

ADDRESS BY UNITED STATES SENATOR THOS. E. MARTIN OF IOWA
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INTERNATIONAL SPACE LAW AND OUTER SPACE

I am pleased and honored to have been invited to speak before you today. The International Astronautical Federation has since its foundation in 1950 provided a valuable international forum for the review of outer space problems and for the stimulation of action in governmental and international public bodies. I hope it will continue to provide this valuable service. In view of the uncharted nature of much of the work in astronautics, the contribution of private thinking and analysis can be of immense importance to the future development of man's efforts in outer space.

The stirring era in which we live is witness to the extension of man's activity into a medium entirely new to him. In the realm of space exploration man is faced with technical and scientific demands of unparalleled difficulty. At the same time, he is given a priceless opportunity -- a chance to establish new relations with his fellow man in a new environment, relatively free from the limiting influence of precedent.

Starting with a clean slate, man should so plan his activities in outer space as to preclude the possibility of the armed conflicts and controversies which have characterized his history on this planet. He can promote a new atmosphere, based on scientific cooperation and the rule of law, which might serve as an example for his earth-bound relations with his fellow man. As Ambassador Henry Cabot Lodge stated in an address to the 14th General Assembly:

"International cooperation in the exploration of outer space offers an avenue along which nations may approach mutual understanding and peace. Working together on the great challenges of explorations beyond the confines of earth can create a new perspective, in which national boundaries and national rivalries recede in importance."

Certainly we can agree that the incentives for international cooperation in outer space are many and very substantial. Tremendous expense is involved in space exploration. Geographically widespread and yet tightly coordinated observation stations are required. Coordination of operations is imperative if we are to avoid mutual interference and minimize the danger of accident and damage as traffic in outer space increases in intensity. All these factors urge the importance of international cooperation.

And there is another grim argument for cooperation: Scientific progress has inevitably made possible the use of outer space for new and more dangerous means of waging war. This fact requires that maximum cooperative efforts be made among the nations to guard against the use of

outer space for aggressive purposes. Recognizing the great dangers lurking in such use, the United States over three years ago proposed a study of means to reserve outer space for peaceful purposes only. Today the United States stands prepared to enter upon such a study separately from the overall problem of disarmament. A concrete proposal in this direction has been made by the five Western powers to the Geneva Conference of the 10-Nation Committee on Disarmament. These nations have urged the banning of weapons of mass destruction in orbit or stationed in outer space.

I hope very much that outer space can be reserved as a great area for peace. It would be a tragic thing indeed if the wars and national rivalries which have too often characterized relations among the nations here on earth were to be projected into outer space.

It is gratifying to note that the strong incentives for international cooperation in outer space which I have mentioned have not been without effect. Even in the initial stages of space exploration, such cooperation has made an important contribution in the tracking of earth satellites and the assembly of scientific data. Wide recognition of the desirability of mutual assistance in this new field is reflected in the intelligent and significant cooperation of states, organizations, and individuals during the International Geophysical Year (1957-58). It is also reflected in the continuation of these activities under the aegis of the Committee for Space Research of the International Council of Scientific Unions.

A special, and important example of international cooperation, is furnished by the transmission by the United States to the USSR of a number of tape recordings of the data received from Sputniks I, II and III.

As the pace of outer space activities increases, there will grow, in addition to the need for cooperation, a need for regulation and control of such activities in order to minimize conflicts of interests and operations. This involves the establishment of broad principles and specific regulatory measures to meet operational requirements.

Because of the very newness of the field of outer space exploration, the context and nature of many potential problems are not yet clear. I therefore believe that it is premature, at this time, to attempt to draw up a comprehensive legal code to cover all contingencies in outer space. It is, after all, a cardinal rule that the development of international law must follow the dictates of concrete need. We do not know enough about the difficulties that may be encountered in outer space to foresee the precise nature of the entire range of regulatory measures which may one day be necessary.

There are, however, certain problems which can be identified at present and studied with regard to possible regulatory and control measures. In this task the United Nations Ad Hoc Committee on the Peaceful Uses of Outer Space has played an appropriately leading role. The report of this committee, published last year, made preliminary identification of a number of areas which call for international coordination and control on a priority basis.

Let me recall briefly what these areas are. Allocation and control of radio frequencies was listed by the Ad Hoc Committee as fundamentally important to space activities because of the exclusive dependence on radio communications for the transmission of scientific data and other messages to and from space vehicles. Coordination and controlled effort are necessary in order to avoid harmful communications interference between various space operations. Another matter -- the identification and registration of space vehicles -- is closely linked with the effort to maintain order in man's activities in outer space, as is also the coordination of launchings of space vehicles.

Still a fourth field of obvious importance concerns the avoidance of interference among space vehicles and between space vehicles and aircraft. Yet another concerns the reentry and landing of space vehicles. This would encompass the establishment of standards for the marking and identification of space vehicles as well as standards for the return of equipment and personnel from the territory of foreign states.

A final matter requiring priority attention was listed by the Ad Hoc Committee. This concerns the liability for injury and damage caused by space vehicles. Procedures will have to be set up for the determination of the fact and extent of liability in case of damage caused by space vehicles. In this connection, the United Nations Committee suggested that early consideration should be given to securing agreement that claims disputes between states will be submitted to the compulsory jurisdiction of the International Court of Justice. Safety standards should also be agreed upon with regard to notification of launching of vehicles, policing of areas of danger on the high seas and installation of safety equipment on missiles to ensure harmless destruction in the event of misfiring.

Now I would not go so far as to suggest that we install stop and go lights in outer space in order to control traffic there. But just as some regulatory measures become necessary for traffic on our international highways and on the high seas, so a certain degree of regulation and control will be essential with respect to outer space activities.

Subsequent to the recommendations of the Ad Hoc Committee, the International Administrative Radio Conference of the International Telecommunication Union took action at the initiative of the United States to allocate radio frequencies for space services. This constituted the first concrete measure of a regulatory character taken in the outer space field. As such, it represents an essential step toward establishment of an international basis for the orderly conduct of outer space activities.

The need for control in these various areas is obvious. It is interesting to note, in studying the matters involved, that there is a useful connection between identification and registration of space vehicles, advance notice of their launchings and a possible system for guarding against surprise attack or use of outer space for aggressive purposes. It may well be that experience gained in this field may be useful in disarmament and arms control measures.

In addition to these rather specific matters, the Ad Hoc Committee dealt with certain broader concepts. Among these, I might mention the

applicability of international law to outer space, the problem of determining where outer space begins, the question of freedom of exploration and use of outer space, and questions relating to the exploration of celestial bodies and assertion of territorial claims.

In the first instance, the committee pointed out -- and I agree -- that the provisions of the United Nations Charter are not limited in their operation to the confines of the earth. The committee expressed the hope that in accordance with Article II, Paragraph 1, of the United Nations Charter, activities in outer space will be conducted in recognition of the common interest of mankind in outer space. It emphasized that there should be respect for the common aim that outer space should be used for peaceful purposes only.

The committee also mentioned the unlimited applicability of the statute of the International Court of Justice. I would say that this is of tremendous importance, for it is absolutely essential that disputes between nations over rights and agreements concerning outer space be settled in a peaceable manner, without resort to force or violence.

In addition to general provisions for international cooperation and peaceful resolution of disputes, there are many specific legal procedures and principles governing air space and the high seas which might be adaptable to the treatment of problems arising from outer space activities. These precedents may afford some useful suggestions regarding space flight, exploitation of minerals and energy resources, and the maintenance of communications. Decisions on the registration of space vehicles may also be facilitated by examination of similar efforts that have been made in air and maritime law.

Regarding freedom of outer space for exploration and use, the Ad Hoc Committee took a liberal and forward-looking view. It pointed out that "during the IGY and subsequently, countries throughout the world proceeded on the premise of the permissibility of the launching and flight of space vehicles regardless of what territory they pass 'over' during the course of their flight".

This premise appears to have been supported by the fact that such space activity has been undertaken and that no nation has raised objection to the launching of space vehicles by another. Thus it would seem to me there has been acceptance of the principle of freedom of exploration and scientific observation in much the same manner as was agreed in Washington last December 1 with respect to the continent of Antarctica.

A similar possibility exists regarding the exploration of and assertion of claims to celestial bodies. Last year agreement was reached by the signatory states to the effect that no territorial claims are to be submitted under the Antarctica Treaty. Why should not serious consideration be given to adherence to such a practice with respect to bodies in outer space? Certainly at the present state of man's knowledge and capabilities it would seem that the resources of natural bodies in space, like the vast regions of space itself, represent sharable assets of the community of nations. Scientific exploration of a planet conducted under the national

auspices of one country should in no way involve the prohibition of similar, non-interfering, exploration by other countries.

The question of the establishment of a recognized boundary between air space and outer space is an especially complex one. In my estimation, it presents a surprising number of difficulties -- difficulties which may possibly prove insuperable. The main argument for determining a space boundary is that it would help to preclude states from making claims to "sovereignty" over large parts of space on the assertion that they are "air space" rather than "outer space."

The criteria for such a boundary determination, however, are not easy to establish. Should the division between air space and outer space be defined in terms of the physical characteristics of the air? Or should it be based upon the purpose of flight or on the physical characteristics of flight-craft? There are, for example, vehicles which have the characteristics of both aircraft and spacecraft. These operate on aerodynamic principles in one part of their flight and on pure rocket principles in another.

In order to avoid these difficulties, it has been suggested that an arbitrary limit might be chosen. But where would the line be drawn? Would it be at an altitude of 50,000 feet, or 70,000 feet, or perhaps as high as a manned plane might fly? The result of any arbitrary limit, it seems to me, would likely be either to fetter space activities by inappropriate rules or to interfere unnecessarily with the existing regime of international aviation.

Even if the difficulties of fixing a stationary boundary were overcome, the achievement would not solve all problems. This would be most obviously the case were the boundary to be fixed at a relatively high altitude. For example, artificial satellites often come much closer to the earth at some points in their orbits than at others. In some cases the perigee, or point nearest the earth, falls within one or more boundaries which have been proposed, while the apogee, or farthest point, falls outside. To me, it would make little sense to impose one legal regime or status on the satellite at perigee and another on the same satellite at apogee.

Another problem would arise in connection with establishment of a high altitude space boundary. As altitude increases, the relevance and adequacy of normal air space boundaries decreases. There is progressively less relationship between objects located or activities taking place "above" specific national territory on the surface of the earth. For example, re-entry and landing of an object traveling at high speed and high altitude are apt to take place hundreds, or even thousands, of miles farther on in its line of travel.

Rather than seek to limit space activity on the basis of altitude alone, other factors might be equally relevant. Should not one consider the trajectory of the space vehicle or object, its flight mission, the instrumentation and other functional characteristics of the vehicle in question, for example, in the search for appropriate criteria? Even with the resort to such criteria, however, much will remain in dispute. It would, I think, be ill-advised to accept a boundary for outer space before its practicality and utility are thoroughly established.

These are some of the imponderables with which we are faced in the formulation of legislation and procedures governing man's activities in outer space. The factors which must be taken into consideration are exceedingly complex, and the technical and scientific information as yet available concerning many aspects of such activities is far from complete. These facts underline the need for considerable caution in drawing up legal provisions relating to outer space activities.

Despite this complexity, however, the accelerating rate of outer space exploration renders indispensable the early consideration of regulatory measures in certain specific areas, as I have indicated earlier. With the growth of customary practice and the accumulation of laws and agreements dealing with particular subjects, a system of laws governing human relations in outer space will gradually be filled out.

In the growth of such a system, the international community will wish to see its basic policy aims, as affirmed in such documents as the United Nations Charter, reflected in the body of outer space law. These aims include the reservation of outer space for peaceful purposes, the encouragement of international cooperation and the encouragement of scientific research, particularly in the interest of achieving practical benefits to increase human welfare.

The hope of cooperation in outer space was put eloquently not long ago by Dr. T. Keith Glennan, Administrator of the National Aeronautics and Space Administration, when he said:

"Out of the efforts of the dedicated and inspired men of all nations may yet come that common understanding and mutual trust that will break the lockstep of suspicion and distrust that divides the world into separate camps today."

Faced with the tremendous opportunities presented by outer space, we owe it to ourselves and to all posterity to rise to the occasion and meet the challenge with statesmanship and breadth of vision.

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