, as we must admit.

Admitting the principle of sovereignty, the question is how far air space extends and, consequently, how far the sovereignty of the state extends, since the possibility of a sovereignty with no limitations whatsoever is a priori absurd.

Air space cannot be unlimited, and the very principle of sovereignty has been the subject of a controversy which we have already studied in its broadest lines, and which has undergone several transformations and treatments in theory as well as in different legislations and international conventions. It can be said in principle that space law, until now limited to air law, has had its source in international conventions, and that very few of its rulings have been drawn from custom or usage; perhaps the only one is the acceptance of the freedom of space over the high seas.¹²

There are no precise agreements determining the extension of air space, because until recently technology, limited by its imperfections, had not reached the point where the use of outer space presented a problem. Since the non-existence of airships capable of flying above the atmosphere placed that area beyond the interest of nations, the states were concerned only with affirming their sovereignty over air space, both in their national legislatures and in international agreements.

An examination of the conventions signed to date brings us to the conclusion that air space cannot be considered subject to the sovereignty of a state except within the limits of the atmosphere and that freedom of navigation has been tacitly acknowledged beyond this limit.

The Chicago Convention of 1944 clearly established the limit of sovereignty over air space: "The contracting states recognize that each state has complete and exclusive sovereignty over the atmospheric space above its territory." (Art. I, Chicago Convention, 1944). The sovereignty of the subjacent state could not, therefore, be exercised beyond the atmosphere.¹³ Any denial of this point is absurd. The real problem is that of determining the limits of the atmosphere, which seems impossible. In fact, if they depend on the physical characteristics of atmosphere, it would be necessary, first of all, to come

¹² Archinard: "Problemes actuels du droit aerien" (p. 236 a)

¹³ Hingorani does not agree with our statement. He maintains that "l'espace atmospherique selon la definition des Convention de Chicago ne se limite pas aux couches atmospheriques. Les redacteurs de ces Conventions ont entendu par ce terme couvrir l'espace 'ad infinitum'." (Hingorani: "La souverainete sur l'espace extra-atmospherique" Revue generale de l'air Paris, No. 3, p. 249.)

Along the same lines, see Michael Milde: "En marge des problemes du caractere juridique de l'espace au-dessus du territoire de l'Etat" Revue de droit contemporain 1958, Num. 1. See also A. Francoz Rigalt: "The International Astronautical Federation and the Use of Space for Peaceful Purposes," Journal of Law and Commerce Vol. 28, Autumn, 1961-62, N. 4, pp. 356-364.

to an agreement on one point-the characteristics upon which those limits should be determined.¹⁴

1. The composition of the gas that the atmosphere contains;
2. Its density;
3. Its temperature;
4. How far classic airships can obtain support from air friction.¹⁵

No two agree on the acceptance of a definite criterion and, even if one should be accepted, it would still be impossible to determine the limits of the atmosphere in accordance with its physical properties, because these properties are not uniform at a certain altitude.¹⁶ It is also useless to try to fix a limit to air space by basing it upon legal arguments. All attempts made so far have actually been more or less ingenious but have failed to fix an exact limit.

1. The height of a building or monument.
2. The height to which the state is able to exercise control.¹⁷
3. The height within which classic aircraft can find support.

¹⁴ "Delimitation de l'etendue de l'espace territorial:

"1. L'atmosphere en fonction de la composition des gaz qu'elle contient:

"2. L'atmosphere en fonction de la densite des gaz qu'elle contient;

"3. Espace ou la soustentation des ae'ronefs est assuree par une quantite suffisante d'air."

(Guillerm: "L'espace interplanetaire et les satellites.")

¹⁵ This the opinion of John C. Cooper: "Apres de nombreuses recherches approfondies, je suis convaincu que l'expression 'espace atmosphenque', telle qu'elle etait employee dans la Convention de Paris de 1919, ne s'appliquait qu'aux regions de l'atmosphere, au-dessus de la surface de terre, ou la densite' de l'air gazeux est suffisante pour supporter des ballons et des avions des seul types d'ae'ronefs existant a l'epoque." (Cooper: "Espace navigable et satellites")

¹⁶ See: "Space exploration: The Problems of Today, Tomorrow and in the Future," by Andrew G. Haley, presented at the Second Colloquium on the Law of Outer Space, held at Lincoln's Inn, London, September 4, 1959.

¹⁷ Kelsen affirms that "the air above the territory of a state which, according to the traditional doctrine is unlimited . . ."; but he goes on to say that

". . . this doctrine ignores the principle of effectiveness. But it is hardly possible to maintain that under general International Law the space below and above the territory of a state belongs to that state, irrespective of, and consequently also beyond, its effective control" (Hans Kelsen: Principles of International Law, p. 226).

Guillerm makes the distinction: "Zone ou s'arre'te la juridiction de la loi terrestre:

"1. Aussi haut que les moyens dont il dispose lui permettent de la faire respecter (ce serait le principe 'la forme cree le droit') (Angleterre dans la mer) 2. Mais on pourrait convenir que la souverainete' de chaque Etat s'etend dans l'espace aussi haut qu'il est materiellement et scientifiquement possible a n'importe quel autre Etat de la Communaute Internationale de controlcr l'espace au-dessus de son territoire; c'est-2-dire, de pouvoir arreter le vol d'une fussee ou d'un engin teleguide' appartenant a un autre nation." (Guillerm: "L'espace interplanetaire et les sate'llites," Revue de defense nationale)

The height of a building cannot be accepted as an argument. A taller edifice can always be built. The control of the state does not mean anything, since cannons have been replaced by rockets of practically unlimited range.

Besides, the support which classic airships get from air friction comes from their velocity. Americans have proved this point by launching a rocket ship,¹⁸ the X-15, capable of flying to a height heretofore considered supra-atmospheric. The limit of the atmosphere would by this criterion still be variable, since it would depend on the speed of the aircraft. Of course, there is a point at which aerodynamic support does not exist for classic aircraft. But the question would then be to determine the exact characteristics of classic aircraft, which seems completely impossible.

The only way to establish a limit to air space would be by international agreement.¹⁹ Here the nations might take into consideration the physical properties of the atmosphere, but only in a general sense, since the will of the nations would be the determining factor.

An agreement should be made as soon as possible; otherwise, if we continue to wait, we might find ourselves in the same anarchic situation that prevails in the limitation of territorial waters.

Chapter II

Legal Status of Outer Space

Section I

The Legal Nature of Outer Space

In trying, to determine the legal status of outer space, the first problem to be solved is that of the legal nature of that space

What is cosmic space? To establish this is the first step toward being able to accord it a legal status

The question is not as easy as some may think. In reality the answer often depends on a person's philosophical background. We have said that the determination of the legal status of space demanded as a first step its definition, but the definition of space is impossible. To define, from the Latin *definire* means to establish limits, but what are the limits of space? In other words, where does it begin and where does it end? To find an answer to these questions would be to provide a basis for the solution of many

¹⁸ *Le Monde*, March 12, 1959, p. 7.

¹⁹ John C. Cooper maintains the possibility of establishing, through agreements, sovereignty over regions above those in which gaseous atmosphere is dense enough to ensure the support of planes and balloons. (See John C. Cooper: *Espace navigable et satellites*.) See also Luis Tapia Salinas: "Jurisdiction over Interplanetary Spaces," report to the Fourth Congress of the Instituto-Hispano-Luso-Americano de Derecho Internacional, Bogota, October, 1962.

problems that have preoccupied man since the beginning of time. In fact, we do not think it possible to define space, since space cannot be defined, that is to say, no limits can be put to it, simply because to attribute limits to it would be to acknowledge that something exists outside of it, and this is admittedly absurd.¹ Space cannot be enclosed within limits (no matter how far apart they are) because space is unlimited. Space is not a part of the universe, but the medium in which the universe has its being. It cannot be placed in relation to other parts because it is not a part, it is a whole. It is not contained, but containing.

The only definition for space would be a negative one: "that which is not limited." But all negative definitions imply to a greater or lesser degree a confession of impotence, of an inability to find the positive characteristics of which a definition should be composed. A great many jurists try, with more or less clarity, to fix the legal nature of space by the delimitation of part of space, resorting for this purpose to references to points considered stationary. In this position there is already an error in principle, because to try to ignore the concept of the oneness of space is a very serious mistake. Furthermore, points considered stationary are not stationary, since in the universe everything is in continual movement, and even the concept of movement is relative, depending on the point of view of reference chosen. The earth, the solar system, the Milky Way, everything is moving at a fantastic rate of speed. This speed, which modifies the concept of time, also inhibits an exact evaluation of space, for which it would be necessary to have an exact concept of time.

Space, therefore, we must conclude, cannot be reduced to terms of a definition, and the human mind, at least under present circumstances, lacks the capacity to conceive of it. The various attempts to arrive at an all-comprehensive concept of space have not had definitive results. And if the concept of space extending to infinity is repugnant to reason, the Einstein explanation of it as a curved entity is certainly not very clear and much less simple.

If we acknowledge that space cannot be defined either as an object or as a phenomenon,² we come to the conclusion that space is not a thing in the legal sense of the word, and cannot per se be the object of a law on the part of nations,³ either as individual states or as members of the community of nations, because space, which for legal purpose would constitute a territory limiting the exercise of sovereignty, cannot be limited, and we would then be confronted with an unlimited sovereignty in the dimension of space, which would be totally absurd.⁴

¹ "L'espace apparait donc, comme un milieu non limite (receptacle) dans lequel les objets corporels se déplacent," (Einstein: La relativite et le probleme de l'espace, p 155). See also by the same author: La theorie de la relativite restreinte et generale.

² See Nicolas Mateesco: Droit aerien aeronautique, p. 75.

³ McNair is of another opinion: "Sovereignty does not really involve continual presence any more than possession does in private law" (McNair: The Law of the Air, p. 6). We agree, but we think he is mistaken in considering that the power of states is exercised on space itself, instead of on navigation, on regulations, in short, on all the activities and natural or artificial bodies in space.

⁴ Goedhuis, although he admits sovereignty over air space, states that this sovereignty is different from that exercised over land: "If it is true that sovereignty over air is derived from possessions of

Because of this we can only state that the qualifications given to space by considering it a *res communis omnium*,⁵ are false. Such qualifications are unwarranted because they stem from an assumption that space is a *res* and whatever adjective is tacked on, whether *nullius*, *communis*, *extracommercium*, or *communis omnium*, depends on the preference of the author or the implications which the term *res* might suggest. The proper procedure for approaching the question would be to study beforehand the possibility of applying the term *res*⁶ to space, and this study would lead to the above conclusion that cosmic space is not a *res*.

The origin of the error of applying to space such a designation as *res* perhaps in an exaggeratedly self-centered (or rather, earthcentered) notion that places our planet at the center of the universe.

From this initial error we can expect a series of false assumptions in the legal study of cosmic space. We must abandon our classic concepts and seek a new point of focus to conform with new circumstances. If we are seeking to find a law to regulate relationships in space, we must consider our planet as a part of the universe, and an insignificant one at that. Should one persist in looking at the universe from the reference point of the earth, we shall fall into grievous errors, such as that of speaking of height in relation to the earth, instead of distance.

The path of our reasoning has led us to exceedingly rich conclusions. If space cannot be defined because it is impossible to set limits to it, and if therefore it cannot be classed as a *res* it cannot be subject to laws, because only things, in the legal sense of the word, can be subject to law. True, it has been said at times that space does not fit into any of the categories known as things, and that therefore a new category must be created that will conform to its characteristics. But that objection is not valid. In fact, the reason we try to find out if space is a *res* is to learn whether it can be subject to law, and it is not very logical to proceed from a false premise and, deciding that space should be subject to law,⁷ say that it has to be a *res*, even if it belongs to a completely different order. This

the subjacent territory, it does not however follow that the content of this sovereignty is exactly the same as the content of the sovereignty over land domain" (Daniel Goedhuis: "Questions of Public International Law", E.C.A.D.I., 1952, 91, 205). Sovereignty over air space has at least a material element on which to exercise - the air. This is not the case with outer space.

⁵ Valladao: "Direito Interplanetario e Direito inter gentes planetarias", p.17.

⁶ "C'est déjà une prétention étrange d'attribuer à l'espace en général une réalité physique, et tout particulièrement à l'espace vide", (Einstein: La relativité et le problème de l'espace, p. 151).

⁷ "Et même si l'on arrive à considérer l'espace comme une chose, cette souveraineté sera fictive, car elle ne pourra être ni réalisée, ni protégée, vu les distances énormes qui séparent la terre de l'espace supra-atmosphérique" (Smirnoff: "La réglementation internationale des vols dans l'espace supra-atmosphérique," Revue générale de l'air, Paris, 1957, No. 4, p.347). This is why P. K. Roy was able to say that "to talk of sovereignty over space' is futile and meaningless," Proceedings of the American Society of International Law, Fiftieth Annual Meeting, Washington, 1956.

method of solving the problem cannot be accepted, because we cannot accept premises that are deduced from a conclusion.

Where does this reasoning lead us? To a very simple and logical conclusion. Space cannot be called a *res*; furthermore, the search for a definition of space, besides being false in intent, is absurd and to tally unnecessary. It must be studied on the basis of what we might call "functional demarcation; that is, on the basis of the regulation of human activities in space, making an abstraction of the space in which they take place. The only limitation that we can and should set is one on air space, using as basic elements things which are not space, but bodies in space (some of them gaseous in nature, to be sure) such as the atmosphere and the earth; the reason for this limitation in the field of application of our functional theory is that atmospheric space is subject to air law, which, according to positive standards of international public law, prescribes the complete and exclusive sovereignty of the underlying state over the space above its territory. No theory, however illustrious its proponent, can overlook the fact of the existence of international rules relegating air space to the sovereignty of the underlying state. Any attempt to apply here a functional theory or a principle we might deem appropriate belongs principally to the field of *lege ferenda* in direct opposition to well-established norms.

Naturally celestial bodies could be subject to laws, since they are things in space

Section II

The Functional Regulation of Outer Space

In order to understand the problem properly, it is necessary to make two preliminary observations:

The Earth is not the center of the cosmos, but a thing in the cosmos, whose position is constantly changing.

2. It is not right to speak of height with regard to the earth, except to a certain point; the word to use is "distance"

Paragraph I. The problem of sovereignty over extra-atmospheric space. *The International Geophysical Year*.

States have sovereignty over the air space above their territory. This is a principle recognized by civilized nations, but it would not be possible to extend this sovereignty to outer space for the reasons expressed in Section I.

Sovereignty has a material basis of application in air space, which can be defined as "wherever there is air." Air, then, would be the element which would permit us to set up limited zones for the exercise of sovereignty. Empty space, on the contrary, contains no material element upon which to set limits. Furthermore, the interests of the state,⁸

⁸ "L'idée de sécurité de l'Etat sous-jacent implique une unique solution: la souveraineté au-dessus de l'espace aérien tout entier qui le surplombe." (Louis Cavare: *Droit International Public*, p. 190)

which are alleged in support of the sovereignty of the underlying state, cannot be defended above a certain altitude. The farther away from the earth we go, the more the interests of the state diminish, and the more the interests of the community of nations increase, up to a point where the latter are so great that the interests of individual states either cease to exist or cannot be acknowledged.⁹

Freedom of navigation through outer space should be firmly established, because of the right of nations to communicate with one another.¹⁰

The belief that navigation in outer space should be free is unanimous. Thus Guillerme says: "La Souverainete' ne saurait s'étendre au-dela de l'atmosphere, dont la limite est d'ailleurs a preciser."¹¹

John C. Cooper limits sovereignty to atmospheric space; extraatmospheric space should be free.¹² Bin Cheng calls it "res extra commercium," which is not quite appropriate, and he calls it "outer space."¹³ John C. Hogan goes further and reduces the dimension of air space.¹⁴ H. von Hannover maintains on his part that state cannot aspire to sovereignty in cosmic space.¹⁵

Mme Bastid points out the absence of protests against the launching of satellites, and from this she deduces an implicit recognition of the limitation of sovereignty over space.¹⁶ It is necessary to make a protest to prevent the formation or consolidation of a

⁹ Mateesco does not agree with Cavaré: "L'intéret étatique (proposé comme explication de la souve)-ainete) n'est pas aussi suprême que celui de l'humanite; c'est pourquoi, du point du vue dogmatique et critique, la theone de la liberte des airs est a retenir aussi dans le donzaine public." (Droit aerien aeronautique: Nicolas Mateesco, p. 93)

¹⁰ "Nous poserons pour base cette regle certaine du droit des gens appele primaire, dont le sens est clair et immuable, savoir: qu'il est permis a toute nation, d'aborder toute autre nation, et de negociet avec elle." (Hugo Grotius: De la liberte des mers, p. 21)

¹¹ Guillerme: L'espace interplanetaire et le droit international.

¹² John C. Cooper: Espace navigable et satellites.

¹³ Bin Cheng: "International Law in High Altitude Flights: Balloons, Rockets and Man-made Satellites."

¹⁴ John C. Hogan: "Legal terminology for the upper regions of the atmosphere and for the space beyond the atmosphere."

¹⁵ H. von Hannover: "Recht in Weltraum?"

¹⁶ "Aucune protestation ne s'est produite pour le lancement des satellites, ce que parait impliquer que le principe de la competence exclusive des Etats ne joue plus" (Mme Bastid: Cours de Droit international public approfondi, p. 574). Similarly, Oscar Schachter observed wisely that "the President's announcement as well as similar announcement by another government, has not, as far as we know, resulted in any protests or claims by any states. It seems to me that this is significant evicence that there is mutual toleration of the

custom; this is the reason why the passive attitude of the states has acquired such importance, above all because of the fact that the satellites were launched so openly. This would invalidate at any time any allegation of ignorance on the part of a state that tried suddenly at this late date to make a protest. Furthermore, this protest would have been necessary to prevent the derogation of the principle established by the Chicago Convention of the complete and exclusive sovereignty of the underlying state over the air space above its territory. Naturally, we exclude outer space from the application of the Chicago Convention principle. But any state that should try at this time to rest its case on the finding of this convention would be met with the objection that its protest is ineffective because it was not made at the right time. Of course, international law does not have rigid rules on the adequate or maximum time limit for making a protest (it could not do this) and circumstances must be taken into consideration. This is why need was particularly urgent for states to make a protest in the case of the satellite launchings, which were accompanied by so much publicity, a publicity intensified by arguments of jurists over whether or not they violated the territorial sovereignty of states. Yet, in spite of the number of questions continually brought up by lawyers and by many politicians, no state thought it necessary to stand in the way of what was happening - the consolidation of a custom. This attitude should not surprise us, since basically (and their silence is a proof of this) the states understood the absurdity of taking a stand contrary to the human desire to see freedom of navigation maintained in space.

In the United Kingdom popular opinion supports freedom in outer space.¹⁷

La Pradelle believed that international law would not suffice to resolve the newly created situations, and that it would be necessary to found a new international law of air space, in order to limit the dominion of sovereignty of each state.¹⁸ For Haley "outer space and the celestial bodies should be the common property of all of humanity, and no nation should have authority to exercise its dominion there."¹⁹

Professor Haroldo Valladao, in our opinion, falls into the error of considering outer a res (even though a res communis omnium) which cannot be accepted, since, as we have already said, space is not a res. Nevertheless, he reaches conclusions whose grandeur and accuracy cannot but be acknowledged. For him outer space is free and unappropriable, not only for the inhabitants of the earth, but also for other possible inhabitants of celestial bodies.²⁰ For Jenks "space beyond the atmosphere is a res extra

satellite projects; it indicates, I think, acceptance of the principle that outer space is not subject to appropriation or control by individual national states." Proceedings of the American Society of International Law, April, 1956

¹⁷ "In accordance with general tendencies of our era, . . . all regions in space as well as celestial bodies are not considered capable of appropriation by any state." The World Today, London, Vol. 14, No.9, Sept. 1958, p.390.

¹⁸ La Pradelle: "Les frontières de l'air (R.C.A.D.I., 1954, II, 86, 154).
However, in the limits of air space, he finds an infinite dimension.

¹⁹ Haley: "Droit de l'espace et Metadroit," Revue générale de l'air, Paris, 1957, No.2, p.176.

²⁰ Valladao: "como 'res communis omnium' o espacio interplanetario esta abierto ao uso de todos, do genero humano, e, portanto, a sua utilizacao esta assegurada tambem ao seres humanos que porventura

commmercium, incapable by its nature of appropriation on behalf of any particular sovereignty."²¹

Finally, the same opinion, opposing the consideration of space or celestial bodies as susceptible of appropriation by an individual state, is held by P. K. Roy,²² Alex Meyer,²³ Chester Ward,²⁴ Broward Craig,²⁵ Richard T. Murphy,²⁶ William Hildred and Sir Frederick Tymms,²⁷ Nicolás Mateesco,²⁸ Joseph Kroell,²⁹ Karl-Heinz Bohme,³⁰ Michel Smirnoff,³¹ A. Galina,³² Charles Chaumont,³³ F. Ikeda,³⁴ Berezowski,³⁵ Jerzy Sztucki,³⁶ Gerhard

existirem noutros Planetas e Satélites. Porque ficaria restrito aos povos de Terra?" (H. Valladao: *Direito Interplanetario e Direito Intern Gentes Planetarias*, p. 22).

²¹ Jenks: "International Law and Activities in Space," *International and Comparative Law Quarterly*, January, 1956, pp. 99-114.

²² P.K. Roy: See his intervention in the Proceedings of the American Society of International Law, Fiftieth Annual Meeting, Washington, 1956.

²³ Alex Meyer: *Ibid.*

²⁴ Admiral Chester Ward: "Projecting the Law of the Sea into the Law of Space," *J.A.G. Journal*, March, 1957, pp. 3-8.

²⁵ Broward Craig: "National at High altitudes," *Journal of Air Law and Commerce*, Autumn 1957, pp. 384-397.

²⁶ Richard T. Murphy: "Air Sovereignty Considerations in Terms of Outer Space," *Alabama Lawyer*, January 1958, pp. 384-397.

²⁷ William Hildred and Sir Frederick Tymms: "The Case against National Sovereignty in Space," *Aeroplane*, London, May 23, 1958, pp. 712-713.

²⁸ Nicolas Mateesco: "A qui appartient le milieu aérien?" *Revue du Carreau of the Province of Quebec*, Montreal, V. 12, N. 5, May 1952, pp. 227-242.

²⁹ Joseph Kroell: "Éléments createurs d'un droit astronautique," *Revue générale de l'air*, 1953, N.3-4, pp. 222-245.

³⁰ Karl-Heinz Böhme: "Lufthoheit und Weltraumflug" *Zeitschrift für Luftrecht*, Berlin, 1956, V. 5, N. 3, pp. 184-197.

³¹ Michel Smirnoff: "La réglementation internationale des vols dans l'espace

³² A. Galina: "K voprosy o mezduplanetom prave," *Sovetskoe Gosudarstvo i Pravo*, 1958, N. 7, pp. 52-58.

³³ Charles Chaumont: "Les perspectives que doit adopter le droit de l'espace," *revue de Droit Contemporain*, Dec. 1960, pp. 5-11.

³⁴ F. Ikeda: "Towards the Principle of 'Freedom of Outer Space'," *Japan Annual of Law and Politics*, 1959 pp. 158 and following.

³⁵ Berezowski: "Sovereignty in Cosmic Space" (in Russian) *Sovetskoe Gosudarstvo i Pravo*, 1959, N.3, pp. 110-115.

Reintanz,³⁷ V. J. Delascio,³⁸ and the great majority of jurists dedicated to the study of problems of the exploration of space from the standpoint of law.

In addition to jurists, the states are also in favor of freedom of navigation in outer space.³⁹

The United States and Russia, to mention only the two active protagonists in the adventure in space (at least for the present) have declared repeatedly that they are of this opinion.⁴⁰

President Eisenhower had already shown that the United States is willing to sign agreements on activities in space.⁴¹ A little later, he re-emphasized this in his Message to Congress on the State of the Union⁴² of January 9, 1958.⁴³

President Kennedy held the same views, and he has so frequently expressed the willingness of the United States to enter into an international agreement on space that it would be useless to point out one statement in particular.

³⁶ Jerzy Stucki: "Bezpieczenstwo państw a przestrzen kosmiczna," *Sprawy Miedzynarodowe*, N. 7/8, 9, 1959.

³⁷ Gerhard Reintanz: "Zur Rechtsnatur des Luftraums und des kosmischen Weltraums," in *Neue Justiz*, 1957, N.1, 1962, pp. 32-38.

³⁸ V.J. Delascio: "Space Exploration and Space Law," *Journal of Air Law and Commerce*, Vol. 28, Autumn 1961-62, N. 4, pp. 364-368.

³⁹ When the United States and the U.S.S.R. launched their satellites, they did not ask permission of the countries over which the satellites would fly nevertheless, this act did not arouse protests. Of course, protests can be made later, but at that time a custom will have begun to be consolidated which will affirm the freedom of outer space.

⁴⁰ On the position of the United States consult Eilene Galloway: "Introduction to Legal Problems of Space Exploration - A Symposium," 87th Congress, First Session, Senate, Document No. 26, March 22, 1961, pp. XIV-XVI. See also Raymond W. Young: "The Aerial Inspection Plan and Air Space Sovereignty," in *George Washington Review*, April 1956, pp. 565-589. The position of the U.S.S.R. is studied in the article by Georg W. Rehm: "Sowjetunion und Weltraum," in *Ost Europa Recht*, 1959, N.2, pp. 99-103; but it would be more convenient to examine it directly in a collection of articles by Soviet authors on the legal problems of space "Kosmos; Mezhdunarodnoe Pravo" Otv., Editor E. A. Korovin, izd. IMO, 1962, Moscow, 182 pp. Perhaps of greater interest is another relatively recent book by Feliks Nikolayevich Kovalev and Ivan Ivanovich Cheprov: "Naputi k kosmicheskomu pravu," Institut Mezhdunarodnykh Otnosheny, Moscow, 1962, p. 179.

⁴¹ "New York Times, January 11, 1957.

⁴² "Notes et Documents"; "Documentation française," January 1958, No.2374, p.3.

⁴³ Loftus Becker says that the United States has sovereignty over her air space, in accordance with the Chicago convention, but that she does not renounce rights she may have beyond air space, (See Loftus Becker: *Major Aspects of the problem of Outer Space*, "Bulletin of the Department of State, Washington, June 9, 1958, p. 962). This opinion diverges from declarations made in public by representatives of United States foreign policy, whether of the State Department or of the President himself.

The principle of the freedom of outer space is merely the expression of the concept of solidarity and of an interest common to all mankind.⁴⁴

On the Soviet side we find the same attitude.⁴⁵ Thus Khrushchev emphasizes the necessity of international cooperation in the field of interplanetary space - a sort of community of satellites.⁴⁶

The Air Code of the U.S.S.R. of August 7, 1935, is confined to a declaration of sovereignty over air space. In the Russian doctrine, air space is the atmosphere.⁴⁷

Finally, in accordance with the position by jurists all over the world, a position supported by their respective states, we can say that in general sovereignty over interplanetary space cannot be accepted, either on behalf of the states or on behalf of the community of nations, and that in principle freedom of navigation will prevail.

We must point out, however, that, although the general principles that apply can be pointed out at this time, a detailed ruling can be established only when the different problems have come to light. Everything that is said at this time is pure hypothesis.⁴⁸

We must not overlook an international event which can be considered as the origin of the launchings, and which is, in a way, the first international agreement on space. This event was the International Geophysical Year (I.G.Y.).⁴⁹

⁴⁴ "Du point de vue de la coopération, l'essentiel est qu'un lancement ait eu lieu" ("le nouvel astre," *Perspective*, October 12, 1957). "Sputnik is now no more Russian than the atmosphere is considered American, because of the Wright brothers, or evolution British, because of Charles Darwin" (Harlow Shapley: "Satellite Hysteria," *Nation*, New York, October 26, 1957, p. 276).

⁴⁵ "The Soviet authority went on to suggest that outer atmosphere, like the open seas, belongs to no one, and that freedom of circulation above 15 or 18 miles should be permitted by International Law" (Philip W. Guigg: "Open Spaces and Open Skies," *Foreign Affairs*, New York, October, 1958, p.94).

⁴⁶ "Nos satellites tournent autour de la terre, attendant le moment où les satellites américains et autres viendront les rejoindre pour former ensemble une communauté de satellites. Cette communauté cette compétition, serait combien préférable à une compétition se traduisant par une course aux armements à la fabrication des armes qui sèment la mort". (Discours au 40ème anniversaire de la Révolution d'octobre, Moscou, 6 novembre, 1957, "Notes et Etudes Documentaires," "Documentation française," 18-1-58, No. 2373, p.3).

⁴⁷ See Ivo Lapenna: *Conceptions soviétiques du Droit International Public*, p. 254 and following; also Korovin: "La conquête de la stratosphère et le Droit International Public," *Revue générale de droit international public*, Paris, November-December, 1934, p. 675 and following; and Laktine: "De la souveraineté des Etats sur l'espace aérien," *Revue soviétique de droit international*, 1928, p.74.

⁴⁸ "Whatever is said now would, therefore, be primarily conjectural or de lege ferenda," Bing Cheng: *op. cit.*

⁴⁹ See Werner Buedeler: *El año Geofísico Internacional*, Paris, UNESCO, 1957; and Walter Sullivan: *The International Geophysical Year*, New York, and 60,000 miles," (See Bin Cheng; *op. cit.*).

The Polar Years, the first of which was organized in 1882, and the second in 1932, are the immediate antecedents of the I.G.Y. Their purpose was to coordinate the work of the various nations on investigations and explorations in the Arctic Zone in order to increase the efficiency of this work.

In October, 1952, a special committee of the International Geophysical Year (C.S.A.G.I. are the initials of its name in French) was formed, which was reconvened later in Brussels to decide that from June 1, 1957, to December 31, 1958, would be the International Geophysical Year. By the beginning of 1957 fifty two nations had announced their participation in the work of the International Geophysical Year.

At the meeting held by the C.C.I.G.Y. in Rome on September 24, 1954, there was a discussion on the possibility of launching artificial satellites equipped with scientific apparatus to circle the earth for the purpose of transmitting information on the zones they traversed. The idea was taken seriously by the various delegations present at the meeting, and on July 31, Professors Sedov and Ogorodnikov made a statement to the press in Copenhagen that the Soviet Union also proposed to launch several satellites. All the countries participating in the I.G.Y. accepted these launching programs, so no legal problem came up. Not a single state raised its voice to object that its air space might be violated.

In consequence, the legality of the first launching cannot be questioned, and even though a voice was raised in the United States against the launching of the first Sputnik, it wielded no influence because of the attitude of the authorities who accepted the fact, and because the majority of jurists in general saw in this launching no violation of sovereignty.

The problem that some internationalists pose is that of determining if subsequent launchings were legal, since they were no longer covered by the agreements of the I.G.Y. But to date no state has made an express protest against the launching of satellites.⁵⁰ Aaronson⁵¹ did not believe that the absence of protests should consolidate or create a custom, for the simple reason that the agreement to hold an International Geophysical Year excluded the presentation of protests for the duration of the international event in question. Actually, the validity of this objection, which has some basis of truth, is circumscribed by two facts. 1) Not all the nations participated in the I.G.Y. 2) It would have been logical for the states participating in the I.G.Y. and therefore obliged to accept the launchings, in view of the importance of such a decision, to have expressed some reservations on the limitations and the scope of the agreement, and in spite of this they did not do so. At any rate, the objection of Aaronson has by now no more than a historical value, since, after the termination of the I.G.Y., the states continued the practice of not presenting reservations or protests. Any presentation of the latter at this time would, as we have shown, make it difficult for the state that brought them up to defend them.

⁵⁰ "The precedents which have been set during the I.G.Y. would seem to indicate that outer space, as distinct from air space, is *res communis* (Dag Hammarskjöld: Address given in Miami at the Fifth Annual Conference of Governors of the United States in May, 1958.)

⁵¹ Michael Aaronson: *Space Law*, International Relations, April, 1958, pp. 962-967.

It is interesting to note the opinion of Loftus Becker,⁵² legal council of the Department of State, who, after calling attention to the fact that the I.G.Y. was the result of an agreement between private persons, concluded that these agreements gave no authorization whatsoever for the launching of satellites. Becker saw such authorization in the tacit acceptance by the nations of the announcements made by the U.S. and the U.S.S.R. on the launching of scientific satellites during the I.G.Y. The termination of the I.G.Y. would mean the end of this tacit authorization and would also mean that new agreements would then have to be made for the continuation of activities of space exploration. We must point out again the fact that the silent and implicit acceptance of the numerous later launchings has come to the point of consolidating a custom.

Paragraph II. The limitation of outer space. This problem can be divided in two parts:

a) In the first place, the determination of its limits with regard to air space;

b) Then, the question of whether outer space can be subject to uniform regulations, or whether it would be advisable to divide it into two zones to be given different legal treatment.

a) On the limitation of outer space from the standpoint of the earth, we must remember what has already been said. Nevertheless, by way of information, let us review some opinions: Guillerme sets a limit "ou les aeronefs tels qu'ils sont actuellement définis sont en mesure de naviguer," and this leaves the problem unsolved.⁵³

John C. Cooper is of the same opinion. For him outer space begins "où la densité de l'atmosphère n'est pas suffisante pour causer une résistance aérodynamique ou pour affecter le vol, d'une autre façon." He sets this limit at a height of sixty miles.⁵⁴

Bin Cheng believes that it is very difficult to establish a limit, and merely points out different opinions.⁵⁵

For John C. Hogan, "When lawyers and judges have used the term airspace, they have been thinking primarily of the troposphere, the lowest region of the atmosphere, where conventional aircraft operate." He divides the atmosphere into five parts, classed according to temperature, and extends the troposphere to a height of ten kilometers, at which point he thinks free space begins.⁵⁶

⁵² Loftus Becker: "Major Aspects of the problem of Outer space, U.S. Department of State Bulletin, June 9, 1958, pp. 962-967.

⁵³ Guillerme: op. cit.

⁵⁴ John C. Cooper: op. cit.

⁵⁵ "Lt. O. M. Draper believes that the margins are between 10,000 and 18,000 miles; Mr. P. K. Roy, head of the legal division of the International Civil Aviation organization, is of the view that the margins are between 1,500 and 60,000 miles," (Sec Bin Cheng: op.cit).

⁵⁶ John C. Hogan: op. cit.

Loftus Becker believes that air space extends up to 10,000 miles, which would then be where free space begins.⁵⁷

Pittman B. Potter sets the limit at thirty miles.⁵⁸ Haley establishes the limit at 53 miles, where the air is so rarified that it can no longer support aircraft.

b) With regard to the advisability of acknowledging an intermediate zone between air space and interplanetary space, the majority of lawyers are in agreement, but there are differences regarding the extent of this zone. For Guillerme it would extend up to 480 kilometers.⁵⁹ John C. Cooper acknowledges that its existence is necessary, but says that its limitation should be made through international agreement. In any case, he believes that the limit of the field of attraction to the earth's magnetism should be taken into account, that is, about 161,000 miles.⁶⁰

Diefenbaker, former Prime Minister of Canada, said that states should have right of transit in a zone situated above air space, up to a height of 500 kilometers.⁶¹

For the study of the legal regulation of space, comparisons have been made from time to time with maritime laws.⁶² Although there are appreciable analogies, there are also differences which are fundamental. It is through analogy with the sea that three zones have been established in space: territorial or air space, contiguous space, and supra-atmospheric or free space. There are, however, factual differences that prevent us from establishing for the air a regimentation similar to maritime law. For example, a ship that sinks does not have any effect on the coastal state, but an aircraft that falls may create damage that must be guarded against. The interests of the state make it necessary to acknowledge the existence of a zone where it has some rights, limited though they may be.

In general, contiguous space is thought of as an attenuation of the sovereignty of the underlying state. In our opinion it is just the opposite. Contiguous space represents a limitation of the freedom of navigation in free space. This distinction is not a legal subtlety and seems very important to us. In fact, should we adopt the principle that contiguous space is a limitation of the sovereignty of the underlying state, this would be the rule, and the opposing rights of the

⁵⁷ Loftus Becker: op. cit.

⁵⁸ Pittman B. Potter: "International Law of Outer Space," American Journal of International Law, April 1958, p. 304.

⁵⁹ Guillerme: op. cit.

⁶⁰ John C. Cooper: op. cit.

⁶¹ Quoted by P.L. Bret: "Le controle de l'espace."

⁶² "Etant donnee cette conception de la nature de l'espace aerien, la police de l'air, necessaire comme celle de la mer, ressemble a la derniere dans ses exigences et ses modalites; elle entraine par consequent, l'adoption de reglementations comparables a celles que le droit maritime connait pour les navires" (J. Alessandri: "Esquisse du regime international de l'aeronavale," Revue maritime, Lannier, 1955, p. 44).

community would be the mere exception; and in a case of conflict the rule always prevails over the exception. It is the right of states over their air space that should be subordinated to the rights of the community. In the face of the higher interest of the community, the sovereignty of states should have no expansive power, but should be limited to air space.⁶³

In contiguous space freedom of navigation should be very clearly set forth and limitations to this freedom should only be admitted for the operation of the most vital interests of the states. These interests should not be left to the consideration of the states, but should be established, proclaimed, and clearly defined by international agreement. This could and should mean prohibiting the transit of military craft and stationing of satellites of relative immobility over any country other than the one that launched them.

Paragraph III. The operational regulation of outer space, a competency of the United Nations.

For M. Homburg⁶⁴ astronautic law should not consist merely of the regulation of activities in space, but also of activities on earth that are related to them? the lower structure, rules for earth-bound personnel, etc. We are in complete agreement.⁶⁵ In fact, the rules should relate to function rather than to space. The immense horizons that space navigation opens up for man demand the total participation of mankind, and no exceptions may be permitted on behalf of any state in particular.

The United Nations, an international organization, is the one best fitted to hold the proper hearings for the regulation of space. For this it will be necessary to create a specialized organism. In the last meetings of the General Assembly of the United Nations, several projects have been presented for resolution that tend toward the creation of such an organism. A permanent committee has been nominated to study this problem.⁶⁶

The time has come for nations to realize that there has been a change in international life and it is necessary to adapt the law to this new situation.⁶⁷ In spite of the urgent need for nations to renounce a part of their sovereignty in favor of the community

⁶³ At the moment, from a strictly legal point of view, only two zones are distinguishable: a) Air space subject to sovereignty of the subjacent state; b) Free space, where there are no special rules, although the general principles of international law are in effect.

⁶⁴ Homburg: "Droit Astronautique et Droit Aerien," *Revue generale de l'air*.

⁶⁵ Marek Zylicz differs with us: "Le statut juridique de l'astronautique dependra tout d'abord de la situation juridique du milieu dans lequel les astronefs vont evoluer." (M. Zylicz: "Sur quelques problemes de Droit Astronautique," *Revue generale de droit international public*; Oct.-Dec., 1958).

⁶⁶ Bulletin of the Department of State, Washington, January 5, 1959. See also Res. 1348 (XIII), Res. 1472 (XIV), Res. 1721 (XVI), Res. 1802 (XVII), of the General Assembly.

⁶⁷ "Le droit, etant une règle de vie, doit forcement suivre la vie dans son evolution" (Le Fur: "Regles generales du droit de la paix," *R.C.A.D./.*, 1935, 38, 5; p. 172)

"Any system of law must continue to develop as the circumstances of society change." (Winfield: *The Foundations and the Future of International Law*, p. 100)

of nations, we wonder if the same things that are evident in maritime law in the sense of restrictions to freedom of transit, imposed by the coastal states, would not be reproduced in space.

The United Nations is, therefore, the only organization with the authority to impose a set of rules on space navigation, and it should make the following distinctions:

1. Air space, whose limits should be established by an agreement within the framework of the U.N. No solution proposed to this problem of setting limits to air space will be of any value if it is not accompanied by the recognition of the nations.

2. Contiguous space, whose lower boundary will coincide with the upper limit established for air space, and whose upper limits should be 36,000 kilometers, where satellites of relative immobility may be placed. In this zone there should be freedom of transit for all nonmilitary craft and the stationing of satellites of relative immobility should be prohibited except over the territory of the state that has launched them.

3. Free space, where there should be freedom of navigation for everyone, even intelligent beings other than men always, of course, after having reached an agreement with them. Rules for this zone, as long as there are no relationships with beings from other planets, should be established within the framework of the U.N., which is competent to give legal status to celestial bodies, astroplanes, space stations, etc.; and which should be able to establish lanes for controlling navigation and give authorization for the launching of satellites, etc.; in short, all that has to do with space navigation.

The theories that support the division of space into two or three zones have been severely criticized by certain authors. We can accept their criticism on the establishment of three zones (a position *de lege ferenda*), but not on the existence of two zones, which is based on actual fact. For example, E. Georgiades⁶⁸ says: "On peut admettre sans doute les efforts faits pour construire cette belle architecture aérienne, mais vouloir y loger une prétendue souveraineté de l'Etat sous-jacent, en oubliant que la terre tourne . . . c'est se vouer à une tâche aussi compliquée qu'inutile . . ." ". . . C'est qu'il est vain de chercher des définitions de l'espace dans lequel la souveraineté d'un Etat sous-jacent pourrait s'exercer . . ." The reasoning of person like DGeorgiades blithely overlooks a positive principle of international law. It is not a matter of a sovereignty that "pourrait

soidisant s'exerce," but of a sovereignty that the subjacent state actually exercises over its air space. Of course it can be objected that if the standards of air law refer to air navigation, space vehicles escape these standards. Nevertheless, this objection cannot be accepted, because even though we can admit that air law does not apply to space, it must be recognized that the exclusiveness of the jurisdiction of the state over its atmospheric space is a rule of positive international law, and not merely air law. Therefore, no reasoning on the part of lawyers can destroy this fact of sovereignty, which must be recognized.

Another of Georgiades' reflections can be found often in many other authors. Referring to the fact that space vehicles cross the air space of states on leaving land or on returning to land, they ask: "Veut-on less soumettre à deux régimes différents suivant la catégorie de l'espace traversé?" The fact is that we do not see anything strange in a

⁶⁸ Euthymene Georgiades: "Du nationalisme aérien à l'internationalisme spatial, ou le mythe de la souveraineté aérien," 11 *diritto aereo*, Anno 1, N 2, 11 Trim. 1962, pp. 97-100; continued in N 3 up to p. 224.

positive answer to this question. When ships, which while on the high seas are subject in principle to the law of their national flag, enter into foreign territorial waters, are they not subject to the law of the land? Does anyone find this strange? If not, why should anyone find it strange that space rockets, crossing the air space of countries other than their own, should respect the laws of that state? All of this confusion comes from an attempt to ignore a well-established principle that cannot be repealed by any lawyer. No theoretic construction should ignore this fact, and if (the constructor) should attempt to destroy it, then he should honestly acknowledge that he is no longer working under *lege lata*, but has entered the field of *de lege ferenda*.

Another comment by Georgiades : "Un satellite reste spatial même quand il s'élève à 75 km. d'altitude," should be accepted in its literal sense, but not in the sense of the legal consequences its author extracts from it, that each of these vehicles should be subject to a uniform law. A space rocket, or a classic plane, has a certain legal status that governs it (for example in the matter of nationality, register, etc.) and this legal status need not change because the vehicle is in another place. The laws that it must respect will change for the vehicle, and when it is in the air space of another country it must respect the rules of that sovereign state. Furthermore, we cannot accept the statement that there is a "caractère artificiel et fantaisiste de la prétendue frontière entre espace atmosphérique et espace extraaérien." No lawyer can deny the existence of the principle that air space is subject "to the complete and exclusive sovereignty of the underlying state," a principle that, besides having been included in the Chicago convention, can by now be considered a generally accepted custom. Also no lawyer can deny that outer space is free and cannot be the object of appropriation on the part of any state or group of states. If these two statements are correct, it must be recognized that somewhere there is a frontier between air space and free space. The only problem is to give this frontier a concrete place, since the Chicago convention merely mentioned atmospheric space, without defining the term. The fact that technology makes it possible now to make vehicles whose characteristics make it difficult to catalog them as air craft or space craft does not detract from the fact that states will not consent to the infringement of their sovereignty in space (air space), a sovereignty they are absolutely entitled to by law.

After all, there is no need to complicate the problem so much. Space vehicles will have one status, air vehicles another. This legal status will be with them wherever they may be. But when they cross a space, whether it be air or extra-atmospheric, they should be subject to the laws of the underlying state, or to general norms established by consensus or by custom for navigation in free space. There is nothing tragic, as far as we can see, of grotesque, in subjecting vehicles to different rules depending on the place in which they happen to be. Does this not occur with ships, and planes, and people?

Finally, the legal regulation of space should be based on one reality: there is no legal vacuum in space, since international law applies there. However, we must realize that only principles of a general nature can be applied, because international law has not foreseen the concrete cases that may come up in space navigation. For this reason it would be advisable to develop as we go along standards along necessarily general lines that can be adapted to the new existential realities.⁶⁹ For example, it would be very fitting

⁶⁹ This was the opinion of a large number of the member states of the ad hoc commission on space. See Document A/4141: also the Bulletin of the Department of State, Washington, July 27, 1959: "United Nations Committee for Outer Space" (Statements by Ambassador H. Cabot Lodge).

for lawyers and states to strive to incorporate in the general plan the legal necessity for the principle of peaceful uses, allowing these general norms to be made concrete at a later time.

Chapter III

Evolution of the Problem of Space in the United Nations

The far-reaching interest of all mankind in the exploration of space should be channelled in to putting before international organizations the legal and political problems raised by this new phenomenon.

In June of 1956, already more than a year before the first satellite launching a report was presented to the assembly of the I.C.A.O. (International Civil Aviation Organization) at its meeting in Caracas.¹ This report emphasized the need for the nations to come to a quick agreement regarding the use of cosmic space, and pointed out that none of the rules that furnish legal guidance to states on problems of sovereignty applies to outer space. It added that the Convention of International Civil Aviation gives each of the member states complete and exclusive sovereignty over the space above its territory, but that it makes no mention of whether this sovereignty extends upward beyond the frontiers of air. After making clear that there is no specialized United Nations agency

¹ United Nations Review, New York, May, 1956, p.4.

to promote agreements on this matter, he stated that, since any space vehicle would have to pass through the atmosphere before reaching outer space, the I.C.A.O. has an interest in this problem.

On January 12, 1957, the United States presented a proposition at the First Commission of the United Nations, whose fourth paragraph was concerned with the Problem of space:

"Men of science of many nations are concerned at present with the launching of devices which travel through space and distant regions, beyond the atmospheric layer that encircles the earth. The various terms given to these devices define their objective "earth satellites,' Intercontinental projectiles,' 'long-range remote control weapons,' 'space platform.'" No one can predict with certainty at this time what the result will be of man's exploration in this area should be made within the framework of a system of arms control, which will give us some guarantee of security. The United States proposed that the first step to insure that future discoveries in outer space will be applied exclusively to peaceful and scientific purpose would be to subject experiments with such devices to international participation and inspection.

"In this matter, as in others, we are prepared to participate in a just, well-balanced and sure system of control."²

In several disarmament proposals presented by the two blocs, reference had been made to the uses to be made of cosmic space. Thus, the proposals of the four western members of the Sub-Committee on Disarmament (Canada, France, the United Kingdom and the United States) expressed the need to limit its uses to purely peaceful ones.

On October 4, 1957, the U.S.S.R. launched Sputnik I, four days before the end of the debates of the General Assembly, and so only the representative from India was able to make concrete reference to it.

But several days before, American Secretary of State John Foster Dulles had expressed his concern on the problem in a session of this Assembly, saying: ". . . the joint proposals would establish a study of outer space to the end that it shall be used only for peaceful, and not military purpose. The Soviet Union has announced that it has discovered ways to use outer space to wreak vast destruction any where. That is no new discovery. The United States, too knows how that can be done. Our task is to see that it is not done".

In the name of Canada, John G. Diefenbaker proclaimed the necessity of reaching an agreement on disarmament in the face of the serious threat that intercontinental rockets pose to the security of nations: "This Assembly should act promptly and effectively to bring about control of the use of this dread menace, the ultimate engine of destruction."

On behalf of India, V.K. Krishna Menon, who closed the debates, applied himself to a general consideration of the problems which the "international planetary" age will

² Eleventh period of sessions, First Commission, Theme 22 of the program. Document A/C/I/783, January 12, 1957.

present to humanity. For him, the moment is extremely serious: "Unless mankind is able to reconcile technical advance with humanity and wisdom, then there will be people who have no vision, and those who have no vision must perish." and an international agreement must be reached in short order to ward off these dangers: "Therefore, this is the time to come to an agreement so that there will be a sharing of knowledge where knowledge is free and where humanity would not be divided by domestic walls."

Finally, the General Assembly approved a proposition presented by the First Commission (1148) whose Part I, f says:

"The joint study of a system of inspection designed to insure that the sending of objects through outer space shall be exclusively for peaceful and scientific purpose."³

As the investigations of space pass from the field of pure speculation to that of reality, the preoccupation of statesmen with this problem increases; this preoccupation is reflected in the correspondence exchanged between Bulganin and the western Chiefs of State when a summit conference was being considered, and it was deemed advisable to deal with cosmic space in the General Assembly of the United Nations.

In December of 1957 Bulganin told Eisenhower that in his opinion it was very urgent to arrive at an agreement on the use of space; and Eisenhower answered him (12/1/58) that "we should agree that outer space should be used only for peaceful purpose."

Bulganin expressed his complete agreement with Eisenhower, that space should only be used for peaceful purposes, but he added that this question could be considered "Only as part of a general agreement to prohibit atomic and hydrogen weapons, put an end to tests of these weapons, and dismantle foreign military bases in the territory of other nations."

As was to be expected, Khrushchev was trying to take advantage of the situation. He said he distrusted the American proposals, calling them mere tactics in the cold war. In his Minsk speech of January 22, 1958, he declared: "'peaceful uses of space'-that means they want to prohibit what they do not possess." Perhaps Khrushchev thought Americans would never be able to send a satellite into orbit; he soon learned better.

Eisenhower continued to insist on the danger that the wrong use of outer space posed for mankind: "A terrible menace can be seen in the making the use of outer space for war purposes. The time to deal with that menace is now" (February 17, 1958); and Bulganin stated again that the U.S.S.R. was disposed to discuss at a summit conference "The question of the prohibition of the use of outer space for military purposes, and the cancellation of foreign military bases in other states" (March 6, 1958).

Under these circumstances, the permanent representative of the U.S.S.R. sent a note to the Secretary General of the United Nations (March 15, 1958) asking for the inclusion in the order of the day of a question entitled:

³ General Assembly. Official Documents: Session xii; Supplement No.18 (A/3805).

"Prohibition of the use of cosmic space for military purposes, suppression of foreign military bases situated in the territory of other countries, and international cooperation on the study of cosmic space." From perusal of the title the object and content of the Soviet proposition can be clearly deduced.⁴

On September 2, 1959, Henry Cabot Lodge requested on behalf of the United States, in a note directed to the Secretary General of the United Nations,⁵ that the following question be inscribed in the order of the day: "Program for international cooperation with respect to outer space."

The basic difference between the Russian proposal and the American proposal is that the former considered the general problems of disarmament linked to the peaceful uses of outer space, while in the American position the latter question was independent.

The General Assembly decided in its 752nd plenary session of September 22, 1958, to inscribe in the order of the day the questions proposed by the U.S.S.R. and the United States as paragraphs a) and b) of Point 6o. entitled: "Question of the uses of outer space for peaceful purposes," and sent them to the First (Commission to make the corresponding study and present a report.

The First Commission studied the question from November 11 to 24. On November 7 the U.S.S.R. had presented a project of resolution⁶ stating that the General Assembly should arrive at an agreement on the prohibition of the launching of rockets into space for military purposes and on the suppression of foreign military bases of other countries, along the lines of the following principles:

1. Prohibition of the uses of cosmic space for military purposes and the obligation of states to launch their rockets only in accordance with an international plan established by common consent.

2. Suppression of foreign military bases in Europe, the Near and Far East, and North Africa.

3. The institution, within the framework of the United Nations, of an adequate international control to safeguard the keeping of the obligations mentioned above.

4. The creation of an organism of the United Nations for international cooperation in the study of cosmic space.

On November 13, the group of twenty countries (Australia, Belgium, Bolivia, Canada, Denmark, the United States, France, Guatemala, Ireland, Italy, Japan, Nepal, New Zealand, The Netherlands, The United Kingdom of Great Britain and Northern Ireland, Sweden, Turkey, The Union of South Africa, Uruguay, and Venezuela) presented a project for resolution under the title: "Question of the uses of outer space for peaceful purpose,"⁷ which requested:

⁴ Document A/3818, March 17, 1958

⁵ Document A/3902, September 2, 1958.

⁶ Document A/C.I.219 of November 7, 1958.

⁷ Document A/C.I/1220

1. The creation of a special commission on the uses of outer space for peaceful purposes, which would report to the General Assembly on the following points:

- a) The activities and resources of the United Nations, of its specialized organisms, and of their international organisms, for dealing with the uses of space for peaceful purposes.
- b) The broadening of cooperation and of international programs involving the peaceful uses of outer space, which could be undertaken under auspices of the United Nations.
- c) The organic means the United Nations should adopt in future to facilitate cooperation in this area.
- d) Legal problems posed by space activities.

2. That the Secretary General be requested to lend appropriate aid to this commission and recommend useful measures to promote international cooperation in this area.

On November 18, Russia presented a revised text (A/C.I/L. 219/Rev.I)⁸ of its project of resolution of the 7th. In this new project, Russia no longer linked the question of foreign bases to that of space, but confined itself to the latter and proposed the creation of a preparatory group of eleven countries that would be responsible for the elaboration of the program and status of an international commission which would be formed within the framework of the U.N. for cooperation in the study of cosmic space.

It was precisely in the composition of this preparatory group that the greatest difficulties arose. Russia proposed that it should be composed of an equal group of Communist and western countries, and three neutral ones. The western nations adhered to the principle of geographic distribution, which is in use in the United Nations, and in their revised project of resolution,⁹ presented on November 21 by the twenty powers, they insisted on it.

Burma, India, and the United Arab Republic tried to reconcile the opposing positions of Russia and the United States, and for this purpose presented a project of resolution and another revised project of resolution on November 24,¹⁰ urging them to come to an agreement and present to the General Assembly a joint report on a practical way to deal with this problem.

The attempt to arrange an agreement failed, and the Soviet delegation took back its proposition. When the other projects were submitted to a vote, the revised project of resolution presented by the twenty powers was approved.

During the debates at the General Assembly, references to problem of outer space came up in all the speeches.¹¹

⁸ Report of Franz Matsch, Document A/4009, paragraph 7.

⁹ Document A/C.I/L.220/Rev.I

¹⁰ Documents A/C.I/L.224; and A/C.I/L.224/Rev. I

¹¹ United Nations Review, Nov. 1958, pp. 18 and following.

John Foster Dulles (United States): "The United States believes that the United Nations should take immediate steps to prepare for a fruitful program of international cooperation in the peaceful uses of outer space."

Andrei A. Gromyko (U.S.S.R) "The Soviet Government believes that the United Nations should focus attention on the following urgent questions: . . . prohibition of the use of outer space for military purposes and the elimination of foreign military bases on alien territory and international cooperation in the field of outer space study."

The delegate of Ireland, Frank Aiken, said he believed that "The United States proposals for the cooperative exploration of outer space . . . have great possibilities for eliminating tension and for our common welfare."

Leopold Figl, delegate of Austria, acknowledged that "The recent developments in the field of technology, reaching, into outer space, create new serious problems which call for clarification."

Filixberto M. Serrano declared on behalf of the Philippines that the use of outer space could result in immeasurable advantages for humanity, but "It would manifestly be unfortunate if that hope were again to be frustrated by our failure to agree on such controls as would insure the use of outer space solely for peaceful scientific purposes."

The delegate from Czechoslovakia, Vaclav Davicl, followed the eastern line, linking the problem of the use of outer space with the elimination of military bases in alien countries: "A problem on which ever greater attention is focused is the banning of the use of cosmic space for military purposes and the closely connected question of the elimination of military bases on foreign territories."

Selwyn Lloyd, on behalf of the United Kingdom? acknowledged the competency of the United Nations in dealing with the problem of space. "My Government welcomes the initiative of the United States Government aimed at developing international cooperation in the peaceful uses of outer space."

Richard C. Casey, delegate from Australia, held the same opinion, maintaining that "Science must inevitably figure to all increasing extent in the activities of the United Nations and in the specialized agencies."

The delegate from Roumania, Avram Bunaciu, proclaimed the necessity of prohibiting the use of space for military purposes and of eliminating foreign military bases, which would be "of the utmost importance for safeguarding the security of all states."

Sidney E. Smith (Canada) stated that "This is an urgent problem which, as in the case of nuclear weapons, would become increasingly difficult with the passage of time," and recalled the proposition made by his Prime Minister for the creation of a United Nations agency on space.

Jens Otto Krag, from Denmark, also declared himself willing to support all efforts to achieve an agreement on the use of space and the creation of a United Nations agency for space.

Kuzma V. Kiseler, delegate of Bielorrussia, naturally went along with the Soviet propositions.

The delegate from Albania, Behar Shtylla, held the same opinion. Pierre Wigny, of Belgium: "It is high time to ask the experts if and how its military use could be prevented."

Koca Popovic, of Yugoslavia: "My delegation . . . will continue to urge that measures be taken to ensure the use of outer space for peaceful and scientific purposes only."

Raúl Porrás, from Eru., said he believed that the problem of outer space was secondary to the more urgent one of prohibiting the production and storage of atomic weapons.

The delegate from Ukrania, Luka F. Palamarchuk, exhorted the other delegates to collaborate sincerely in the matter of space exploration.

On behalf of Israel, Mrs. Golda Meir stated that the new scientific achievements which have made it possible for man to begin to explore cosmic space "have linked us all in ever more intimate association but at the same time have cast upon us the shadow of potential destruction."

The General Assembly, in a plenary session held December 13, 1958, adopted the American proposal (called that of the twenty powers).

The members of the Soviet bloc (Russia, Czechoslovakia, Poland), who should have participated in the committee created by this resolution, announced that they would not participate in its work. The neutral countries, India and the U.A.R., were also absent from the meetings of the committee.

From May 6 to June 25, 1959, the ad hoc committee on space held its meetings in New York. The countries participating in its work were Argentina, Australia, Belgium, Brazil, Canada, France, Iran, Italy, Japan, México, Sweden, the United Kingdom and the United States.

On May 4 the United States delegation presented a project for a working paper¹² and on the 5th, a working paper.¹³

This "Special Commission on the Use of Outer Space for Peaceful Purposes" finished drawing up its report on July 14, 1959.¹⁴

¹² Document A/Ac.98/L.2; May 4, 1959.

¹³ Document A/AC.98/L.1; May 5, 1959.

¹⁴ Document A/4141; July 14, 1959.

In obedience to the recommendations of the General Assembly, the Committee studied the following problems: 1. Activities and resources of the United Nations, its specialized agencies and other international organisms related to the peaceful uses of space; 2. Outlooks for the existence of international cooperation in this area by all states, regardless of their economic or scientific state of development; 3. Future agreements for facilitating international cooperation in this area within the framework of the United Nations.

Finally, it dealt with the nature of the legal problems that the exploration of outer space may pose.

In order to pursue its study to best advantage, the committee constituted two working groups, one scientific and technological, and the other legal. The report drawn up by this committee was presented to the General Assembly, together with another report by the Secretary General, in which he summed up the work done to that time in the field of space exploration by the United Nations and international organizations.¹⁵

The committee in charge of this commission was made up of Koto Matsudaira, from Japan, as President; Mario Amadeo, from Argentina, as Vice President, and Joseph Nizot, from Belgium, as rapporteur.

Matsudaira declared in the course of one of the sessions that the constitution of the commission was the first step in complying with the determination of mankind to have the problem of cosmic space dealt with on an international plane in a peaceful manner.

Opinions were divided on the way to focus the work; the representatives of the United Kingdom, Austria, Canada and the United States believed that the creation of a space code was premature, and besides that the Assembly had not foreseen this or given them faculty for it, and that therefore the committee should confine itself to making up a list of the particular problems that might come up. Brazil, Mexico, Argentina, Iran and Italy expressed the opinion that the Committee should propose certain basic principles and ascertain what rules of international law were applicable to cosmic space, adding that this outer space should be considered *res communis omnia*.

Secretary General Dag Hammarskjöld had made reference to all of these problems in the course of a talk he gave at a dinner in Miami on the occasion of the Fifth Annual Conference of Governors of the United States in May, 1958. On that occasion outer space was classed as *res communis*.¹⁶

The report of the ad hoc committee of the United Nations on space was examined at the 14th Session of the General Assembly by the Political Commission, which studied it from December 11 to 12, and it was adopted by a resolution at a plenary session of the assembly on December 12, 1959.

¹⁵ Document A/AC.98/4.

¹⁶ Dag Hammarskjöld: ". . . outer space has been considered as belonging to no one and as not being subject to appropriation or to sovereignty." (Op. cit.)

During the debates Herter invited the U.S.S.R. to cooperate with the United States in the realm of "the peaceful use of outer space," and indicated (11/12/59) that "Jurisprudence is beginning to recognize and develop a law which considers that outer space is freely accessible, under conditions of equality, to all peoples for their exploration and use."

Selwin Lloyd mentioned in his disarmament plan of the for an "agreement on a system to guarantee the use of cosmic space for peaceful purposes."

Khrushchev also took part in this General Assembly, presenting personally his "plan of general and complete disarmament," and in one part of it he proposed the "complete suspension of the production and distribution of all types of rockets, of all ranges, including cosmic rockets which serve military purposes."

The Soviet delegate Kuznetsov also recognized that "The exploration of space is a problem that comes from the frontiers of nations and affects the interest of all mankind"¹⁷

The United States and Russia concluded on December 10 an agreement on the composition of the permanent committee on cosmic space¹⁸ and, together with ten other nations, presented this agreement in the form of a project of resolution to the Assembly, and it was adopted December 12. But difficulties came up again regarding the designation of a president. Russia proposed India, but the western states would not accept her because of her refusal to form part to the previous committee. The United States proposed Matsudaira (Japan) and Russia was opposed because he had been president of the previous meeting. The purpose of this permanent committee was to go on with the work of the previous committee and prepare the question to be submitted to a committee which, at the proposal of the Soviets, should meet in 1960 or 1961.

This conference, in spite of the petition made by the Fourteenth General Assembly¹⁹ that it should be planned for the years indicated, never took place because the great powers could not come to an agreement on the composition of a subcommittee necessary for the preparation of this meeting. For the same reason the commission of twenty-four members created by the Fourteenth Assembly²⁰ was unable to meet.

Under these conditions, the Fifteenth Assembly did not deem it advisable to start a debate on the problem of outer space,²¹ and confined itself to the report of the First Commission,²² which recommended putting off the discussion until the following period of sessions.²³

¹⁷ Intervention of Kuznetsov in the United Nations November 12, 1959.

¹⁸ The Committee was made up of Albania, Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Czechoslovakia, France, Hungary, India, Italy, Japan, Lebanon, Mexico, Persia, Poland, Roumania, Sweden, U.A.R., United Kingdom, United States and Russia.

¹⁹ Res. 1472 (XIV) of December 12, 1959.

²⁰ See the Annual Report of the Secretary General on the Work of the Organization, 1960-1961. Supl. No.1 (A/4800).

²¹ On October 10 it had been included in the order of the day, at the recommendation of the Board, and on October 13 it was assigned to the First Commission. It confined itself to the report of the First Commission.

²² Of April 21, 1961.

The only advances, very relative ones since there was not an expressed agreement, were two points that were reached.²⁴ 1) The putting into orbit, or the stationing in outer space, of weapons of destruction in mass should be prohibited, according to the joint declaration of the U.S. and the U.S.S.R., made before the First Commission; 2) the undertaking of nuclear tests in outer space should also be prohibited, according to the unanimous opinion of the powers meeting in Geneva to deal with the termination of nuclear tests.

On November 27, the Commission for the Peaceful Uses of Outer Space held its first meeting²⁵ at the request of Great Britain which wished it to deal with before the expiration of the term for which it had been created, and thus be able to present a report to the General Assembly.

At this meeting the Commission on Space agreed to ask the Political Commission of the General Assembly to take into exploration of space for peaceful purpose.²⁶ (Previous to this request, the General Assembly, in its plenary session of September 25, 1961, had charged the first Commission (the Political Commission), with the study and presentation of a report on the question.) The Political Commission met on December 4, and took as a basis for discussion a project of resolution first drawn up by the United States, and later supported in its revised form by the U.S., Canada, Australia, and Italy.²⁷ The original project of the United States made no reference to the legal aspects of the matter and concerned itself exclusively with technological and scientific cooperation in space. In the revised project the original parts of the project were retained and the legal part was added.

The general lines of this important project, in its legal aspect, are the following:

I. The legal system of outer space should be based on two principles:

- a) International law is applied to outer space and celestial bodies.
- b) Outer space and celestial bodies may be explored by all states.

They are not susceptible to national appropriation. This latter principle is considered advisable, and it is recognized that it is purely a principle of *lege ferenda* for the moment. In support of these enunciated principles, it is pointed out that they were recognized in the report of the Special Commission and confirmed in practice by the United States.

²³ Document A/4749

²⁴ See "Issues before the sixteenth general assembly," *International Conciliation*, No.534, September 1961, p.23.

²⁵ 25. See Annual Report of the Secretary General on the Work of the Organization, 1961-1962, Supl., No.1 (A/5201).

²⁶ Doc. A/4987.

²⁷ Doc. A/C.1/L.301.

2. It is for the moment, premature to set limits to air space and outer space; it is much more advisable to wait for the formation of more general opinion.

3. A register should be begun in which to inscribe future launchings, which should be given due publicity

4. The planning of a world meteorological program under the auspices of the United Nations should be started.

5. It would be advisable also to bring about a global system of communications satellites in the control and use of which all states would participate.

6. The project indicates a) that the concern is solely with aspects of peaceful use; b) that the realization of this program will be of enormous aid in bringing all peoples closer together.

Conversations were held between the countries of the eastern and western blocs on this proposal of the five powers,²⁸ and on December 11 a resolution was adopted by the unanimous vote of all the members of the Political Commission (with the support of all the members of the Commission on Outer Space). Only a few minor changes were made in the project,²⁹ such as the decision to enlarge the Commission on Space by adding four new members (Chad, Mongolia, Morocco, Sierra Leone) out of consideration for the increase in the membership) of the United Nations since the creation of the Commission in 1959.

When the project was presented to the (General Assembly with the unanimous recommendation of the Political Commission, it was also unanimously adopted on December 20, 1961.³⁰

The debate in the Sixteenth General Assembly was characterized by the insistence of the delegates on certain points, such as the urgency of reaching an agreement on the legal regulation of space, and the importance of insuring that celestial bodies in outer space should not be subject to occupation by any individual country.

The various statements of the delegates give us a clue to the prevailing climate which, in spite of everything, enabled the general desire for harmony and cooperation to shine through on this point in the order of the day.

Mr. Stevenson (U.S.) insisted on the "need to make haste to reach an agreement on space, because it will become increasingly difficult to adjust national space programs to a rational structure of cooperation."³¹

²⁸ On certain criticisms made by the Soviet delegate on the procedure of the Commission on the Peaceful Uses of Outer Space, see Doc. A/C.I./857.

²⁹ Doc. A/C.I./L.301/Rev. I and Corr. I.

³⁰ Res. 1721 (XVI); also Doc. A/5026.

³¹ Doc. A/C.I./ SR/1162 to 1243, pp. 260-261.

For Mr. Brook (Canada) the question of cosmic space belongs to a category of particularly critical problems which threaten the survival of the United Nations. He spoke of turning over certain competencies on space to specialized organizations, and pointed out that he would like to see the Commission on Space collaborate with the I.C.A.O. in studies on the delimitation of cosmic air space.³²

Mr. Zorin (U.S.S.R.) was concerned about the fact that, in his opinion, the independent action of states might seriously impair exploration in space. He requested the introduction in the Commission on Space of the principle of the troika, so that each bloc (eastern, western, and a third world) might be represented by the same number of members.³³

Sir Patrick Dean (U.K.) insisted on the importance which the establishment of the legal regulation of space and the celestial bodies would have, but he warned that such a system should come about gradually. Sir Patrick Dean did not think it would be possible, or even advisable, to elaborate a space code, as was sometimes suggested, although he did believe that it would be advisable to enunciate the general principles, which are the very ones included in the project presented to the Assembly. He also felt the great urgency of reaching an agreement, because he feared that in the near future this agreement might no longer be possible.³⁴

Mr. Ferreira (Argentina) spoke on the dangers of abuse of the analogical method, saying that problems of space (legal, political) cannot always be solved by the methods used for those of the earth. With regard to the delimitation of air space, he stated that no theory had been affirmed, and that only an international agreement could resolve it. On the legal nature of space, he expressed his opinion that it was a matter of a *res communis omnium extra commercium*, and he was in favor of having the General Assembly formulate the broad principles of space law.³⁵

Mr. Martino (Italy) called attention to the need to prevent the extension of the cold war to cosmic space and the introduction of a new form of space colonialism. He also agreed that no one country or group of countries should have the exclusive right to the use of cosmic space. He recommended the study of the following questions: 1) space meteorology; 2) telecommunications; 3) control and registration of space vehicles; 4) space law, with the desire that all nations sign a declaration of principles stating that space and celestial bodies can be freely explored and are not susceptible to appropriation.³⁶

³² Ibid, p. 261.

³³ Doc. A/C.I./SR.II62 to 1243, pp. 262, 263.

³⁴ Ibid., pp. 263-264

³⁵ Ibid., p. 265.

³⁶ Doc. A/C.I./SR. II62 to 1243, p. 267

Mr. Belaunde (Peru) was concerned about the danger there would be in the domination of space by one single country, and he expressed his delight that the theory of the vertical projection of sovereignty from the earth had been discarded.³⁷

Mr. Loufti (U.A.R.) spoke of the need to elaborate legal standards for space law, but pointed out: 1) that the will of the states must be taken into consideration; 2) that a certain degree of precaution must be taken to avoid an excessive application of analogies; 3) that it would be necessary to resort first and foremost to the organs of the United Nations.³⁸

Mr. Machowski (Poland) pleaded for the extension to outer space of the principle of the equal sovereignty of all states, contained in Article 2, Paragraph 1, of the Charter of the United Nations.³⁹

Maintaining a position in common with the countries of the eastern bloc, Mr. Zemina (Czechoslovakia) defended the principle of the troika, just as did Mr. Zorin, and he added that the analogy of the Antarctic Treaty proved that international cooperation in the exploration of outer space was feasible.⁴⁰

A series of extremely interesting principles was expounded by the Japanese delegate, Mr. Okazaki, who after pointing out that space activities take little account of national frontiers, and that this is why no nation can be indifferent to them, went on to enumerate certain presuppositions that should be taken into account: 1) It is misleading to expect a global solution to all the legal problems; 2) the concrete problems should be solved as they come up; 3) the general principles should be enunciated; 4) the foremost one is that cosmic space should be used only for peaceful purposes; but it is also important to establish freedom for the exploration and use of cosmic space.⁴¹

Mme Rossel (Sweden) felt that the drawing up of a space code was premature, and said she believed that among the urgent tasks are the reaching of an agreement that stipulates clearly that celestial bodies are not susceptible to national appropriation, and the creation of an international register of satellite launchings.⁴²

Mr. Valkil (Iran) emphasized, very properly in our opinion, that the main responsibility for solving the urgent problems posed by the exploration of space rests on the great powers.⁴³

³⁷ Ibid., p. 268

³⁸ Ibid., pp. 268-269.

³⁹ Ibid., p. 269

⁴⁰ Ibid., p.271.

⁴¹ Doc. A/C.I./SR.II62to 1243, p. 271-272

⁴² Ibid., p.273.

⁴³ Ibid., p. 278.

Mr. Lequerica (Spain) expressed the general opinion by stating that it was still too soon to think of establishing the legal regulation of space, but that it should be accepted that the principle of international law apply to activities in space, and that space and celestial bodies cannot be objects of appropriation by states.⁴⁴

Mr. Jha (India) recalled the urgency of coming to an agreement on the rules to be applied to cosmic space, an agreement which he believes depends fundamentally on the two principal powers (U.S. and Russia). He expressed alarm about the military plans for the use of space for war purposes, and asked the principal powers to sign a joint declaration affirming the principle of the use of space for peaceful purpose only. The example of the Antarctic Treaty seemed to him proof sufficient that an understanding can be reached with a little good will.⁴⁵

Finally, Mr. Demetropoulos (Greece) insisted on the application of the principles of international law on cosmic space, and on the establishment of a prohibition to appropriate celestial bodies or cosmic space.⁴⁶

This panorama of the debates in the General Assembly on cosmic space demonstrates that certain principles which should govern the activities of nations in space are already solidly anchored in the conscience of the people, such as the one that there is no legal vacuum in space, since international law applies there, and the one that neither cosmic space nor celestial bodies can be subject to appropriation. The general tendency toward the affirmation that only peaceful activities be permitted in space (for the moment merely a question of *lege ferenda*) give us hope that it would be very difficult for a subversive movement to rise and attempt to thwart what is evidently the earnest desire of all mankind. The climate of international understanding, created by the approval of the above-cited resolution by the General Assembly, soon began to produce practical results: 1) On March 5, 1962, in a letter directed to Mr. U Thant, Mr. Stevenson submitted facts about seventy-two "space vehicles and associated objects" launched by the United States up to the 15th of the previous February, and he promised to send reports periodically from then on so that they could be included in the register of launchings of the Secretariat General. 2) Mr. Platon Morozov displayed the same willingness on the part of the U.S.S.R. on March 20, and on the 26th he presented information on sixteen launchings effected by the Soviet Union, among them the flights into orbit of Gagarin and Titov.⁴⁷

Before these two communications were made to the Secretary General of the United Nations, there had been an interchange of letters between Khrushchev and Kennedy,⁴⁸ which began with the letter of congratulation directed by the Soviet Prime Minister to the President of the United States upon the flight into orbit of Lt. Col. J.H. Glenn. Khrushchev said, "If our countries would combine our efforts-scientific,

⁴⁴ Ibid., p. 278.

⁴⁵ Doc. A/C.I/SR.II62 to 1243, p. 279.

⁴⁶ Ibid., p. 280.

⁴⁷ See Keesing's Contemporary Archives, May 5-12, p. 18749

⁴⁸ Ibid., p. 18599 and 18754 (February 17-24 and May 12-19, 1962).

technological, and material-for the exploration of outer space, it would be very beneficial to the advance of science, and it would be acclaimed by all the peoples, who would like to see scientific conquests used for the benefit of mankind and not for the purposes of the 'cold war' and the arms race."

The President of the United States reacted favorably and said: "We will indicate in response our desire that outer space be explored peacefully (and) we will be prepared to discuss this matter at the United Nations or bilaterally, or in any other way in which this common cause can be advanced."

In fact, in his reply, Kennedy made a series of concrete propositions, of which the most important were: 1) The joint establishment of a meteorological system of satellites intended to facilitate a global system of information on the weather, which could be used by any nation; 2) the establishment of transmitting stations in each other's territory, so that these stations, although constructed of materials furnished by the other, would be operated by technicians of the country in which they were stationed; 3) cooperation in the establishment of a map of the earth's magnetic field in space, using two satellites one belonging to the U.S.S.R. and the other to the U.S.; 4) joining the efforts of the two countries in the development of space medicine. Kennedy suggested that the representatives of the United States and the Soviet Union to the Space Commission meet privately to discuss these five propositions at the time when the Commission should hold its meeting in New York.

In his reply Khrushchev accepted all the points in Kennedy's letter, with the exception of that of the establishment of transmitting stations in each other's territory. At the same time he added other points, such as that of signing an international agreement in case of emergencies originating from space exploration, and that of another international agreement guaranteeing all the members of the United Nations the right to make exploration of the moon or interplanetary space, Khrushchev left dependent on the results of a disarmament agreement.

The Commission of United Nations for the Peaceful Use of Outer Space met in New York beginning March 19, 1962. In the course of these meetings, the above-mentioned conversations took place in private between the representatives of the U.S.S.R. and the U.S., Morozov and Plimpton, and both of them informed the Commission of the interchange of correspondence between Kennedy and Khrushchev. The representative of Great Britain expressed the desire that the cooperation between the U.S. and the Soviet Union would not exclude that of other countries, referring to the European Launcher Development Organization (ELDO), and the European Space Research Organization (ESRO).⁴⁹

Other bilateral (U.S.-U.S.S.R.) conversations took place in the United Nations between Dryden (of NASA) and Blagonravov (of the Academy of Science of the U.S.S.R.) out of which came the project for negotiations on a broader scale to take place in Geneva or Washington.

⁴⁹ 49. On the formation of this organization see International Organization, Vol. XVI, No.3, Summer, 1962, p.650.

The Director of Investigations of the U.S. Weather Bureau, Dr. Harry Wexler, and the assistant Director of the U.S.S.R. Hydrometeorological Service, Dr. Viktor Bugaev, met in Geneva, at the WMO (World Meteorological Organization) to prepare a project of plan of a network of meteorological satellites for a global observations on the world's weather.

The year 1962 meant, therefore, a great step forward in international cooperation, and a transition from bombastic and ineffective declarations on cooperation to the study of concrete measures.

At the same second meeting of the Commission on Space, the president of the commission made manifest in his initial declaration that agreement had been reached on several points through fruitful conversations: 1) The members of the commission and those of the subcommissions would try to carry out their work so that the commission could reach an agreement without the necessity of a vote; 2) representatives of the WMO, ITU, UNESCO, and the Committee of Investigations on Space of the International Council of Scientific Unions would be invited as observers. The position of the United States in the discussions of the Commission on Space was based on the need for extensive international cooperation, and its delegate called the attention of the participants to Kennedy's letter to Khrushchev.

The U.S.S.R. laid stress on Khrushchev's answer to Kennedy's message, and after outlining the position of the Soviet government on the question of space cooperation, enumerated certain problems that could be solved only by sincere and faithful international cooperation. Nevertheless, the Soviet Union did not believe that complete cooperation in the exploration of space was possible as long as no agreement had been reached on disarmament.

When the debate was over in the Commission on Space,⁵⁰ its president proceeded to read a summary of the activities. He was able to do this because in view of the spirit of cooperation among the delegation, it was decided that it would be unnecessary to approve a resolution.⁵¹

The reading of the summary made clear a number of points on which decisions had been made: 1) two plenary subcommittees would be created which would meet in Geneva in 1962 (on May 28) - a) one on scientific and technological problems, b) the other on the legal aspects; 2) the objective of the Commission on Space would be to effect the coordination of the activities of the specialized bodies of governmental and non-governmental organizations, etc.

In New York the Commission on the Peaceful Uses of Outer Space continued its meetings from September 10 to 14.⁵² The discussions brought out varying points of view on the general plans and while some, like Karoly Csatorday (Hungary)⁵³ suggested the elaboration of a complete code because "It is difficult, if not impossible, to develop international cooperation in the absence of clear and definite rules," others, like Louis Dauge (France)⁵⁴ asked, "What would be the use of hastily approving a general principle

⁵⁰ Doc. A/AC.105/PV.2.

⁵¹ Doc. A/AC.105/L.I.

⁵² Doc. A/AC.105/PV.16.

⁵³ Revista de las Naciones Unidas, October 1962, p.19.

⁵⁴ 54. Ibid., p.20.

when there is fundamental opposition to the very meaning of the words used ?" Taking this line, the French representative expressed his opposition to the "Project of Declaration of Basic Principles" presented by the Soviet Delegation first to the legal subcommission and then to the commission itself

Finally a report was adopted which was presented to the Commission of the General Assembly for its study and judgment, although in this report there was no advance on the road to the legal regulation of space with regard to the general principles already formulated and explicitly accepted

From December 3 to 11, 1962, the First Commission studied the problem of cosmic space⁵⁵. A series of documents was presented to it 1) A report of the Commission on the Peaceful Uses of Outer Space⁵⁶; on the work of the Commission and of the legal and scientific subcommissions since the adoption of Resolution 1721 of the Sixteenth General Assembly; 2) a report of the World Health Organization⁵⁷ in response to Resolution 1721 C, on the progress of the atmospheric sciences and their application, in the light of advances made in outer space; 3) a report of the International Telecommunication Union,⁵⁸ in response to Resolution 1721 D, on telecommunications and outer space; 4) a report on activities in outer space voluntarily facilitated by the governments,⁵⁹ in response to Resolution 1721 B (XVI) of December 29, 1961; 5) a project of declaration presented by the United Kingdom⁶⁰ on the basic principles which should govern the activities of states with relation to the exploration of outer space; 6) documents jointly presented by the U S and the Soviet Union⁶¹ on an agreement reached in the matter of cooperation in the exploration of outer space; 7) a project of declaration of principles on the peaceful exploration of outer space, presented by the United States;⁶² 8) the United States also presented a project of resolution which would later be amended and which would serve as the basis for the project adopted by the twenty-four powers.⁶³

The debates at the First Commission were concerned with determining the positions more precisely and, if the talks of the delegates of the two principal powers are analyzed, it can be seen that the gap that separates their positions is becoming narrower all the time.⁶⁴

⁵⁵ Doc. A/C.I./ PV.1289-98.

⁵⁶ Doc. A/5281

⁵⁷ Doc. A/5229.

⁵⁸ Doc. A/5237.

⁵⁹ Doc. A/AC.105/7 and Add. I.

⁶⁰ Doc. A/C.I/879.

⁶¹ Doc. A/C.I/880

⁶² Doc. A/C.I/881

⁶³ Doc. A/C.I/L.320/Rev. I and Add. I-2.

⁶⁴ See International Organization, Vol. XVII, No. 1, winter 1963, pp.121-124.

Thus, the U S representative, Mr Gore, regretting that the subcommission on the legal aspects had not reached notable results, insisted on the need to arrive at these agreements, and emphasized the interest the U.S. had in the establishment of a legal system for outer space. Among the questions to which his government gave priority were the following: 1) the signing of a treaty to prohibit nuclear tests in outer space immediately; 2) the adoption of measures of every kind as long as they were reasonable and applicable, including that of consulting the world scientific community to prevent experiments in space that might have harmful effects; 3) the establishment of a global commercial system of communications satellites; 4) a system of meteorological satellites, with broadest international participation; 5) an agreement on responsibility for accidents to space vehicles; 6) an agreement on measures to facilitate the rescue and return of astronauts and their craft. On another occasion Mr. Gore summarizing the project of declaration on the exploration and use of outer space before the First Commission enunciated several fundamental principles: 1) Equality of rights for all nations in the exploration and use of outer space; 2) activities in space should be regulated in accordance with the standards of international law and the provisions of international treaties including the Charter of the United Nations; 3) states should give aid to flight personnel, especially in the case of accident and should help them return to their country; 4) states should return to the country that launched them vehicles felled by accident or error in their territory; 5) states or international organizations should be responsible for damage caused by vehicles they have launched; 6) the movements of space vehicles should not affect property rights.

The delegate from the Soviet Union also expressed clearly his country's point of view⁶⁵ when he said that there was a lack of adjustment between the legal situation and technological and scientific progress and that in order that there might be true scientific and technological cooperation among the states it would be necessary to enunciate the general principles that bear on this cooperation. But the enunciation of these general principles should have the support and acceptance of the states who should pledge themselves to obey them otherwise nothing would be accomplished but a declaration of principles without any binding force as was the case of Resolution 1721 of the Sixteenth General Assembly. The Soviet Union thus proposed a joint declaration of the following basic principles binding inter alia: a) Outer space should be free to all nations; b) all activities in space should be kept within the limits of the Charter of the United Nations; and c) any activity which interfered in any way whatsoever with the exploration and use of space should be prohibited.

The Soviet stand was criticized by the delegate the United Kingdom, Sir Patrick Dean, who stated that this government was not against a declaration of principles, but against the fact that the Soviet declaration included certain principles whose content was political, and therefore subject to controversy, and this made it inappropriate for these principles to be included in a declaration of general principles. Sir Patrick Dean said he found principles much more acceptable in the project of the code of the U.A.R. as it appeared in the Commission on Outer Space.

At one of the meetings, the United States and the Soviet Union referred to the agreement reached by these two countries the past June on cooperation in space in

⁶⁵ The position of the USSR appears clearly in Doc. A/C.I/857.

(meteorology, in the elaboration of a map of the field of terrestrial magnetism and experiments with communications satellites).

The project of resolution presented by the United States, after a few minor amendments, was adopted unanimously on December 11 by the twenty-four powers, and submitted to the plenary session of the General Assembly.⁶⁶

On December 14 the Assembly approved,⁶⁷ unanimously, that project, composed of four parts and a sort of preamble. In the first part it was regretted that the Commission on Space had not yet presented recommendations on legal problems on the peaceful uses of outer space, and the Commission on Space was requested to persevere in its efforts, above all with regard to certain points of particular importance and urgency: a) the elaboration of the basic legal principles governing the activities of states in the matter of the exploration and use of outer space; b) responsibility for accidents to space vehicles; c) assistance to (and return of) astronauts and space craft, etc.

Part II of this resolution is concerned principally with supporting the recommendations of the Commission on Space on the interchange of information. Parts III and IV refer generally to cooperation with the World Meteorological Organization and with the International Telecommunication Union respectively.

In Part I of the resolution it was also agreed to pass on to the Commission on the Peaceful Uses of Outer Space the following propositions and documents received: 1) Project of the declaration by the U.S.S.R. on the basic principles governing the activities of states in the exploration and use of outer space;⁶⁸ 2) project of the international agreement submitted by the U.S.S.R. on the rescue of astronauts and space ships that have had to make a forced emergency landing;⁶⁹ 3) project of the proposition by the United States that aid be given to the crew of space vehicles and that the return of personnel and craft be facilitated;⁷⁰ 4) project of the proposal by the U.S. on responsibility for accidents caused by space craft;⁷¹ 5) project of the code submitted by the U.A.R. for international cooperation on the uses of outer space for peaceful purposes;⁷² 6) project of the declaration of the United Kingdom on the basic principles governing the activities of states with regard to the exploration and use of outer space;⁷³ 7) project of the declaration of principles submitted by the U.S. with regard to the exploration and use of outer space;⁷⁴ 8) other propositions and documents previously delivered to the General Assembly.

⁶⁶ Doc. A/C.I./L.320/Rev. I and Add.I.

⁶⁷ Res.-1802 (XVII).

⁶⁸ Official Records of the General Assembly, Seventeenth Session, Annex III A..

⁶⁹ Ibid., Annex III B.

⁷⁰ Ibid., Annex III C.

⁷¹ Ibid., Annex III D.

⁷² Ibid., Annex III E.

⁷³ Doc. A/C.1/879.

⁷⁴ Doc. A/C.1/881.

During the debates of the General Assembly⁷⁵ on December 5, Mr. Stevenson and Mr. Zorin, respectively representatives of the U.S. and the Soviet Union, sent U Thant a joint letter announcing the agreement reached by their countries for the common realization of a program of exploration of outer space.

On February 25, 1963, the Commission on the Peaceful Uses of Outer Space began a new series of meetings,⁷⁶ but to date no concrete results can be noted.

The importance of reaching agreements on certain points, such as the responsibility for damage caused by accidents to space vehicles, was demonstrated when Mr. Plimpton, U.S. delegate, presented before the Commission a piece of metal which had fallen on September 4, 1962, on a street in Manitowoc, Wisconsin, and which was believed to be a piece of Sputnik IV.⁷⁷

It is evident that the work of the legal subcommission is not going ahead as fast as might be desired, and we are convinced that certain problems (such as that already pointed out on responsibility for damage) are of extreme urgency, and if they are not solved quickly they may lead to dangerous situations. However, it must be realized that on matters in which considerations of a political nature enter to complicate things, advances cannot be rapid, and in spite of everything the ground covered in the matter of the legal regulation of space has been extensive. We have come a long way from discussions on whether or not to extend state sovereignty into outer space, a principle now abandoned by the great majority of jurists, who in this matter are merely following the practice of the states. We have also come a long way from discussions on whether or not international law should be applied to space, and the unanimous position of the states precludes any legal vacuum which might have been presented and provoked most serious problems. Therefore, it is incorrect to say that the UN has not made any progress in the creation of space law. Even though it must be acknowledged that the progress has not been spectacular, we must admit that we are no longer at the beginning, and that this is due to the existence of an international organization that promotes contacts, moderates positions, and accelerates the evolution of international practice, which otherwise would have been much slower.

⁷⁵ See General Assembly, Official Records, Seventeenth Session, Supp. No. (A/5217) .

⁷⁶ Doc. A/AC.105/PV.17-19/Rev. I

⁷⁷ See Keesing's Contemporary Archives, p.19367 (April 20 27).

Book II

Legal Status of Space Vehicles

Chapter I

Space Vehicles

Section I

Definition of Space Vehicles

Serious difficulties are encountered in attempting to arrive at a definition of space vehicles, because the great variety of these vehicles makes it impossible to single out any differentiating factor. The only definition possible is one comprising negative characteristics:¹ "Those vehicles that are not airplane or aerostats, and are not destined to navigate in the atmosphere."

Conventions on space law define classic vehicles as "any vehicle that can be supported in the atmosphere through air friction." Airplanes and aerostats are included in this.

Space vehicles, in the simplest terms accepted, are those destined to travel through space above the atmosphere.² This is also the opinion of Ch. Chaumont, for whom it is "impossible de tirer de la seule structure de l'engin sa qualification juridique."³

¹ "Un satellite n'est pas un aéronef soumis aux règlements internationaux en vigueur" (John C. Cooper: "Espace navigable et satellites").

² "Flight craft: May be applied to all devices capable of flying in flight space." (Bin Cheng: "International Law and High Altitude Flights: Ballons, Rockets, and Man-made Satellites," International and Comparative Law Quarterly, pp. 487-505, London, July, 1957). See also Cocca: "Naturaleza jurídica del satélite artificial," Revista de la Asociación argentina interplanetaria, 1956, N.12 Bauzá Araujo: Derecho Astronáutico, pp. 135-158.

Section II Nationality of Space Vehicles

In order to establish legal regulations for space vehicles, the first condition is that the vehicles belong to a designated nation. In principle, international law is a law between states, and only a state is entitled to rights, and consequently, to duties.

The conclusion drawn from this is that a space vehicle should belong to a state in order to fit into the framework of international law. This leads us to the two following principles:

- a) Space vehicles must have a nationality.
- b) Space vehicles cannot have more than one nationality

The attribution of nationality to space vehicles is a duty of states, and this should be regulated by their internal laws. But international regulation should also be established in order to avoid conflicts which might result from a diversity of regulations by different states. In attributing nationality to space vehicles, several conditions may be taken into consideration:⁴

- 1. Place of construction
- 2. Place of registration
- 3. Port of junction
- 4. Domicile or nationality of proprietor.

Because of this it might happen that two nationalities might be given to one and the same vehicle.

The state granting nationality to a vehicle will have right to control it.

Evidently, in the matter of space vehicles, just as for airplanes and ships, the nationality might be changed, should the conditions under which it was established be changed; that is, a vehicle might be sold or transferred to another proprietor, or engaged in a service which might mean giving it a new nationality.

For the purposes of international traffic, a series of rules will have to be established:

- a) A register of space vehicles, in which all vehicles should be inscribed. Every state should have its own register for all the vehicles bearing its nationality. Changes of nationality should be noted in it, as well as all changes which might have a bearing on the

³ Ch. Chaumont: *Le Droit de l'espace*, Paris, Presses Universitaires de France, 1960.

⁴ M. Marcel Sibert: *Traité de Droit International Public*, T.I., Paris, 1951.

legal status of the vehicles. This register should be at the disposal of all states, for their information.

b) For the vehicles, the following will be necessary:

1) The exhibition on a clearly visible part of the vehicle of the numbers or letters of registration.⁵ The possible consignment of some vehicles to space stations, either the moon or other celestial bodies, or as artificial satellites converted into bases (astroports), will make it necessary to put a distinctive sign beside the letters or numbers of registration, showing their respective allocation to the earth or to a space base. Thus we shall see that over and above national differences there will be an element of unity - that of belonging to the earth.

2) All space vehicles will possess the necessary papers to identify their status:⁶ registration, certificate of navigability, a license for the personal pilot, a flight log, etc. Earth vehicles should not be expedited by any one state in particular, but by an international organization, which might be found within the framework of the UN.

The attribution of nationality to space vehicles will enable them to be protected by the states whose nationality they bear. Further-more, it will permit the appointment of an entity in international law to whom a state, injured by a space vehicle, can present claims. Will a space vehicle be able to have two nationalities? The launching of space vehicles, which is so expensive, might be effected by a group of nations, or by individuals having different nationalities. However, even though from an economical, commercial, or technological standpoint, the participation of several nations can be easily conceived, from the point of view of nationality, no more than one could be accepted for a space vehicle. If it had two nationalities, it would be subject to two different regulations, with the ensuing complications, which a single nationality would preclude.⁷

Launchings by international organizations will present a practical problem, and the principle of single nationality would have here a possible exception. We refer to launchings taking place within the framework of such organizations as ELDO (European Launcher Development Organization) or ESRO (European Space Research Organization); or the United Nations itself, for those launchings which are scheduled to take place during the International Year of the Quiet Sun (1964-1965). We do not believe that the solution in these cases would be to assign the nationality of one of the member nations; the most probable solution would be to assign such satellites to the organization that launches them, which will have all rights over its satellites, and at the same time will be responsible for what the satellites might do.

⁵ All aircraft employed in international air navigation will bear the marks of nationality and registration that belong to it (Art. 20, Chicago Conv., 1944).

⁶ Article 29 of the Chicago Convention, 1944. to the above conditions might be added the requirement of a medical certificate to prevent the transmission of terrestrial diseases to other planets. Given the special conditions of space navigation, it would be very useful in facilitating the identification of vehicles to have each of them send a certain radio signal, established at the time of the vehicles' registry.

⁷ "Meili et Pilet étaient contre la nationalité unique des aéronefs. Mais elle a été reconnue" (Traité de Droit International Public: Marcel Sibert, Paris, Dalloz, 1951).

The Chicago Convention of 1944 established the principle of single nationality for airships.⁸ Using the perfectly valid method of analogy, we could apply this ruling to space vehicles. With regard to the element that must be taken into consideration for the attribution of nationality, the Chicago Convention can be accepted also. According to this convention, nationality results from registration.⁹

All the registrations effected by a state should be centralized in an international organization, still to be created. Until this organization is created, registration of vehicles will not be required, and the circumstances of the launching will decide the nationality.¹⁰

The United States and the U.S.S.R. have given the United Nations Organization information on their launchings, as a first step toward the establishment of a registry of space vehicles in the Secretariat General of the organization.

If one country asks another more technologically advanced country to effect a launching, once this has been done, the vehicle will acquire the nationality of the state that ordered the launching, but it will be necessary to have a proclamation to this effect from both of the states, the one that carried out the launching as well as the one that ordered it.

Section III Classification of Space Vehicles: Satellites, Free Vehicles

Space vehicles can be classified, according to their trajectory, as satellites and free vehicles.

Satellites are those vehicles destined to circle around a celestial body, whether it be the sun or the moon or any other celestial body, and have only gravity as their moving force. Free vehicles are those whose trajectory is variable, or, rather, those that do not adopt as a center any celestial body, and that use a motive power other than that of gravity.¹¹

⁸ "An aircraft cannot be validly registered in more than one state, but its registration may be changed from one state to another." (Art. 18, Chicago Convention, 1944).

⁹ "Aircraft have the nationality of the state in which they are registered." (Art. 17, Chicago Convention, 1944).

¹⁰ ". . . les satellites qui les vont parcourir (the routes of circumnavigation around our own planet) appartiendront légalement à la nation, ou au groupe de nations qui les auront réalisés" (Space Flights Problems; Fourth International Astronautical Congress, Zurich, 1953, p. 221; "Programme d'action," by Prof. Gen. Grocco, Rome).

¹¹ There is also established a classification of free vehicles: "En ce qui concerne les engins c'est-à-dire les aérodyncs ne portant pas des pilotes humains deux classes sont à distinguer au point de vue mouvement:
-Ceux du genre V-1 volant comme des avions.

-Ceux du genre V-2 communément appelés balistiques ayant après une période plus ou moins longue de téléguidage une trajectoire assimilable à l'échelle près à celle

It is important to note the type of power they use. It is very possible that a free vehicle may move around a celestial body; in this case its trajectory would be merely circumstantial, capable of being changed at will.

It is also true that a satellite might possess motors that would enable it to change its orbit and even return to earth. The difference lies in its main purpose, and a satellite's purpose is to circle around a celestial body.

Besides these two types of vehicles, there are others that cannot be classified as either of the above, and have characteristics that require a special ruling. These are the space stations, which have, on one hand, characteristics in common with satellites, when it comes to being bases that use the force of gravity; and on the other hand, of free vehicles, when these are mobile bases.

In spite of these characteristics in common with satellites and free vehicles, they should be dealt with separately, because of the peculiarities of their legal ruling.

Only those vehicles that are destined to navigate in space above the atmosphere can be called space vehicles. We exclude airplanes and aerostats.

With regard to aerostats, there has been a discussion in connection with the launching of balloons under the operation "Moby Dick."¹²

These balloons were launched by the United States for meteorological observations. They made long flights at considerable height. A great number of them flew over the U.S.S.R. and some of the allied countries, provoking protests.

The problem was to determine if the altitude at which they were flying was above the air space of the territories flown over. We shall not enter here into the discussion, but if these balloons were considered to be flying above air space, we would have to conclude that they are space vehicles, which is absurd.

Actually, balloons need atmosphere to be able to go up, and if they reach a certain height, it is because there is atmosphere there; and air space extends to the point where atmosphere ends. Therefore, balloons, even those of Operation "Moby Dick," cannot be considered space vehicles.

d'un projectile d'artillerie" ("Mission et organisation de la défense aérienne de l'Occident") *Revue de la Défense Nationale* Paris, Nov. 1957, p. 1692.

¹² For a study of Operation "Moby Dick" see: Bin Cheng "International Law, and High Altitude Flights: Balloons, Rockets, and Man-made Satellites"; and Lloyd Mallan: *Men, Rockets and Space*, p. 151; also: "United States replies to Czechoslovak Charges Concerning Free Europe Committee Balloons," *Bulletin of the Department of State*, Washington, June 16, 1958.

Chapter II

The Study of Satellites

Artificial satellites are space vehicles destined to circle around a celestial body, using the force of gravity.¹

The importance which satellites will have in the future of interplanetary navigation justifies their being studied independently.²

In fact, their ability to navigate at a height where there is no air to serve as a brake enables them, in theory and in practice, to continue circling perpetually, without the consumption of combustible matter, and this will have many practical consequences from every point of view.³

A classification of satellites can be made based on their movement with regard to the earth.

It is evident that different phenomena receive different interpretations and treatment in law, and the physical facts reveal the following: a satellite that moves at a height of 36,000 kilometers takes 24 hours to make a complete circle, as the earth takes twenty-four hours to turn on itself. This means that the satellite follows the earth in its movement, thus apparently remaining stationary in the sky, as seen from the earth. This leads us to establish one classification of satellites.⁴

¹ See Jacek Machowski (Professor in Warsaw): "The legal status of unmanned space vehicles," Legal Colloquium of Outer Space, London, September, 4, 1959.

² The importance of rockets for interplanetary navigation is also recognized everywhere: "But the future of aviation is in rockets." (Lloyd Mallan: Men, Rockets and Space, Cassell, London, 1956, p. 98)

³ "Le satellite russe, comme ceux construits actuellement par les américains, est de vie courte. Aux environs de 1,000 Km. elle se compte cependant par années. Par contre, au delà de 36,000 Km. le satellite fait le tour de la terre en 24 heures; les rotations étant identiques, l'engin paraît donc s'immobiliser aux observateurs terrestres. Telle est la grande étape visée par les russes et les américains. A ce moment peuvent être conçus les observatoires spatiaux auxquels rien de ce qui se passe sur terre n'échapperait" (Bilans Hebdomadaires: Possibilités et limites des satellites artificiels," October 19, 1957.)

⁴ Technical studies of satellites, more or less popularized, can be found in the works of:

- A. Ananof: Astronautique, science universelle
- Ch. Garreau: Alerte sous le ciel . . .
- R. Richard-Foy: Voyages interplanétaires et énergie atomique
- P. Rousseau: Les satellites artificielles
- Charles-Noel Martin: Les satellites artificiels
- Willy Ley: Satellites, Rockets and Outer Space

a) Satellites of relative immobility: those that take twenty-four hours to go around the earth, or, in other words, that follow its movement and therefore seem to be always in the same place with respect to the earth.

b) Satellites of relative mobility, those that move about in space, as seen from the earth.

We believe it is evident that different regulations are necessary for these two types of satellites.

A satellite of relative mobility flies over all the countries, while one of relative immobility remains always over a certain country, which will take the greatest interest in this satellite.

A legal ruling on satellites should take into consideration every aspect of their use.

Satellites of relative mobility are especially useful for meteorology, since they can gather observations from all points in space, and so offer scientists a vision of the whole. They will also be very useful for telegraphic (radio) communications and for an eventual plan of aerial inspection. For this purpose the U.S. has initiated the launching of its satellites Echo, Samos, and Midas.

Satellites of relative immobility present a special interest. They can be used as intermediate stations in flights through outer space,⁵ for the surveillance of vast expanses of land, as "relays" for television, etc. .⁶ In fact, the possibilities for the use of all these satellites cannot yet be determined,⁷ and the various activities require different legal treatment as well as special rulings.

Having made this classification, however, we believe that it establishes categories that are too absolute.

An improvement in technology may make it possible to endow satellites with motors which would give them their own power, independent of gravity, so that they could change their orbit. Thus a satellite of relative immobility could become a mobile satellite,

-Wernher von Braun and Willy Ley: Die Eroberung des Weltraums, Fischer Bücherei, Frankfurt and Hamburg, 1958

⁵ "Il appartient au comité T on Pirquet, d'établir que la station spatiale, considérée par beaucoup comme un intéressant accessoire, est en fait la clef des voyages interplanétaires: la station, une fois établie rendrait toutes choses relativement aisées (Willy Ley: Vers la conquête des mondes, p. 266).

⁶ Two Soviet engineers, Messrs, Droujkin and Sorine, have written in a scientific diary that it is now possible to use an artificial satellite as a television "relay" . . . placed at a height of 36,000 kilometers, the satellite could insure the regular transmission of broadcasts from the TV center of Moscow to all the eastern hemisphere, from 82° latitude north to 82° latitude south. (See la Croix, Paris, July 31, 1958, p. 5). The launching of "Telstar" confirms those predictions.

⁷ Ships and planes will be able to calculate their position, thanks to the satellites, with a margin of error of 400 meters. (See Le Monde, March 26, 1959) .

either by dropping to lower zones in space, or simply by an increase in velocity. The opposite could also take place. A mobile satellite could rise to a height of 36,000 kilometers and become immobile, as seen from the earth.

The problem that comes up is that of determining what ruling would be applicable to those satellites which change in nature. Three different solutions can be offered:

- a) Consider that one status continues, while the other is accidental.
- b) Consider that the status changes with the situation.
- c) Consider that each status presents characteristics sufficiently individual so that a new status can be created.

The second solution seems to us to be the most appropriate. Actually, the regulation refers less to the satellites themselves than to their functions, and if this changes, the regulation should also change.

At any rate, the general rules which refer to the legal status of satellites in general would retain their obligatory effect; for example, rules on nationality, ship-board papers, etc. What is lacking is to complete the necessary formalities when a change in function entails as a consequence a change in the obligations that this function embodies-in other words, its legal status.

Another problem that might come up is that of free vehicles that become satellites. In short, all that has been said above regarding satellites is valid for free vehicles that become satellites.

There remains for us to make an observation on satellites whose transmitting apparatus ceases to function. Most authors are in agreement that they should be destroyed. The reason for this is the danger that they present to navigation, since they could no longer be localized. The report of the Committee on Space, in 1959,⁸ dedicated one of its paragraphs to this question, and since then several systems have been studied to annul this danger.

Book 111

Responsibility and Control

Chapter I

⁸ See Doc. A/4141. Consult also, for general information on the regulation of satellites, R. H. Mankiewicz: "Regime et conditions d'exploitation des engins spatiaux," *Rev. de droit contemporain*, Dec. 1960, pp. 23-52; D. Poulantzas: "The Legal Status of Artificial Satellites," *Revue hellenique de droit international*, 1961, p. 225.

Responsibility in Cosmic International Law

Section I

General Examination of Responsibility in International Law

Paragraph I. The concept of Responsibility.

International responsibility is an institution in accordance with which, when a violation of international law is committed, the state that has committed this violation must make amends for the moral damage (satisfaction) or material damage (reparation) caused.

It is easy to determine, from this definition, the conditions for international responsibility:

1. Violation of international law;
2. That this violation be imputable to a state;
3. The existence of material or moral damage.¹

In order to determine the existence of international responsibility, we have pointed out as fundamental elements the violation of a law and the existence of a damage, and in this we have shown ourselves to be partial to the doctrine that demands the first condition. But this does not mean that we are finally committed to it, and that our observation of the international scene, above all in the matter of space navigation, does not force us to accept a theory that might prescind the violation of law and base responsibility on the mere fact of the existence of a damage. But we shall devote the second paragraph to that.

With regard to the second condition, it is very clear that it should be imputable to a state,² or, be more exact, to an entity in international law.

Among them we place international organizations, which, because of their present state of development, can no longer be left out

With regard to physical persons, they cannot yet be accepted as subjects of international responsibility, although there are some lawyers who maintain that they can.³ In fact only states can make responsibility effective, demanding it of other states and of individuals aided by states through the use of diplomatic protection

¹ "Une analyse de la notion de délit international permet de découvrir deux éléments: un élément objectif, normalement représenté par une action ou une omission, en un mot par une certaine conduite, et un élément subjectif, résultant de l'imputabilité de cette conduite à un sujet de droit." (R. Ago: "Le délit international," R.C.A.D.I., 1939, 68, 419).

² "La nature et la profondeur des liens sociaux sont telles dans la société actuelle qu'il y a des cas où il est plus juste et plus vrai de résoudre les problèmes de responsabilité internationale en les posant sur le terrain des rapports entre Etats ou, si l'on préfère, des rapports entre patrimoines collectifs" (Paul Reuter: "Quelques remarques sur la situation juridique des particuliers en Droit International Public," Etudes en l'honneur de Georges Scelle, p. 544).

³ ". . . two paths have been followed, starting from the original proposition of Grotius: the one of fault; the other seeking to eliminate entirely the idea of fault, and to make responsibility objective"

Paragraph II The two theories on international responsibility.

Whether the essential condition of international responsibility is the claim of a violation of a law, or whether it simply depends on the existence of a damage, has given rise to two theories that of the fault (a more subtle manifestation of the violation of the law) and that of objective responsibility (still more subtly, the theory of risk), and this has turned into a controversy among internationalists which has some practical effects, but which in general is rather more academic.

a) *Theory of fault*

This theory maintains that international responsibility occurs only when a state has committed a fault against international law, which presents delicate problems, such as that of determining when the fault exists.⁴

Some have tried to avoid this difficulty by saying that responsibility occurs, not from a fault, but from the violation of a rule of law.⁵ This results in the problem's having been turned around, and the question becomes that of determining what rule of law it is that has been violated. Savatier speaks of "un devoir générale de ne pas nuire à autrui,"⁶ the violation of which constitutes a fault.

In general this theory is the one most widely accepted, and to the three fundamental conditions:⁷ a) damage caused; b) violation of a rule of law; c) imputability to

(Clyde Eagleton: "The Responsibility of States," p. 208); Anzilotti tries to solve the problem by saying that "il est besoin de rechercher si cette norme subordonne l'imputation à la faute ou envisage seulement l'existence d'un fait objectivement contraire au Droit International" (Anzilotti: "Cours de Droit International Public," p. 498).

See also M. Seara Vazquez: *El individuo ante las jurisdicciones internacionales (en la práctica actual)*, "The individual before international jurisdictions (in present-day practice)" (Traslator). Report to the Sixth International Congress of Comparative Law, Hamburg, 1962.

⁴ For Savatier it is the principle of responsibility: "La faute est l'inexécution d'un devoir que l'agent pouvait connaître et observer. . . la faute comporte deux éléments, l'un surtout objectif, l'autre plutôt subjectif, l'imputabilité à l'agent" (René Savatier: *Traité de la responsabilité civile*, p. 5).

⁵ "Au fait illicite, c'est-à-dire, en formule générale, à la violation d'un devoir international" (Anzilotti: *Cours de Droit International Public*, tra. de la 3e Ed. ita; p.467).

⁶ "Reste le cas où la faute consiste, sans violation d'aucun devoir légal, ou contractuel, ni aucun devoir moral plus particulier, à porter à autrui un dommage volontaire ou d'imprudence. Nous n'hésiterons pas alors à expliquer la faute par l'existence d'un devoir général de ne pas nuire à autrui" (René Savatier: *Traité de la responsabilité civile*, p.9)

⁷ "Y. Qu'un préjudice matériel ou moral ait été causé.

"2. Que ce préjudice se soit produit à l'encontre du droit des gens coutumier ou conventionnel.

"3. Il faut que le fait dommageable imputable à son auteur, qu'il résulte de sa libre détermination" (Marcel Sibert: *Traité de Droit International Public*, p. 310).

a state; others at times are added, such as, for example, that there exist "au profit d'un Etat,"⁸ or, in addition, "l'éuisement de la voie interne". Louis Delbez speaks of the illicit act and of fault committed by a state,⁹ but we cannot see what difference he finds between "acte illicite" and "faute." At any rate he understands that the condition of fault is subject to controversy and is not always accepted.

Kelsen, with a broad and realistic criterion, enumerates all the cases that might give rise to responsibility, and, although he does not say so expressly, when he admits that responsibility exists as long as there is a damage, he agrees with the theory of objective responsibility, which he calls absolute responsibility. He makes a distinction between responsibility founded on fault, which he calls "culpability" and that founded on harmful effect, which calls "liability or absolute responsibility."¹⁰

b) Theory of objective responsibility

This second theory, whose development and application began in domestic (internal) law,¹¹ has found no defenders in international law until recently

According to this theory, fault is not alone the cause of responsibility, and the mere fact of the existence of a danger creates the obligation to make amends. This is what has been called objective responsibility, and it started a great deal of controversy among internationalists. It is also known as the theory of responsibility for risk, but that is really a variation of objective responsibility. Whoever creates a risk should be responsible for the consequences. Fundamentally, an examination of the basis of this theory brings us to the former theory.

The theory of fault brought up the problem of determining when there is fault. Fault, it has been said, is the violation of a law of the right everyone has to security. It has been added that it is a failure to comply with a duty—that of not injuring anyone. And this duty is understood in its simplest sense, excluding limitations that might be imposed by subordinating this violation to the will of states. In other words, if a state creates a hazard,

⁸ "1. La responsabilité internationale est imputable à l'état.

"2. Elle existe au profit de l'Etat ou d'une personne de Droit International.

"3. Elle suppose un acte contraire au droit.

"4. Enfin, elle suppose un acte dommageable (Mme Paul Bastid: "Droit International Public Approfondi," Les cours de droit," Paris, 1957-58, p. 376).

⁹ "Pour ne point parler du préjudice (matériel ou moral) ils sont au nombre de trois: un acte illicite, son imputabilité à l'Etat, une faute commise par cet Etat" (Louis Delbez: Manuel de droit international public).

¹⁰ See Hans Kelsen: Principles of international Law, p. II

¹¹ "11. "The damage caused by something that falls or flows from the upper part of a building is imputable to all the persons who inhabit that part of the building." (Chilean Civil Code of 1855, Art. 2328).

it commits a violation of the principle of not injuring anyone,¹² even though it was done involuntarily or accidentally. And here we see a coincidence with the theory of risk: as long as there is a damage, the state that has caused it should make amends.

The theory of risk needs no other rationale. Its legal basis lies in the fact that whoever creates a risk should be responsible for the consequences, because a state might perform an act in conformity with the law, an act whose unforeseen or inevitable consequences cause someone harm.¹³ If the state that caused the harm has carried out the act, it is because it was to its interest to do so, and it should pay the consequences, according to the rule, *ubi emolumentum ibi onus*.

We were saying that fundamentally the theory of risk coincides in its effects with the theory of fault. The latter is the basis of the obligation to make amends in the law granting states the right to be secure and safe from injury, and the former is presented as the *ultima ratio* of the right to reparation. The theory of fault, in its broadest sense—the violation of the general duty to cause no injury to anyone—is merely the theory of risk under another angle.

Of course it is not that simple, and sometimes the theory of fault excuses a state from responsibility, while the theory of risk attributes it to it.¹⁴ Thus, the existence of damage because of accident or a force beyond control would not compromise the responsibility of a state according to the theory of fault, while, according to the theory of risk the state would be responsible.

All of this has a very interesting bearing on responsibility in cosmic international law, since a large number of the accidents that cause damage will be due to fortuitous causes or to a major force.

Paragraph III. Responsibility and International practice.

The study of any legal theory or of any institution entails the absolute necessity of examining real life situations in order to see how it works in practice—in short, to see it in action and measure its effectiveness.

It serves no purpose to enunciate principles or rules of conduct if they are reduced to academic words, devoid of practical meaning. It only leads to the fabrication of doctrines, magnificent dialectical edifices without any practical foundation or use.

¹² "Since law is a social order, regulating the mutual behaviour of men, a sanction is annexed to the conduct of an individual because of the harmful effect this conduct has, or may have, on other individuals" (Hans Kelsen: *Principles of International Law*, p. II).

¹³ "The harmful effect may be brought about by the delinquent unintentionally, or only negligently, and it may be brought about without intention, malice or negligence on the part of the delinquent, by mere accident" (Ibid., p. II).

¹⁴ "Le dommage purement fortuit n'entraîne pas d'ordinaire de responsabilité à la charge de l'Etat. Mais il y a pourtant des cas où il devient responsable d'après le point de vue de la garantie et du risque" (G. Cohn: "La théorie de la responsabilité internationale," *R.C.A.D.I.*, 1939, 68, 209).

For this reason it is of prime importance in the study of international law to examine, along with the theories, how they are observed and what their effective value is.

International law, in fact, is concerned with nations, and those nations are real entities, with their own existence, subjects and objects at the same time of international law. Therefore it is vital not only to make a simple statement of the rule, but to study its practical value and the manner in which it is observed, even though this should take us at times into the field of international relations that depend more on politics than on international law. It is interesting, because, besides showing us the effect and efficacy of the rules, it shows us how these rules respond to reality and gives us a glance at their possible evolution.

Except in unusual cases when it is to the states' benefit to recognize their responsibility immediately, such recognition is always preceded by international conflict, which can be grouped into three cases:

1. Where the very existence of the rule of international law is disputed. This is the most serious case, and it does not happen often. The state that has caused a damage (any violation of a right causes a damage, material or moral) maintains that this right which the injured nation is trying to maintain does not exist. Naturally, if a rule of law does not exist, it cannot be violated.

2. Where the conflict centers on how far the rule extends, that is to say, where the terminology of the rule is disputed by the litigant states. A frequent example is the conflict on the limits of territorial waters. One state may say that its territorial waters extend to three miles and another that they extend to six. In today's conflict between Iceland and Great Britain, the latter does not recognize the former's sovereignty over the sea beyond a limit of three miles. Iceland maintains that she is within her rights in arresting English fishing boats outside of the three-mile limit. England's responsibility will be involved or not, in accordance with whether or not Iceland's rights to the waters are acknowledged.

3. Where the conflict centers on considerations of fact. The rule of international law is admitted by all the conflicting states, but the facts are presented differently. In the case of a violation of territorial waters, one will maintain that it was outside the limits, the other will affirm that the limits have been infringed.

These are the three ways in which states try to extricate themselves from their responsibility.

When a conflict exists, different methods are used to try to resolve it, with the possible following results:

1. It may remain unresolved and become a source of friction.
2. Peaceful means for the solution of international conflicts are resorted to.
 - a) Arbitration, mediation, diplomatic negotiations, etc.
 - b) The International Court of Justice in the Hague, whose decisions are not always respected, as in the case of the straits of Corfu, between Albania and England.
3. War is resorted to.

Previously, the great powers made their rights effective through force, as in the case of the debts of Venezuela. The threat of intervention forced the small states to face up to their responsibilities, while the great powers, because of their strength, escaped this threat.

Today the situation has improved a little in this respect. For one thing, Article 2, Paragraph 4. of the Charter- of the United Nations prescribes the renunciation of war as a means of solving conflicts, and world opinion, in general, supports this declaration..

It has been seen that Franco-British intervention in Egypt, in order to protect their indisputable rights, was condemned by world opinion.

But now, a strange thing has happened. The great powers are more concerned than the small ones about recognizing their responsibilities, naturally, when it does not affect their vital interests.

The reason for this is a matter of politics and prestige. In the struggle to extend their influence throughout the world, the great powers have every reason to present themselves as defenders of law and order, and cannot allow themselves to fail in their responsibilities because of the loss of prestige that this would mean. Thus, all nations, great and small, are more or less in circumstances of equality in this respect.¹⁵

Finally, in the matter of responsibility, political considerations are as important as purely legal considerations, when comes to examine international reality.

For example, the United States quickly indemnified the Japanese fishermen who were burned by radioactive ashes which fell in their boat at the time of the atomic tests in Bikini. But it has not eliminated the ultimate consequence of its responsibility, that is to say, it has not suppressed such tests,¹⁶ because this would be against with Russia. Neither did the latter suspend its experiments, even though radio-activity had reached a dangerous point in Japan,¹⁷ and in Stockholm, after several test were made there, and

¹⁵ "La responsabilité internationale presuppose, comme tout droit, la réalisation d'une certaine égalité, d'une conséquence logique qu'on ne peut refuser d'admettre sans enlever au droit toute son autorité" (G. Cohn: "La théorie de la responsabilité internationale," R.C.A.D.I., 1939, 68, 209).

¹⁶ See Fischer: *Droit International e expérimentation des armes atomiques*, pp. 13-23; and Padilla Nervo: "International responsibility of states for experimental explosions of atomic weapons"; and further Sottile: "Les expériences atomiques et le Droit International."

¹⁷ "Toutes ces résolutions demandent l'établissement d'un contrôle international de l'Énergie atomique, la limitation à des fins exclusivement pacifiques et la prohibition des expériences nucléaires, de la fabrication et de l'utilisation des bombes atomiques et à l'hydrogène. Ce problème est si grave pour l'avenir de la civilisation que, de l'avis de ma délégation, sa solution ne devrait pas préoccuper seulement les grandes puissances militaires. Elle devrait être le souci essentiel de tous les pays, petits ou grands, armés ou non. Les armes nucléaires modernes, lorsqu'elles sont utilisées, ou même expérimentées, ne connaissent pas de frontières." (Declaration of Matsudaira, Japanese delegate, before the Political Commission of the United Nations, October 10, 1957; "Notes et Etudes documentaires," "Documentation française," February 27, 1958, No. 2386, p. 3).

after the United Nations had recommended the suspension of these tests.¹⁸ If she has done so now, it is only for the time being, and for political reasons.

In summary, responsibility is not effective in international practice, except under the pressure of political factors at a certain time, and legal factors are taken into consideration only when there are political reasons to give them weight.

Section II

Responsibility in Air Law

To make a study of responsibility in air law, three different aspects must be taken into consideration

1. In accordance with international conventions
2. In accordance with national legislations
3. In accordance with legal doctrine

Paragraph I. In accordance with international conventions

The new thing, the appearance of aviation as a normal means of transportation, created a fear of the damage that this type of navigation could cause, a fear that later was proved to be unjustified, or, at least, exaggerated.

The first aspect considered in the matter of responsibility in air law was that of damage caused to third parties on the surface.

The first attempt to establish legislation on responsibility in air law comes in part from the International Legal Committee founded in Paris in 1910.

This committee, which met in Frankfurt at its Third Congress, tried to find a solution to this problem. Actually, it was not yet a propitious time to reach a unanimous and more or less clear solution to this question. On one hand, aviation was still in its early stages and problems had not yet arisen, and thus it was difficult to foresee the way in which they would come up; on the other hand, the principles upon which traditional doctrine based responsibility were still exercising their influence.

¹⁸ "Recalling that the Conference has been convened by the General Assembly of the United Nations in accordance with resolution 1105 (XI) of February 21, 1957;

"Recognizing that there is a serious and genuine apprehension on the part of many states that nuclear explosions constitute an infringement of the freedom of the seas;

Recognizing that the question of nuclear tests and production is still under review by the General Assembly under various resolutions on the subject and by the disarmament Commission and is at present under constant review and discussion by the Government concerned, decides to refer this matter to the General Assembly for appropriate action."

(Resolution adopted April 27, 1958, on the report of the Second Committee in connection with Article 2 of the Convention on the High Seas, Conference of the United Nations on the Law of the Sea.)

The first important international agreement was the Convention of Rome on May 29, 1933. This Convention declared itself frankly in favor of objective responsibility:

"The damage caused by an airship in flight to persons or goods found on the surface on the earth demands the right the danger exists and that it comes from the airship."¹⁹

It was evident that there was good reason that responsibility should be understood in its broadest sense.²⁰

This responsibility existed only if the person injured had done nothing to provoke the injuries.

Additional protocol of the Brussels Conference of 1938 maintained the same principles, which were confirmed at the Conference of Rome in 1952.

Paragraph II. In accordance with national legislation.

National legislatures do not give uniform treatment to responsibility for damages caused by airships to third parties on the surface, and because of this reparations vary with the different countries.

Some are in favor of absolute responsibility: when a damage has been done and it is proved that the airship has been the cause of this damage, there is an obligation to make amends. Others exclude the fortuitous case or the major force. Others, finally, limit reparation to an amount that may not be exceeded.

When the 1933 Convention of Rome was signed, objective responsibility was accepted by the following countries:²¹

Germany	U.S. (17 states	Norway	U.S.S.R.
Bulgari	Finland	El Salvador	Yugoslavia
Chile	France	Sweden	
Denmark	Hungary	Switzerland	

¹⁹ Convention of Rome of May 29, 1933; Art. 2, 1.

²⁰ "La navigation en haute mer, est sans influence sur les Etats que se trouvent à une certaine distance, tandis que par suite de la loi d'attraction, tout ce qui se passe dans la zone aérienne peut avoir un effet sur le territoire sousjacent" (Mme Bastid: Le Territoire dans le droit international contemporain, Paris, 1953-54).

²¹ Andre Kaftal: "La Convention de Rome de 1933 . . ." p. 174.

Today this trend prevails, and in it we find Germany, Bulgaria, Chile, Finland, Hungary, Denmark, Great Britain, Norway, Sweden, Switzerland, Turkey, U.S.S.R., and Yugoslavia, who follow the trend of the (onvention of Rome of October 7, 1952.²²

Naturally, the responsibility of a state does not arise, in air law, solcly from damages to third parties on the surface of the earth.²³ There are many other cases which may be the cause of liability.

The majority of conflicts come from violation of air space, over which the underlying country is sovereign, as •vas clearly established in the 1944 Chicago Convention, Art. 3, c, and Article 9, a. The violation of this convention, or of any other international agreement, entails liability.

Paragraph III. In accordance with legal doctrine

Doctrine has been almost unanimously in favor of objective responsibility in the matter of air law, which is perfectly reasonable, considering that it is the only theory that offers a real guarantee that acts a automatically

Some hesitate to call it objective responsibility and prefer the name responsibility for risk, which is basically the same thing

In fact, as long as a state has an airship in flight there is a hazard, and it should be responsible for the consequences Ripp and Maurer have gone on record in favor of this, and so have Rohler and Serfatti.²⁴

For Anzilotti responsibility is based solely on the relation of the causality that exists between state activity and an action contrary to international law. If the fact of creating a risk is considered contrary to international law, we can place Anzilotti among the defenders d the theory of risk

Pepin holds the same thesis and repeats almost literally Article 2, I of the 1933 Convention of Rome.²⁵

Most authors who decide to accept the theory of risk, howeve, class it as an exceptional theore,²⁶ that can conveniently fill the gaps in the theory of fault or that of the violation of the law.

²² 22. J. Lacombe and Saporta: "Les lois de l'air," Paris, 1953.

²³ A. Kaftal: "The Problem of Liability for Damages Caused by Aircraft on the Surface," Journal of Air Law, 1934, p. 179.

²⁴ Andre Kaftal: "The Convention of Rome of 1933. . ."

²⁵ "Pour qu'il y ait droit à la réparation il suffit que le dommage existe et qu'il provienne de l'aéronef" (Pepin: "Le Droit Aérien," R.C.A.D.I., 1947, ql, 481; p. 518).

²⁶ "nous en méconnaissions pas (en partant de la notion du risque, dans sa note sur l'arrêt Regnault-Desrozières) les services qu'elle peut rendre, comme théorie exceptionnelle et de complément, dans des hypothèses où les garanties de la théorie des fautes en sont pas

This theory of risk is actually nothing new, since basically it is merely a transposition to air law of principles already accepted in private law expounded by doctrine,²⁷ and appearing in nearly all civil codes the world over.²⁸

A way had already been opened for in it administrative law, and from there to acceptance in air law was but a step.

Section III

Responsibility in Cosmic International Law

Paragraph I. Problems that might arise from interplanetary flights from the point of view of subjacent states

The threat that space navigation poses to all the countries in the world has been greatly exaggerated. Undoubtedly certain dangers exist but we do not believe they are any greater than those posed by aviation and no one is frightened by these.

The study of the damage that space navigation might occasion implies a study of what damages are possible. For this we must make a distinction between satellites and rockets whose destination is beyond the earth and those satellites and rockets destined to return to it.

The justification for this distinction becomes clear when one tries to determine the voluntary nature of the damage. It is in fact presupposed that rockets and satellites whose destination lies outside are not to be excepted to fall to earth, and if they do, it is an involuntary action, attributable to a major force or an accident.

The I.R.B.M. or I.B.M.²⁹ rockets launched must by their very nature fall on the territory of a state or on the high sea, and in this case, although there may not have been a formal purpose of causing damage, the risk has been accepted, and one might call it rash imprudence

No state has the right to launch aircraft without a pilot into the territory of another state, and this was clearly determined at the 1944 Chicago convention. If it does so it

suffisantes" (Hauriou, cité par Kuo Yu: "Quelques aspects nouveaux de la responsabilité sans faute de la puissance publique," p. 103).

²⁷ "La responsabilité civile est l'obligation qui peut incomber à une personne de réparer le dommage causé à autrui par son fait, ou le fait des personnes ou des choses dépendant d'elle." (René Savatier: 'Traité de la responsabilité civile,' p. I).

²⁸ We have come a long way since Gentili, Grocio, and Vattel enunciated the theory of fault. The change in circumstances leads us to the affirmations expressed above. It is vital always to keep in mind the evolution of law, which cannot accept rigid or crystallized concepts. On the theory of fault, see M. Reuter: "Droit International Public," Collection Thémis, Paris, p. 134.

²⁹ I.R.B.M.- Intermediate Range Ballistic Missile.
I.B.M.- Intercontinental Ballistic Missile.

commits a violation of international law, and if, on top of this, it causes damage, it incurs liability without a doubt

The problem of the use of the high seas for rocket tests should be treated with great care. On one hand, there is no doubt that they constitute a serious threat to air and maritime navigation, and, when they prohibit the use of extensive areas of ocean, they transgress against the freedom of the seas.³⁰ On the other hand, human progress would be handicapped by any legal shackles that impeded such experiments

In the present state of international law, it is incontrovertible that a prohibition to navigate a certain area of the high seas is an illegal act. The attempt to integrate these tests with maneuvers of the navy which reserves a zone for its target practice cannot escape criticism.

1. The maneuvers of the navy require a very limited zone and for a short time only.

2. The range of weapons of war vessels is limited and there is no danger of their causing damage beyond the reserved zone, while rockets must cross other extensive areas to reach their reserved zone, and there is always the possibility of a failure or in propulsion which may cause irreparable damage.

The U.S. made no protest against the Russian tests of January and April, 1960 nor of those of 1961 and 1962, alleging that she had no legal basis for protest.³¹ We believe there was another reason: the desire not to set a precedent which could later be used against her. However, there were protests from other states. A spokesman of the Japanese government announced on January 8 that Japan reserved the right to claim indemnization for any damage received or loss suffered as a consequence of the test in the Pacific, and added that Japan had an important fishing fleet in the central zone of the Pacific (West of the Palmyra Islands) and in the name of freedom of the high seas protested against the use of this area for rocket tests. On January 12 the Japanese government unanimously approved the proposal of Prime Minister Nobusuke Kishi to send a note to the Russian government. In this note Japan emphasized that the "test zone was in the high seas, and she reserved the right to make any representation and to present any claim for indemnity."³²

³⁰ 30. On the night of January 7, the TASS agency broadcast a note announcing that the U.S.S.R. would proceed to make some rocket launching test. The fall of the rockets would take place in the Pacific in a zone bounded by the following coordinates

Latitude North	Latitude West
9°6'	170°47'
10° 22'	168°22'
6°16'	166°16'
5°3'	168°40'

This zone, rectangular, 500 Kms. long and 300 Kms. wide, was banned to navigation from January 15 to February 15, 1960.

³¹ Senator Mike Mansfield asked that the U.S. also protest to Moscow, but his petition was accepted with reservation by the State Department and publicly criticized by Senator Case (Rep.) and Congressman Brooks (Dem.) (Le Monde, January 13, 1960). For a more complete study of this theme, see Book IV Chapter V.

³² See Le Monde, January 13, 1960.

Finally, the Commission on International Law had already made an express prohibition of such acts.³³

The United States also violates international law by shooting rockets over the Atlantic from Cape Kennedy, and although they are launched over the high seas, this is no excuse, since the liberty and safety of all navigation should be respected, not to speak of the danger which, however remote, is no less certain, that rockets may pose to air navigation.

What would happen if a radio-directed rocket lost control or fell within the territory of a state? Such a thing has already happened. A rocket landed in a Brazilian forest. There was no damage or, at least, it was not made known, and world opinion was not aroused, but one can imagine what would happen if, instead of landing in the forest, it had fallen on Rio de Janeiro.³⁴

In this case, the legal problem would have had an easy solution. The United States would have violated a rule of international law, Article 8 of the Chicago Convention. As a result, damage would have been done, and in consequence, the United States would be liable. It could not be said that the damage was done voluntarily, but it could be said that there had been rash imprudence on the part of the U. S.

Not every case is as clear as this, and there is another series of problems that could come up such as that of the destruction of a satellite by a state other than the one that had launched it, and the interference that the transmitter of a satellite might cause to the transmitters or receivers of the underlying states. In short, it would be impossible to foresee all the possibilities from a general standpoint and in the realm of basic principles.

Paragraph II. Possible applications of the theory of fault or of the violation of the law.

Once space vehicles have been launched, there are two possibilities: it may either go beyond the earth's range of magnetic attraction or it may fall to earth. In the first case there is no problem. The vehicle will move in cosmic space, where concrete rules do not yet exist, and consequently cannot be violated.

Imagine the highly improbable, but still possible, case of a collision between satellites. Who would be responsible? In the absence of regulation, it would not be possible to determine who would be to blame for the collision.³⁵ Even though it were not

³³ "No state may endanger the safety of life at sea by issuing any regulations which are inconsistent with the regulations approved by a majority of sea-faring States." (Commission on International Law; Meeting at Geneva in 1955).

³⁴ "Mr. Dulles in his Press Conference: In the main, it is a recognized practice to avoid putting into the air anything that could interfere with any normal use of the air by anybody else." (Bin Cheng: "International Law and High Altitude Flights: Balloons, Rockets and Man-made Satellites"; International and Comparative Law Quarterly, London, July 1957, pp. 847-505).

³⁵ "Il est absolument nécessaire qu'un accord international fournisse les moyens d'une telle réglementation. Un tel accord devra certainement prévoir que l'Etat ayant lancé un satellite, sera

clearly established that the destruction was voluntary, there still exists, at least, in defect of a detailed ruling, the principle of not injuring another. If the state that has caused the voluntary destruction of a satellites or rocket cannot present extenuating circumstances in its favor (a case of necessity, deense against aggression, etc.) it should be liable for its action.

It is also possible that a space vehicle might use a transmitter that causes interference in another transmitter on earth. Here, evidently, the state that has launched the vehicle would be liable for failing to keep the agreement on the division of frequencies, but this is not a problem which depends exclusively on cosmic international law. However, a new division of frequencies would be needed to be used in interplanetary space.

Let us now examine the vehicles that might fall to earth. The theory of fault, or that of violation of law, is shown here to be, to a certain extent, insufficient.

Satellites fall to earth because of the force of gravity, and they disintegrate in the upper layers of the atmosphere; and it is most probable that they are completely destroyed and unable to cause any damage.

But this does not mean, in our opinion, that no responsibility exists. In fact, if the satellite disintegrates, it is because it has entered the upper layers of the atmosphere; well, according to the Paris Convention of 1919 and the Chicago Convention of 1944, states have sovereignty over the atmospheric space about their territory,³⁶ and the moment a satellite enters this space, it commits a violation of the sovereignty of the underlying state,³⁷ and furthermore, it infringes the rule prohibiting the launching of vehicles without a pilot. And even though it may cause no material damage, a moral damage has been produced that exacts reparation.

If the satellites or rocket does not disintegrate completely and falls to earth, causing damage, the state that has launched it has added reason to make reparation for the damage caused

From an examination of these cases we can draw the conclusion that in general violation of the law is sufficient to entail the occurrence of liability. It is important, however, to keep in mind one thing; no satellites that have been launched so far, even

responsable par la suite, de sa bonne conduite internationale" (Propositions de desarmement adoptées par le Comité Politique des Nations Unies, 6/II/1957).

³⁶ "The contracting states acknowledge that every state has compelle and exclusive sovereignty over the air space above its territory." (Article I, Chicago Convention, 1944).

³⁷ "In like manner, responsibility on the part of the state launching the satellite would arise if by chance it should not be able to maintain its flight and in entering the atmosphere it should fail to burn out and should fall upon the territory of another state and injure persons and destroy property. Professor Quincy Wright raised the question of liability without fault; but it would seem that the fault was obvious and he suggested that the principle of sic utere tuum would probably be applied." (C. G. Fenwick: "How High is the sky?" American Journal of International Law, January, 58, Vol. II, No. I, p. 99).

thought they have fallen on territories of various states and have thereby committed violations of air space, have aroused protests on the part of the injured states.

Thus, when Khrushchev claimed from the United States the remains of a sputnik which it was said had fallen in Alaska, this claim was an implicit acknowledgment of the fact that American air space had been infringed; but the U.S. did not bring up the question of reparations due for this infringement, and confined herself to rejecting the Soviet claim.

An examination of all these problems suggests to us the possibility that the idea of sovereignty may be developing limitations and that Article 8 of the Chicago Convention may be beginning to undergo a process of "desuetude."

Article 8 of the Chicago Convention does not prohibit the launching of unpiloted craft upon the territory of a state absolutely, but only when it is done without "special authorization from said state, and in accordance with the terms of said authorization." In other words, a state may authorize the launching of unpiloted aircraft over its territory, but it is obliged to take all necessary precautions to ensure that this launching does not constitute a danger to civil aircraft.

From a study of this article we can deduce that:

1. No state may launch unpiloted aircraft on the territory of another state without obtaining previous authority from the latter.

2. No state may launch unpiloted aircraft on the high seas, in the first place because the high seas do not form part of the territory of any state, and consequently no particular state may authorize launchings over it, and in the second place, because the danger it implies to air and maritime navigation is present and inevitable.

In spite of all, we have seen how the absence of protests on the part of third states is beginning to bring about the derogation through desuetude of Article 8 of the Chicago Convention.

This cannot help having consequences. If states are permitted to launch unpiloted aircraft, this is an acknowledgment of their right to do so, and if in the exercise of this right they cause damage, how is their liability to be founded on violation of law? The use of a right (the right to launch unpiloted aircraft) cannot be made a cause of liability.

It may be objected that when the exercise of a right causes damage, it is no longer a use, but an abuse. We do not consider this objection valid, because if the faculty of states to launch satellites or rockets is acknowledged, the fact of their launching constitutes a proper and normal use of said right, and it cannot be said that there has been an abuse.³⁸

³⁸ Furthermore, the theory of the abuse of rights seems absurd to us, because as soon as there is an abuse, the rights no longer exist.

It would be relatively easy today to base liability on the idea of fault or the violation of law.³⁹ The U.N. adheres to this, and insists on recognizing "la faute comme condition nécessaire de la responsabilité"⁴⁰ but it seems to us that if we were to observe the evolution of numerous principles, we would be forced to resort to liability for risk, even though it only exists at present as a theory of complement,⁴¹ and we suggest that its application be made with all the prudence and reservations possible, since we are dealing merely with an auxiliary theory that may be used in a very limited number of cases.

Paragraph III The necessity of accepting the theory of risk as a theory of complement

The possibility of a space vehicle's causing damage is very evident, and the only way to avoid it would be to prohibit its launching. But no one thinks that this would be acceptable, since it would place an obstacle in the way of the progress of science, and, furthermore, all states have tacitly accepted said launchings to date. Thus, the launching of space vehicles is beginning to be considered a right of states, even though this right means a limitation of the sovereignty of other states over their air space. In fact, when satellites go up, they cross the air space of several states. If this violation is given consent, it amounts to an acknowledgement that other states have the right to commit it, and for this reason alone they cannot protest later that they have suffered an injury in violation of international law. It cannot be established unless it is based on the violation of a right taken in its broadest form of acceptance: the right not to be injured.⁴²

³⁹ "It would seem equally clear that the non-consenting underlying state would have ample grounds for protest against a violation of its territorial airspace. Further, in the event of surface damage, the underlying state would have recourse to traditional legal principles designed to secure protection against direct or accidental injury by other states" (Myres McDougal: "Artificial Satellites: A Modest Proposal," American Journal of International Law, January 1957, V. 51, No. 1, p. 76).

⁴⁰ (Examen d'ensemble du Droit International, en vue des travaux de codification, de la Commission du Droit International. Mémoire du Secrétaire Général, 1949, p. 62). This memorandum reads as follows (p. 63): "A propos de la codification du droit relative à la responsabilité des Etats, d'autres questions devront être examinées, notamment l'interdiction de l'abus des droits."

Evidently no violation can be found in the launching of a satellite, or in its fall either. There is, however, another paragraph that could be used (p. 62): ". . . quels que soient les cas dans lesquels la responsabilité d'un Etat est mise en cause . . . ou du fait de ne pas avoir empêché l'utilisation du territoire national comme base d'activité nuisible aux intérêts légitimes d'Etats voisins . . ."

Of course, if launching is considered injurious to neighboring states, we shall find here grounds for compromising the responsibility of the launching state, because if its responsibility is compromised by not preventing the use of its national territory as a base for injurious activity, there will be greater reason to compromise it if the state itself enters into such injurious activity.

⁴¹ "Nous ne méconnaissons pas (en partant de la notion de risque, dans le note sur l'arrêt *Regnault-Desrozières*) les services qu'elle peut rendre, comme théorie exceptionnelle et de complément, dans des hypothèses où les garanties de la théorie des fautes ne sont pas suffisantes." (Hauriou, cité par Kuo Yu: "Quelques aspects nouveaux de la responsabilité sans faute de la puissance publique," p.103).

⁴² "La responsabilité est le corollaire nécessaire du droit. Tous droits d'ordre international ont pour conséquence une responsabilité internationale." (Huber, quoted by Pavlos Alexandrov Zannas: "La responsabilité internationale des Etats pour les actes de négligence," p. 19).

But in our opinion, there is no need to resort to such complicated arguments, and the theory of risk, not to speak of objective responsibility, is the most applicable. He who creates a risk must be responsible for the consequences.

A state launching a space vehicle, whether it be a satellite or a rocket, poses a threat to all nations. It commits no violation of international law, since its right to undertake the launching is acknowledged. But if it causes an injury, it should make reparation.⁴³

In air law, the right to reparation appears once an injury has been caused and it is established that it proceeds from an air vehicle.⁴⁴ By analogy, which seems to us sufficiently justified, the same principle could be applied to space vehicles, and an article could be conceived in these terms:

"The damage caused by an astroship in flight to persons or goods on the surface confers the right to reparation for this reason alone, that be established that the damage exists and that it was caused by the estroship."

One problem of responsibility is that of determining whether the damage exists and whether it should be taken into consideration.⁴⁵

Up to now, the satellite launching enterprises have been national and have followed an established plan. Under these circumstances it is not difficult to attribute liability to the state for all the injuries caused. But it can easily be conceived that when space navigation reaches a higher degree of development, other more complicated and varied relationships might appear, and in these relationships it will be necessary to differentiate between those launching enterprises that depend on and are attributable to a state and those that are strictly private. That is to say, when individuals act in their capacity as individuals, and not as agents of a state, the responsibility of the state will not be compromised.⁴⁶

⁴³ 43. "L'Etat ayant lancé un satellite sera responsable par la suite de sa bonne conduite internationale." (Proposition de désarmement adoptée par le Comité Politique des Nations Unies, 6/II/1957).

⁴⁴ "The damage caused by an airship in flight to persons or goods on the surface confers the right to reparation for this reason alone, that it be established that the damage exists and that it was caused by the airship." (Convention of Rome of May 29, 1933. Art. 2, I).

⁴⁵ "The real difficulty often arises when it comes to determine what "prosubjecta materia" is deemed to constitute an injurious act . . . When the case is of serious consequence and the injury is established by clear and convincing evidence." (Bin Cheng: "International Law and High Altitudes Flights: Balloons Rockets, and Man-made Satellites").

⁴⁶ "It is generally accepted that the strict rules of agency do not apply to the relations between a government and its officials to the extent of making the government internationally responsible for all the wrongs committed by its official personnel acting in that capacity" (Freeman: "Responsibility of states for unlawful acts of their armed forces," (Freeman: "Responsibility of states for unlawful acts of their armed forces," R.C.A.D.I., 1955, 88, 267).

The U S S R developed in discussions held in the United Nations in the course of 1962 a stand against the participation of private individuals in the field of space exploration, which, according to the U.S.S. R, should be reserved exclusively for states. According to a comment by Zhukov, "The extension of such private enterprise into outer space could result in a substitution of international cooperation by private capitalist competition and other undesirable consequences".⁴⁷

In the long run, in the matter of responsibility as in everything that may be said on cosmic international law, we must wait for particular problems to come up to be able to establish definitive solutions.⁴⁸

All that has been said up to now has concerned merely general ideas based on pure hypothesis, taking into consideration, however, whatever is useful in theory, national legislation, and international agreements.

Chapter II

The Control of Space Vehicles

Section I

Appraisals of the Problem-Preliminary Study

Paragraph I. Distinction between regulation and control.

Before beginning the study of the control of space vehicles, we must make a distinction between regulation and control. Control refers to a material and to highly determined purposes, while regulation is the aggregate of rules dealing with navigation in space, considered as a whole.

⁴⁷ See Zhukov: "Practical Problems of Space law," International Affairs, Moscow, May, 1963, pp. 27-30. See also Robert D. Crane: "Basic Principles in U.S. Space Policy," in Federal Bar Journal, Summer, 1962; and by the same author: "Soviet Attitude Toward International Space Law," American Journal of International Law, V. 56, 1962, pp. 700-704.

⁴⁸ "Basically, it is the position of our government that the law of space should be based upon the facts of space and that there is much that we have to learn about the conditions existing in space before we shall be in a position to say what shall be the legal principles applicable thereto" (Major aspects of the problem of outer space"; Loftus Becker, Legal Advisor, Bulletin of the Department of State, Washington, June 9, 1958, p. 962). De RodeVerschoor brings up the problems of international responsibility in space in several works, among them "General view on the problems studied and still to be studied in connection with the damage caused by space-craft," Il diritto aereo, No. 4, 1962, pp. 337-343.

Space navigation implies a series of complex and diverse relationships of varied nature, such as the attribution of nationality to vehicles, commercial operations, or their use from the military standpoint. Regulation refers to the sum total of all these relationships and gives them general consideration. Control, however, refers to a concrete point, that of establishing certain limitations, certain conditions on navigation, for the simple safety of the nations.

The matter may seem too limited, but we believe it to be of great importance, since it is a problem that has preoccupied all the chancery offices in the world and has been discussed several times at the General Assembly of the United Nations.

It is very possible that the plethora of letters, conferences, speeches, etc., on this subject have their origin in one fact, which is that man is confronted with a new situation—the possibility of the use of space for military purposes. Mankind has not adapted itself yet to this fact, this new situation, and the result is boundless confusion.

In the course of history, every new means of destruction invented by man has been questioned as a licit means of warfare, because people have been terrified at the thought of the disastrous consequences of a conflict in which such military weapons could be used. But always, in the end, the weapons have been put into use.

On every question of disarmament and the exclusion of weapons that are too destructive, with the exception of chemical warfare, on which, by some miracle we cannot explain, an agreement has been reached, the lamentations of philosophers, the efforts of politicians, and the conferences of diplomats have been doomed to failure and have accomplished nothing.

People get used to them, and worry only when new weapons appear that are tested in every war for their massive use in future wars.

In spite of all this, it is evident that the use of the atomic weapon combined with space vehicles poses a threat on a scale which makes it absolutely necessary to come to an agreement in this area. The means of destruction in a future war will be so devastating that there will be practically no conquerors and no conquered, only a vast hecatomb in which everyone will have more to lose than to win.

It is this ineradicable fear, this anxiety about security, that is driving the great powers, as well as the small ones, to make an effort to find a solution to the threat. If it has not yet been found, it is because fear of these weapons enters into the game the great powers play in international politics, and this fear is itself a powerful weapon which it is to their advantage to use.¹

¹ "Les risques pris par l'agresseur seraient d'une telle ampleur et ils seraient si largement partagés que le recours à ces armes ne pourrait être envisagé que dans des conditions exceptionnelles (voir que l'on puisse posséder sur l'autre un avantage assez marqué pour décider par les armes, du sort du monde). Lorsque M. Dulles laissait écrire dans "Life" que 'la faculté d'être sur le point d'entrer en guerre sans s'y laisser entraîner est une nécessité' il exprime peut-être cavalièrement, une des vérités de l'ère atomique" (General Pierre M. Galois: "Le Spoutnik ou la guerre impossible" La nef Paris Nov. 13, 1957).

Paragraph II. Political and military importance of space vehicles.

The military importance of space vehicles, satellites as well as rockets (I.13.M. or I.R.13.M.) is indisputable, since they project war from the horizontal plane to the vertical plane in its fullest sense. Attack no longer comes from an exclusive direction, nor from a determined country, but from the sky, with the practical impossibility of determining who the aggressor is, how to intercept the attack, or how to effect immediate reprisal. Technological advances make it possible for us to foresee that in a more or less immediate future a means will be found of annihilating aggressive vehicles before they come close enough to cause damage² but this is still part of the realm of hypothesis.

The military use of space craft is now, however, accepted by everyone. These questions have been obscured by propaganda to such a point that it is impossible to determine exactly what is true and what pertains to pure fantasy.

Thus, in November of 1957, President Eisenhower reassured the American people by saying that Russian artificial satellites held no danger for the safety of the United States.³ Evidently the desire to reassure the American nation mattered more here than the desire to give them true information.

A serious problem which seemed an insuperable obstacle to the use of satellites for military purposes was that of re-entry into atmosphere. There would be no use, in fact in launching a nuclear charge from a great height, if it were going to disintegrate on its return to the atmosphere, before reaching its target. Tests made in the middle of August, 1960, solved this problem completely, as is proved by the numerous orbital flights of piloted satellites.⁴

Apparently the U.S.S.R. had already solved it,⁵ and the U.S. also, with reference to missiles, which was a great step forward in solving the problem of satellites' return to the atmosphere.

² The United States has caused bombs explode beyond the atmosphere, according to a revelation made by Donald Quarles, secretary Adjutant of Defense, in an "anti-missile" experiment. (See *Le Monde*, Paris March 20 and 27, 1959)

³ "Artificial satellites do not constitute in themselves, at this time, a direct danger to our national security." (Message of President Eisenhower to the American people on the role of science in national life, Number 7, 1957); (Translated from author's note taken from "Notes et Etudes Documentaires," "Documentation française," No.2358; 10/12/57).

⁴ Now the problems that concern scientists are something else, and they relate to journeys to other planets.

⁵ "Le 25 Août (1957), l'UR.SS. a annoncé les essais réussis d'une fusée intercontinentale susceptible de transporter une bombe à hydrogène, de se déplacer à 5 000 km.h., de monter à 100 km. d'altitude et de porter à environ 8 000 km. et d'atteindre à l'arrivée une précision de l'ordre de quelques dizaines de kilomètres" (*Revue de la défense nationale, Chronique aéronautique*, Nov. 1957, p. 1780).

All of this cannot help having its effects on international politics and international law. A few years ago, from our observation of the evolution of international politics, we reached the conclusion that in a future war there would be no neutral states, that the world would be divided into two enemy blocs, and that war would be total, with the participation of all nations and, within them, the participation of all inhabitants in military tasks.

Thus, Antonio de Luna, Professor at the University of Madrid, said:⁶ "This war (speaking of the total war) produced by the combination of two factors-national mobilization and industrial revolution-will be total, not only because of the proportion of the population that will take part in it, nor because of the destructive power of the weapons, nor because it will include the entire planet, but also because of the intensive revolution of military technology in relation to the spatial revolution of the 16th century," and went on to say that "the third world war will be for the hegemony of the world."

Reality has proved to be different from all the forecasts of logic. A future war, understood as a total war, would have such disastrous consequences that no state would want to run the risk that its unleashing, would entail, because it would mean the annihilation of all civilization, and the survival of the human race would be in jeopardy.

For the first time in history the human race has within its power the possibility of complete self-destruction, knowingly or unknowingly.⁷ This state of affairs has had the effect of causing states to exert all their prudence toward the avoidance of war. They play with fear and threat, as they have always played, but they draw back when they reach a point that is too hazardous; the skill of politicians consists in enticing the adversary to this point, to force him to draw back.

Total war looms, then, beyond the margin of probability, and international tensions are usually resolved by local, limited wars, which all nations are concerned in circumscribing. And we do not believe that war will be fought for the hegemony of the planet, but for a determined point. Nor will there be total participation in wartime tasks. We have only one reservation to make, and that is whether total war may not come about through a combination of events. This is very possible, but we still accord humanity a certain measure of common sense that will enable it to avoid total war.

From a military viewpoint, space vehicles have gone through a change in strategy, and we can distinguish three periods in this change.

I. Period of the I.R.B.M. (Intermediate Range Ballistic Missiles). Their range being limited, the problem was to place the launching bases as near as possible to the adversary, in order to overcome the difficulties of distance and precision in shooting. The

⁶ This quotation was taken orally at a course given by Don Antonio de Luna, so we apologize if we have not succeeded in getting his exact words.

⁷ "Au surplus, sa réalisation (utilisation militaire du satellite) n'augmenterait guère les dangers résultant de l'existence de projectiles balistiques intercontinentaux, dont l'usage suffirait amplement pour nettoyer complètement notre planète" (Le lancement du satellite russe et ses conséquences militaires," revue "Perspectives," October 12, 1957)..

objective was to encircle the adversary with a ring of launching slopes, and to immobilize him with terror of an attack. This was the period of periferal strategy, now half abandoned.

2. Period of the I.B.M. (Intercontinental Ballistic Missiles), long range intercontinental missiles that can reach any point on earth. Here the concern is to pull back the launching bases to facilitate their defense. The success the U.S. (and Russia, also) has had in carrying out tests with this type of apparatus has made it possible to manufacture them by mass production. This meant the abandonment of close-range tactics, with bases farther away from the target and thus more easily defended, from the standpoint of an attack by land.

We are at present at this stage. The importance of alliances has diminished because of the self-sufficiency of states able to attack other states at any point on earth. Some commentators have spoken of the possibility that this will induce the U.S. to return to her old policy of isolationism; it would be possible if only the military aspects of the problem were considered, but it seems highly improbable when we consider other aspects of the international scene.

3. Period of artificial satellites and astroships. When certain minor problems have been solved, satellites and astroplanes will be indispensable in certain cases, and always very useful:

A. Satellites will be able to serve very varied military purposes.

a) Those of relative immobility can be used as defensive weapons, for surveillance,⁸ and for counter-attack. We do not know what agreements will be made with regard to satellites of relative immobility, but it seems most probable that stationing a satellite over a country other than the one that launched it will be prohibited. At any rate, since this prohibition will have to be limited, it can easily be conceived that, although outside of the prohibited zone, these satellites will be constantly over some determined country.

b) Those of relative mobility will be a constant threat to all states.⁹ Carrying bombs, piloted, or simply provided with an apparatus for surveying what goes on in underlying territories, they will be constantly spying on the land and will make surprise attacks impossible. It is Eisenhower's plan of aerial inspection put into practice, thanks to space navigation and without the need for Russian approval.

B. Astroplanes will have all the advantages of satellites and rockets, once they have been perfected. Not long ago, Von Braun, the father of American satellites, declared

⁸ "Au delà de 36,000 km., le satellite fait le tour de la terre en 24 h.; les rotations étant identiques, l'engin paraît donc s'immobiliser aux observateurs terrestres. Telle est la grande étape visée par les Russes et les Américains. A ce moment peuvent être conçus les observatoires spatiaux, auxquels rien de ce qui se passe sur terre n'échapperait" ("Possibilités et limites des satellites artificiels," Bilans hebdomadaires, October 10, 1957).

⁹ "Un pays capable de faire passer et repasser au-dessus de n'importe quel point de la Terre un satellite dont le poids est supérieur à 500 kg., peut envoyer une bombe, d'un poids au moins égal, à n'importe quel point de la planète." ("Aperçus techniques et militaires sur les Spoutniks"; "Revue de la Défense Nationale," December 1957, p. 1912).

to news reporters that the day was not far off when rockets would be used as a means of transportation, not only for mail and merchandise, but also for troops.¹⁰ This statement may possibly be a bit precipitate, but there is no doubt that some day or other it will be a reality, and then we can imagine what effect these rockets will have on the strategic aspect.

The conclusion we draw from this is that space craft combined with the atomic weapon have introduced new factors into international politics which should be taken into account when studying the international scene.

The situation is extremely perilous, and the measures that must be taken to put an end to it are very apparent.

Paragraph III. the right of states to self-defense.

"All the peoples of the world have the right to peace and security"(Nehru, Nov. 28, 1957).¹¹

When the sky is no longer part of the exclusive sovereignty of any of the subjacent states and artificial satellites cross it in every direction while radio-directed missiles endanger the safety of air and maritime navigation in the test launchings of great powers we might ask ourselves if all the traditional concepts of international law have not undergone a brutal change? in virtue of which the clear violation of the most elementary rules of the right of nations to peace is glossed over by the more or less convenient interpretations that these rules receive.

Until recently the air space of states was inviolable but artificial satellites have put a limit to this inviolability. The concept of inviolability is not attacked. What is said is that air space has its limits and this is true; to contradict it is absurd-the idea of air space with unlimited extension cannot be accepted. The outer limits of air space remain to be defined and it will be extremely difficult for nations to come to an agreement on this question. If the evaluation of these limits were left to the discretion of the states each one would give it an interpretation convenient to its own advantage. without worrying about committing a more or less serious injustice.

There is no doubt that an artificial satellite even though it be stationed at a height above air space may be a threat to the safety of the state beneath it. Those having launched it will not wish to renounce their right to do so and to a certain extent they are right while others will be legitimately concerned about their safety.

¹⁰ See the journal *Astronautics*, p. 10, Nov., 1958; 20th & Northampton Sts., easton, Pa., U.S.A. See fur further, E. Biorklund: "Present and Future of the Politics of Rockets," *Revista de politica internacional*, Madrid, January-February, 1962, No. 59, pp. 137-148.

¹¹ "To a scientist, a 'critical mass' is that minimum amount of fissionable material which may be assembled before nuclear energy can be released. And just as the nuclear physicist can detect in advance that the critical assembly is being approached, so political observers are now aware that a nuclear explosion is in the making in their field also." (*The Economist*; "Radioactive criticisms," May II, 1957, p. 496). see also Franz B. Schick: "Space Law and National Security," *International Affairs*, Moscow, March, 1962, pp. 61-63.

How to reconcile interests so antagonistic? We have on one hand:

1) limitation of states air space;

2) freedom of navigation above this zone of air space. And on the other hand:

1) exclusive sovereignty of the states over their air space;

2) the right to peace and security.¹² We may deduce from this concept the right of subjacent states to prevent all acts which may represent a hazard to their existence or their security. It is evident that the flight of space vehicles over the territory of a state, even above air space, represents a danger, above all if they are carrying atomic weapons. What is needed is a law to control navigation, which should not be permitted indefinite quarter, except above a zone of space where the sovereignty of the underlying state no longer exists, but in which it still retains certain rights. This zone could begin at 36,000 km, since beyond that the principle of the freedom of navigation is superior to that of states' right to security.

In the present state of the development of artificial earth satellites, they end by falling to earth, with all the hazards this entails. For this reason states have a right to prohibit and even to destroy satellites that pose a threat to their safety.¹³ However, even though a state might possess the means to do so, this would not be desirable, because it would hinder human progress. The only possible solution is an international convention that would bring the interests to all the nations into harmony, those that have launched the satellites as well as those whose territory has been flown over.¹⁴

There is a very interesting aspect of the possible uses of satellites, presenting another problem difficult to solve: the possibility that a satellite might carry a photographic television camera in order to spy on what happens within the territory of state.¹⁵

Can a state keep its territory from being photographed? Until now to photograph it would have meant violating the sovereignty of that state, but when a satellite soars so high that it is beyond the zone of space subject to sovereignty, there is no longer any question of violation. Nevertheless we believe a zone should be defined above air space

¹² No. 75. inviolabilité des droits fondamentaux. Les droits fondamentaux d'un Etat ne sont susceptibles d'aucune atteinte sous aucune forme. Convention of Montevideo, Dec. 26, 1933, 5." (Francesco Consentini: "Les principes généraux du Droit des gens," p. 114).

¹³ "Whatever the degree of threat descending satellites may actually pose, it would seem to be reasonably apparent that the state upon whose territory an object was about to fall would be authorized to take whatever measures thought necessary to protect itself from injury. This presumably would include destruction of a satellite at whatever height this might be possible . . . The most obvious support for this action taken for the underlying state is the doctrine of self-defense. It would seem equally clear that the non-consenting underlying state could have ample grounds for protest against a violation of its territorial airspace ." (Myres McDougal: "Artificial Satellites: A Modest Proposal," American Journal of International Law, January 1957, Vol. 51, No. 1).

¹⁴ "On ne peut en effet , contester à l'Etat sous-jacent un droit de police et surveillance sur la portion de l'atmosphère qui surplombe son territoire. Mais ici, tout comme pour la mer territoriale, on s'est efforcé de concilier les incontestables intérêts de l'Etat sous- jacent avec les exigences raisonnables de la circulation aérienne. Cette conciliation n'opérera efficacement que dans le cadre d'une réglementation internationale." ("Code de Morale Internationale," Bruxelles, 1951, p. 43).

¹⁵ For a more detailed study of reconnaissance by satellites, see Book IV, Chapter II.

where the subjacent state should have certain rights, among them the right to prohibit the taking of photographs that might reveal military secrets. However, it would be impossible to prohibit the taking of photographs from above a considerable altitude, if only because there would be no way of controlling it. What has happened that man has not succeeded in adapting himself to new circumstances. And one of the new circumstances today is that the territory of a state can no longer be considered as something private that no one may look at. It is important to see it as something wide open to the curiosity of the whole world.¹⁶

In the long run, this will probably have salutary effects, since it will lead to the acceptance by force of the long-contested matter of aerial inspection, and what could not be brought about by international agreement will be accomplished by a scientific achievement. This should be accepted by everyone, for it will make surprise attacks difficult, if not impossible. It may result in a diminishing of international tension and of the threat of war.

The Chicago Convention authorizes states to prohibit the use of photographic devices on ships that fly over their territory,¹⁷ but for the reason given above we do not think this faculty can be used without limitation, above all when it involves space vehicles.

In short, the state has a fundamental right of self defense because of its independence. This right can be exercised only to guarantee the safety and sovereignty of the state, and it has its limitations. The rule not to injure others is one of the limitations it has to its sovereignty. The rights of each state end where those of others begin.¹⁸ With regard to space rights, it will be very difficult to determine where the rights of states begin and end; for this reason we think it would be advisable to limit these rights a priori, within the framework of a general regulation.

This regulation should, of course, be guaranteed by a multilateral agreement. The most feasible way would be for the United Nations to draft it and offer it openly to all nations for their acceptance.

¹⁶ "Il ne serait justifié de combattre un régime juridique" (with reference to the continental platform) "que l'on considère propre au développement de la Communauté internationale en élevant au rang de principes immuables les règles qui ont prévalu jusqu'à présent. Une science juridique qui s'inspirerait d'une telle conception risquerait de pétrifier l'ordre juridique." (Professor Francois, quoted by Gilbert Gidel: "The continental platform and the principle of freedom of the high seas," "Estudios de derecho internacional, homenaje al profesor Barcia Trelles," University of Santiago de Compostela, 1958).

¹⁷ "Chaque Etat contractant à la faculté d'interdire ou de réglementer l'usage des appareils photographiques à bord des aéronefs survolant son territoire." (Art. 36, 1944 Chicago Convention).

¹⁸ No.76: "L'exercice des droits fondamentaux de l'Etat n'a d'autres limites que dans l'exercice des droits des autres Etats, et dans les dispositions de ce Code ou des traités."
No.78: "Toute nation est souveraine dans sa juridiction . . . cette indépendance et cette liberté en sont pas absolues, mais limitées par l'égalité et l'indépendance des autres."
"No. 94; "Droit à l'indépendance. Tout Etat a droit à l'indépendance . . . le droit de ne pas souffrir et, au besoin, d'empêcher que sur le territoire soumis à sa souveraineté ne soit accompli aucun fait, commis aucun acte qui, directement ou indirectement, implique, ou puisse impliquer, l'exercice de la 'publica autoritas' de l'imperio, de la 'jurisdictio'; par une souveraineté étrangère." (Francesco Consentini: "Les principes généraux du Droit des gens").

Section II

The Realization of Control of Cosmic Space

Paragraph I. The control exercised by states.

After having examined the importance of space vehicles for political and military purposes, and after having considered the right of states to self-protection against the possible menace of space, a right founded on the most elementary postulates of justice, we shall try to find a formula for neutralizing the dangers arising from the development of space navigation that may pose a threat to nations.¹⁹

The first solution that presents itself to us in this problem of the control of space is that each state take the necessary measures to protect itself. It is a most primitive solution, in which each state might avail itself of its rights if it were strong enough to do so. It is the recognition of a legitimate right of defense which could be accepted only if there were not a superior legal order to limit the rights and duties of each state.

When one goes into the study of the value of leaving the control of space to each state, one should lay aside all moral or legal considerations and sticks to the sole question of its efficacy.

A space control exercised independently could not extend beyond the limits reserved for the state, either with full sovereignty or with restricted sovereignty. It could not be accepted in free space, simply because there would be a conflict of rivalries, with no way of judging which state had final authority. It is difficult to conceive of the simultaneous exercise of various sovereignties, often contradictory, operating in space that is common to all with each one having the faculty to control the others. It would be necessary to enter into an agreement between all the states and this in itself would give control an international basis.

On the other hand, the control of the use of space for military purposes entails a series of activities that are not always carried out in space itself. Thus launching bases must also have a place in a system of control.

Now, if control were exercised by states independent of one another they would not have sufficient authority to inspect one another's territories, and launching bases would escape inspection.

Furthermore, the continuation of space investigation on a national basis would keep alive and increase national differences.²⁰

¹⁹ "The instability of the armaments situation can only grow worse if present technological trends continue, and no political controls are devised" (Lloyd Berkner: 'Earth Satellites and Foreign Policy,' *Foreign Affairs*, January 1958, p. 221).

²⁰ "On dit 'les cinq grands' parce qu'ils sont chefs de file atomique. La France est parmi eux. Les nations d'Europe viennent loin derrière." Thus Maurice de Broglie establishes the most recent international hierarchy ("Pour une politique atomique française," *La nef*, March, 1957, p. 81).

The great powers, above all the United States and Russia devote their enormous resources to space navigation and carry on a satellite and rocket race neglecting other aspects of progress of far more immediate practical use.²¹

The small nations fall farther and farther back from the standpoint of technology and economics and thus become weaker and weaker politically in relation to the great powers.

Fortunately, the United States and Russia are far from reaching an agreement. We say fortunately because we can imagine what would happen if they came to an agreement. The result would be a world dictatorship indeed without any opposing force strong enough to maintain a balance of power and see to it that justice be given due respect.

Khrushchev has already proposed that the U.S. and Russia join forces for the investigation and exploration of space and modest plans for cooperation have been made.

However deplorable Russo-American disagreements may be, it is preferable to a separate agreement between them in which no other state took part

The control of space exercised on a national basis would be fragmentary, inefficient and unjust, and would be freighted with other perils

It is therefore necessary to abandon a whole set of legal and political prejudices and meet the new situation with a fresh mentality.

A state's territory is no longer a private possession that can be hidden from the eyes of the world. All the principles that could be brought forward, all the arguments that could be alleged, would be futile. There is no escaping the fact that satellites navigate at a height beyond the sovereignty of the underlying states, and it is no longer necessary to violate sovereignty to take photographs of a state from above.

All of these new problems can be only by international agreement.²²

Paragraph II. The control exercised by the United Nations.

The threat of extinction which weighs upon the national, and the arms race of atomic weapons and missiles²³ can be resolved only by coming to an agreement on

²¹ "The United States must not be drawn into a Sputnik race with the Russians. It should use its economic power in ways that will be of more value" ("American Challenge," *The Economist*, December 14, 1957).

²² ". . . Une question de rapports juridiques nouveaux entre les nations, qui ne pourra être que par des conventions internationales dont on ne peut pas encore prévoir les modalités" ("Programme d'action," by Pr. Gen. Grocco, Rome; *Space Flights Problems*, Fourth International Astronautical Congress, Zurich, 1953).

²³ "The various leaders of the Soviet Union have apparently decided on a course of action that will prove to the world that the U.S.S.R. is ready to assume not only military leadership, but also

disarmament. Such an agreement seems impossible at present, however, and nothing positive will result unless the question of the prohibition of the use of space for military purposes is treated separately. Here an agreement is still possible. The interests of states are not as vital, nor as important, as the reduction of classic, and even atomic, weapons where an agreement seems to be impossible.

The United States and Russia, the two protagonists in the politics of space, proclaim the necessity of an international agreement for the control of space, which would include the prohibition of its use for military purpose and the need for international cooperation in its investigation and exploration.

The U.S.S.R. proposed first a bilateral proposed first a bilateral agreement with the U.S. on disarmament, in which they would the use of cosmic space and the creation of an international organization for the control of missiles and satellites.²⁴

This clear position has since changed, and the international agreement on the use of cosmic space for peaceful purposes is no longer conditioned by a general agreement on disarmament. Nor is there any longer in these projects of resolution presented in the General Assembly of the United Nations any demand to deal jointly with the problem of space and of bases in alien countries.

The United States also realizes the difficulties presented by a general agreement on disarmament and has separated it from the question on cosmic space, where an agreement still seems easy to reach.²⁵

The foreign policy of the United States, which in our opinion is frequently unfortunate from the standpoint of practical achievements, is here completely correct. Since a general agreement on disarmament is difficult, it is urgent to find some remedy for the new menace which looms over humanity, and as long as space navigation is still in an experimental stage, an agreement will be possible.²⁶

Nevertheless, a concession must be made to the U.S.S.R. It is true that an agreement on the peaceful uses of cosmic space cannot be made if there is no control on launching bases of missiles and satellites. But here we find other difficulties created by the U.S.S.R. If this control is to be exercised on military bases in foreign countries, to be

technical leadership. They have drawn two areas: atomic energy and missiles." ("Moon we never made," *Commonweal*, New York, Nov. 15, 1957, p. 170, by James B. Kelly).

²⁴ "Khrouchchev propose de mettre le satellite et toutes les fusées de l'U.R.S.S. sous contrôle international, dans le cadre d'un accord soviéto-américain sur le désarmement" ("Spoutnik et balles de golf," *Perspectives*, October 10, 1957).

²⁵ "Let us this time and in time, make the right choice, the peaceful choice" (Letter from Eisenhower to Bulganin, January, 1958).

²⁶ "With the passage of time, and their continuous growth and refinement the problem of effective international control becomes more difficult." (Loftus Becker, Legal Adviser of the Department of State: "Major Aspects of the Problem of Outer Space," *Bulletin of the Department of State*, Washington, June 9, 1958, p. 962).

effective it should also be exercised over bases situated within the territory of the U.S.S.R. and the U.S. The propositions of the U.S.S.R. should be accepted, but she should also accept the ultimate consequences of her proposition.²⁷

How this control should be exercised is an altogether different problem.

It seems to us that the plan of aerial inspection proposed by Eisenhower is the most logical one. This plan, which has met with opposition from the U.S.S.R., is going to be resolved in an unexpected way. It will not be diplomatic negotiation that will bring us to it, but one simple fact—the advance of technology, which will enable us to fly over the territory of a state without violating its air space. Furthermore, it will not even be necessary to fly over the territory of a state to be able to observe it. It will be sufficient to place a satellite of relative immobility above the territory of one state to be able to see what goes on in a neighboring territory.

It is therefore superfluous to try to impose on the U.S.S.R. through diplomatic means an acceptance of the Eisenhower plan, since she will be forced to accept it *velis nolis*.

The present moment seems the most propitious one for reaching an agreement on cosmic space, an agreement which will become more difficult with the passage of time. The nations of the world have manifested their conformity on this question in the Subcommittee on Disarmament, General Assembly of the United Nations in Khrushchev's declaration, in the declaration of Eisenhower.²⁸

There is general agreement on the necessity of the creation of a Commission on Cosmic Space, charged with the study of the possible problems of space navigation.

²⁷ At this time, Russia has agreed to treat separately the problems of space and those of foreign bases.

²⁸ "Le jour où on multiplierait les engins ou parties de propulseur dans la partie de l'espace que traversent les fusées intercontinentales ou à moyenne portée, celles-ci ne pourraient plus être identifiées par les radar, qui seraient saturés. Les contre-mesures deviendraient alors impossibles.

"Les États-Unis, La Grande Bretagne, La France et le Canada déposèrent, en juillet 1957 une résolution à la 'Sous Commission du Désarmement à Londres':

"'Tout les parties à la Convention sont d'accord pour exprimer que, dans les trois mois suivant l'entrée en vigueur de la dite Convention, elles coopéreront à la création d'un comité technique chargé d'étudier les modalités d'un système d'inspection permettant d'assurer que l'envoi d'objets dans les hauteurs spatiales aura un but pacifique et scientifique.

"'En Décembre 1957, l'Assemblée Générale vota une résolution presque identique. Après, Eisenhower déclara: 'Nous sommes en présence d'un moment décisif. Le temps est venu de ne plus se servir de l'espace pour expérimenter des engins militaires.'" (p.L. Bret: "Le contrôle de l'espace," Revue générale de l'air, Paris, 1958, No.1 p. 3).

Space cannot be controlled by one state or by several states within the framework of a bilateral or multilateral agreement. The necessity for all states to participate is recognized. The United Nations is the organization most appropriate for this task.²⁹

These agreements on cosmic space should include, besides the prohibition of its use for military purposes, a program of international cooperation that would enable all states to participate in the work of investigation.³⁰

There is doubt, it seems to us, that the nations are willing to let an international organization take charge of establishing the control of space. No state has objected to it, and every proposition presented by the United Nations expresses the same intent.³¹

²⁹ "L'Organisation des Nations Unies peut et doit contribuer au règlement des questions de l'interdiction de l'espace cosmique à des fins militaires." (Revue des Nations Unies, Mars, 1958, p. 16).

³⁰ "En vue de garantir, dans toute la mesure du possible, les intérêts et la sécurité de tous les Etats et en vue de développer la coopération internationale dans le domaine de l'étude de l'espace cosmique à des fins pacifiques, le gouvernement de l'Union Soviétique propose de conclure un large accord international qui comprendrait les dispositions fondamentales suivantes:

"1. Interdiction d'utiliser l'espace cosmique à des fins militaires et engagement de la part des Etats de n'envoyer des fusées dans l'espace cosmique que conformément à un programme international établi d'un commun accord."

"2. (Concernait les bases militaires dans les pays étrangers).

"3. Institution dans le cadre de l'O.N.U. d'un contrôle international approprié à l'exécution des engagements visés aux paragraphes 1 et 2.

"4. Création d'un organe des Nations Unies pour la coopération internationale touchant l'étude de l'espace cosmique, qui pourra exercer les fonctions suivantes:

"1. Programme international pour le lancement des fusées.

"2. Investigations sur l'espace cosmique

"3. Réunion et diffusion d'informations.

"4. Coordination des plans nationaux d'investigation scientifique sur l'espace cosmique."

(Proposition of the Soviet government: Revue des Nations Unies, March, 1958)

³¹ "Le représentant des Etats Unis avait déclaré, lors d'une réunion d'un Comité de l'Assemblée Générale des Nations Unies, que 'la première mesure en vue d'assurer que le lancement de machines dans l'espace supra-atmosphérique poursuivra toujours des buts pacifiques et scientifiques, consisterait à effectuer les essais de ces dispositifs sous le contrôle et avec la participation d'organismes internationaux.'

"Réunion du Sous-Comité de la Commission de Désarmement: le Canada, la France, le Royaume Uni et les Etats Unis proposèrent d'inclure dans une éventuelle Convention de Désarmement le texte suivant:

"'Contrôle des objets pénétrant dans l'espace supra-atmosphérique' toutes les parties à la Convention s'engagent à collaborer, en vue de la constitution, dans les trois mois après l'entrée en vigueur de la Convention, d'un Comité Technique, qui sera chargé d'étudier l'établissement d'un système d'inspection permettant d'assurer que le lancement d'objets dans l'espace supra-atmosphérique poursuit des buts exclusivement pacifiques'." (Sème. Rapport du Sous-Comité de la Commission du Désarmement; D.C. 11311, Sep. 1957, annexe 5 DC. SCI/66, 29 August 1957).

An international agreement should deal with the following points:

1. The creation of a Committee on Cosmic Space, made up of representatives of states that are permanent members of the Council of Security, and a number, to be later determined, of representatives of other states, who would succeed one another on the committee and would be elected by the General Assembly.

2. An international agreement for the prohibition of the use of cosmic space for military purposes. The Committee on cosmic Space would be able to make use of whatever technological means it considered necessary to insure that this agreement be respected. One of these methods would be the launching of satellites provided with photographic or television cameras to observe satellites or missile launching slopes.

3. International scientific cooperation

a. The establishment of an international plan for the launching of satellites or missiles. It could have two systems:

1) Each state could carry out its program of space investigation independently by merely announcing its launchings to the Committee and allowing it to control them.

2) The launchings could be effected in accordance with an international plan to which all states would agree.

The latter system would be preferable, but we believe that at present the one most likely to be accepted would be the former. Actually it has already been adopted. In fact, it is the coordination of launching that is dealt with, and not their direction.³²

b. All information obtained in the investigation of space should be turned over to the Committee, which will put it at the disposal of all nations.

The Thirteenth General Assembly of the United Nations created a Committee on the Peaceful Uses of Outer Space, charged with preparing a report for the Fourteenth General Assembly, above all with regard to the control of space, international scientific cooperation in space investigations, and the peaceful uses of outer space.³³

The Fourteenth General Assembly has reorganized this committee.

Besides the United Nations, the Conseil International des Unions Scientifiques (International Council of Scientific Unions) has decided to create a Committee on Space Investigation.³⁴

³² "Le groupe doit également présenter un rapport sur l'organisation des échanges d'informations concernant les recherches dans l'espace, et sur la coordination des programmes nationaux dans ce domaine." (Le Monde, 27, II, 58).

³³ See report by Franz Matsch, Doc. A/4009.

³⁴ "1) La création, pour 1959, d'un comité spécial de la recherche spatiale (SCOSPAR) chargé de coordonner les expériences scientifiques réalisées dans ce domaine par tous les pays membres, y compris les Etats Unis et l'U.R.S.S.;

At present, the Committee for the PEaceful Uses of Outer Space is studying the problems of space exploration from the technological and legal points of view, and some of the solutions that we proposed in 1959 have been adopted already - for example, the furnishing of information, the creation of the International Committee of the United Nations, etc.³⁵

Book IV

The Peaceful Uses of Outer Space

One of the basic topics in the study of cosmic international law is that of the "peaceful uses of outer Space," a term commonly found in legal dissertations, and one resorted to glibly in the speeches of politicians. However, although everyone uses the term "peaceful uses," few have felt the need to define the term which, upon its application,

"2) L'établissement d'un 'code international de l'espace' destiné à prévenir toute contamination accidentelle des planètes par des engins terrestres émettant des radiations et porteurs de microbes." (See Le Monde, Paris, Octobe4r 8, 1958, p. 16).

³⁵ In Book I, Chapter III, will be found a fuller exposition of the results obtained in United Nations sessions.

has been so often profoundly mistaken and contradicted. This has contributed to a discrediting of the very concept that efforts are being made to defend.

To attempt a definition, a delineation, of the concept of peaceful uses, will be our purpose in the following chapters, in which, at the same time, we shall study certain activities, such as so-called spying from satellites, explosions of nuclear bombs in space, etc., which, while not peaceful in themselves, nevertheless will help us to understand the true significance of peaceful uses, and will help us to destroy certain mistaken ideas and confusions.

Chapter I

Peaceful Uses

Section I

The Appearance and Evolution of the Term

The appearance of the term "peaceful uses of cosmic space" precedes the exploration of space itself. In fact, in debates held at the First Commission¹ during the eleventh period of sessions of the General Assembly, the United States delegation

¹ Already on the theoretical plane the need for activities in space to be limited to peaceful purposes had been defended by certain jurists, like Oscar Schachter: "Legal Aspects of Space Travel," in the Journal of the British Interplanetary Society, January, 1952, p. 15; Kroell: "Einen Weltraum entgegen," in Zeitschrift fuer Luftrecht, 1952, p. 254; Alex Meyer: "Legal Problems of Flight into Outer Space," Third International Astronautical Congress, Stuttgart, September 5, 1952.

presented a memorandum on the regulation, limitation, and balanced reduction of all armed forces and armaments, making several proposals therein. In requesting that experiments destined for the exploration of outer space be submitted for international inspection and participation, it showed that the purpose of this proposal was to make scientific and peaceful application of discoveries.²

Resolution 1143³ of the Twelfth Session of the General Assembly speaks already of the creation of an international system of inspection that will insure that sending objects across outer space will be done for purely peaceful purposes. The U.S.S.R. adopted a similar

position, and in a memorandum⁴ to the Secretary General, posed from a negative angle, the problem of prohibiting the use of space for military purposes and, from a positive one, that of establishing international cooperation on the study of cosmic space. But in the first problem it conditioned its agreement to the proposed matters on the achievement of an agreement on the elimination of foreign military bases in alien territories. This condition was later to be abandoned.

It is generally conceded that cosmic space should be used only for peaceful purposes,⁵ and no lawyer or politician would defend, at least openly, a position to the contrary.

It would be of little practical purpose to enumerate the adherents of this principle or to point out the nuances of meaning that are expressed. It suffices to record this general acceptance and to point out the vague and confused nature of the term "peaceful uses" which often serves to cover intentions that are not so peaceful.

Section II

Delimitation of the Concept

The principle that outer space should be used only for peaceful purposes has been generally accepted by all states and by all lawyers, but the problem that has not been solved is that of determining what peaceful purposes are.⁶

² See Doc. A/C.1/783.

³ See Doc. Supp. No. IS (A/3805).

⁴ See Doc. A/3181, and Doc. A/C.1/L.219

⁵ Resolution 1348 of the Thirteenth Session of the General Assembly was devoted to the principle in question, which was headed by the title, "Question of the Peaceful Use of Outer Space." See Doc. Supp. 18 (A/4090).

⁶ The concept of peaceful uses was defined on another occasion for a different purpose in two international documents which perhaps might be used as precedents. We refer to the treaty on the Antarctic, whose Article I, Paragraph I, says: "The Antarctic shall be used only for peaceful purposes. Prohibited inter alia are any measures of military nature, such as the establishment of military bases or fortifications, the carrying out of military manoeuvres, such as tests of any kind of weapons." The Statute of the International Agency of Atomic Energy also presents in Article 2 a concept of peaceful uses, based on opposition to military purposes. See, furthermore, Resolutions 1721 (XVI) and 1802 (XVIII) of the General Assembly, which define the term in a similar way. On the theoretical plane, see Alex Meyer: "Legal Problems of Outer Space," *Journal of Air Law and Commerce*, Autumn 1961-62, New York., pp. 339-346.

This concept is usually given two distinct interpretations what although not contradictory, are sufficiently different in latitude of content to constitute two parts of a dilemma between which one must choose:

a) Peaceful uses of outer space should be those activities carried out by states in outer space in accordance with the regulations of international law, that is, without violating any of their rulings.⁷

b) The application of the words "peaceful uses of outer space" to extra-atmospheric activities requires not only that those activities shall be in accordance with international law. It is also important that their peaceful nature be evident, taking the word in its negative sense of the exclusion of warlike or hostile purposes,⁸ and in its positive sense of contributing to international amity, promoting cooperation among the nations, and putting at the services of the universal community the results of outer-space activities.

The difference in content between the two interpretations is indubitable. The first is based on the general principle that what is not prohibited by law is permissible. It is therefore a purely negative definition, prohibiting any act contrary to the rules of international law and permitting everything that is not proscribed by the law of the nations. This position adds nothing new to law, and is confined to requiring that whatever laws are in force be kept. No one denies that states must respect the rules of international law in their reciprocal relations and wherever they may be.⁹ Nevertheless, a study of the origin

⁷ Zhukov is confused when he identifies certain activities of a military nature engaged in by the states in cosmic space as violations of international law. If they are not prohibited on the earth, there is no reason why they should be so in space. Actually, Zhukov shows the reason for this confusion when he calls such acts violations of the principle of peaceful uses. We are in agreement with him here, but he deduces from this that they are violations of international law, which is unacceptable, because it is equivalent to considering the principle of peaceful uses a positive law of the nations, taking as *ex lege lata* what is merely a question *de lege ferenda*. See G. Zhukov: "Practical Problems of Space Law," *International Affairs*, Moscow, No.5 1963, p. 27. The same basic error can be found in other Soviet authors, such as Korovin: "Peaceful Cooperation in Space," *International Affairs*, Moscow, No.3, 1962, p. 61 and Ostniskaia: "Les aspects juridiques de la conquete du Cosmos," *Revue de Droit Contemporain*, No. 2, Dec., 1960, pp.53-61. Other authors of the eastern bloc, like Gerhard Reintanz, are more prudent in their definition of the meaning of peaceful uses: "Was friedliche Nutzung des Weltraums konkret bedeutet, ist in Staatenpraxis und Wissenschaft umstritten." See his article, "Zum Stand der Diskussion ueber Fragen des Weltraumrechts," *Staat und Recht*, March 1963, pp. 509- 512.

⁸ We can easily agree here with Zhukov, who states that "the concept of the 'peaceful uses of outer space' excludes any measures of a military nature and means that only peaceful research for the welfare of mankind and the benefit of all states is to be conducted in the upper strata of the atmosphere and in interplanetary space." (Zhukov: *Op. cit.*, p. 28) See also Zhukov: "Plaene der Weltraumspionage und das Voelkerrecht," *Staat und Recht*, 1959 H.I., s. 143 and following, and by the same author: "Demilitarization and Neutralization of Cosmic Space." (In Russian) *Sovietskoe Gosudarstvo i Pravo*, No. 5, 1962, pp. 62-72.

⁹ The extension of the principles of international law, including the contents of the Charter of the United Nations, has been confirmed on several occasions before the General Assembly of the United Nations. (See Res. 1721, XVI, of December 20, 1961).

of the term "peaceful uses" and the motivations that gave rise to it brings us to a realization that this first interpretation is not sufficient.

In fact, international law, like all laws designed to guarantee a minimum ethic in relationships between the peoples of the world, leaves states a wide margin of freedom to act in accordance with their own judgment, and this is used to engage in types of activities which, if not warlike, at least give the impression of not being very peaceful, as in the case of the development of the arms industry, the mapping out of plans for future wars, or the constitution of alliances that always call themselves defensive, etc. As we can see, international law guarantees a minimum of cohabitation, but does not impose the ideal of peace or prevent certain activities that clearly evince warlike tendencies.¹⁰

Under such conditions, if were to subject space to the same regulations as those that govern the earth, without adding any supplementary obligations, we would simply be applying international law to cosmic space without implementing the term "peaceful uses."

On the other hand, this term has been resorted to ever since its first appearance every time quarrels on earth and the hardly peaceful activities of man are transposed to outer space, where they are much more dangerous and become a terrible threat.

The second interpretation, therefore, besides demanding respect for international law, which is taken for granted, implies the inclusion of an added obligation. This has both a negative aspect - not to engage in activities of a military nature⁻¹¹ and a positive

¹⁰ We cannot help being extremely surprised by the attitude of various authors, seemingly lacking in seriousness who, on their own initiative, create out of thin air entire legal systems which, according to them, are applicable to inter-state relationships in outer space. Generally, these theoretical fantasies

are intended to prevent any act that does not fall within the narrowest limits of what is generally understood by peaceful uses. And we wonder what legal right these authors have to enumerate obligations that cannot be found in positive international law. If owning warships or bombing planes is not a violation on earth, why should it be illegal to send military satellites into outer space, just as planes and warships are sent out over the high seas, or military planes over the space above it, which is as free as outer space? We agree that many activities engaged in by several states in outer space are not very peaceful, but neither are those they practice on land, and international law does not stop them. Would the U.S.S.R. or the U.S. admit that maintaining an army and air force, or a military navy are acts contrary to international law? Of course not, and yet it is evident that these are not the best expression of active pacifism. In trying to impose these obligations that do not exist in international law upon relationships in outer space, these authors are entering the field of *lege ferenda*, they are merely speculating, and thereby they lose scientific precision. Imposing on states the principle of peaceful uses presupposes that it has an obligatory force, which we think no one can prove at this time.

¹¹ As long as this accessory obligation is not accepted, it cannot be enforced, so that until this happens, peaceful uses will be no more than the sum total of a series of declarations of principles, with purely programmatic value. For this reason, we agree with one of the conclusions in the report by Leon Lipson and Nicholas de B. Katzenbach, to be presented in the name of the American Bar Association before the National Aeronautics and Space Administration: "For the time being it seems that the only uses of space that are prohibited are those that fall within the prohibition of the Charter, and that until a disarmament agreement dealing with space activities can be arrived at, the United States is justified in using space for non-aggressive military uses consistent with the terms of the Charter." The comment that Zhukov makes on this paragraph reveals the confusion he introduces in the analysis: "And the United Nations could quite justifiably insist that it is peaceful!" (See Zhukov: "Practical Problems. . .") The Soviet author confuses legal activities with peaceful activities. Among legal activities we must include certain military activities, all those that do not

aspect-to promote friendly relations among the nations and to engage in activities whose purpose is to serve increase the welfare of all peoples, who will benefit equally from cosmic conquests.

This latter seems to us to be the true interpretation of "peaceful uses," because if the former were correct, it would be void of meaning, since it adds nothing new.¹²

Section III

The peaceful Uses of Space and the Problem of Their Enforceability

After reaching the conviction, as we have, that the true interpretation of the terms "peaceful uses" is the one that gives it a new and broader content than the simple obligation to respect international law, we are confronted with the problem of the obligatory nature of the peaceful uses of space, that is to say, of whether or not states are obligated not to use outer space except for peaceful purposes.

The first interpretation, which we have discarded, eliminated this problem, since there can be no doubt that international law is in force wherever there are relationships between states, and if there ever was a doubt, it has vanished in the face of the multitude of declarations by representatives of states acknowledging that international law is applicable in outer space, thus eliminating any legal vacuum there.¹³

The problem is something else, and it exists in practice, when we refer to the peaceful use of space in its second interpretation, with the added obligation to renounce its use for military purposes, or to orient it to the peaceful purposes of international cooperation.

We can say right now, without ignoring the advisability of making obligatory the limitation of states' activities in space to peaceful purposes, that we do not believe at present that any rule of international law has the power to limit the activities of states to such peaceful uses.

involve aggressive acts or acts of war. From the peaceful activities (in the sense usually meant with reference to outer space) all military activities should be excluded, but this principle is not at present a legal rule, as we have said so often. What we do not agree with in the report presented to NASA is that military activities are called peaceful when not aggressive. From the standpoint of actual international law this position is acceptable, but it introduces an element of confusion. It is much more advisable to call them legal, reserving the word peaceful for those activities that include the requisites more or less clearly called for by the resolutions of the General Assembly, among which is the non-military stipulation. This criticism on the report to NASA is supported by Alex Meyer: *Supra*, Note 6).

¹² It would merely be a reaffirmation of the standards of the law of nations.

¹³ It can be said that there is general acceptance of the application of international law to relationships in outer space, as it has been unanimously accepted in the General Assembly, as well as in all the recent meetings of special commissions on cosmic space, with no manifestation of a dissenting opinion. The general acceptance of this principle precludes what was being feared during the early stages of the exploration of outer space - a legal vacuum propitious to hazardous adventures on the part of the states.

This limitation to peaceful uses is a newly created supplementary obligation and not a rule already in existence in international law. Therefore, it must follow the normal procedure in order to become an obligatory rule.

It may be adduced that it is an obligation already accepted by states. We do not think this statement is correct. In fact, if we examine the two principal sources of international law, custom and treaties, we shall see that neither of them gives support to the statement. With regard to custom, it has been said that since the states have made a great number of declarations to the effect that outer space should be used only for peaceful purposes, and since there has been no opposing statement, a custom has been created and consolidated, based on the tacit acceptance of the principle by all nations. Of course, we admit that nearly all the states have gone on record in favor of the use of outer space for purely peaceful purposes, and that there taken into consideration, and that is that in order to judge the validity of a custom, one must take into account not only what states declare, but what they do in practice. The mere making of declarations, if they are not respected and put into practice, does not create a custom.

Furthermore, in saying that outer space should be used only for peaceful purposes, the states have made a declaration of principles whose obligatory effect would depend on a later agreement in the form of a treaty, and no treaty has yet been signed. Therefore, there is no use in resorting to resolutions of the General Assembly, whose only value is that they are recommendations, lacking legal power of enforcement.¹⁴

On the other hand, states have never recognized the limitation of their activities to peaceful purposes as a rule already in force. For example, in discussing the advisability of reaching an agreement on this point the U.S.S.R., which has always declared itself disposed to recognize it and is one of its staunchest defenders, insisted as a necessary condition for making it truly effective that it be placed within the broader framework of a general agreement on disarmament.¹⁵ It is true that it later accepted the separation of the two problems, but it is also true that every time the necessity for renouncing the use of space for military purposes is brought up, it points out that such a renunciation will be effective only if parallel measures are adopted on the earth;¹⁶ and there may be reasons

¹⁴ See Michel Virally: *La valeur juridique des recommandations des organisations internationales*, *Annuaire Français de Droit International*, 1956, pp. 66-96; F. Blaine Sloan: "The Binding Force of a Recommendation of the General Assembly of the United Nations," *British Yearbook of International Law*, 948, p. 3; E. Jiménez Aréchaga: "Derecho Constitucional de las Naciones Unidas," (*Constitutional Law of the United Nations*), Madrid 1958, especially pp. 221-227; G.P. Zadorozhny, whose opinion appears to reflect a changing position of the U.S.S.R., by the preference he gives to his writings, maintains that "international law. . . for the moment contains no prohibition on the use of outer space for military purposes," Zadorozhny: "Osnovnye problemy nauki kosmicheskogo prava" ("Fundamental Problems of the Science of Cosmic Law") in the symposium "kosmos i Mezdunarodnoe Pravo."

¹⁵ See Doc. A/3181; Doc. A/C.I.L. 219; also Galina: "About the question of interplanetary law," *Sovetskoe Gosudarstvo i Pravo*, July 1958, pp. 52-58; the same author: "For an Equal Collaboration in the Peaceful Uses of Cosmic Space," *Izvestia*, September 17, 1958, p.5.

¹⁶ "This (to secure the prohibition of the use of outer space) can be done only through general and complete disarmament, consistently implemented on land, on sea, in the air and in outer space." (Zhukov: *Practical Problems . . .*) Also N. Khrushchev: "Le désarmement est la voie de la consolidation de la paix et de l'amitié entre les peuples" (*Disarmament is the way to consolidate peace and friendship among peoples*) Ed. in foreign languages, Moscow, 1960.

for defending this point of view. The complication increase because it is difficult to establish just what constitutes peaceful uses; and although there may be no obstacles in the way of the consideration of its positive aspect of international cooperation, it can be clearly established that, in its negative aspect of not using space military purposes, an agreement has become difficult, if not impossible, because today military art is so closely related to technology, practically any technological advance is of benefit to the art of warfare.¹⁷

In short, the custom which is so often mentioned does not exist in fact, and this can easily be proved by noting that paralld with the formulation of lofty declarations about human cohabitation and the renunciation of the use of space for military purposes, the states proceed to launch satellites whose purposes are patently not those that promote confidence among nations or contribute to peace. The United States does this openly with satellites like SAMOS and MIDAS, and the U.S.S.R. does it another way, silently, with its satellites (because it must be understood that Russia does not want to be left behind in the military use of space) and with an immense display of propaganda when it proceeds to launch IBM missiles in the Pacific.

To speak of a peaceful custom and base it on declarations, when the only regular and constant practice observed by states is one tending to use space for military purposes, seems to us to be a fault in logic and an error.

There is no treaty today that prescribes the use of space for purely peaceful purposes. The declarations of the states, even when revised as joint declarations, can be considered only declarations of principles, since it is evident that the states lack the intention to create a legal obligation. As for resolutions of the General Assembly of the United Nations, we have already said that their value es simply that they are recommendations, with no force other than moral force, expressing the desire of the immense majority of the peoples of the world.

In conclusion, it remains only to be said that, although the rules of international law retain their obligatory nature in outer space, and states should adpt their conduct to them, the peaceful use of space as an obligation for states is a mere desire on the part of mankind, and although expressed through multiple declarations by the states, the concept carries no legal obligation.¹⁸

¹⁷ Philip C. Jessup and Howard H. Taubenfeld are certainly right when they point out that "the critical question whether peaceful and military activities in outer space can in fact readily be segregated must still be posed," and above all when they emphasize the importance of the problem: "how to assure a real separation of peaceful from military uses of atomic energy and now of outer spce is ideed a key problem in a world bristling with antagonisms, rivalries, and fears." Consult the work by both authors: Controls for Outer Space and Antartic Analogy, Columbia University Press, New York, 1959.

¹⁸ They do humanity an ill turn who, shutting their eyes to legal facts, would like to believe that the principle of peaceful uses is obligatory established. Our insistence on calling attention to the fact that it has no legal force is an attempt to reveal the naked truth, and to concentrate efforts to the end that the states may go forward from simple declarations of principles to contracting formal commitments in this area. Otherwise, energies are simply wasted by asking for obedience to standards that lack legal weight. Before all, they must be given the effectiveness they lack.

In accordance with this statement, activities engaged in by the states in outer space are judicially legal (the moral point of view has no bearing here) as long as they are in accordance with international law, even though they may be of a military nature and display evidently warlike purposes, because if international law permits such activities on earth, there is no reason them to be prohibited in space.

For this reason a distinction should be made between those activities engaged in by states in space that contrary to international law, and, are at present illicit, and those activities that go counter to the principle of the use of space for peaceful purposes but are judicially licit. To make them illicit, an agreement is necessary that would consecrate the new obligation to limit space activities to peaceful ends and prohibit those engaged in for military purposes.

As long as this agreement does not exist, it is incorrect and false to classify as violations of international law such uses of space for military purposes as operations SAMOS and MIDAS,¹⁹ or other similar ones, as long as they remain within the limits exacted by international law for activities on earth or in the atmosphere may be subject in part to the sovereignty of states, outer space is not, for in space, as on the high seas, there is a reign of freedom limited only by the exercise of rights belonging to other states. It is true that at times we hear that states can take necessary measures for the maintenance of their security. It is true, but on condition that these measures be confined to limits fixed by international law, and they cannot be given broader scope in space than they have on land, unless it is so arranged by an international agreement. For if states were able to fix the limits of self individually, there would be international anarchy, and all crimes would be justified, beginning with preventive wars.

We insist once more that international law guarantees, like all laws, a minimum of cohabitation. If on occasion a broader content of this minimum is desired, it must be effected through an agreement by the states, tacitly by custom, through the acceptance of a constant practice, or expressly through a treaty. What cannot be done is to broaden the content of international law in accordance with the unilateral will of one or several individual states.

In order to prohibit certain military activities and make it possible for international law to outlaw practices that may be considered injurious or dangerous for human cohabitation, new rules must be created by adequate legal procedures. It must be remembered that international law is not a law that imposes friendship, but a law that, for the moment (whether we like it or not) merely imposes a certain measure of tolerance.²⁰

¹⁹ The study of Operations SAMOS and MIDAS and other similar operations is made in the following chapter.

²⁰ Sztucki, in his otherwise magnificent work, follows the line generally adopted by jurists of the eastern bloc, of giving the rules of international law, in their application to outer space, a margin they (unfortunately) lack on earth. For example, in referring to Art. 2, Par. 4 of the Charter of the United Nations, which establishes the obligation to renounce the use or threat of force against the territorial integrity or political independence of states, he seems to admit that it applies in outer space to military activities and that they should fall under this prohibition, a thing that, as we know, is not the case on earth. To speak of aggression through the use of space for military purposes is equivalent to speaking of aggression through the use of the high seas or the air space above them. No one, not even the U.S.S.R., would say this, because she also uses them for this purpose.

Having made these evaluations, we shall proceed to study certain activities of states in outer space. Some, erroneously classed as violations of international law, are only against the principle of the peaceful use of space, which lacks, as we have seen, obligatory force at present. Others are authentic violations of international law and may come to be classed as crimes against humanity.

Aggression is a concept that needs certain requirements that are not given in the case we are dealing with. Consult the position of Jerzy Sztucki in his work "Bezpieczeństwo Państwa a przestrzeń Kosmiczna" appearing in *Sprawy Międzynarodowe*, of July, August, September (nos. 7, 8, and 9) of 1959, p. 63.

Robert Crane, in a magnificent editorial study in the *American Journal of International Law* (July, 1963, pp. 615-625) gives certain reasons that lead him to believe in a change in the Soviet attitude on the matter of peaceful uses of space. Commenting on the statements of certain authors like Kovalev and Cheprov, that "the question of prohibiting the military use of outer space as a whole has not yet been decided" (see p. 166) he comes to the conclusion that the U.S.S.R. will in future defend the point of view that the principle of peaceful uses is a principle *de lege ferenda* as long as there has been no particular agreement on it.

Chapter II

Legal Aspects of Reconnaissance by Means of Satellites

INTRODUCTION

Among the problems that the development of astronautics poses for lawyers, reconnaissance by means of satellites is one that demands a rapid solution, because in the near future satellites will be put in orbit to keep under continual watch the territories over which they fly.

The protests evoked from Russia by the simple announcement by the United States on the launching of satellites within the framework of Operations SAMOS and MIDAS¹ shows us that the solution will not be very easy.

However, lawyers must face this problem and try to solve it by applying the rules on international law in their strictest sense, leaving out all political considerations, which would only complicate the matter.

ANTECEDENTS

During the summit conference held in Geneva July 18 to 23, 1955, President Eisenhower proposed during conversations on disarmament the acceptance of a policy later called "Open Skies,"² which would enable the United States and the U.S.S.R. to make aerial inspections of each other's territory to dispel all lack of confidence and prevent the unleashing of an armed attack.

The Eisenhower declaration did meet with favorable response and, although the United States insisted on its proposal, the Soviet position did not change.

Russia's negative response was founded on a very solid base: the principle of the complete and exclusive sovereignty of the subjacent state over its air space,³ and it would

¹ See G. Zhukov "Space espionage plans and International Law", International affairs, Moscow, Octobre 1960, pp. 53-57.

² See Raymond W. Young: "The Aerial Inspection Plan and Airspace Sovereignty," The Georges Washington Law Review, April 1956, p. 565.

³ A principle clearly established in Article I of the Convention of Paris of 1919: "The High Contracting Parties acknowledge that each Power has complete and exclusive sovereignty over the airspace above its territory." The Chicago Convention of 1944 expressed the principle in the same terms in its Article I. The statements sometimes made that Russia was not a party to the Chicago Convention and therefore cannot claim the protection of the said principle have no foundation, for they ignore the fact that this

be very difficult for the United States to ignore this opposition without becoming liable to violation of an international law in active force.

But the launching of the first Sputnik by Russia in 1957, and the launchings that followed it on the part of both Russia and the United States, shed a new light on the problem and gave a serious blow to the political and legal theory of territorial sovereignty.

When the first launching took place in the International Geophysical Year, some lawyers stated that since a majority of the states had given their approval, there was no need to look further for right of transit, since it was implicit in the agreement of the states with the International Geophysical Year's program of investigations, which had foreseen the launching of satellites.⁴

This reasoning was not very convincing (and much less sufficient), and when the I.G.Y. ended, launching continued to be made without any concern for the opinion of the states whose territory was flown over, while the latter made no claims based on violation of their air space. Thus a series of precedents was established whose legal validity would be very difficult to question. It can be deduced from this that states recognize the existence of a limit to the vertical extension of their air space.

During this state of affairs, the United States announced the future orbiting of satellites MIDAS and SAMOS. A Soviet protest was not long in coming asserting that these launchings constituted a violation of the air space of the U.S.S.R. and an attempt against Russia's security. The United States will nevertheless proceed with its operations.

In the face of these facts, it might possibly be necessary to assess the position of international law with regard to these problems, making an abstraction of the concrete case of the U.S.- U.S.S.R., controversy, and examining the question from a strictly legal point of view stripped of very political consideration.

STATEMENT OF THE CASE

Because Operations SAMOS and MIDAS have been called espionage, we deem it necessary to begin by refuting these charges, which in our opinion are false, and then go on to explore their true legal status.

Later, taking as our basis freedom of navigation with relation to satellites, we shall try to demonstrate that in the present state of international law there is no legal basis for attacking Operations SAMOS and MIDAS by the United States, nor would there be for similar operations engaged in by any other state, and this includes the U.S.S.R., if it is not already doing the same thing.

principle has been consolidated and extended by international custom, until it has become universally obligatory.

⁴ For details on the organization, consult Werner Buedeler: The International Geophysical Year, UNESCO, 1957.

We shall end, finally, by outlining possible solutions to the problem within the framework of a general agreement on disarmament, which seems to us to be the only way out of this blind alley as far as the peaceful uses of outer space are concerned.

At any rate, we must keep in mind that although we declare the legality of Operations SAMOS and MIDAS, this does not preclude our hoping earnestly that these activities will be prohibited, for they do nothing but increase distrust between nations. But this prohibition should also carry with it the elimination of all other causes of international friction. Confidence should be total, and as long as this trust does not exist, states are free to act within the limits of international law; and although states accuse others of unfriendly actions, there is no obligation to act in a friendly manner in an international society devoid of friendship, so long as states remain within the limits of the law.

Section I

Operations SAMOS, MIDAS, and Espionage

Paragraph I. The concept of espionage.

A. In accordance with international law.

Convention IV of the Hague 1907, gives the following definition of a spy: "No one can be considered a spy except an individual who, acting clandestinely or under false pretexts, gathers or tries to gather informations in the zone of operations of a belligerent, with the intention of communicating this information to the adversary." (Article 29).⁵

Two observations can be made with regard to this definition: in the first place the Hague Convention applies it to wartime; furthermore, the conclusion drawn from this article is that espionage must take place upon the territory of the injured state; this seems to be the meaning of the phrase, "zone of operations of a belligerent." It is important for us to emphasize this requirement, that espionage take place upon the territory, for if it can be proved that it has taken place outside of the territory, it is no longer espionage, at least from the standpoint of international law.

B. In accordance with national legislation.

Every state, through the exclusive authority it has over its territory, especially with regard to penal authority, can establish any penal legislation it sees fit, and can all any action it likes espionage.

For this reason we think it would be futile to go into the details of international legislation to look for articles in penal codes having something to do with espionage, since all states can modify them to suit themselves.

⁵ James Brown Scott: *Rapports faits aux Conférences de La Haya de 1899 et 1907, 1920*. See p. 516 and following.

Furthermore, and this is the most important point, penal authority has one fundamental characteristic: territoriality.⁶ The state cannot base its exterior coercive power on its internal legislation. In order to act in the international sphere, states must abide by the rules of international law.

Based on these considerations, we must admit that internal legislation does not interest us, especially since we are going on the principle that the incriminating actions took place outside of the territory of the state.⁷

Paragraph II. The legal status of reconnaissance by means of satellites.

A. Can it be called espionage?

We must discard the definition of the Hague Convention referred to, since it is only applicable in time of war.

A state may, evidently, claim that such activities are prejudicial to it, and declare that in accordance with its internal legislation it is a matter of espionage. But this claim has no value if these activities take place in outer space, for the simple reason that its penal legislation is ineffective there. The absence of legal regulations for a certain situation does not give a state any authority to create one in its own interest, however respectable and worthy of consideration it might be.⁸

We may consider the designation of espionage activities given to Operations MIDAS and SAMOS abusive and completely without legal foundation.

If there is a hiatus in international law⁹, it must be remedied by an international agreement, but no state is authorized to make gratuitous judgments, much less to take

⁶ There may be certain exceptions to the principle of territoriality, as with regard to the repression of "international crimes," for example, piracy. But in the concrete case we are dealing with, the acts are carried out directly by the states, and this must always be kept in mind. See M. Bourquin: "Crimes et délits contre la sûreté des Etats étrangers," R.C.A.D.I., 1927, 16, 121; especially pp. 163 and following, where the question is discussed of crimes against the security of states, committed on the outside, with an examination of "subjective territoriality" and "objective territoriality." See also Vespasiano V. Pella: "La répression des crimes contre la personnalité des Etats," R.C.A.D.I., 1930, 33, 677; especially pp. 769 and following.

⁷ "Chaque Etat ayant le droit d'assurer sa conservation a qualité pour prendre sur son territoire," à titre préventif, toutes les mesures nécessaires à sa sécurité." (Amédée Bonde: Droit International Public, Paris, Dalloz 1926.)

⁸ "The legal rules to be framed for outer space cannot be based on state sovereignty. They can only be established by an international agreement to be concluded on earth." Prof. A. Meyer, in Report of the 49th Conference, International Law Association, meeting in Hamburg, 1960, p. 247.

⁹ Dr. M. Milde is right to a certain extent when he says "I am convinced that there is not even at present any "legal vacuum" in space. The universally accepted principles and rules of general international law are not specially limited," in Report of the 49th Conference, International Law Association, meeting in Hamburg, 1960, p. 252.

coercive measures (as we were led to understand), which constitute real acts of aggression.

Ratione locis, reconnaissance by means of satellites, cannot be called espionage, because it takes place outside the territory of the states. There is a fundamental difference in the case of the U-2 plane, whose operation was a clear violation of the air space of the Soviet Union, as was Operation Moby Dick.¹⁰

The reason for accusing SAMOS and MIDAS of espionage must be looked for in the work of observation they are going to do.

SAMOS is destined to take photographs of U.S.S.R. territory. At what point a state may prevent another from taking photographs of its territory is a good question

To be able to classify these activities as espionage, it would be necessary to create a new category for this international offense. Now, if we are trying to find out whether reconnaissance by means of satellites (and therefore outside of the air space of states) has characteristics that would bring it into the accepted category, we cannot create a new category in order to be able to include satellites in it. That would not be logical

What is needed is to end the elements of reconnaissance by means of satellites, submit them to analysis and, in accordance with the results of this analysis, determine their legal status.

In the present state of international law, it is in our opinion indisputable that reconnaissance by means of satellites cannot be reduced to a case of espionage.

The mission of satellites launched in Operation MIDAS will be to observe the launching of missiles; its purpose, therefore, is purely defensive, and we cannot see how it can be considered to have been conceived for aggressive purposes. Only in another aspect is there a possibility of MIDAS being similar to SAMOS: by observing missile launchings, they can come to discover the launching bases

B. The legality of reconnaissance by means of satellites.

Those who attack operations SAMOS and MIDAS cannot call them violations of air space. And of course they don't. What they complain about is that the satellites are

¹⁰ A legal examination of Operation Moby Dick can be found in Philip W Quigg: "Open Skies and Open Space," *Foreign Affairs*, October, 1958, p 95; for the Soviet point of view see A. Kislov and S Krylov "State Sovereignty in Airspace," *International Affairs*, Moscow, March 1956, pp. 35-44. On the matter of the U-2, there is a very impartial study by Quincy Wright: "Legal Aspects of the U-2 Incident," *AJIL*, October, 1960, pp. 836-854. This author clearly states that "In authorizing the U-2 flight over Soviet territory, the United States violate international law." (*Op. cit.*, p. 853). Regarding the official Soviet position on the Moby Dick question, an interesting note appeared in the *New York Times*, February 6, 1956, p. 3: "The launching of this sphere into Soviet airspace by United States military organs represents a gross violation of Soviet airspace and is a violation of the universally accepted principle of international law that every state has full and exclusive sovereignty in respect to airspace over its territory."

going to take photographs that will make it possible to make maps of the Soviet Union and locate the launching bases of missiles and satellites. But can these activities be considered acts of espionage? And, in any case, are they illegal?¹¹

The method of analogy, which is perfectly valid, may shed a little light on the problem.

Up to now the use of radar as a means of vigilance over the territory of a state has not been considered illegal. It is equally impossible legally to prevent a state from taking photographs of the territory of another state from planes flying over the former state's territory. Nor can a state be prevented from photographing its neighbor's territory from the top of a mountain. What difference is there, except that the distance is vertical instead of horizontal? We have come a long way from the time when states protested because radio waves crossed their air space.

Basically, the question is very simple, but that does not make it easy to solve. States and many institutions of international law have, in many aspects, been left behind by technology. Territorial sovereignty is interpreted as the right to prevent states from casting indiscreet glances at the territory of another. After radio and radar seriously weakened this presumption, artificial satellites have come to give the final blow to this maidenly modesty of states regarding their territories. There is only one thing to do: acknowledge the new circumstances and adapt to them. It has been a blow to sovereignty, but at the same time is proof that we can no longer shut ourselves up behind frontiers, and that interdependence between peoples is becoming increasingly evident.¹² We should be glad of it.

To seek a basis for protesting against a so-called violation of space by light waves would be to confess ignorance of the laws of physics. The camera does not send out light waves, it merely collects them. In order to prevent the taking of photographs, it would be necessary for a state to prevent the light waves from leaving its territory, which would be a bit difficult.

Should we follow to its logical conclusion a possible prohibition for satellites to take photographs, we would reach some absurd results which would show up the lack of legal and even logical grounds on which to apply such a prohibition absolutely; the day men were able to land on the moon, they would be forbidden to look at the earth; astronauts would be forbidden to carry photographic or even optical instruments enabling them to survey the earth. Forbidding the taking of photographs or the simple observation of territories from cosmic space is no way to solve anything. Furthermore, it would be

¹¹ Kenneth Gatland states that "legally, America has every right to launch reconnaissance and surveillance satellites over the territories of other nations," and places the problem in its true proportions when he adds that "the wisdom of so doing at the present critical period of international diplomacy is open to question." See K. G.: "Surveillance from Orbit," *The Aeroplane and Astronautics*, London, June 3, 1960, pp. 678-679.

¹² "Questions might arise, for instance, in regard to the photographing from the space of the territory of a state for military or other purposes, otherwise than in accordance with the terms of an agreed plan for mutual protection against military surprise," adding that "no abstract principle is likely to be of much service for the purpose of resolving such questions." (C. Wilfred Jenks: "International Law and Activities in Space," *International and Comparative Law Quarterly*, January 1956, p. 99).

impossible to control such actions. Would the United States or Russia, or other countries, be willing to allow a commission to control their bases for launching, satellites or missiles? A prohibition pure and simple, without the possibility of control, would have no practical effect.

Section 11

Freedom of Navigation and Space Reconnaissance

Paragraph I. The principle of freedom of navigation.

A. The present state of international practice.

The first launching of satellites, effected within the framework of the I.G.Y., met with no objection.

While Sputnik I was making its first circlings of the earth, the protest of a United States journalist provoked, and in our opinion justifiably, the indignation of Soviet Journalists and lawyers, who were aroused by the threat of the destruction of their satellites.¹³ The attitude of the states to the satellites was positive, and none dreamed of prohibiting their flight over its territory. When the I.G.Y. ended, launchings continued to be made, and thus a series of precedents has been established, which by now has led to the conclusion that the right to launch vehicles in space has become an acquired principle.¹⁴

Now, if the principle has been accepted more or less explicitly with reference to the activities of states in cosmic space, no state, because it feels it is being threatened, can by unilateral decision impose limitations on this freedom.¹⁵

It would be futile to give a detailed explanation of the position of all the states with regard to the principle of freedom of navigation in space, or of the theoretic defense that lawyers have elaborated, or, further, of the resolutions of the United Nations and legal organizations; it would simply mean going over and over the same questions.

In the absence of a general agreement on the limits of air space, the zone in which satellites are at present situated can be considered outside of air space. The rule of effectivity that certain lawyers are trying to impose would have no basis, since its

¹³ Korovin has stated that the intentional destruction of a Soviet satellite would be considered an act of war. Consult his article: "International Status of Cosmic Space," *International Affairs*, Moscow, January 1959, pp. 75-76.

¹⁴ Thus, Dr. D. Goedhuis is of the opinion that the "U.S.S.R. and the U.S.A. have evidently acted on the premise that their rights to place their satellites in orbit for peaceful purposes is not dependent on the consent of any other state." (Report presented by Dr. D. Goedhuis at the 48th Conference of the International Law Association, in New York, 1958. See *Proceedings*, p. 327).

¹⁵ The principle that outer space is not subject to sovereignty . . . entails two consequences, apart from the negative consequence, the prohibition of interference by any State with the spacecraft of any other State, the positive consequence of conferring on all States the right to draw from outer space the various benefits flowing from its use." Dr. D. Goedhuis: *Op. cit.*, p. 329

acceptance would result in the extension of space to an unreasonable distance. In fact, the development of technology has created the possibility (foreseeable, at least, in the near future) that a state may exert effective control of space to a practically unlimited distance

B. Consequences of the principle of freedom of navigation

The principles of international law continue to be applicable to cosmic space as long as no agreement has been reached permitting a more specialized regulation; but these principles cannot be applied to space more strictly than they are applied to earth; and if certain states on earth, such as the United States and Russia, continue to launch missiles, they are in no position to protest if another state should send satellites for purposes that may not be very peaceful.

What is the difference between espionage (let us accept the term provisionally) carried out by satellites and that engaged in by spies? Where is the peaceful purpose of missile tests, of which we are told every day that they are capable of transporting atomic weapons able to sow death in every corner of the world?¹⁶

Do the states respect the proposal and principles of the Charter of the United Nations on earth? Why, then, do the states that make a mockery of them on earth want them respected at all costs in cosmic space? Are they trying to protect possible inhabitants of the cosmos from the hot or cold war, while they neglect the less fortunate inhabitants of earth?

In short it is not too difficult to outline the situation international law should be applied, such as it is to cosmic space, as long as no agreement has been reached on its peaceful uses.

But the principle of freedom of navigation in outer space entails as an inescapable consequence the acceptance of activities that are not clearly prohibited by international law at present in force.¹⁷ Furthermore, if there is freedom of navigation, no state may prevent another state from acting as it sees fit, as long as it does not conflict with the law of nations. If each state were permitted unilaterally to create its own international rules, it would mean leaving them to its arbitration, since the state that created them could just as easily annul them, and this would lead to international anarchy or the reign of the strongest

From the expressed principle of freedom of navigation in outer space, and from considerations we have just expounded, we believe that, as international law stands at present, there is no legal basis for opposing the launching of satellites SAMOS and

¹⁶ This is why Alex Meyer believes that, "States in future should make an agreement in which they declare to abstain from using outer space for war purposes." (A.M.: Legal Problems of Flight into Outer Space. Third International Congress of Astronautics, Stuttgart, May 5, 1952)

¹⁷ G. Zadorozhny affirms in *Sovietskaya Rossiya* (October, 1957) that outer space belongs to no one, and that freedom of navigation beyond fifteen or eighteen miles should be permitted by international law. (Quoted by Philip W. Quigg, in "Open Skies and Open Space," *Foreign Affairs*, October 1958, p. 95)

MIDAS or any other similar operations engaged in by any other state. The evidence must be acknowledged, and it must also be realized that it would be practically impossible, given the progress of technology, to establish a general prohibition against taking photographs from cosmic space.¹⁸

Paragraph II. The problem of its true solutions

A. The framework of its solutions:

To try to solve the problem of the peaceful uses of cosmic space, ignoring the more general problems of disarmament, would be a useless task that would lead to nothing at all.

The prohibition of the use of cosmic space for military purposes presupposes a control that cannot be left to the good will of the states. This control should be extended to launching bases in Russia as well as in the United States, and until the methods of this control are established, there will be no possibility of solving the problem of the demilitarization of space operations.

We would be tempted to seek a legal basis for the prohibition of military activities in cosmic space from resolutions already approved by the United Nations, or from declarations of nations announcing that they will not use space except for peaceful purposes.¹⁹ But these arguments, already advanced by other lawyers, have only a schematic value, and do not bind the parties to anything.

We insist that the framework in which this problem can and should be solved is that of disarmament.²⁰ In fact, the prohibition of the use of space for military purposes could not be effective without control by the states. Now, for states to accept a control entailing the right to inspect military bases situated on earth, it would be necessary for mutual confidence to be established on a solid basis, without fear of an eventual attack that would erase them from the surface of the earth; and this confidence cannot be created without a general agreement on disarmament, together with a control that fully guarantees its effectiveness.²¹

¹⁸ C.E.S. Horsford acknowledges the impossibility of this control: "It is obvious that rigid control of all vehicles in space would seem to be a super human undertaking." ("The Law of Space," *Journal of the British Interplanetary Society*, May-June, 1955, p. 144)

¹⁹ In the National Aeronautics and Space Acts of 1958 there is an interpretation of the word "peaceful" (in reference to the uses of outer space) that is, to say the least, disputable: "the word 'peaceful' as used in the Act means 'non-aggressive' rather than non-military." (Quoted by Spencer M. Beresford in "Surveillance Aircraft and Satellites: a Problem of International Law," *Journal of Air Law and Commerce*, Vol. 27, No.2, Spring, 1960, p. 107).

²⁰ For J. Sztucki, the problem of the legal regulation of space is intimately linked with that of disarmament, with which we are in total agreement. See Report of the 49th Cotzfetette, International Law Association, meeting in Hamburg, 1960, p. 257.

²¹ See Wilfred Jenks, in his testimony at the Congress of the International Astronautical Federation, in Stockholm, 1960, under the title: "The International Control of Outer Space"; also A. W. B. Hester, who defends the need of a United Nations action to punish any act which might

B. Is reconnaissance by means of satellites aggression?

It has been called so at times, but we do not think it is worth our while to argue the question, especially on the premise that the definition of aggression is very difficult to establish.²²

It would seem more reasonable to call it an act of provocation, which has a certain different connotation. Of course, in a report of the Secretary General of the United Nations on October, 3, 1952, the idea of provocation was at the bottom of the concept of aggression, but this concept does have an interest for us.

In the same report it was brought out that long-range or immediate preparations for aggression could constitute provocation. Perhaps this evaluation is correct, but who is going to be the first to accuse another of acts of provocation,²³ those that launch intercontinental missiles, or those that launch reconnaissance satellites? We believe that the international situation is so complicated that it is difficult to discern where acts of provocation begin, what they are, and which acts constitute a mere response. Under these conditions, provocations are so many on the part of all states that they have lost their meaning, and it would be impossible to ask; that one of them be condemned without condemning them all.

We must point out that we do not approve in any way of such operations as SAMOS and MIDAS. Humanity is on the brink of war, and this unstable equilibrium might be upset any day, with what catastrophic consequences we can well imagine.²⁴

consist in a mis application of Astronautics for military purposes, in "Some Political Implications of Space-Flight," *Journal of the British Interplanetary society*, November-December, 1955, p. 314.

²² The bibliography on the definition of "aggression" is very extensive, so we shall confine ourselves to mentioning only a few works: Jaroslav Zourek: *La définition de l'agression et le droit international. Développements recents de la question*, R.C.A.D.I., 1957, 92, 755; Tucker: "The Legal Interpretation of War," *International Law Quarterly*, 1950; Ch. Chaumont, *Explication juridique d'une définition de l'agression*, *Annuaire français de droit international*, 1956, pp. 521-592; Eugene Aroneanu, "La définition de l'agression," *Les Editions Internationales*, Paris, 1958, 405 pp.; Tunki, ("The Soviet Definition of Aggression in the United Nations Organization") (in Russian), *Sovietskoye Gosudarstvo i pravo*, 1953, Nos. 2-3, pp. 89-101; Lothar Schultz, "Der sowjetische Begriff der Aggression," *Osteuropa Recht*, October 1956, pp. 274-285.

²³ "Tu Quoque" is a common popular argument, and equity recognizes 'that he who seeks equity must do equity, ' sometimes called the principle of 'clean hands,'" Quincy Wright: *Op. cit.*, p. 849.

²⁴ "Dans l'espace cosmique ainsi que dans leur aetioite terrestre les Etats doivent s'abstenir de la menaee et de l'apliation de la force; ils doivent s'inspirer du respect envers la souveraineté des Etats, particulièrement envers la souveraineté des Etats dans leur espace aérien." V.M. Koretski, *intervention in the Hamburg Conference of the International Law Association*: see Report of the 49th Conference, Hamburg, 1960, p. 256. We agree with the general lines of this statement, but we have the right to ask ourselves why the states shoul(l particularly respect the sovereignty of other states in their air space. Is this the most important aspect of sovereignty? Frankly, we think Mr. Koretski exaggerates a little.

But besides these operations, to be just, we should place others, such as the launching of rockets, which are also a danger to the security of states, and a crime against humanity when they are done for military purposes, as is the case at present.

All disputing of the legality of cosmic reconnaissance is without foundation. A state's right to defend itself has a limit which is the right of other states to defend themselves. Russia may consider that satellites SAMOS and MIDAS constitute a threat to her security, and possibly she is right; but the United States can argue that they are necessary for her own security, and since she is acting outside of Soviet air space, she has every right to do so.²⁵

The rules of international law are legal rules, not moral ones; they should guarantee a minimum international ethic. Every state is free to act as long as there is no precise law to make it stop. The territorial sovereignty of states does not extend to cosmic space.²⁶ The general principle is that of freedom. Since this is an established principle, it must be maintained, and its logical consequences inferred. Thus, we believe that it would be legally incorrect to say that reconnaissance by means of satellites can be considered espionage in the traditional use of the term, or as aggression. Nor can the statement be accepted that they are acting in opposition to international law, at least in its present state.

CONCLUSION

To be able to speak of espionage in the traditional sense of the term, it is necessary that the incriminating acts take place on the territory of a state. On the principle that satellites circulate above air space, and therefore, outside of the zone of the state's exercise of sovereignty,²⁷ one cannot *ratione loci* call it espionage. From the point of view of the activities, we see no legal reason to call them illegal. If no state can complain that others are receiving the electric waves that it sends out on its radio apparatus, neither can it complain that another state is receiving its light waves in a photographic camera.

The state, which has exclusive sovereignty over its territory, should submit, in its relationships with others, to international law. Consequently, the act of labeling certain acts, such as the launching of SAMOS and MIDAS, as espionage, is irrelevant, since

²⁵ "Le critère à observer sera ici le principe de la liberté de l'espace aérien bien que limité par le droit de conservation des pays survolés" (Quintiliano Saldaña "La Justice Penal Internacional," R.C.A.D.I., 1925, 10, 227).

²⁶ Spencer M. Beresford goes further, and states that "under customary international law the air space above a State is not a part of its territory and hence not subject to its sovereignty except by specific agreement"; but this statement merely reveals the author's lack of knowledge of international practice; for this it would be enough to consider the numerous international aerial incidents since the end of the second (world) war, in which no state has attempted to ignore the sovereignty of the underlying state over its air space. See Spencer M. Beresford: Op. cit., p. 112. See also *supra*, note 4.

²⁷ At a certain time in the United States, a movement was outlined against the limitation of sovereignty to air space. "The United States is not about to renounce its rights to make territorial claims in outer space." See Philip Quigg: Op. cit., p. 95.

they move in outer space and therefore outside of the territory subject to a state, and beyond the sphere of its penal authority.

Finally, in the absence of laws to the contrary²⁸ that establish a prohibition, states have freedom to act, a freedom which, however, is subject to those limitations imposed by the general principles of law, which prohibit causing injury to another. The destruction of a satellite, even one engaged in reconnaissance, would compromise the international responsibility of the destroying state.

Chapter III

The West Ford Project

Section I The Facts

On October 21, 1961, a satellite MIDAS launched by the United States Air Force put into orbit 350,000,000 fine copper needles designed to form a circle eight kilometers wide around the earth at a height of some 3,500 kilometers.¹

The purpose of this launching, known as Operation West Ford, was to determine the possibility of using this circle for long-distance communications, especially in the Arctic zones, with the idea that the fine needles launched would reflect radio waves back to the earth.

The scientists in charge of this experiment from the Massachusetts Institute of Technology's Lincoln Laboratory, stated that it would have no harmful effects on astronomy or astronautics and that, at all events, the life of the launched particles would be of short duration? of one to three years, in some cases seven years, but that in general they would finally be pushed back to earth by pressure from solar light, and on entering the atmosphere they would disappear in flames.

Nevertheless, the assurances given by the scientists in charge of the project were not satisfactory in the eyes of a great many lawyers from all over the world and of

²⁸ The establishment of a ruling is now necessary to prevent certain conflicts. Andrew C.J. Haley asked himself the question, "What are some of the immediate legal problems?" and listed the ten answers, corresponding to the problems he had selected, with one that interests us specially: "Agreement among nations with respect to the use of television, photography, and any observational equipment whatsoever, should be immediately undertaken." See Andrew Haley: "Survey of Legal Opinion on Extraterrestrial Jurisdiction." Report presented to the Eleventh Congress of the International Astronautical Federation, Stockholm, 1960.

¹ See Keesing's Contemporary Archives, December 2-9, 1961, p. 18461.

scientific associations, who vehemently condemned the West Ford Project. Even though the position of opposition to the experiment adopted by certain institutions like the U.S.S.R. Academy of Sciences might be accused of bias or prejudice, there is no doubt that other scientific societies, like the International Astronomic Union, deserve all credit and a wide margin of confidence. Now, this latter institution, in a resolution adopted unanimously (with the participation of United States scientists) on August 24, condemned the West Ford Project, which might "interfere seriously with astronomic observations." Similar protests were made by the International Radioscientific Union, the French Academy of Science, which considered it "a danger to the progress of radio and radio-astronomy"; Sir Bernard Lovell, Director of the Jodrell Bank, who accused the United States of "contaminating" space, in spite of the "opposition of organizations which represent the opinions of the great majority of the most eminent scientists in the world"; Dr. Fred Hoyle, Professor of Astronomy and Experimental Philosophy at Cambridge, who did not hesitate to call this experiment an "intellectual crime,"² an opinion which Machowski agrees.³ On May 6, 1963, the United States Air Force announced that at a date to be made public, the United States would proceed with the second launching of 400,000,000 needles. On May 12, the Massachusetts Institute of Technology announced that the operation had been carried out, accompanying this announcement with the usual assurances of the innocuousness of the experiment. World reaction was, however, as strong as in 1961. Thus, Sir Bernard Lovell (Director of Jodrell Bank) called attention to the fact that "the proliferation of orbiting debris over a few decades" could create such difficulties for radioastronomy that it was in danger of disappearing by the end of the century.

The exposition of these isolated events leads us to ponder the fact that a country no matter whether it be the United States or the U.S.S.R., has proceeded to carry out all experiment in outer space whose actual consequences were unknown, or were doubtful, and which might have caused irreparable damage to certain branches of science, such as astronomy, or to space navigation. Furthermore, this experiment was carried out against the opinions and protests of eminent scientists and the opposition of international organizations of first rank in the scientific field, known for their impartiality in political affairs.⁴

Through a legal analysis of these events we shall determine whether, as has been said, they constitute an act contrary to the principle of the peaceful uses of outer space, whether it is an intellectual crime, as some have defined it, or whether it is a simple violation of international law, without overlooking the evidence for its legality.

Section 11

Legal Analysis

² See Keesing's Contemporary Archives, December 2-9, 1961, p. 18461.

³ Doc. A/C.I/SR.II62 to 1243, p.269.

⁴ Perhaps Sir Bernard Lovell has pointed out the most deplorable point in this whole matter "The damage lies not in this experiment alone, but with the attitude of mind which makes it possible without international agreements and safeguards," Keesing's Contemporary archives, June 8-15, 1963, pp. 19452-53.

The crux of the problem can be reduced to determining to what point a state is to be condemned for having carried out all acts which, according to nearly all the scientists in the world, might have harmful and irreparable consequences for the sciences. To what extent may a state make decisions that imply or may imply an injury, of whatever nature it might be, to all of humanity?⁵

Paragraph 1. The West Ford Project, as an act contrary to the principle of the peaceful uses of space.

To accept this judgment would be to declare that the launching of the needles into space had a purely (or principally) military or warlike purpose, directly or indirectly. Actually, it is clear that the purpose of this operation was the one professed, to experiment with the possibility of using the belt of needles as a reflector for waves sent from the earth, and thus be able to achieve a great improvement in long-distance transmissions. Such a purpose would seem to anyone to be concomitant with the peaceful uses of space; it may be argued that the advances achieved in this aspect could be used for military purposes, and it will probably be said (and possibly with reason) that the main, if not the only purpose was one of a military nature, adducing as support for such a statement the fact that the Air Force was the promoter of the experiment. Actually the argument is very weak, because although an advance of science or technology can be used for military purposes, it is also evident that in calling an activity peaceful or non-peaceful, one must confine oneself to the activity itself and not to its purposes, whether more or less admitted. Therefore we have no hesitation in stating that the launching of the needles into space in the West Ford Project in order to improve long-distance radio transmissions cannot be called an act contrary to the principle of the peaceful uses of space. The violation of this principle cannot be deduced from the simple accomplishment of an act contrary to law (this would be to give the term "peaceful uses" a scope it does not have, and to attempt to use it to supplant the legal regulation of space, a task that belongs to international law). It must be shown that the act involves the idea of military usage, or belligerent purposes, unless the action itself constitutes an act of war.

Paragraph II. The West Ford Project as an intellectual crime.

The designation applied by Dr. Fred Hoyle and Machowski⁶ is probably the fruit of the indignation provoked by the United States' decision to proceed with its experiment, taking little account of protests from all over the world. In fact, to determine what constitutes an intellectual crime is a bit difficult. It is a figure of speech with no substance or, at least, none that has been defined. Probably the term was used to refer to the West Ford Project as a crime against the law of nations. The term exists in international law, and the task of the lawyer is to see what elements enter into it in order to determine whether or not apply it to the case at hand. Of course, since we repudiated calling the operation an act contrary to the principle of peaceful uses, it may be thought that the possibility of our considering it a crime against the law of nations is also eliminated; but this is not our

⁵ The position of Zhukov in this respect is completely correct: "Experiments in outer space which may hamper its study by other states must be subject to preliminary discussion and co-ordination on an appropriate international basis." (See Zhukov: Practical Problems . . .)

⁶ Supra, notes 3 and 4.

position. Even without pursuing belligerent ends, a state may indulge in experiments for peaceful purposes, knowing (or admitting the risk) that it will cause sufficient harm to the population of the globe to constitute a crime against the law of war and need not be undertaken for military purposes to constitute a crime against the law of nations, we shall define this term and judge its application to the concrete case of the West Ford Project.

Discarding once and for all the designation of intellectual crime, which is not recognized in international law, we should confine ourselves to crimes as they are classified in the law of nations, and therefore we should also make a clear distinction between crimes against the law of nations and simple illegal acts against the law of nations. Leaving the latter for the following paragraph, we shall analyze the former. Annexed to Article 6 of the Charter is the agreement signed in Moscow on August 8, 1945, creating the International Military Tribunal,⁷ classifying crimes against the law of nations in three broad categories: a) crimes against peace; b) war crimes; c) crimes against humanity. The launching of Operation West Ford cannot be included in the first,⁸ because it did not entail "the planning, preparation, or waging of a war of aggression, etc., etc."; nor in the second, because a war crime implies violation of the rules of warfare⁹ and the natural existence of a state of war; finally, it could not be classified as a crime against humanity,¹⁰ because such a crime means causing serious harm, from assassination to reducing persons to slavery, and at worst the West Ford Project occasioned only material damage to science, and material injuries cannot be said to be against the law of nations, where such a designation necessarily implies an offense against human persons.

Having discarded this designation, there remains the last, to consider whether the West Ford experiment constituted a simple violation of international law.

Paragraph III. The West Ford Project as a simple violation of international law.

The final question is whether it was a licit operation or whether it was a violation of international law. The United States of America, the state that effected the launchings, based its case on the innocuousness of the experiment, which, it maintained, would not cause harmful effects or interfere with studies being made by other countries of the world, adding that, in any case, the slightly harmful effects that would be produced would

⁷ See Merle: "Le procès de Nuremberg," 1949; Donnedieu de Vabres: "Le procès de Nuremberg devant les principes modernes du droit pénal international," *Recueil des Cours de l'Académie de Droit International*, 1947, Tome 70, pp. 481-581.

⁸ See Waclaw Komarnicki: "La définition de l'agresseur dans le droit international moderne," *R.C.A.D.I.*, 1949, 75, 5-110; Hans Wehberg: "L'interdiction du recours à la force. Le principe et les problèmes qui se posent," *R.C.A.D.I.*, 1951, 78, 7-121.

⁹ Jimenez de Asúa: "Crímenes de guerra," *El Criminalista*, Buenos Aires, 1947, p. 211 and following; Pella: "La guerre-crime et les criminels de guerre," Paris and Geneva, 1946.

¹⁰ J. Graven: "Les crimes contre l'humanité," *R.C.A.D.I.*, 1950, 76, 433-607. In the preparation of the International Convention on Genocide, a definition appeared in the Special Committee containing the necessary elements to qualify this violation of the law of nations: "Any one of the following premeditated acts that follow, committed with the intention to destroy a national, racial, religious, or political group because of the national or racial origin of the religious beliefs or the political opinions of its members . . ." (See Doc. E/794, p. 5).

disappear within a short time which, at most, would be seven years.¹¹ It presented the problem by saying that a few hypothetical and temporal damages do not justify the deferring of an experiment that may produce incalculable benefits for all humanity, since it promised to share with all nations the results of its experiment. For the United States this is simply a matter of fact.

The enemies of this experiment adopt a different position, giving another interpretation to the facts: the harmful effects of the launching of needles into space are undeniable, according to the vast majority of the world's men of science, and no state has the right to conduct such an experiment.

The presentation of the issues from a legal point of view means for us that we must set aside many of the circumstances and deal with it on a more abstract level. A state has conducted an experiment (it does not matter much what its actual effects might be) in a zone of outer space which, according to general opinion, is free and may not be appropriated by any state in particular. The permanence or duration of the experiment, preventing other states from using this space with all the confidence necessary for the normal practice of traveling through it, implies an appropriation to a certain extent, since it keeps others from exercising their right to the full. Furthermore, this act of appropriation is aggravated by the circumstance of the opposition of scientists all over the world and the protests of certain states.¹²

For individual states to indulge in experiments or acts of the type we have studied, without an agreement with other members of the international community, and even against the more or less clearly expressed will of the majority, would constitute an extremely serious precedent against the principle of the non-appropriation of outer space.

For the foregoing reason we consider that the West Ford Project, although it cannot be called a violation of the principle of the peaceful uses of space, nor a crime against the law of nations (the intellectual crime has been discarded as being hardly judicial), should be considered a violation of international law. The objection that might be made, that since there is no express ruling on activities in space, each state may go ahead with whatever experiments it deems advisable (which would mean a retrogression, since we have seen how customs accepted by all consolidate into principles) is not acceptable, because these experiments interfere with the rights of other states on earth, in this case the right to continue their scientific observations in the fields of astronomy, radioastronomy, etc. Since the West Ford Project affects the countries on earth (by preventing the normal performance of their work of observation) if there were no other standards in outer space, this would be applicable to international law in the concrete rule that establishes the general duty of states not to injure others or prevent the free exercise of their rights.

¹¹ This is not the unanimous opinion, as we have indicated before See Keesing's . . ." p. 18461-18462

¹² See, for example, the interventions in the General Assembly, of Machowski (Poland) in Doc A/C I/SR II62 to 1243, p 269; of Lorinc (Hungary), Ibid., p. 274; and of Kuleshov (Bielorussia), Ibid., p. 277

No jurist, therefore, can accept the West Ford Project, or any other of similar nature, as legitimate and in accordance with law.

Chapter IV

Atomic Tests in Space

Section I ***The Facts***

On July 26, 1963, representatives of the U.S., Great Britain, and the U.S.S.R., meeting in Moscow, reached an agreement on the prohibition of nuclear tests, excepting underground tests, which would be the subject, according to the report received, of later conversations.

This agreement, however, although this was not manifested in the text made known (because the states involved do not admit it) merely lists a conventional series of principles of positive international law which until then had been violated. For this reason, although the Moscow agreement has put an end, at least temporarily, to the dangerous atomic tests, including those launched into outer space, it would be advisable to study these latter tests to determine their actual legal status. This will serve to prove our statement that the Moscow agreement did not create law through conventional channels, but merely applied principles which until then had not been violated.

On May 28, 1962, the United States announced that in the near future it would launch two atomic tests to a height of several hundred kilometers¹ in the Pacific, in the area of Johnston Island. The first one took place on June 9, with the explosion of a two-megaton bomb. Its luminous effects were visible in Hawaii, New Zealand, and the Fiji Islands, and radio communications were seriously affected for some time (twenty minutes from Sidney to Vancouver, eight from Tokyo to Manila or Honolulu, etc.)

But there were other much more serious effects, as was proved later. On August 19, Van Allen (discoverer of the circle of radioactivity that bears his name) announced that the experimental explosion of the Johnston Islands had created a new circle of radiation, thus adding to the danger to which future astronauts would be exposed.

It was said that this new circle of radiation would progressively lose its force until it disappeared totally within a year. From the strength of these affirmations, supported by Van Allen himself, the U.S. Department of Defense announced that there was no occasion to be alarmed by these effects which, as it pointed out, had been adequately foreseen. Nevertheless, on September 1 following, the Department of Defense corrected its previous statement and that of Van Allen, indicating that later studies had evidently shown that the increase in radiation had been greater than had been foreseen, and that it

¹ Keesing's . . . p.18885-6-7. 21-28, July, 1962.

was possible that its life would be prolonged for several years, especially in the upper regions. At the same time it was acknowledged that radiation had damaged the solar batteries of the British satellite Ariel which transmitted intermittently, and that two United States satellites had been completely silenced.

As if the effects mentioned were not sufficient, it must be remembered that the first two attempts to send a nuclear cargo into space failed and the cargo had to be destroyed in flight, its fragments falling into the sea.²

Protests rose from all over the world against this act, which was described in the harshest terms and evoked a protest from U Thant, pointing out the resolutions approved by the General Assembly of the United Nations, asking for an end to nuclear tests.

Section II *Legal Examination of the Problem*

The legal evaluation of nuclear tests in space presents multiple facets derived from the site of the experiment, the goals pursued by such tests, and their harmful effects. Therefore, we cannot say that they are simply a violation of international law, or a violation of the principle of peaceful uses; they are something more and, of all the problems we have examined here, we have no doubt that the undertaking of atomic tests in space, the most serious of all the violations, constitutes an authentic crime against humanity.

Paragraph I. Atomic tests in outer space, a violation of international law.

Even before the Moscow agreement, engaging in atomic tests was already a violation of international law, whether they took place in the air, on the sea,³ or in outer space. In themselves, atomic tests do not seem to us to be violations of the law of the nations, violations which we base solely and exclusively on their harmful effects on all of humanity⁴ and on the place where they are undertaken.

² These accidents lead to reflection because 1) they demonstrate the technical possibility that one of those rockets, provided with nuclear cargo, might escape control and crash in some inhabited place; 2) that, at any rate, even though it might be destroyed in air, as happened the two times mentioned, its particles fall into the sea, contaminating the waters

³ On the general legal aspects of atomic tests there is an abundance of literature, among which we point out the following: Marcolis: "The Hydrogen Bomb Experiments and International Law," Yale Law Journal, April, 1955, pp. 629-47; McDougal and Schlei: "The Hydrogen Bomb Test in Perspective," Yale Law Journal, April, 1955, pp. 648-710; G. Fischer: "Droit International et experimentation des armes nucleaires," Le droit au service de la paix, June, 1957, pp. 13-23.

⁴ See 1. R. Oppenheimer: "Atomic Weapons and American Policy," Bulletin of Atomic Scientists, July, 1953; Yoshitaro Hirano: "Le droit à l'age atomique," Le droit au service de la paix, June, 1957, pp. 5-12.

It is sometimes said that atomic tests are to be condemned because their purpose is the preparation of weapons for a future war,⁵ and that as such they should be considered violations of the law. This statement does not seem acceptable to us. In fact, the manufacture of weapons, however repugnant it is to us, is not especially prohibited by international law, and there is nothing against it as long as no agreement has been reached on disarmament or the limitation of armaments. Whether the weapons are atomic or not does not matter, with the exception of chemical and bacteriological weapons that have been outlawed by international instrumentations now in effect.

In accordance with this criterion, underground nuclear-bomb test carried out in the territory of the country that undertakes them are perfectly legal, and do not violate any international standard, either of common law or of conventions.

It was a violation of international law when the atomic explosion interfered with the rights of other nations, and this interference was produced in two principal ways: a) the undertaking of atomic tests on the high seas, violating the universally recognized principle of freedom of navigation; b) undertaking tests in the atmosphere, producing radioactivity which, by circulating in the atmosphere and falling in the form of radioactive residue, produced extremely serious damage all over the world.

With regard to tests on the high seas, the cutting off of navigation and fishing in extensive areas (a problem that we shall look into further ahead) constituted a flagrant violation of international law, but the worst effects were those of radioactivity on the fishing industries, and on persons, when spread throughout the oceans by marine currents.

The undertaking of atomic tests in the atmosphere was more serious still, because, besides being a threat to the freedom of navigation in air space situated over the high seas (when not taking place over the territory of a state) the harmful effects of radioactivity are more widespread and injurious to all the inhabitants of the planet

Even supposing that radioactivity did not cause irreparable harm to persons, the atomic tests were still a clear violation of international law: 1) those undertaken outside the territory of the state, because they constituted a threat to the rights of other states, among which is the freedom of communication, upheld as far back as the illustrious Francisco de Vitoria; 2) those undertaken within the air space of a state, because radioactivity causes injury within the territory of other states and in the free atmosphere and sea, and international law positively forbids states to engage in acts whose consequences transcend their frontiers when these consequences are harmful; this theory has been clearly determined in the case of the Trail Foundry,⁶ United States vs. Canada, in which Canada, in whose territory the foundry was situated that produced the smoke causing damage on the other side of the frontier, was found guilty. And states are responsible not only for those acts that cause damage beyond their territory, but even within their own territory they should take necessary measures to prevent it, according to the International Court of Justice in the Corfu Channel Case, in response to the first question of the

⁵ Hirano: *Op. cit.*; Tadeusz Cyprjan: "Interdiction des armes de destruction massive et sécurité collective," *Le droit au service de la paix*, June, 1955, PP. 13-25

⁶ L. C. Green "International Law Through the Cases," 2nd Ed., Stevens, London, 1959, PP 777-788

Special Agreement on whether Albania was responsible under international law for the explosions that occurred in Albanian waters, and for the human loss and damage occasioned. The answer was affirmative, pointing out That international practice shows that "A state on whose territory or in whose waters an act contrary to international law has occurred may be called upon to give an explanation"⁷ If liability was incurred by a state, in this case by Albania's negligence in not informing (according to one of the interpretations) the foreign ships of the danger existent in its waters, with greater reason will a state's responsibility be compromised if the acts producing the dangers are voluntary and are undertaken outside of the territory of the state, or even within its frontiers, when the effects spread to other countries The Trail Foundry Case shows that a state may not undertake or permit the performance of acts within the territory, whose consequences will produce harmful effects beyond its frontiers, whether it be in the territory of another state, the free sea, the space above it, or outer space, since in any event it is a threat to the rights of other states, first among them being territorial sovereignty, and among the others freedom of communication

Nuclear tests then, even when made within the territory of the state, constitute a violation of international law, because of their effect, radioactivity, which causes human loss and damage in the territories of other states. If these atomic tests are undertaken beyond the territory of the state, whether on the high seas or in outer space, the state's liability is aggravated by the fact that, besides the possibly major widespread harmful effects of the act upon the territories of other states, the act presents a threat to a universally recognized principle: the right of freedom of communications on the high seas and outer space, where no state may engage in acts that imply a direct limitation of other states' right of transit and may cause serious damage if, through ignorance, they should try to cross the zone wrongly prohibited to traffic.⁸

The irrefutable consequence is that undertaking atomic tests constitutes a violation of the general principles of international law as it stands in force at present, without any need for the Moscow agreement. We exclude atomic tests made in the subsoil of a state In fact, atomic tests are not prohibited in themselves by international law, but because of their effects, and the effects on third states of underground tests are nil In order to prohibit this type of test, an international agreement would be necessary, but such a prohibition at this time is merely a question de lege ferenda,⁹ in contrast to other test which no nation may attempt to undertake by claiming that there has been no preceding agreement to ban them; such an agreement is unnecessary, and the states

⁷ "Corfu Channel Case, Judgment of April 9th, 1949; I.C.J. Reports p.4." p 18

⁸ In its sentence on the affair the Corfu Canal, the International Court insisted on what it called "General and well-recognized principles, namely: elementary consideration of humanity, even more exacting in peace than in war; the principle of the freedom of maritime communication; and every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other states," Ibid., p. 22 every word in this sentence is useful.

⁹ Activities carried out in the interior of the territory of a states, that have no effects beyond their frontiers, and do no harm to foreign subjects within them, fall within the area of application of Art. 2 (7) of the Charter, on the exclusiveness of domestic jurisdiction.

that were undertaking nuclear tests were committing a positive violation of international law, and threatening the security of all the nations of the world.¹⁰

This appears to us to be a clear statement of the problem. We have purposely refrained from resorting to resolutions of the General Assembly asking for the cessation of nuclear tests, because these resolutions have no value other than that of recommendation, as we have indicated elsewhere, and have no obligatory power. Nevertheless, they should be remembered, since they lend to our argument the moral weight of the opinion of the vast majority of the peoples of the world, who formulated these resolutions.

The Moscow agreements only confirm a prohibition already in force in international law.

Paragraph II. Atomic tests in outer space, an act contrary to the principle of peaceful uses

The undertaking of nuclear tests in outer space constitutes not only a violation of international law but is, besides, contrary to the principle of the peaceful uses of space, unlike the West Ford Project

The reason for the distinction between the two problems stems from the principal difference in the nature of each of these acts. Thus, while the West Ford was originally and principally oriented to the achievement of peaceful purposes, and the military uses that might result from it were secondary, the undertaking of atomic tests in space was conceived principally for obtaining data designed for defensive (or offensive) military programs, and the non-military advantages that might result were secondary or, at all events, were not determining factors in programs of atomic explosions.

Naturally, calling an act contrary to the principle of the peaceful uses of space can only be attributed to explosions produced in outer space, since those effected in other places are outside the range of application of this principle.¹¹

¹⁰ There is no doubt that acts performed (no matter where) by a state that cause injury outside of its own territory (we have seen how the International Court extends responsibility to include certain acts performed within its very territory) incur international liability for the guilty state. In the face of such a clear statement, the question naturally arises as to who brought up the need for international conversation to prohibit nuclear tests. We see that it was the atomic powers that brought up this misleading proposal in order to place themselves in a privileged position. For this reason, when Continental China and France demonstrated that any agreement on the suspension of nuclear test in which they had not participated would not be compulsory for them, they were arguing from false premises, as if only an international agreement could put legal restraints on the tests. The fact is that such an agreement is superfluous from a legal standpoint. Politico-military considerations of self-defense, though at times alleged, cannot be accepted. International order would collapse if military considerations flouted the law. (At times this occurs in practice, but jurists should not allow themselves to be led into the games, If it means nothing to a state to violate international law for military reasons, it should be important to a jurist to condemn that state with the only weapons in his power-legal standards.) We already know that the great powers will not do it, because their interests are at stake, but it would be sovereignty before the international Court, and claim eventual reparation for damage caused by past atomic tests.

¹¹ For a discussion on the legality of the atomic tests, see H. j. Taubenfeld "Nuclear Testing and International Law," Southwestern law journal, Vol 16 No. 3, Sept., 1962, especially pp 395-399, dedicated to the examination of atomic tests in outer space. For a different point of view, see

Now, it must be pointed out that if the only reproach that could be made regarding these explosions were that they are contrary to principle, they could not be called illegal since, as we have made clear previously, the principle of the uses of space for purely peaceful purposes is still *de lege ferenda*, and as long as there is no international agreement making them obligatory, states are free to respect them or ignore them, the latter constituting contempt for the opinion of the vast majority of the countries of the world, manifestly expressed through the resolutions of the General Assembly of the United Nations, but very different from the violation of a rule of law, as would be the case if the principle cited had been made obligatory by its inclusion in an international treaty.

Summing up the state of the problem in this aspect, then, it must be pointed out that the atomic explosions in space, besides constituting a violation of international law, for the reasons expressed in the previous chapter, were also a violation of the principle of the peaceful uses of outer space, keeping in mind that the latter act cannot be classified as illegal, because the Principle of peaceful uses is still *de lege ferenda*. Its violation, however, constitutes an act of contempt for the general will of the majority of the countries of the world.

Paragraph III. Atomic tests in outer space, a crime against humanity.

This designation, which we do not hesitate to attribute to atomic tests in space, is based on the general nature of atomic tests, and not on the circumstance that they took place in outer space.

Without entering into a profound and detailed analysis of the legal nature of atomic tests and their status as crimes against humanity, which would be out of place, we would like to point out that we base this designation on the fact that, according to the most highly authorized opinion, the heinous effects of radioactivity liberated by the explosions are obvious and irrefutable. To mention only one of them, scientists who do not agree on the concrete figures are in agreement on the positive influence of nuclear explosions on the number of deaths all over the world from leukemia, not to mention the still unpredictable effects that, in the light of the experiences of Hiroshima and Nagasaki, make possible a future world of monsters if atomic tests continue to be made.¹²

No serious scientist can therefore deny the increase in human mortality caused by nuclear tests; and on this basis, no sane jurist of good will could evade condemning these tests with the adequate designation of crimes against humanity. If the bombs had been directly launched against the thousands of persons who die every year as a result of the

Gerhard Reintanz: "Kernwaffenversuche in grosser Hohe," *Demokratie und Recht*, 1959, No.4, pp. 104 and following; also by the same author: "Cosmos and Humanity" (in Russian) *International Affairs*, Moscow, 1959, No. 10, pp. 123 and following.

¹² See the reports of the Scientific Committee of the United Nations on the Effects of Atomic Radiation, Doc. A/PV.839. See also: Res. 1376 (XIV); Doc. AC/386; Doc. D/AC.82/G/L.336; Res A/II47 (XII); Res I347 (XIII); Doc. A/38(4); Doc. A/4II9; Doc. AC/381; LOC. A/4528 and Annex I; Doc. A/4881; Doc. A/3838, SUPP. No. 17; Doc. A/488I and Corr. r; Doc. A/ SPC/1.68 and A/SPC/L.69 and Add. I; Doc. A/SPC/L.70; Doc. A/4804; Gen. Ass. Off. Records (17th Session), Supp. No.16 and 17.

tests, all the world would be indignant and would make its protests known. Nevertheless, it is a fact that thousands of deaths are the price that humanity is paying (always with innocent lives) for atomic tests, whose possible beneficial effects on science are obscured by the main purpose of the perfecting of terrible weapons for use in a hypothetical future war.

It is true that from a strictly legal standpoint atomic tests do not fit into the definition of crimes against humanity listed in the Nuremberg Document.¹³ We can point out two differences: 1) In the crimes subject to the Nuremberg rulings the will to commit them was apparent; the precise and voluntary purpose was to kill human beings under distinctly detailed conditions. 2) Among these conditions, the reason governing the crime and the desire to exterminate human beings is that they belong to an ethnic, religious, or political (etc.) group.

In the case of the atomic tests we find certain differences: 1) the purpose of the tests was not to cause the deaths that such tests ordinarily produce. The risk was simply accepted; a decision was made to undertake an act which it was known would cause several thousand deaths, perhaps even among the very ones who were conducting the tests. The deaths were not willed, but they were accepted in the full knowledge that they would be caused. 2) There was no intention to kill anyone for being part of an ethnic, religious, national, or political group, and the effects could have been just as harmful to the very members of the nation as to those of other countries. In fact, when the tests are conducted on home territory, the risk to the members of the nation is much greater.

These are the differences that prevent an exact application to the recent atomic tests of the designation of a crime against humanity. Nevertheless, this designation seems just to us, and we feel justified in stretching its limits a little.

In summary, what are the facts? Several states (responsibility is here shared by the principal powers of the two blocs, for although the United States was the nation mainly accused of conducting tests in space, the USSR has also conducted them, according to all appearances,¹⁴ and, at all events, Russia has the terrible responsibility of having been the one to break the tacit truce in 1961) proceeded to engage in acts which uselessly (and we say uselessly, because the perfecting of weapons, purely military pursuits, cannot justify in times of peace the death of a single person) caused thousands of deaths all over the world. The fact that such deaths were caused (and are still being caused) by a means that spread them through all countries, and that they were not directly willed by those who conducted the atomic tests, does not detract from the fact that such deaths were caused, and that those who conducted the atomic tests knew that they had to be caused every time they effected a nuclear explosion. The application of crime against humanity to the act of deliberately (deliberately is the adequate adverb) causing the deaths of thousands of persons in the world is perfectly correct and does not ignore any of the rules of international law in force.

¹³ See *Supra*, Chapter 111, Note 9.

¹⁴ In this respect, see the statement of United States representative, Mr. Francis T. P. Plimpton: "The Soviet Union truly effected explosions of nuclear weapons in outer space a year ago." (*United Nations Review*, October, 1962, p. II).

The Paragraph IV. The Moscow agreement on the prohibition of nuclear tests.¹⁵

A) Its content. On July 25, 1963, it was announced to the world that - the conversations taking place in Moscow between the United States, Great Britain and the U.S.S.R. had resulted in an agreement on the cessation of nuclear tests.

The agreement was conceived in the broadest terms the parties "promised to prohibit prevent, and not conduct any explosion of nuclear-arms tests, in any place under their jurisdiction or control:

a) in the atmosphere, beyond its limits, including outer space . . ."

The agreement would not apply to underground nuclear tests conducted within the territory of the state itself

The reason for the suspension of tests was made manifest in Art. I Paragraph (b) which extends the prohibition to explosions conducted in "any other environment, if such explosions cause the presence of radioactive residue outside of the territorial limits of the state under whose jurisdiction or control such an explosion is effected "

The treaty, of unlimited duration, is open to the participation of other states

B. Legal value of the agreement. The agreement did nothing but record in a conventional document legal obligations already in effect as the result of general principles of international law, internationally observed until they were violated by the conducting nuclear tests freedom of communications in outer space and at sea; national sovereignty (which was threatened when radioactive residue fell on the territories of other states, causing damage), etc

The statement that the Moscow agreements add nothing to positive law is all the more true in that they refused to prohibit underground tests, for these, as long as they are conducted within national frontiers, do not violate international law, and an agreement between states needed to prevent them

¹⁵ We have consulted the text in a note disseminated by United Press International], July 25, 1963.

Chapter V

Zoning off Ocean Areas for Missile Tests

Section I

The Facts

The liberties great powers take with the standards of international law are exceedingly plain to see in their activities in the matter of space exploration (or, until a short time ago, in atomic investigations through nuclear-bomb tests). Here they not only show scant concern for the legal consequences of their activities or for the violation of principles that have begun to be generally accepted, but, when necessary for the success of their scientific work or their propaganda aims, they do not hesitate to violate the most established and generally accepted standards of international law.

This is also the case with freedom of the seas, a principle seriously violated by the leading powers of the two blocs (U.S. and U.S.S.R.) principally, for the purpose of making nuclear tests on the high seas and launching rockets out to sea, cutting off from free navigation extensive areas of oceanic space, and seriously infringing on the equal rights that all countries have to its use. The problem of atomic explosions on the high seas does not concern us at this time, and the Moscow agreement appears to have solved it. We shall confine ourselves to the missiles tests made by the U.S.S.R. in the Pacific.

On January 7 and 8, 1960, the Tass Agency announced that the Soviet Union would proceed to launch in the Pacific missiles of great power, without the third stage, which would be designed to transport terrestrial satellites and facilitate journeys to planets of the solar system.

Governments were informed through diplomatic channels that the areas in which the missiles would fall would be in the Pacific and would be about 16,000 kilometers in diameter, an area in which sea and air navigation was cut off during the time of the tests. The first launching took place on January 20, and the second on the 31st of the same month

On the 5th and 7th of July, 1960, the Soviet Union conducted new launchings of missiles in the Pacific, which fell on the appointed objective, an area 1,500 kilometers from Hawaii.

On July 23, 1962, the USSR announced that from August to October it would carry out joint exercises with its Northern Fleet and the use of rockets, and air forces and that for this reason air and maritime navigation would be prohibited in the Barents Sea and the Kara Sea during the period dedicated to tests by the fleet.¹

Similarly, in August, 1962, the United States, in order to carry out atomic tests, created a proscribed zone in the Pacific Ocean, around the Johnston Islands, with a radius of 600 sea miles along the coast by 810 sea miles, rising to a height of about 12,000 meters.²

The events are similar and their legal classification is identical the prohibition of an extensive zone on the high seas to maritime navigation, a prohibition extended in both cases also to air navigation above the stipulated zone

The United States launching of missiles in the Atlantic in the direction of the Saint Helena Island was done without zoning off the area, but it created a hazard to air and maritime navigation.

Section II

Legal Classification

The bare exposition of the facts reveals that maritime and air traffic were forbidden in an extensive zone of the high seas and in the air space above it. It will be our purpose to determine to what point this conduct is legitimate, or if it constitutes a violation of the principles of international law, committed with absolute disregard for the interests of other nations.

Paragraph I. The principle of freedom of the seas and its limits.

¹ See Keesing's . . . p. 18890, July 21-28, 1962; also "Revue Générale de Droit International Public," April-June, 1963, pp. 399-404.

² See Keesing's . . . p. 18886, July 21-28, 1962.

It is being said currently that the Dutchman Grotius was the enunciator of the principle of freedom of the seas, when he published separately the chapter *De Mare Libero* which, as is known, was part of his more general work *De Jure Praedae*; but this statement is not quite accurate for, although it is true that Grotius was the one who spread this idea of freedom, its more certain origin goes back to the Spaniard, Francisco de Vitoria, who had tried to find a basis for it at to place it in the more general context of *Jus communication*.³ At any rate this shows that, since the celebrated debate took place between Grotius, who defended freedom of the seas with his *De Mare Libero*, and Selden, who favored the possibility of imposing the sovereignty of a state over it, in his *De Mare Clausum*, enough time has elapsed to consolidate the principle of freedom of navigation, accepted by all states, and the illegality of appropriating any zone therein or imposing any obstacles to traffic.

It would be difficult to find at this time any jurist of good will who does not recognize the full scope of a principle like that of freedom of the seas, which has been based on the constant practice of the states and recognized for centuries by all jurists. Without attempting here to make an exposition of the theory of the freedom of the seas, of its content, of its limits, or of its defenders, we shall confine ourselves to pointing out that in recent times freedom of the seas has been understood to mean the possibility of the sea's being used indiscriminately by all states, large and small, with no other limitation than that imposed by the principle that the use of the high seas by one country should not keep other countries from using it in its main function as a means of communication and as an area for fishing.

In his project of regulation presented to the International Association, in 1924, the great jurist Alejandro Alvarez pointed out in Article 13: "No state or group of states shall be allowed, under any pretext, to attempt to have over the high seas the right of sovereignty, regulation, control, privileges, prerogatives, or restrictions for its own benefit in any part of this sea whatsoever, or create obstacles, even temporary ones, to the exercise of free navigation."⁴

This position was later to be incorporated in the project "Laws of maritime jurisdiction in times of peace," adopted by the International Law Association at its meeting in Vienna, in Article 13 which points out that no state or group of states "may regain possession of any right of sovereignty, privilege, or prerogative over any part of the high sea or put obstacles in the way of the free and complete use of the seas."⁵

The convention on the high seas, a result of the conference on the law of the sea, held in Geneva in 1958, points out in Articles 1 and 2 that the high seas are

³ Thus, Vitoria said then: "In the beginning of the world (when all things were held in common) it was legal for anyone to go to any region he liked and travel through it. This does not seem to have been abolished by the division of things, because it could never have been the intention of the peoples to prevent communication and trade between men." *Relecciones sobre los Indios*, Part III.

⁴ Report of the Thirty-Third Conference, Sept 8th to 13th, 1924, pp. 266-275.

⁵ Report of the Thirty-Fourth Conference, August 5th to August 11th, 1926, pp. 101-104

open to all states and that no one state may try to subject any part of them to its own sovereignty.⁶

To make the idea clearer, we must point out that in referring to the different freedoms that states have on the high seas (freedom of navigation, freedom to lay oil pipe lines, to stretch cables, to fly over its waters, etc) it was added that "these freedoms, and others which are recognized by the principles of international law, will be exercised by the states with a reasonable consideration for the rights of other states in their exercise of freedom of the seas."

The principle of freedom of the sea is not defended exclusively by bourgeois Western jurists,⁷ but also by theorists of the Soviet state. Thus, Kozevnikov tells US that, "Recognizing the principle of freedom of the open sea in international law, the Soviet state will protect it from any threat from wherever it may come."⁸

Another distinguished Soviet jurist, Durdenevski, tells us in his *International Law (Mesdunarodnoe Pravo)* that, "The Soviet Union consistently defends the principle of freedom of the open sea" considering it "one of the foundations of peace."⁹ Another, Vychnepolski, is more concrete when he indicates that, "The Soviet conception of freedom of the seas . . . arises from democratic and peace-loving principles, from respect for sovereignty and the safety of all the coastal states, however small they may be."¹⁰

International law in its present state, therefore, shows that the principle of freedom of the seas is indisputable from a theoretical standpoint, and in practice all the states confirm all of these theories, included finally in the definitive Geneva Conference of 1958.

Freedom of the seas means that they can be used by all states, and that no one state or group of states may use them in a way that is incompatible with the principle of freedom as enunciated. In other words, no state or group of states may use them in such a way as to entail hindering (even temporarily) maritime or aerial navigation, radio communications, fishing, etc., which are the normal uses of the high seas. The state or states that do so are violating international law, since the only restrictions to the principle of freedom of the high seas are those established by the law of nations in time of peace in the matter of policing the sea, and in time of war within the narrow limits set forth.

⁶ "The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty."

⁷ See C. J. Colombos: "Le Droit International de la mer," Ed. A. Pedone, Paris, 1952, especially pp 3a-54.

⁸ Quoted by J. Y. Calvez: "Droit International et Souveraineté, en URSS," Armand Colin, Paris, 1953. See p. 193.

⁹ Op. cit., p. 290.

¹⁰ Vychnepolski: "Freedom of the sea in the epoch of imperialism," *Sovietskoe Gosudarstvo i Pravo*, January 1949, p. 25.

Depending on the effects of illegal activities of states, such activities may be classed as simple acts of violation of international law or as crimes against humanity when they involve the death of innocent human beings.

Paragraph II. The zoning off of areas of the ocean, a violation of international law.

As demonstrated by the facts set forth at the beginning of this chapter, the states have proceeded to zone off certain more or less extensive zones in the high seas, depriving third states of their use:

1) In the case of atomic explosions;¹¹

2) In the case of missile launchings in the Pacific area by the U.S.S.R. in 1960 (January-February, and July), 1961 (September-October) and 1962 (October).

3) The zoning off international waters for aeronaval maneuvers (with the use of guided and atomic missiles of all types) in the Kara Sea and the Barents Sea, By the Soviet Union;

4) The launching of rockets by the U.S. into the Atlantic, from Cape Kennedy, which implied not only a violation of the principle of freedom of the high seas, because of the dangers inherent in the launching of an apparatus whose exact destination was uncertain, and which therefore might cause serious damage to those exercising their right to navigate freely, but also a violation of the spirit of the Chicago Convention of 1944 which, as we said before, since it prohibits the launching of unpiloted aircraft across the air space of other nations, should also include free air space.

Excluding from our study case 1, 3, and 4, we shall confine ourselves to analyzing the launching of rockets over the Pacific Ocean, making clear that the principle violated is the same, and that the seriousness of the violation of freedom of the seas is aggravated when it becomes a matter of atomic tests.

The bare facts demonstrate that a country, the USSR, on her own decision, conducted an activity violating a principle of international law—the freedom of the seas, and against generally accepted rules¹² which prohibit any exclusiveness in the use of the high seas, zoned off an extensive area of the Pacific, causing serious damages to other states.¹³

¹¹ For atomic tests on the high seas, according to Soviet doctrine, see Koretsky: "On the Legal Nature of Atomic Tests on the High Seas," (in Russian) *Izvestiya Vystshikh Uchebnykh Zavedeniy*, Leningrad, No. 1, 1957, s. 100-106. The problem has now been solved, with the prohibition of atomic tests on the high seas, decreed in Moscow.

¹²The principle of freedom of the seas has been defended traditionally by Soviet authors. See Vereshchekin: "Freedom of Navigation on the High Seas" (in Russian), *Intitut Mezhdunarodnykh Otnosheniy*, Moscow, 1958, p. 143.

¹³ On the Russian conception of the international responsibility of states, Soviet authors. See Vereschekin: "Freedom of Navigation on the High Seas" (in Russian), *Otdeleniye Ekonomiki i Prava*, No.2, 1946, pp. 99-115, *Izvestiya Akademii Nauk SSSR*; Agarkov: "The Concept of Damage in International Law," *Ibid.*, No.6 1945, pp. 19-27

To prove the reality of the damages suffered would require a detailed study of their nature and magnitude. But even without going into the fine points of the case, we can already judge definitely that the zoning off of an extensive area of the high seas implies:

1) A violation of international law, which classes the state that does it as an international delinquent;¹⁴

2) A series of very diverse damages, which should be paid in their totality by the state that has caused them. In the concrete case of the Soviet tests in the Pacific, these damages were real, since in this zone, according to the declaration of the Minister of Foreign Relations of Japan, about 270 Japanese boats are engaged in the fishing industry, and the air lines. The economic damages were real, as we can see, and can be estimated by considering the forced interruption of fishing and the detouring or interruption of flights that airline companies were obliged to make. It must also be realized that many other ships that might have crossed the zone were forced to change their route, unnecessarily increasing their expenses.

To the responsibility for violation of a rule of law, and to the economic loss implied by the suspension of fishing and the detours made by ships and planes must be added the penal liability that may have arisen by the creation of a risk of such magnitude by the launching of high-powered rockets. In fact, a ship that may not have been warned in time would have been exposed to destruction as it crossed the prohibited zone, a crossing that would have been nothing but the use of a right.

Obviously, the use of the high seas for the launching of transcontinental missiles and the zoning off of areas from navigation are clear and undeniable violations of international law, since they are contrary to the principle of freedom of the seas, a principle that cannot be derogated by the unilateral will of a single power, however great that power may be.

Therefore, for a state to maintain that the fact of its having pointed out beforehand the limits of the prohibited zone relieves it from the obligation to pay whatever damages its activities in launching missiles might have caused is an unsustainable fallacy, since only the legitimate exercise of a right may be alleged as an exception from responsibility. Depriving states of the free use of part of the high seas is an illegal act which may not be imposed on anyone. Hence, if one of the ships had refused to respect the restrictions and had consequently suffered damage, the state causing the damage would not be able to claim exemption by denying that the boat was making legitimate use of the exercise of a right in spite of the prohibition. This would be merely an attempt to defend itself by what is nothing but an illegal act can never serve as an exemption from responsibility.

Summing up our conclusions, then on the question discussed regarding the zoning off of the high seas in order to launch missiles, we have found:

¹⁴ The explicit declarations of Soviet jurists and representative on freedom of the seas may be compared with the zoning off of extensive zones of the high seas, such as those carried out in the Pacific. In fact, the general recognition of the freedom of the seas necessarily entails the admission that the practices pointed out (launching of rockets or atomic tests) imply a violation of international law, logically making the violators liable for the damages caused.

1. Such zoning is a violation of the principle of freedom of the high seas, which has been developed by custom and incorporated in the Convention on the High Seas in Geneva, in 1958.

2. Our position of opposition to the legitimacy of such zoning is not a position *de lege ferenda*, but based on international law currently in effect.

3. In order for states to derive navigation, fishing, and other general uses from the high sea by zoning off certain areas, the consent of a reasonably large proportion of them is required.

4. A state that forces others to renounce the use of a zone on the high seas should proceed to pay the corresponding indemnization, since it is depriving them of a legitimate right.

5. If a state refuses to heed the prohibition to use a determined area on the high seas, and its ships or planes or their respective crews suffer damages, the state that caused them should pay anyway, without availing itself of the excuse that the first state refused to respect the said prohibition, because it is illegal, and an illegal act cannot serve to justify the prevention of the correct exercise of a right.

6. The small states should be all the more concerned about making their protests known in the face of a violation of a right, such as that of freedom of the seas, which is beginning to undergo the assaults of the great powers. In so doing, the small powers would not be struggling to impose modifications *de lege ferenda* on international law, but to impose respect for a system of positive regulations, and this would be the best guarantee for the survival of the system.

SECOND PART

Problems of Sovereignty over Celestial Bodies

Book I

Legal Nature of Celestial Bodies

Chapter I

Concept of a Celestial Body

The definition of a celestial body presents great difficulties because of the fact that we are attempting to establish a legal definition that should take into account physical concepts. Well, from a physical standpoint, what is a celestial body? It is not sufficient simply to enumerate these bodies, because the principle of generality, necessary to all definitions, would be lacking. Planets, satellites, comets, are celestial bodies, but so too are the shooting stars, and the simple meteors, and thus we come to the conclusion that, from the physical point of view, a celestial body is anything [in space] possessing mass. Energy is excluded.

However, this definition is too broad. A meteor could not be considered a celestial body from the standpoint of cosmic international law. And even though a moving body of a size worthy of consideration might be accepted as a celestial body, there is no doubt that a meteor would not deserve this appellation. Immediately we are faced with the problem of deciding the qualification of the mass that would make it possible to accept a meteor while traveling in space as a celestial body. The problem, although difficult, has no bearing here, because we do not know what attitude the law would take toward something that is not subject to any law. And here we find an essential element for the legal definition of a celestial body: the possibility of its being subject to law.

We were saying that, from a physical standpoint, a celestial body is anything that possesses mass. We were trying thus to distinguish it from energy, which is merely a manifestation of a mass, or, if you prefer, mass is condensed energy. We thus conclude that it must be a solid or liquid mass. Is it possible to consider a liquid mass a celestial body? Actually, this is nothing but solid matter in an incandescent state, and we see no reason why it should not be considered a celestial body. There are several planets in such a state, and they are certainly celestial bodies. In short, we should consider any material thing, in solid or liquid state, existing in space (beyond the earth) and subject to law a celestial body.

Having established the concept of celestial bodies,¹ we shall examine their legal qualifications. In this context, we can consider them as *res nullius*, in the sense that no

¹ See Fumio Ikeda: "The Legal Status of Planets," Japanese Annual of International Law, No. 5, pp. 25-30; E. Bornecque-Winandy: "Droit de l'imperialisme spatial," *Libr. Gene'rale de Droit et Jurisprudence*, Paris, 1962, p. 93; E. Fasan: "The Legal Nature of Celestial Bodies," *Colloquium on the Law of Outer Space*, Washington, 1961; from the same: "Sovereignty Over Celestial Bodies," Paper presented to the II Working Group of the International Institute of Space Law, Vienna, 1961;

one exercises any sovereignty over them, or as *res communis*, in the sense that all states have the same rights over them.

Chapter II

Celestial Bodies

Res Nullius

Res nullius is something that belongs to nobody. In international law a region that is not subject to the sovereignty of any state is considered res nullius.

This brings up several problems:

1. To determine when a region is subject to the sovereignty of a state. It is generally admitted that a region is subject to national sovereignty when there exists a state of occupation. How is this state of occupation made manifest? We shall examine this question later when we study occupation as a means of acquiring sovereignty and maintaining it. At the moment we shall state precisely that the following conditions are necessary:

- 1) The will to occupy.
- 2) The state of occupation, through the exercise of certain state activities.
- 3) In the Berlin Conference of 1885, making public the fact of occupation was added,¹ which does not seem basic to us as a positive condition, but which we find acceptable as a negative condition; in other words, the occupation would not be valid, even with the two requisites of will and state of occupation, with the exercise of state activities, if the state should conceal its occupation from other states.

2. Nevertheless, res nullius does not always seem to be a clear concept. The example of the Antarctic presents the paradox of a land belonging to nobody, in spite of its having been occupied by several states. It might be objected that it is res communis and not res nullius. We shall accept the objection for the moment, but there was a time when no one had ever even seen these regions, and at that time they were res nullius, and if they were res nullius they were susceptible to occupation.

Actually, no one admits that they can be subject to occupation by any state.

It will possibly be the same with celestial bodies. Today they belong to no one, but are they res nullius? If they are, they will belong to the first to occupy them, as long as this occupation fulfills the required conditions. But we doubt that the nations would accept the first occupant as the sole sovereign of a celestial body.

According to the definition of res nullius, this is what the Antarctic was, and the celestial bodies still are. If we follow the principle of res nullius to its logical conclusion, the first occupant will be able to appropriate them. But this will certainly never be permitted. What can we deduce from this reasoning? Two possibilities can be acknowledged:

¹ In enunciating the condition of publicity, the Berlin Conference referred principally to territories in Africa. The requisite of notification was abolished by the Treaty of Saint Germain.

1. The concept of res nullius has been modified.
2. Res nullius will disappear from the field of public international law.

The latter hypothesis seems to us to be more likely. We shall try to explain this conclusion.

In practice a concept should be clearly defined. The concept should conform to a fact and the fact to the concept. When the fact changes, the concept no longer applies. It needs another name to designate it, to distinguish it. Obviously, legal concepts, like political concepts, are in a state of perpetual evolution, which is natural for human beings, and it can be said that the concept of res nullius has undergone a certain evolution. But there is an objection: when this evolution entails a fundamental change in the fact, the latter cannot continue to be called the same.

Res nullius belong to no one and can be appropriated by their first occupant. Is the second part of this statement accepted today in public international law? Certainly not, and it is, or at least we believe it is, basic.

It is said that the stars are res nullius because they belong to no one. Possibly it is said because it is thought that no one can reach them. But the moment the possibility of reaching them appears, they are no longer called res nullius. We think, therefore, that they can only be accepted as res nullius provisionally, that is, as long as they are out of man's reach. afterwards study in the following chapter.²

Chapter III

Celestial Bodies

Res Communis

² See M. Smirnoff: "The Legal Status of Celestial Bodies," the Journal of Air Law and Commerce, Autumn, 1961-62, pp. 385-404; A. Buckling: "Gebietshoheit uber Himmelskorper," Osterreichisches Juristenzeitung, 1960, No. 12, pp. 317-319; A. A. Cocca: "La luna como objeto de derecho," ("The Moon as an Object of Law") Ciencia Aeronautica, 1958, V.V., p. 28; J. Ver plaetse: "Can Individual Nations Obtain Sovereignty Over Celestial Bodies?" Space Law Colloquim, Washington, 1961.

Andres Bello defined *res communis* in Article 585 of the Chilean Civil Code of 1855: "Things which nature has made for the common use of all men, like the high seas, are not susceptible of becoming subject to the right of property, and no nation, corporation, or individual has a right to appropriate them.

"The right to their use and enjoyment is distributed among the individuals of a nation by the laws of that nation and among different nations by international law."

Here the characteristics of *res communis* are determined perfectly.

A. Positively.

- a. They are things of nature.
- b. They are for the common use of all men.
- c. Their use is regulated by national or international law.

B. Negatively.

- a. They are not susceptible to becoming objects of the right of property.
- b. No nation, corporation, or individual, may appropriate them.

With regard to the high seas, there has been continual controversy. Rome claimed exclusive sovereignty over the "Mare Nostrum"; Venice, Geneva, and Denmark also tried to have the right of exclusive use of certain seas. The celebrated Bull "Inter Coetera" of Alexander VI, later modified by the Treaty of Tordesillas, divided the recently discovered world between the Spanish and the Portuguese, and started a great argument among jurists. In general, all of these discussions were dominated by the political factor. Whether nations were for or against freedom of the seas depended on the strength of their navies.

Hugo Grotius enunciated the theory of the freedom of the seas in his work *Mare Liberum*¹ to protect the development of Dutch commerce.

Selden responded with his *Mare Clausum* at the time that England, confident of her naval strength, wanted to be mistress of the seas. As always happens, reality prevailed, and the desire to keep navigation free has made the principle of freedom sacrosanct.

Collective sovereignty can be conceived in two ways:

1. Indivisible, or co-sovereignty. The members of a community exercise their sovereignty over a certain object, each independently of the others. Such is the case of the sea and the air. There is a common object of the law: the sea, or the air; and a plurality of subjects: the states. Each state uses the sea, considered an indivisible *Ullit*, with only one obligation-not to injure others or disturb them in their exercise of the same right.

2. Moral entity. The title is vested in a moral party, the result of the association of others, with an identity distinct from theirs. We might find an example of this in the international mandates of territories subject to guardianship. This is exercised by a

¹ In reality it was one chapter of his work *De jure proedae*, and it was published separately in 1609.

responsible state, but the title to the right belongs to the United Nations as an organization of nations, with legal status, and with an identity distinct from the nations that constitute it.

There are, however, two fundamental objections to these two conceptions. If there is co-sovereignty over the sea, there is no explanation for the case of the new states. Sovereignty would be limited to those states exercising that power, and new states would have to solicit it of them. In reality, it is obvious that such is not the case. There is a natural right to the use of the sea, and any new state may use it without seeking authority from anyone. Even individuals simply because they are people, and not because they belong to a state, may use it and no state has the right to stop them.

New factors have entered the situation to complicate the legal status of the sea. For example, when a state uses the sea to make atomic tests or to launch missiles, and prohibits transit within a determined zone, is it not sovereign power? Possibly in the present state of the evolution of international law, this constitutes a fault, but it is being done, and the protests it evokes are so weak there are grounds for the thought that a custom is in the process of taking form.

Res communis are things that nature has placed at the disposal of all men in equality, and no one should be able to appropriate them -the high seas, outer space, etc.

As for celestial bodies, according to classic international law, they belong to no one, they are appropriable, and the first occupant should be able to establish sovereignty over them as long as he fulfills the required conditions. The attitude of the states, even those to whom the application of the principle of appropriation would be of greatest benefit, is that they prefer an international agreement to guarantee the peaceful use of these celestial bodies by all the nations of the world. This is the aim pursued by several projects of resolution presented at the General Assembly of the United Nations.

According to this what will happen is that a regime of co-sovereignty will be formed, through a moral entity, which will be the only practical solution acceptable.

In fact, as soon as technological progress makes exploitation of celestial bodies possible and profitable, all the states will want to take the fullest advantage, and there will inevitably be conflicts.

In summing up to the legal status of celestial bodies, it can be concluded: in principle they are res nullius, since they belong to no one and any state may appropriate them. By the practice being followed, they belong rather to res communis, because it is the will of all that there be no exclusive appropriation for the benefit of one special country or group of countries. They prefer exploitation in common. But celestial bodies are not res communis in the proper sense of the word, because this means use by all, without sovereignty on the part of any.

Most probable there will be a co-sovereignty, by an independent moral entity, whether it be the United Nations or the Committee on Cosmic Space.

In this matter, as in so many other questions of international law, political solutions will be imposed on those purely judicial. Only through an international agreement will a solution be reached. There is unanimity of opinion on this, and it is hostile to any

appropriation of a celestial body by a state or group of states, unless the whole community of nations is included.²

Book II

Acquisition of Sovereignty over Celestial Bodies

Chapter I

The Modes of Acquiring Territory

The modes of acquiring territory can be classified in two categories, as follows:

- A. Original Acquisition
 - a. Occupation of unowned territories
 - b. Accession

- B. Derivative Acquisition

² The principle must be established that no force or power may assume jurisdiction of or sovereignty over the moon or any other celestial body." (Andrew G. Haley, *Astronautics*, November, 1958).

"Nous ne croyons pas que le principe de souveraineté puisse mieux sauvegarder les intérêts de l'Etat, qu'une entente internationale conclue sous l'égide d'une organisation spécialisée, internationale elle-aussi" (Smirnoff: "La réglementation internationale des vols dans l'espace extra-atmosphérique"; *Revue générale de l'air*, Paris, 1957, No. 4, p. 351).

- a. Conventional
- b. Extra-conventional

We may also speak of territories without an owner, and territories subject to an owner. This is the classification proposed by Mme Bastid.¹

The authority that the popes had in the middle and modern ages was such that their power was recognized to grant territories to European kings, principally Spanish and Portuguese.

Thus, Martin V. granted the Portuguese all the countries they could discover from Cape Bojador and Noun to the Indies. Eugene IV confirmed this decision. Nicholas V also granted the Portuguese sovereignty over the coast of Guinea, a grant later confirmed by Sixtus IV.

Most famous was the Bull Inter Coetera, of Alexander VI, April 4, 1493, giving the Spaniards all the lands situated west of an imaginary line one hundred leagues west of the Azores; the rest was for the Portuguese.

The Spaniards and the Portuguese came to an agreement, and after a few modifications, the Bull was accepted by the Treaty of Tordesillas in 1494.

What is curious about these allotments is that territories were granted without their being known, *res nullius* without even their existence being known. What was granted most of the time was the right to discovery

From the standpoint of modern international law, even considering the authority of the popes in certain matters in those times, the granting of one sovereign country to another would not be said to be just²

The means of acquiring sovereignty over territories already appropriated (derivative acquisition) has no bearing on our work

With regard to originative ways, we will only consider occupation, since it would be absurd to speak of accession over celestial bodies.

¹ See Mme Bastid: "Cours de Droit International Public Approfondi," Paris, 1957-58, p. 466.)

² Already Vitoria, disagreeing with the imperial ideas of Charles 1, had proclaimed the injustice of these grants, in his work *Relecciones sobre los indios*, 1532.

Chapter II

Special Investigation of Occupation

Section I

Concept of Occupation

Occupation, which had lost all interest for international law, since there were no more res nullius territories on earth, is beginning to regain all its importance in cosmic international law

Occupation consists in the appropriation by a state of res nullius.

Until the last century, occupation was the normal means of acquiring sovereignty over territories, when exploration made possible the discovery of new regions, either uninhabited or in elementary state of civilization.

The imperialist expansion of the states came to an end with the end of regions capable of being occupied, which have by now been drained from the earth and exist only in interplanetary space, where the celestial bodies present new problems, not to mention the Antarctic, which is subject to special conditions.

Section II

The Conditions of Occupation

The conditions of occupation may refer:

A. To the subject;

B. To the object

C. To the occupation itself.

A. The subject: The occupant should be a state or an entity authorized by the state. Occupation by an individual is not valid, either with respect to the state of which he is a subject, or with respect to other states. He may claim only the right of property, but not that of sovereignty, which is an attribute of the state.

Of course, occupation may be effected by an individual, but always in the name of a state,¹ and in accordance with the other conditions.

B. The object of the occupation. The occupied territory should be *res nullius*, either because it does not form an integral part of another state, or because it is not subject to the sovereignty of another state?²

Occupation is recognized over the occupied territory only with material effectiveness. There are, furthermore, two theories:³

1. That of continuity.

2. That of contiguity.

The first submits to the authority of the occupying state the regions beyond its control which are in the proximity of those effectively occupied. If a state occupies a region on the coast, it has a right to the coterminous regions in the interior of the country.

The theory of contiguity refers to islands, and affirms that when a state occupies an island, or several islands, in an archipelago, those that are nearby are also subject to its sovereignty.

These two theories cannot be accepted without certain reservations. To be accepted, the conditions of the act of occupation and of the territory already occupied must be taken into consideration.

¹ "In order to acquire sovereignty of regions that are not under the dominion of any state, it is indispensable that the occupation be effected in the name of the state that to acquire sovereignty over those regions." (Arbitration of the King of Italy, June 6, 1904, between Brazil and Great Britain).

² "Areas which are *territoria nullius* and open to acquisition by occupation, may consist of: Uninhabited lands, unless they are suitable for permanent habitation and are being used for the purposes for which they are suitable." (Hackworth: Digest of International Law; V. I, p. 396).

³ "Trois conditions pour l'acquisition des territoires sans maître:

"1) Le territoire objet de l'occupation ne peut être qu'un territoire sans maître, une *res nullius*."

"2) Le territoire dont il s'agit doit être effectivement occupé."

"3) L'occupation obtient enfin à une troisième condition, formulée dans l'article 34 de l'Acte de Berlin, celle de la publicité." (Louis Delbez, Manuel de droit international public, p. 175).

It is also necessary that the region claimed form a unity with that over which effective sovereignty is exercised. Furthermore, there must be a certain proportion between the part occupied and the rest.⁴

No great extension may be claimed if there is only a small establishment over it.

C. The occupation itself.

a. On the subject. The will to occupy,⁵ that is to say, occupation is a voluntary act with a well-defined aim-to acquire sovereignty over a territory. This condition of will can be the "animus" of the possession.

The justification of this condition is to be found *ad absurdum* in the situation which would result if it were not exacted. The temporary use of a territory would place it under the control of a state not interested in it, and this would prevent other states from using it and appropriating it.

b. On the territory. The effectiveness of the occupation is considered an essential condition of occupation. Actually, to discover is not necessarily to occupy, but it would have the same effects.

The consequence of this conception would be that the road to expansion would be closed to other states, while many discovered regions would remain unoccupied. In the face of reality one arrived at the definitive conception of occupation, and thus the condition of effectiveness became a requisite.⁶ The problem then was to determine what effectiveness in occupation was. While for some the fact of developing any commercial activity was sufficient, others felt that the exercise of state activity was needed, and in the end this was imposed with regard to sovereign power.⁷

The interpretation of the effectiveness of occupation has been the origin of several conflicts, as in the case of the *Clypperton Islands*, which set Mexico against France and

⁴ The effective possession of a part of a region although it may be held to confer a right to the acquisition of the whole of a region which constitutes a single organic whole, cannot confer a right to the acquisition of the whole of the region which either owing to its size or to its physical configuration cannot be deemed to be a single organic whole 'de facto.'" (Hackworth: Digest of International Law, p. 396).

⁵ "It is conceived that two elements must concur in order to invest a state with a title by occupancy to unappropriated land. There must be some intimation of intention on the part of the state in question, and there must also be some actual utilization of the territory concerned." (Thomas Baty: International Law in Twilight, p. 253).

⁶ "The principle of effectiveness manifests itself with particular clearness in case a state acquires territory which belongs to no state (stateless territory) by occupation. Such occupation has the effect of the acquisition of territory only if it is effective." (Hans Kelsen: Principles of International Law, p. 214)

⁷ "Le droit moderne admet l'acquisition de la souverainete par occupation moyennant un exercice pacifique et suffisamment continu des fonctions etatiques." (Charles de Visscher: Théories et réalités en Droit International Public," p. 255).

which was submitted to the arbitration of the king of Italy, who decided in favor of France; and the case of the Falkland Islands between Argentina and England, which has never been resolved.

The measure of effectiveness cannot be absolute, and should change in accordance with circumstances and the nature of the territory to be occupied. It is evident that a great deal of effectiveness in occupation cannot be exacted in a territory that offers little usefulness.⁸

This is the case with certain islands that have not sufficient resources to support a population, and only serve occasionally. This is the opinion of Von der Heydte.

Others add that occupation should be continuous, permanent, and not interrupted. We have said that this depends on circumstances, although in principle it is true.

c. On third states. The Berlin Conference of 1885 established the obligation of giving notice of the occupation to third states. This obligation has two purposes: it is the manifestation of the intent to occupy, of the express desire to occupy a territory, and besides it serves the purpose of notifying the other states that a certain territory is occupied and is no longer available for occupation.⁹

Actually, this is the least important condition, and it seems to us that what is most important in it is the negative obligation it implies: to keep states from concealing the act of occupation.

⁸ "En ce qui concerne les revendications concurrentes résultant de découvertes et de différences relatives au degré d'occupation effective, le principe qui préside à ces règles est clair, bien que leur application puisse être caractérisée par une grande souplesse." ("Examen d'ensemble du Droit International, en vue des travaux de Codification de la Commission du Droit International"; p. 49; Mémoire du Secrétaire Général, 1949).

⁹ The Institute of International Law, in its meeting in Lausanne, in 1888, studied a project of resolution, in ten articles among which appeared two conditions of occupation: a) Permanent authority; b) Notification.

Chapter III

The Occupation of Celestial Bodies

It is difficult to prophesy what the attitude of international law will be with regard to the occupation of celestial bodies, and the only thing that can be foreseen is that there will be a profound change in traditional concepts.

International law has to date been nothing more than the legal justification a posteriori for international politics. To have said this, baldly and brutally, may shock our principles, but it is none the less true. However, we dare to predict that with regard to the occupation of celestial bodies, we shall witness for the first time the operation in reverse. A legal solution is being sought before the action has taken place.

The problem of the use (we do not speak of appropriation) of cosmic space is being brought up legally, while this use is still in the realm of pure hypothesis.

We say that it is being brought up legally, and we should add, to all appearances, because in reality it is the political factors rather than the legal ones that are involved in the enunciation of the problem. In fact the word "injustice" is heard when the possibility is evoked that a great economic power may embark on a program of expansion in cosmic space and appropriate a celestial body.¹

From the point of view of classic international law, this is not strange. A *res nullius* belongs to its first occupant. But no great power is attempting to avail itself of this right, and all the states are presenting formulas for the use of space by all of humanity, for the benefit of all the states, regardless of their state of economic or scientific development.²

What is the reason for this renunciation of the right to the occupation of a *res nullius* for the particular benefit of one state? It might be judicial—a more lofty concept of justice and of international solidarity. It might be economic—the enormous cost of astronomic enterprises, which would make it difficult for a single nation to sustain the expenses involved.

¹ Kroell maintains, on the contrary, that the rules of international law relating to the acquisition of territories are valid for the celestial bodies. (J. Kroell: "Element créateurs, d'un droit astronautique," *Revue général de l'air*, Paris, 1953, p.222).

² See Chapter on United Nations.

It is almost certain that the reason is political: the two principal protagonists in international politics today, the United States and Russia, do not yet know with certainty who will be the first to arrive and, mutually fearing the result of a triumph by the adversary, are trying to bring all the nations into the game, thus making a common cause with the winner and reducing the risks.

It is vital, however, not to discard the possibility that this is due to an awakening of the universal legal conscience to the possibility of a cultural, economic and, in certain cases, political unification.³

Small states are grouping together, and it is then that they become conscious of possessing greater strength and being able to subject the great powers to certain pressures.

Let us now examine the different hypotheses on the occupation of a celestial body.

a) By an individual. Given the high cost of an enterprise of this nature, the case would never come up. However, it would be very possible for a private society. Obviously, it could not acquire any rights over the territory, from the standpoint of public law. Neither would it be able to occupy it in the name of the state whose nationality it bears. Even its rights in public law, which were once recognized, would no longer have any value, except to the extent that they were recognized by the Commission on Cosmic Space, of which we have already spoken and of which we shall speak again later.

b) By a state. Depending on the status which is given to celestial bodies and on whether or not they are considered *res nullius* we should be faithful to our logic and deny the states the right to occupy a celestial body.

So we come to the third hypothesis.

c) By the community of nations. In the Thirteenth General Assembly of the United Nations, several projects of resolution have been presented that agreed on one fundamental point: the need to reach an agreement on the common exploitation of cosmic space, an agreement which, it is stated, is of interest to all of humanity.

Thus we exclude the possibility that a state more advanced technologically and economically may take upon itself the right to occupy a celestial body.⁴ How, then, should this occupation be conceived ?

³ "One condition of first importance is the extraordinary interdependence of scientific, military, commercial, and other objectives that may be advanced by the same activities in space" (Myres McDougal and Leon Lipson "Perspectives for a Law of Outer Space"; *American Journal of International Law*, July, 1958, p. 407)

"By reason of this interdependence it may be difficult to apply some wellknown legal techniques-prohibition, conditional permission, allocation of responsibility for damage, regulation and so on-on the basis of supposed predominant category of use" (Myres McDougal and Leon Lipson, *op. cit.*, p. 410).

⁴ "What if a rocket fired by a state were so contrived as to plant a flag on the moon, would it constitute valid title by prior occupation? The answer is clearly no, if we are to say that the Antarctic is incapable of occupation in the sense of an establishment capable of maintaining itself by

1. The idea of exploitation by one single state having been rejected, we may think that it would be advisable to grant it to all states capable of reaching a celestial body. But this would be to maintain a situation of privilege for these states.

2. The division of the celestial body into zones and the distribution of them among all the states on earth. This would present the problem of distribution. Moreover, new states would be deprived of the possibility of owning an area, or if they were granted one it would involve complicated operations.

3. Indivisible co-sovereignty, giving each state the right to make whatever use is most convenient to its interests, independently of the others. This would create a situation of anarchy, and the strongest would win out in the end.

4. A moral entity. The most feasible solution seems to us to be this one, which has been submitted for study to the United Nations. It is very possible that the commissions created in the United Nations for cosmic space will develop to the point of becoming the very organization we propose, as they go on accumulating competency on different political or legal aspects of the exploration and use of space.

Certain internationalists speak of granting the United Nations sovereignty over celestial bodies. This would then be co-sovereignty exercised through a moral entity with an identity different from that of its members.

Actually, we do not believe it necessary to go that far. It is merely a matter of internationalizing celestial bodies, and creating: an international entity to exploit them with the participation of all nations belonging to the United Nations.

Tangier, Trieste, Danzig, were internationalized cities, and no one asked who had sovereignty over them. The same could be done with celestial bodies, with whatever modifications are required by the magnitude of space; instead of a city, it would be a celestial body, and the international committee would be made up of members of all nations.

It is very possible that this will be the solution adopted for the Antarctic, about which states are presenting legal arguments, not with regard to its intrinsic value, but with regard to the advantages it holds for them.⁵

resources drawn from the local area." (C. G. Fenwick: "How High Is the Sky?" American Journal of International Law, January 1958, p. 99).

Albert Ducrocq is of the same opinion: "Il nous semble qu' a priori la seule expression de colonisation d'une terre du ciel par une nation quelconque doit être évitée." (A. Ducrocq: L'humanité devant la navigation interplanétaire, p. 179.) In the projects later presented to the U.N. and the resolutions adopted there the principle of non-appropriation of celestial bodies is acknowledged and defended: Doc. A/C.I./L.301; Doc. A/4749; Res. 1721 (XVI); Doc. A/5026; A/AC.105/PV.2; Doc. A/C.I./PV.1289-98; Res. 1802 (XVII).

⁵ Up to now, statesmen have been in a state of expectant abeyance, evincing a desire for all nations, great and small, to participate in the conquest of space, although these desires have not yet crystallized into international agreements.

It is curious to note how Russia, who insists on the theory of sectors with regard to the North Pole, prefers that of discovery for the Antarctic. In short, the dead end to which discussions have come will possibly be overcome when the treasures available by exploitation make an agreement advantageous. Such an agreement will not fail to have an effect on the development of theories of sovereignty over celestial bodies.

For the moment? in virtue of the treaty signed in Washington December 2, 1959, the status quo is being maintained, with the freezing of territorial recoveries, non-militarization of the Antarctic, and the prohibition from undertaking atomic tests.

BOOK III

Relationships with Possible Inhabitants of Celestial Bodies

Chapter I

In Case They Should Be Men

However, there are two discordant notes a) Lieke for the United States, who stated that the United States would reserve for itself any rights it might have in space (op. cit) and b) Mikoyan, for Russia who declared in Oslo: "Since we have photographed the unknown face of the moon, we have sovereign rights of this satellite of the earth" (Reuter Agency, Feb 15, 1960) This declaration has no legal basis

In the chapter dealing with occupation, we have studied the discovery of new territories from the point of view of the discovering nations. Now we shall study them from that of the countries discovered.

The Bull Inter Coetera divided the [new world between the Spaniards and the Portuguese, granting them full powers to discover and colonize the new lands. There are two aspects to this Bull: (a) Positive. Authorization accorded to Spain and Portugal to discover and colonize; (b) Negative. Abstention for all countries other than Spain and Portugal, in order that the latter might not be hindered in their enterprises.

Actually, from the standpoint of modern international law, this Bull was not valid under either of its aspects.

a) The first took for granted the existence of lands *res nullius*, belonging to nobody, over which there existed no organized power. Well, this was not the case with the American countries, where an efficient political organization was established, and where there existed an organized people having a determined culture. It is true that this statement cannot be taken in an absolute sense, since these peoples had an inferior culture and customs that at times were barbarous.

Thus, what is under discussion is the principle of civilizing peoples because, actually, it was not a matter of occupying territories, which were already occupied, but of imposing a new and superior culture on the inhabitants.

It can be said that when a people is organized and exhibits a political power that is effectively exercised, it has a right to independence. Then it would be not only Spanish colonization in America that would be placed on trial but also all the other colonizations conducted by European countries in Africa, Asia, Oceania, etc. And the problem would arise of determining at what stage of political evolution a people has a right not to be colonized. This would be very difficult to solve.

Francisco de Vitoria, creator of modern international law, in his work *Relecciones sobre los indios*, criticized the reasons alleged for appropriating these lands. He said that the Roman principle of occupation refers to *res nullius*, but that if the lands discovered were already under an effective power, they could not be occupied.

b) With regard to the duty of abstention imposed on third countries, this was a result of international individualism, and of the lack of solidarity among nations.

Even at that time, there was no excuse for prohibiting other countries from conquering lands in the designated areas, which were reserved to the Portuguese and the Spaniards. Nevertheless, this prohibition should not rouse so much indignation. In one way or another, and in many other matters, there has always been discrimination in history in favor of the great powers, and international law, as a consolidation of legal principles emanating from natural law, or as the realization among nations, is always in a bad way.

Only international law as the legal justification a posteriori of international politics can explain it. At that time Spain and Portugal were the first-ranking powers on the globe and, since they had the power, they created the law. This is something that has always happened, and it is still happening today.

However, on the international scene today, we can see a certain increase in international solidarity, the causes of which are very varied-cultural, economic, technological, political. In this aspect, we must recognize the important role played by the United Nations, above all with regard to the smaller nations, who realize the strength that union can give them.

For all these reasons, even though there may be certain doubts about the existence of real international solidarity at present, we believe that no nation will be able to usurp the individual right to occupy a territory, and will not be able to do it except in the name of the community of nations

Now we come to the problem of determining what to do once the celestial bodies are reached, in case there are men on them

1. If they are politically organized and possess a certain culture, their right to independence should undoubtedly be recognized. The practical problem would be to determine what degree of development would be required to consider them capable of governing themselves, providing, of course, that they were not strong enough to make the decision themselves

2 If they are not politically organized, earth men will have the right a) to colonize them Of course, this colonization cannot be conducted on classic lines. . .

A superior form of colonization will have to be conceived, that could be a kind of tutelage, under the vigilance of the United Nations. But would the United Nations have the right of tutelage over these peoples? We are obliged by this question to study the nature of the United Nations

(a) Although the United Nations is an international organization, there is no doubt that it would have no right of tutelage, since its domain does not extend beyond relationships between its member nations. It would have the right to intervene only if the relationships of a member nation with a celestial body affected another member nation. In other words, the relationships of a member nation with an extraterrestrial people is beyond the domain of the United Nations. But if these relationships entailed a difference with another member nation, the United Nations would have the right to intervene

(b) If the United Nations were a supra-national organization, it would have competency to deal with all problems related to extraterrestrial peoples. Of course, even though it is merely an international organization, it could have this competence if its member states would be willing to recognize it

In summation, if there should be men on a celestial body, the problem of their relationships with earth men would be regulated by the principles of classic international law, taking into consideration the evolution it has undergone and its present state, as well as the new modifications that would have to be made to adapt it to the circumstances of that time

We need not add that all of this will be possible if they are not strong enough to impose their own principles, or simply their oppression because of their strength - the ultima ratio of public international law as it is practiced

Chapter II In Case They Should Be Intelligent Beings Different from Men

Relationships with extraterrestrial men presents no basically new problem from the standpoint of international law; but the possibility of confronting intelligent beings that do not belong to the human race would bring up problems whose solution it is difficult to conceive.

In principle, there is no difficulty in accepting the possibility of coming to an understanding with them, and of establishing all kinds of relationships. the difficulty lies in trying to establish the principles on which these relationships should be based.

In the first place, it would be necessary to establish communication with them throu some language or other, and afterwards, as a first condidon for all intelligence, that they should have a psychology similar to that of man.

At any rate, internadonal law should make place for a new law on a differnet basis, and it might be called "Law Among Planetary Peoples," following Valladao. Obviously, the idea of evolutionizing international law to the point where it would be capable of coping with new situations would compel us to make a change in its structure, a change

so basic that it would no longer be international law, that is to say, as it is conceived today, but something altogether different, so that it could no longer bear the same name

If these intelligent beings were in possession of a more or less advanced culture, and a more or less perfect political organization, they would have an absolute right to be recognized as independent and sovereign peoples, we would have to come to an agreement with them to establish the legal regulations upon which future relationships should be based,¹ and it would be necessary to accept many of their principles.

Finally, if they should reject all peaceful cooperation and become an imminent threat to the earth, we would have the right to legitimate defense, and to conquer them, but only insofar as would be necessary to annul this danger, without striving to exterminate them.

Chapter III

The Possibility that a Group of Earth Men Might Establish Themselves as an Independent Nation on a Celestial Body

The problem presented is that of determining whether a group of men, coming from different countries on earth, might, once established on a celestial body, proclaim themselves as an independent state.

Obviously, this possibility depends on many circumstances, whose conditions cannot yet be foreseen. However, we can make a study of the basis on which such a thing might be done today.

In the first place, living conditions on these bodies would have to be such as to permit a stable, and to a certain extent, independent life, from an economic standpoint. Much has been said about the possibilities for life on celestial bodies, always hypothetically, and there are those who go so far as to give formulas for the creation of an artificial atmosphere on the moon, which undoubtedly have a certain scientific foundation, and which may one day be put into practice.¹

¹ Mr. Haley (Chairman of the American Rocket Society) (Seventh International Astronautical Congress, in Rome): "An independent authority to control space would be needed and, eventually, it might have to deal, not only with human affairs, but with relationships between the human species and inhabitants of other worlds." (The Times, London, Sep. 20, 1956).

¹ "Astronomers assume that magnesium silicates on the moon contain up to 13 per cent water. Using energy and machines brought to the moon, perhaps from the space station, the rocks could be broken up, pulverised, and then backed to drive off the water of crystallization. This could be collected and then decomposed into hydrogen and oxygen, using an electric current or the short

In any case, such possibilities cannot be discarded, and we must take into account the progress of technology, which often comes up with unexpected results.

Of course, if no existence is possible on celestial bodies except for enterprises for the exploitation of their natural riches, with a continuous interchange of the men who work on them, unable to establish themselves there definitely and be able to live an isolated life independence will never take place.

On the contrary, if celestial bodies were able to maintain life, and men could definitely establish themselves there, there would be many reasons for their declaring themselves independent. In fact, the distance which would make relationships and control from earth difficult, the conditions of life, which would exert an influence on the customs and needs felt, all of these things as a whole might result in a union among the residents of celestial bodies and a differentiation from those on earth.

We have spoken about the possibility of certain events. Now let us examine the question from the political and legal point of view.

What is most probable is that men will be sent to a celestial body in the name of the community of nations, whether the organization that sends them be the United Nations, the Committee on Cosmic Space, or some other group. These men will have a determined function, a duty to carry out, and they will be unable to do anything but that which they have been authorized to do.

Now, if they should be established permanently, a differentiation would be produced with regard to the earth, they would have to have a certain amount of autonomy in conducting their private affairs, and it would not be difficult for this limited autonomy to develop into independence. But the conditions for this development would not be legal ones; they would imply that the inhabitants of the celestial body were strong enough to make their independence effective. This is why we believe that this problem will not come up on a legal plane, but on the plane of international politics.

In short, there are three possibilities:

1. Temporary establishment on a celestial body. No physical possibility for an independent life.

2. Definitive establishment on a celestial body, and the existence of an immigrant force of men from earth.

- a) Certain autonomy, but sufficient dependence on earth's existence to deter sovereignty. This solution, in our opinion, is the better one.

- b) The constitution of a celestial body into an independent country or group of countries.

wave radiations of the sun. The oxygen could be used for breathing purposes; the hydrogen might even be used as a fuel." (Collier's Encyclopedia Year Book 1958; voice space, p. 537, P. F. Collier & Son Corporation, New York).

Conclusion

Section I

The Present State of Studies of Cosmic International Law

It was not our intention to make a complete study of cosmic international law. Our purpose was merely to deal with several problems, knowing in advance the difficulties with which we would be confronted: on the one hand, the scarcity of treaties focusing on cosmic international law considered as a whole;¹ on the other hand, the multitude of articles in law magazines, at times lacking any system, and nearly always limited to the study of sovereignty over outer space.

At the root of these difficulties is the fact that cosmic international law has just appeared on the international scene and jurists either have not yet encountered the

¹ We can cite: A Bauza Araujo: "Derecho Astronautico," Montevideo, 1961 (Second edition, containing his "Hacia un Derecho Astronautico," published in 1957); A. A. Cocca: "Teoria del Derecho Interplanetario," Buenos Aires, 1957; Welf Heinrich, Prince of Hanover: "Luftrecht und Weltraum," Georg August, Universität, Göttingen, 1953; M. Seara Vazquez: "Etudes de Droit Interplanetaire" (thesis, Paris, April 29, 1959); R. G. de Guzman: "Problemas juridicos de la conquista del espacio" (thesis, Madrid, December 9, 1959); Ch. Chaumont: "Le droit de l'espace," Col. Que Sais-Je? Presses Universitaires de France, Paris, 1960; R. Quadri: "Droit International Cosmique" (Cours a l'Academie de Droit Internationale de La Haye, Summer, 1959), R.C.A.D.I., 1959, 98; M Seara Vazquez: "Introduccion al Derecho Internacional Cosmico" (which serves as a basis for the present English edition), Escuela Nacional de Ciencias Politicas y Sociales, Universidad Nacional Autónoma de Mexico, 1961; H. J. Taubenfeld and Ph. C. Jessup: Controls for Outer Space and Antarctic Analogy, Columbia University Press, New York, 1959; Korovin (Ed.): "Kosmosi mezhdunarodnoye pravo," Institut Mezhdunarodnykh Otnosheny, Moscow, 1962; F. N. Kovalev and I. I. Cheprov: "Na puti k kosmichestomu pravo," Institut Mezhdunarodnykh Otnosheny, Moscow, 1962; Myres S. McDougal, Harold D. Lasswell, Ivan A. Vlasic: Law and Public Order in Space, Yale University Press, 1963.

problems involved or they are unwilling to solve them by applying principles that must be recognized as prescribed.

The lawyer who devotes himself to the study of cosmic international law should do so with the firm conviction that there will be completely new situations to consider. The changes that have taken place in international life cannot fail to have an effect on the laws governing this life.

Classic international law is becoming superannuated, and it is obvious that it is going through a period of crisis.² There are several reasons for this crisis. The only one that has any bearing here is the one derived from technological progress. Communications are becoming easier all the time, and social relationships are multiplying, with all of their attendant consequences.³ But international law has not yet reached a stage of development to enable it to cope with these circumstances, so that whether states persist in asserting their rights, ignoring the importance of supra-national interests, or whether their institutions have not yet become adapted to the new state of things, the result is a lack of confidence in international law.⁴

In the opinion of Joseph Kunz, international law is in a period of transition, but the supra-national law of which he speaks will not come about in any near future.⁵

However, there has to be a renunciation of acts of self-administered justice, which Kaufmann maintains have been and still are licit.⁶

Cosmic international law, then, cannot escape these situations. It should be seen as law that will be called upon to solve problems different from those that have come up to date, and to have a more highly developed intellectual grasp of them. The study of cosmic international law has earned the attention of many illustrious jurists Haley, Cobb Cooper, Jenks, Pepin, Homburg, Smirnof, Cocca, Bauza, De Rode-

²See Antonio de Luna: "Fundamentacion del Derecho Internacional," *Revista de Derecho Internacional*, Havana, No. 122, June 30, 1952, pp. 210 and following.

³ "Lorsque les rapports sociaux se multiplient, ils provoquent la naissance d'intérêts communs" (P. Reuter: *Institutions Internationales*, p. 17).

⁴ "Il arrive que les pays redoutent, pour certains de leur litiges, des solutions strictement juridiques qui ne leur semblent pas toujours conformes aux réalités de la 7^{ie} internationale, et préfèrent des solutions politiques ou d'équité." (Institut de Droit International, Session de Lausanne, 1947; "Méthodes de la Codification du Droit International Public," p. 19; Rapport présenté par Alejandro Alvarez).

⁵ "Période de transition entre un droit des gens complètement décentralisé et un droit des gens plus centralisé et organisé, entre la réduction de la souveraineté classique et un droit plus supra qu'international" (Joseph Kunz: "La crise et les transformations du Droit des gens"; *R.C.A.D.I.*, 88, II, 55; p. 99).

⁶ "Pour la défense des intérêts que les États considèrent comme compris dans leur droit de propre conservation, les États sont autorisés à procéder, si la nécessité s'impose, à des actes de propre justice. Le droit de propre justice est un principe général de droit reconnu par les nations civilisées et commun au droit interne et international" (Kaufmann: "Règles générales du droit de la paix," *R.C.A.D.I.*, 1935, 54 312; p. 579).

Verschoor, Winandy, etc Besides the works mentioned in this book, a considerable number of studies have appeared in journals.

The teaching of cosmic international law is growing in importance In Paris and in the "Institut des Hautes Etudes de Droit International," Mr. Chaumont, professor in the Faculty of Law at Nancy gave a course in 1958-1959 on "Problems of International Law Posed by the Development of Astronautics," a course published under the title "Le Droit de l'Espace."⁷

In The Hague, during the summer of 1959, Quadri professor of the Faculty of Law in Naples gave a course on International Cosmic Law in the Academy of International Law, and so did Manfred Lachs, during the summer of 1964. On the other hand, in Nice, an "Institut specialise dans l'etude du Droit sideral et intersideral"⁸ has been created. In Paris there is a Center of Studies for the Law of Space, under the direction of Bornecque-Willandy. In Sao Paulo, the lawyer J. Escobar Faria, began a course of this kind in April of 1960, which he called Transair Law.

In nearly all the countries of the world there are associations of astronauts, belonging to the International Astronautical Federation, the presidency of which has gone to Mr. Haley, American jurist, and to Professor Sedov, Soviet Scientist. Congresses IX, X, XI, XII, XIII, XIV, of the International Astronautics Federation, held in Amsterdam (The Hague) London, Stockholm, Washington, Varna, Paris, have included in their programs talks on space law, to which jurists have come from all over the world. Since the 13th General Assembly of the United Nations, legal problems on space have found a place there worthy of their importance, and have been dealt with anew in the following sessions of the General Assembly.

Section II

Summary of the Work and the Enlargement of the Problem

Paragraph I. Summary of the work.

A. We believe that outer space cannot be classified as a res and consequently it cannot be the object of any law. Only activities in space can be objects of law, and this is what we call "functional legislation."

Bodies in space are certainly things, and may be objects of a law. Among them we include celestial bodies, both natural and artificial (artificial satellites or space bases). The "functional legislation" of space should, however, be left to the United Nations.⁹ This organization will exercise it through specialized organs.

Three zones should be established in space: 1) air space; 2) contiguous space; 3) free space.

⁷ See Bibliography.

⁸ See Le Monde, Paris, January 16, 1959.

⁹ In this we agree with Jenks. See his work, International Law and Activities in Space.

B. Satellites should be launched in accordance with an international plan. They will be obliged to have only one nationality. Nations launching them will be responsible for their international conduct. If one state asks another to launch a satellite, the former will have sole responsibility, with the reservation that this circumstance be made known to all states.¹⁰

C. a. On the matter of responsibility we hope for new concepts. Generally the theory of violation of law will be sufficient, but it will be necessary to resort to the theory of responsibility for risk as a complementary theory.

b. Control of outer space should be established to prevent its use for military purposes.¹¹ This control should be exercised by the United Nations.

D. Celestial bodies cannot be subject to appropriation by states, since the community of nations alone is competent to regulate their exploitation.

Regarding relationships with possible inhabitants of celestial bodies, if they are men, they should be treated on a basis of equality, taking into consideration the observations we have made. If they should be intelligent creatures different from men, a *modus vivendi* must be sought, even if this should mean a renunciation of our privileges.

Paragraph II. Enlargement of the problem.

There are many other problems for which there has not been room in our study. It would be impossible to establish detailed regulation beforehand, when the problems have not yet come up.¹²

However, there are questions which can and should be dealt with now, such as the status of space bases, the regulation of flights of astroships, etc. The question of a distribution of frequency waves for satellites is particularly interesting. An international conference was held in Geneva in August, 1959, for this purpose.

There is one possibility that, if it comes to pass, will completely disturb all systems of order. According to Einstein, a man traveling through space at speeds similar to that of light will age much less rapidly than men do who remain on earth. No one can be oblivious to the problems that would be created if it should be put into practice. A man who went on an interplanetary flight at such speeds would still be young when he returned, while his wife would be an old woman. A father would be younger than his son, and so forth. One can easily imagine what disruption this would mean for the judicial order, as well as

¹⁰ This possibility that we had foreseen has been confirmed, in fact:

"L'agence américaine des recherches spatiales a offert aux académies des sciences des pays du monde entier de mettre du matériel à bord d'un satellite artificiel pour des recherches scientifiques. Ce satellite sera lancé avant un an et demi environ." (Le Monde, Paris, March 17, 1959).

¹¹ See Book IV on peaceful uses.

¹² Toward the end of October, 1959, the first World Congress of Space Medicine was held in Rome. Among the matters discussed was the need to establish measures to prevent the contamination of celestial bodies with terrestrial germs.

the moral order, and even the political or purely economic orders. It is not our purpose to magnify these problems, merely to call attention to them, so that we might contemplate the effects of space navigation on the law. Father Spiazzi is turning over in his mind the spiritual problems that the conquest of space presents.¹³

In general, and this is true of life as a whole, not just its legal aspect, there is one thing at the root of all the troubles of humanity man has been surpassed by technology.¹⁴ Cosmic international law, therefore, needs a new focus, from a fresh mental viewpoint, in order that institutions may be created responsive to the urgent demands of the present; the terrestrial problem is much more difficult, and we see for international law no way out of this blind alley.

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¹³ See *Le Monde*, September 27-28, 1960.

¹⁴ "Fier des progrès scientifiques et technologiques, il a négligé dans les derniers siècles des problèmes fondamentaux qui ne peuvent pas être ignorés impunément." (Joseph L. Kunz: "La crise et les transformations du Droit des gens"; *R.C.A.D.I.*, 88, II, 55, p. 9).

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