

THE FUTURE OF THE LAW OF OUTER SPACE

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I. *Introductory Remarks.*

Outer space is vast beyond all human comprehension, but the existing body of law on outer space is so diminutive that it probably can be stated in one paragraph. However, a great deal of thought has been given to this subject since the launching of the first successful space rocket some four years ago. Before that time the legal status of activities in space was purely a speculative matter.

Space law constitutes a brand new branch of international law which itself is only in a comparatively early stage of development. This places the status of space law in indeed a strange position because many are still inclined to think that international law itself does not exist or that it has lost its way, comparing it to the story of the travelling motorist who got lost on a country road. This traveller having driven up and down along a dusty unpaved road for some time, finally came across an old man with the deeply lined look of the ancient mariner himself. The traveller said to the old man politely: "I am afraid I lost my way, can you put me back on the road to Montreal?" The old man shook his head. The traveller then went on: "I know we cannot be more than twenty miles from Hawksbury, can you tell me how to reach Hawksbury?" Still the old man shook his head. Finally the traveller in exasperation said: "How long have you lived in this district?" and the old man said: "All my life". "You must be very stupid then not even to be able to direct me to Hawksbury". For a moment the old man looked at the traveller very quietly and then said: "At least I have not lost my way."

The old man in the story and international law have one thing in common: international law like the old man has not lost its way despite what many might think to the contrary, but in con-

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trast with the old man its vision, and speaking particularly of the branch of international law relating to outer space, is not confined to its immediate surroundings, rather it extends out along an endless vista to be paved not only with good intentions but also with great hopes of practical achievements.

November 18th, 1958, might well compete for the honour of being the birthday of the law of outer space. It was on that day that the United States chief representative in the United Nations, Ambassador Henry Cabot Lodge, introduced a resolution in the General Assembly which was approved by the Assembly a month later,¹ recommending studies of the general space problem.

The significance of this most important step was pointed out by Mr. Lodge in these words:

Man has now penetrated outer space. Future historians will make this development as one of the most important in human history. A new factor—in effect, a new dimension—has been added to man's existence We can use this new dimension to destroy ourselves through the extension of national rivalries into outer space, or we can use this new development as a vehicle for international collaboration and harmony.

Actually many features of the space projects now under study and experiment are not entirely new. The truth is that rocketery as a science goes back 2,000 years. The Chinese were the first to experiment in this field with their efforts pre-dating the birth of Christ. The possibility of space travel fascinated one of the greatest astronomers of all time over three centuries ago, namely Mr. Kepler who set out his ideas on the subject in his book called "*Somnium*" which was published in 1634. And while later astronomers became more skeptical as the difficulties involved were more fully realized, it has been a favorite theme of imaginative writers down through the centuries.²

It is now proposed to do a little crystal gazing, or perhaps rather star-gazing for the purpose of speculating as to what kind of legal problems will arise in connection with the exploration of outer space.

However, to do this it is first necessary to reach a point of departure which might best be done by outlining briefly the developments which have occurred since the historic step taken by Ambassador Lodge when he introduced his November 18th, 1958 resolution concerning the development of outer space.

¹ See General Assembly Resolution 1348 (XIII) adopted on December 13th, 1958.

² C. Wilfred Jenks, *The Common Law of Mankind* (1958), p. 382.

By the terms of the 1958 General Assembly Resolution on outer space an Ad Hoc Committee on the Peaceful Uses of Outer Space was established with directions to report to the General Assembly on a number of matters. In essence they added up to this: the General Assembly wanted the Ad Hoc Committee to indicate just what was necessary in order to get started on a space research programme stressing that full attention be given to the technical, organizational and legal aspects of the matter. The Committee was composed of eighteen states, including Canada, the United Kingdom, the United States of America and the Soviet Union. However, the Soviet Union never participated in the work of this Committee.

The Committee made a very useful Report to the Fourteenth Session of the General Assembly which met in New York last autumn.³ In pointing out the problems that face the world in this field, the Report indicated that there had been a great scientific and technological surge forward which opens new perspectives for human progress. The Report indicated that even more than in astronomy, the space field inherently ignores national boundaries. Space activity must, to a large extent, be an effort of Planet Earth as a whole. The problem, this Report pointed out, is to make available and to exploit the possibilities that exist for participation by nations at all levels of development from supporting research or operation of tracking stations to launching small vehicles or joining with others in more advanced undertakings. The conduct of space activities must be effectively open and orderly. There is also the overall question of whether man's advance in outer space will rebound to his benefit. Here man's intent is of overriding importance. The Report further pointed out that a determined attack on these problems is urgent because the development of space activities is advancing at a staggering rate.

As an approach to tackling these important problems the Report made the following main points:

- (a) It stressed the need for a suitable centre related to the United Nations that would be able to act as a focal point for international co-operation in the peaceful uses of outer space. In this regard it expressed the belief that the world does not yet need an international agency for outer space, but that there is an evident need for efforts of co-ordination and encouragement by the United Nations in some areas

³The text of the Report is contained in U.N. Document A/4141, dated July 14th, 1959.

by way of support for international co-operation in this field;

- (b) it preponed the idea that where the objective is scientific whether academic or applied, regulatory provisions requiring agreements amongst governments are necessary only peripherally to promote scientific co-operation. Most needs, it claimed, are cared for successfully by the International Scientific Unions. The Report listed the main scientific unions engaged in this field and they indeed provide an unexpectedly impressive array. Particular mention should perhaps be made of the international body which serves as a co-ordinator of these unions, namely the International Council of Scientific Unions, having regard in particular to the impressive work done by its Committee on Space Research (Cospar).

The Report also underlined the importance of the contribution to be made by the United Nations and the Specialized Agencies engaged in work that would naturally involve them in this field in a very direct way, namely the International Civil Aviation Organization, the United Nations Educational, Scientific and Cultural Organization, the International Telecommunications Union, the World Health Organization and the International Atomic Energy Agency;

- (c) the Report pointed out a number of areas where international co-operation or agreement would be desirable in the near future, such as the allocation of radio frequencies for space activities, the central registration of satellite orbital elements, removal of spent satellites, re-entry and recovery of space vehicles and a number of others;
- (d) in dealing with the legal aspects, the Report recognized the difficulties involved in making too extensive recommendations concerning what action should be taken in the space field at this early stage, but it discussed in a general way the major near and long-term legal problems.

At the Fourteenth Session the General Assembly adopted a resolution creating a successor committee to the 1958 Ad Hoc Committee on the Peaceful Uses of Outer Space, with this committee having substantially the same terms of reference as those of the first committee.⁴ The new committee is composed of

⁴ General Assembly Resolution on International Cooperation in the Peaceful Uses of Outer Space, adopted on December 12th, 1959.

twenty-four states, including Canada, the United States, the United Kingdom and the Soviet Union. Unlike the situation which existed with respect to its predecessor, it is expected that the Soviet Union will actively participate in the work of this committee which is to be convened shortly.

It is also of interest to note that the second part of the resolution passed by the General Assembly at its Fourteenth Session reports the Assembly's decision to convene in 1960 or 1961, under the auspices of the United Nations, an international scientific conference of interested members of the United Nations and of the Specialized Agencies for the exchange of experience in the peaceful uses of outer space.

II. *Present Status of Laws Dealing with Outer Space.*

No specific agreement has been reached between states concerning the nature of the laws which govern outer space. The view generally held by space-law writers is that existing international flight agreements would appear to refer to sovereignty only in the air space over national territory and hence would not apply in their terms to outer space. Today the key international multilateral agreement regulating international flight is the Chicago Convention of 1944.⁵ Seventy-six states are members of this convention, including Canada, the United States of America and the United Kingdom. The Soviet Union is not a member.

Although the Chicago Convention does not apply to outer space, it is proving of great assistance in formulating a basis on which to establish a body of law dealing with outer space. Article I of the Chicago Convention provides that "every state has complete and exclusive jurisdiction over the air space above its territory."

"Air space" is not defined in the convention, but the words "air space" in a similar context in the French version of the Paris 1919 convention,⁶ the forerunner of the Chicago Convention are translated as "espace atmosphérique". Many writers cite this as a reason among others based on the logic of the situation for saying that the words "air space" should be interpreted as meaning the atmosphere with recognition given to the fact that this term will itself need to be more precisely defined.

If this interpretation were found to be acceptable then a significant step in the direction of certainty would have been made.

⁵ December 7th, 1944, 15 U.N.T.S. 295, Can. T.S. 1944/36.

⁶ 11 L.N.T.S. 173.

As air space above the high seas is free according to general international law in the same way as the high seas themselves are free, the result would be to confine appropriated space to the atmosphere above states.

Writers on space law find further support for this position by indicating the lack of objection to the satellite flights as setting a precedent in international law. According to this interpretation, outer space is now free by the general practice and agreement of nations, at least for scientific and peaceful flight, no matter what its status was before the satellites were launched and even though the satellite flights may have been originally sanctioned by tacit consent alone in connection with the International Geophysical Year programme. Under this interpretation the legal situation would remain unchanged with the ending of the International Geophysical Year, satellite programme.

The opposing view is that a matter of this importance cannot be considered as being settled unless or until there is a multilateral convention on the subject to which most states, including the great powers would be parties, having in mind all the complications which will arise once space vehicles begin to crowd the skies.⁷

III. *Nature of Legal Questions Requiring Solution by International Agreement.*

The above discussion suggests that the international law field dealing with outer space remains virtually undeveloped at this time. The reason for this, of course, is that law necessarily lags behind in providing principles for regulating new situations in world affairs brought about by technological or social upheavals. The technological advances which have taken place in the last fifteen years, as Mr. Lodge indicated in his statement referred to above, have been awe-inspiring in their magnitude and terrifying in the amount of power which they have placed in the hands of mankind for his betterment or for his complete destruction. Reference is of course being made in particular to the developments which have taken place in the fields of nuclear energy and outer space.

Events stemming from the opening up of this new era have moved forward at such speed that it has not yet been possible or

⁷ For the various views advanced by writers in this field see for instance: The Staff Report, Survey of Space Law (1955) prepared for U.S. Congressional (House of Representatives) Select Committee on Astronautics and Space Exploration.

feasible to devise a body of law to meet fully the situation. The recent successful nuclear bomb tests conducted by the French Government in the Sahara add new urgency to the situation, having in mind that the developments in the fields of nuclear energy and outer space are so closely related.

Already an impressive bibliography is developing with respect to the field of outer space⁸ and the results of these writings and the thinking of governments are in large measure reflected in the legal section of the Report of the Ad Hoc Committee on the Peaceful Uses of Outer Space to the General Assembly to which reference has already been made.

This section of the report contains a realistic appraisal of the legal problems which the world will have to face in the immediate future in connection with the development of outer space. It would therefore seem appropriate to touch briefly on the main questions raised by this report.

These main questions might be pin-pointed as follows:

- (a) The committee recognized that the principles and procedures developed in the past to govern the use of such areas as the air space over the sea deserved attentive study for possibly fruitful analogies that might be adaptable to the treatment of legal problems arising out of the exploration and use of outer space. On the other hand, the committee acknowledged that outer space activities were distinguished by many specific factual conditions, not all of which were now known, that would render the nature of its legal problems unique;
- (b) the committee also recognized that some of the legal problems of outer space activities were more urgent and more nearly ripe for positive international agreement than others. It was felt that "the progress of activities in outer space and of the advances in science and technology would continually pose new problems relevant to the international legal order and modify both the character and the relative importance of existing problems";
- (c) the committee considered that a comprehensive code was not practicable or desirable at the present stage of knowledge and development. Despite the progress already made it was emphasized that relatively little is so far known

⁸ See in particular Ch. 9 of *The Common Law of Mankind*, *supra*, footnote 2. See also Symposium on Space Law printed by the U.S. Government Printing Office for use of the Senate Special Committee on Space and Astronautics, Washington, 1959.

about the actual and prospective uses of outer space in all their possible varieties of technical significance, political context and economic utility. It was pointed out that the rule of law is neither dependent upon nor assured by comprehensive codification and that premature codification might prejudice subsequent efforts to develop the law based on a more complete understanding of the practical problems involved;

- (d) although an attempt at comprehensive codification of space law was thought to be premature, the committee also recognized the need both to take constructive action and to make the law of space responsive to the facts of space.

Recognizing that its scope must therefore necessarily be limited by these circumstances, the committee confined itself to selecting and defining the problems that have arisen or are likely to arise in the near future in the carrying out of space programmes, dividing the problems into two groups, those which may be amenable to early treatment and those which do not yet appear to be ripe for a solution, and indicating without definite recommendation various means by which answers to such problems might be pursued.

The committee listed the following legal problems as being susceptible of priority treatment:

- (1) The question of freedom of outer space for exploration and use;
- (2) liability for injury or damage caused by space vehicles;
- (3) allocation of radio frequencies;
- (4) avoidance of interference between space vehicles and aircraft;
- (5) identification and registration of space vehicles and of coordination of launchings;
- (6) re-entry and landing of space vehicles.

Amongst other problems which were not considered of sufficient importance to be susceptible of priority treatment were included the following:

- (1) The question of determining where outer space begins;
- (2) the protection of public health and safety: safeguards against contamination of outer space or from outer space;
- (3) questions relating to exploration of celestial bodies;
- (4) avoidance of interference among space vehicles.

Some of these questions have already been touched on in an

incidental fashion and lack of space does not permit even a cursory examination of others. In these circumstances, it is proposed only to discuss one of them at some length, namely the liability for injury or damage caused by space vehicles, proceeding on the assumption that this would be the one which might prove to be of the greatest interest to practising lawyers.

As the report points out, since injury or damage might result from the launching flights and return to earth of various kinds of space vehicles or parts of such vehicles, a number of problems exist with respect to defining and delimiting liability of the launching state and other states associated with it in the space activity causing injury or damage. Many questions arise in this connection which might be listed as follows:

- (1) The type of interest protected, that is the kind of injury for which recovery may be had;
- (2) the type of conduct giving rise to liability; should liability be without regard to fault for some or all activities or should it be based upon fault?
- (3) Should a different principle govern depending on whether the place of injury is on the surface of the earth, in the air space or in outer space?
- (4) Should liability of the launching state be unlimited in amount?
- (5) Where more than one state participate in a particular activity, is the liability joint or several?
- (6) What machinery should be utilized for determining liability and ensuring the payment of compensation, if due? The committee was of the opinion that early consideration should be given to agreement on submission to the compulsory jurisdiction of the International Court of Justice in disputes between states as to the liability of states for injury or damage caused by space vehicles.

The report really makes no attempt to do more than to raise these questions, but much attention has been focussed on these questions from other quarters. An interesting paper was delivered⁹ by Mr. Ph. de Rode-Verschuur before the International Astronautical Federation in The Hague on August 29th, 1958⁹ on the responsibility of the states for the damage caused by the launched space bodies. He suggests that one can imagine three solutions with regard to the responsibility for damage as follows:

⁹ See page 434 of Symposium on Space Law prepared for the U.S. Senate, *ibid.*

- (1) The state that launched the space craft can accept full responsibility for possible damage;
- (2) the state can be entitled to make certain reservations as, for instance, in the case of the Convention of Warsaw, excluding, for instance, responsibility in case of "force majeure". We could imagine, for instance, the unforeseen collision with a meteor;
- (3) one may consider the situation of an international guarantee fund for paying the damage caused by satellites (except in the case where the damage is intentionally caused in which case the state responsible will always have to pay the damage).

In his paper Mr. de Rode-Verschoor favours the *third situation* "because in the future it may not be possible to insure the damage caused by earth satellites in view of the great risks and the uncertainty of the matter."

It is perhaps of interest to note that the first of the three alternatives suggested by Mr. de Rode-Verschoor conforms very closely with the famous Anglo-Saxon doctrine of absolute responsibility, regardless of fault for damage caused by a dangerous object. The rule was first enunciated in the old 1773 case of *Scott v. Shepperd*.¹⁰ In this case a young man tossed a fire-cracker in a spirit of play near a market gathering; somebody kicked it away; somebody else kicked it towards still another person; that person picked it up and tossed it blindly in an entirely different direction where it exploded in the face of an unsuspecting bystander. Though the damage was a direct result of forces neither contemplated nor exerted by the originator of the sequence, liability was traced to him.

In approaching this problem the legal section of the Report of the Ad Hoc Committee on the Peaceful Uses of Outer Space suggested that the 1952 Rome Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface¹¹ should be taken into account. This convention would seem in large measure to be based on the Anglo-Saxon theory of responsibility regardless of fault which was discussed above.

Even supposing that not too much difficulty is experienced in working out a doctrine for redress for damage caused by space rockets and space ships, it seems likely that for some time to come the only parties who will be in a position to launch space craft and space rockets will be national governments.

This, of course, raises the question as to the procedure which would be followed for taking action against governments having

¹⁰ Smith's Leading Cases (13th ed., 1929) vol. 1, p. 513.

¹¹ U.N. T.S. no. 4493, Oct. 7th, 1952. Implemented in Canada by S.C., 1955, c. 15—assented on May 4th, 1955.

regard to the special immunity status they enjoy. Obviously special procedures will have to be worked out for the handling of these claims and, as has been suggested in the legal section of the Ad Hoc Committee Report, it would appear that the International Court of Justice would play a prominent role in regard to the lines along which such procedures would be developed.

IV. *Disarmament Aspects of Outer Space.*

The work of the Ad Hoc Committee on the Peaceful Uses of Outer Space is, as its name denotes, restricted to examining the *peaceful* uses of outer space. Actually, however, the problems of outer space were first introduced in a resolution of the General Assembly of the United Nations on November 14th, 1957, relating to disarmament based on a proposal submitted to the United Nations Disarmament Commission on August 29th, 1957 by Canada, France, the United Kingdom and the United States. This resolution called for "the joint study of an international system designed to ensure that the sending of objects through outer space shall be exclusively for peaceful and scientific purposes."

It was later decided to separate the peaceful use aspects from the disarmament aspects of outer space at the present stage. The disarmament aspects will be a matter for discussion in the Ten-Power Disarmament Committee of which Canada is a member.

During the foreign affairs debate in the House of Commons last February, Prime Minister Diefenbaker listed seven basic points of Canada's disarmament policy, stating that the question of outer space transcends all others. He indicated in this connection that a basic requirement of Canadian disarmament policy is an international declaration banning outer space for other than peaceful purposes and a prohibition against nuclear armed satellites. He also indicated two initial steps which might be taken by nations if they generally want disarmament:

- (1) Acceptance of the jurisdiction of the International Court of Justice;
- (2) a declaration that no part of outer space or any celestial body be subject to the jurisdiction of any one nation.

V. *Conclusion.*

The potentialities connected with outer space stagger the imagination. Undoubtedly within the next twenty-five years our means and ways of living will be revolutionized. The tendency will be for events to move so swiftly as to tumble over themselves in a

heap and the resulting chaos could prove devastating. The key to an orderly development lies in ensuring that law is able to keep pace with the new vistas as they open up, no matter how startlingly or how suddenly such happenings may occur. It is a big challenge, indeed the biggest challenge which man has ever had to face, but it is a challenge in which lawyers must be prepared to play an important role.

The hope of being able to meet this challenge hangs perhaps on a slender thread—the capacity of the human race to be able to find itself—for its various components to be able to communicate with each other and to regard each other's point of view with sympathy and understanding and tolerance.

This capacity to understand may be illustrated by a true story concerning the artist Philip Wilson Steer. He had gone to a tea party given by a fellow artist, Beatrice Bland. She was saying sadly that she had been upset at the unkindness of a woman artist who had called at her studio that morning. This artist had spoken scathingly of her flower paintings, saying they were "just like tin".

The other guests at the tea party tried to comfort her. Steer said nothing until some twenty minutes later when he got up to go. He walked across to a vase of real live tulips beautifully arranged in the window. Looking at the tulips he remarked: "How lovely, just like tin".

The problems of outer space loom closer and larger with each passing day. The earth is itself being converted into an enormous space vehicle launching platform which will sooner than it is at present anticipated have the necessary know-how to send out its space ships in great numbers to explore and perhaps conquer outer space.

Little fear need be expressed for man's ability to overcome the technical problems connected with the development of outer space. Much concern should however be felt regarding whether the necessary advances which need to be made in other vital fields affected, namely in the fields of social progress and human understanding can be achieved. What indeed might provide the answer would be the depth of insight shown by Mr. Steer at Beatrice Bland's tea party applied on a world-wide scale.
