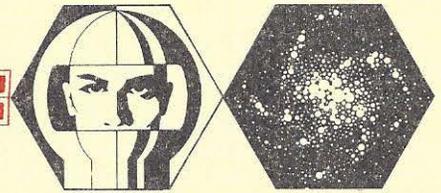


COMMERCIAL SPACE REPORT



MOON TREATY ATTACKED IN TESTIMONY TO HOUSE

**Statement of Leigh S. Ratiner
On Behalf of the L-5 Society
Before The
Subcommittee on
Space Science and Applications
Of The Committee on Science and
Technology
U.S. House of Representatives
September 6, 1979**

Introduction

Mr. Chairman, I am grateful that your Subcommittee has provided me with the opportunity to testify today on the implications for the United States of the draft agreement governing the activities of states on the moon. Negotiations have been underway in the United Nations for a number of years on this draft treaty. They have just concluded, and the UN General Assembly has been asked to open the treaty for signature in a few weeks. I appear before you today to warn that, if the moon treaty is signed and ratified by the United States, it will foreclose the commercial uses of outer space by American private enterprise.

Since I have not previously had the privilege of appearing before this subcommittee, I would like to take a moment to introduce the organization I represent and to tell you a little about my own background and experience. I appear before this subcommittee on behalf of the L-5 Society, a non-profit organization of some 3,500 private citizens who are devoted to the advancement of mankind's full utilization of the potential of space. Our members reside in every state in the U.S. and in a number of foreign countries. They are committed to do everything they can to preserve this nation's options to move our industrial creativity and inventiveness into outer space.

In the years to come, human beings will travel, live and work in outer space. On a small scale, human beings already do this. With the advent of the space shuttle, it will be done on a larger scale. This will be followed by multiple space shuttles and eventually by orbiting work platforms, which will become a base for space manufacturing. No one knows better the promise of outer space than the members of this Subcommittee. I will, therefore, avoid repeating to you a catalog of the industrial developments now underway or considered feasible by respected scientists during the next few decades. One need only be a casual reader of the daily newspaper to know that space may in the next few decades be the location for major

industrial activities which could produce substantial portions of the world's energy requirements.

I am a partner in the Washington law firm of Dickstein, Shapiro & Morin. My practice concentrates in the field of international law and natural resources. My clients include corporations both large and small, domestic and foreign, as well as one foreign government. All have an interest in the discovery and development of basic raw materials and natural resources. Before entering private practice, I was an American Government official for fifteen years. In that capacity, I served a number of federal agencies including the Department of the Interior and the Federal Energy Office and was responsible in those agencies for international resource problems. From 1969 to 1977 I was a member of the American Delegation to the Law of the Sea Conference and during that time was for four years the principal American negotiator for the resources of the deep seabed. It is in part because of this experience at the Law of the Sea Conference that the L-5 Society asked me to appear before you today on their behalf and share with you some thoughts on the recently concluded moon treaty, with particular regard to its relationship to the law of the sea treaty which may itself be concluded next year after eleven years of negotiation. That treaty, Mr. Chairman, gives us the roadmap to the meaning and interpretation which the moon treaty will have, should it ever become the law of the land.

Mr. Chairman, the draft moon treaty uses as its legal precedent the 1970 UN Declaration of Principles on the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction which declared the resources of that area to be the "common heritage of all mankind." If we are to fully understand that concept, which I will explain in detail a little later in my testimony, we must first understand the historical context in which it arose and how it fits into a complex international negotiating scenario which is now sweeping through all UN bodies and conferences concerned with economics.

The Modern Historical Context for "Common Heritage"

Mr. Chairman, the moon treaty proposes to govern all the resources of the moon and all other celestial bodies. Can we even contemplate the quantity and quality of all the natural resources in our solar system? Since the industrial revolution mankind has been forced to remove from the earth an enormous quantity of resources in order to sustain industrial development. Indeed the space age is itself a product of our ability to utilize natural resources for progressive industrialization. Wars have been fought and countries colonized over virtually insignificant re-

Editor's Note: Mr. Leigh S. Ratiner, a Washington attorney with a distinguished career in law of the sea matters, was invited to testify before the Subcommittee on Space Science and Applications of the U.S. House of Representatives recently. His topic: the proposed U.N. treaty on the exploitation of the natural resources of outer space. Here, excerpted from the record, are his remarks.

sources compared to those which will be found beyond our earth. One marvels at the arrogance of those who would even feel qualified to subject such vastness beyond our understanding and reach to an elaborate legal regime governing future generations' needs and patterns of growth.

While only a small number of the nations on earth are now fully industrialized states, the common objective of virtually all the rest is industrialization. Almost every diplomatic move being made in multilateral negotiations at the UN now relates to the need to assist the developing countries in the process of industrialization. Where are these resources to come from? No one can say for sure that they will come from outer space, but who can say they will not. Indeed, twenty years ago no one dreamed that a significant share of the world's nickel, cobalt, and manganese would by the turn of the century be retrieved from 15,000 feet below the deepest parts of the world's oceans.

Mr. Chairman, the development of natural resources only requires a market, a technology and a suitable cost of extraction compared to alternative sources of raw materials. I have just described to you global demands for industrialization and, accordingly, an unprecedented expansion of the market. The technology for this development of natural resources in outer space is well on the way. After all, a large part of the technological progress has already been successfully accomplished by mankind's proven ability to get there, to work there and to live there. History proves that the costs of alternative sources of raw materials continues to rise steadily, thus stimulating the production of new sources of raw materials.

The Political Context in Which Common Heritage Must Be Understood

In the last ten years there has been an extraordinary change in the world—one to which many of us have perhaps been too close to fully understand. There are approximately 90 countries in the world today which did not exist in the 1950's. They are virtually all poor. Almost all of them were colonies before their independence. In their struggle to obtain independence, they found in many cases that while they were free, they were worse off economically than they had been before. Rather than renounce their new-found freedom, they have sought to act collectively to strengthen their bargaining position with the industrialized countries of the world. This began to occur in the early 1970's and is still occurring. The process gained in intensity when, in 1973, OPEC demonstrated its ability to cause, through concerted political and economic action, a massive transfer of wealth from the rich countries to the poor. During that same period the developing countries of the world formed a political caucus known as the Group of 77, which began to formulate common positions on all of the economic subjects which found their way into the UN negotiating system. The Group of 77 in the early and mid-1970's developed a manifesto for this emerging revolution in international affairs. They prepared a declaration calling for the creation of a New International Economic Order. The underlying rationale of that document is the assertion that fundamental justice requires that those who receive the raw materials and natural resources which fuel and feed industrialized economies must be required to pay a significant share of their economic wealth in exchange for access to those resources. The so-called North-South dialogue is a direct out-growth of that declaration. Third World enthusiasm for this new movement caused the spread of this new ideology to every available forum in the United Nations. These concepts have now been deployed in the UN Conference on Science and Technology, at the Law of the Sea Conference, in the North-South dialogue, in the outer space negotiations, and are even under discussion with respect to the use of natural resources of Antarctica.

The principle of the Common Heritage, inserted into the political arena at the Law of the Sea Conference, was chosen as the first available slogan for the concrete elaboration of these principles at a law-making conference. At that conference, two-thirds of the earth's surface is to be the subject of a treaty that will govern the rights of all states and human beings on, over and under the world's oceans. Nationalism and economic need quickly lopped off the most immediately available and useful resources before that conference could internationalize them. During the protracted negotiations at the Law of the Sea Conference, most countries unilaterally claimed jurisdiction over as much of the oil and fishery resources adjacent to their coasts as they could possibly justify.

Thus, the playing out of the New International Economic Order was restricted to the deepest ocean beds, where valuable but futuristic resources were known to exist.

When the law of the sea negotiations began in the late 1960's with the negotiation and adoption in 1970 by the UN General Assembly of a Declaration of Principles, there was no technology for extraction of these resources. Today only 10 years later, four major international consortia have announced their complete confidence in the technology which they have developed for the extraction of these resources within the next several years. However, they have all announced as well that, under the treaty which is emerging at the UN, they cannot conceive of continuing with their investments. Many doubt that the law of the sea treaty will ever be ratified by the United States because it is an elaboration of the Declaration of Principles first adopted by the UN in the 1970's. Private enterprise shudders at the thought of investing \$1 billion for a single seabed mining operation under the politico-economic philosophy which has been elaborated under the common heritage banner.

The Meaning of the Common Heritage—the Moon Treaty and the Law of the Sea Compared

Mr. Chairman, over 150 nations have just spent 10 years in arduous negotiations developing a draft treaty which is intended to define the principle first adopted by the UN General Assembly in 1970 that the resources lying at the bottom of the ocean are "the common heritage of mankind." That principle is now so well defined in international custom and practice that it is possible to predict with certainty how the resources of the deep seabed will be developed—if at all. It is equally possible to predict the legal content of a regime for the resources of outer space, if that regime is to be founded on the same common heritage principle. Later in my statement I will describe fully to you what that principle means.

The moon treaty in most important respects corresponds to the 1970 UN Declaration of Principles on the deep seabed. Articles IV and XI of that treaty provide as follows:*

**Italics indicates the principal catch-phrases which have been elaborated in detail at the Law of the Sea Conference and which are derived from the 1970 Declaration of Principles pursuant to which the law of the sea treaty has been negotiated.*

ARTICLE IV

1. *The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living conditions of economic and social progress and development in accordance with the Charter of the United Nations.*

2. *States Parties shall be guided by the principle of cooperation and mutual assistance in all their activities concerning the exploration and use of the moon. International co-operation in pursuance of this Agreement should be as wide as possible and may take place on a multilateral basis, on a bilateral basis, or through international inter-governmental organizations.*

ARTICLE XI

1. *The moon and its natural resources are the common heritage of mankind* which finds its expression in the provisions of this agreement and in particular in paragraph 5 of this article.

2. *The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.*

3. *Neither the surface nor subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person.* The placement of personnel, space vehicles, equipment facilities, stations and installations on or below the surface of the moon, including structures connected with their surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon or any area thereof. The foregoing provisions are without prejudice to the international regime referred to in paragraph 5 of this article.

4. *States Parties have the right to exploration and use of the moon without discrimination* of any kind on a basis of equality, and in accordance with international law and the terms of this Agreement.

5. *States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible.* This provision shall be implemented in accordance with article XVIII of this Agreement.

6. In order to facilitate the establishment of the international regime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community to the greatest extent feasible and practicable of any natural resources they may discover on the moon.

7. *The main purpose of the international regime to be established shall include:*

(a) *The orderly and safe development of the natural resources of the moon;*

(b) *The rational management of those resources;*

(c) *The expansion of opportunities in the use of those resources;* and

(d) *An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the moon shall be given special consideration.*

8. All the activities with respect to the natural resources of the moon shall be carried out in a manner compatible with the purposes specified in paragraph 7 of this article and the provisions of article VI, paragraph 2, of this Agreement.

Mr. Chairman, I offer for the record the UN Declaration of Principles on the Peaceful Uses of the Seabed and Ocean Floor Beyond the Limits of National Jurisdiction. You will find that those principles and the principles enunciated in Article XI are virtually twins. Like the UN Declaration of Principles for the deep seabed, the moon treaty calls for a subsequent negotiation. Article XI, paragraph 5, of the moon treaty commits the parties "to establish an international regime, including appropriate procedures to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible." In short, Mr. Chairman, commercial exploitation of the resources of our solar system must await a new international agreement that will elaborate in detail this draft moon treaty, in the same way that the law of the sea treaty elaborates the 1970 Declaration of Principles for the deep seabed.

It is therefore incumbent on all of us to scrutinize with the utmost care how the principle that resources are the common heritage of mankind has been interpreted in the law of the sea treaty to determine whether the U.S. should now sign a treaty on the moon that contains a significant risk that all of the natural resources of our solar system will be subject to the same international regime as is being contemplated for the bottom of the oceans.

Mr. Chairman, allow me to summarize the major provisions of Part XI of the draft law of the sea treaty. In doing so, I will indicate which provisions of the law of the sea treaty are derived from principles now found in Article IV and Article XI of the moon treaty.

First, *exploration for and exploitation of seabed resources are under the complete control of an international organization.* This provision of the law of the sea treaty

is deemed by most of the world to derive from the principle that the resources of the seabed are the common heritage of all mankind—a phrase which is believed by the vast majority of nations to mean common property. Indeed, in several of the official languages of the UN the term used to translate heritage is "patrimony"—the legal equivalent of property in most of the world.

The concept is also derived from the provision of Article IV, paragraph 1, of the moon treaty which requires that exploration and use of the moon "shall be carried out for the benefit and in the interest of all countries." Article XI, paragraph 4, provides that the right to exploration and use of the moon shall be "without discrimination of any kind." Thus, the argument runs that, if the resources belong to all nations, they can only be disposed of through common consent, which can only be found in an international organization comprised of all countries.

Such an organization is in any event argued to be necessary to ensure fidelity to the principle of non-discrimination. More important, however, the moon treaty, like the 1970 Declaration of Principles for the Deep Seabed, specifically provides for a *particular kind of discrimination which shall be permissible.** Article IV of the moon treaty makes clear that in the exploration and use of the moon "(d)ue regard shall be paid . . . to the need to promote higher standards of living conditions of economic and social progress and development . . ." Article XI, paragraph 7, subparagraph (c) and (d), establish that among the main purposes of the international regime shall be "expansion of opportunities in the use of those resources" and an "equitable sharing by all states parties in the benefits derived from the resources, whereby the interests and needs of the developing countries . . . shall be given special consideration." These concepts of special discrimination for developing countries will require a special type of international organization in which all important decisions are taken by governing bodies in which developing countries have the greatest influence. In the Law of the Sea Conference, these same concepts have been translated into an international organization that is dominated by a powerful, general Assembly that operates on a one-nation-one-vote principle. That general Assembly is considered to be supreme among the organs of the Seabed Authority, is empowered to make general policies, and approves the rules and regulations of the Seabed Authority which govern resource exploration and exploitation. All other organs of the Seabed Authority (including its executive council, which is supposed to have more balance between the industrialized countries and the developing countries) are required to follow the Assembly's general policy guidance. The creation of this supranational governing authority is expressly contemplated in Article XI, paragraph 5, of the moon agreement in the seemingly innocuous phrase: "States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures . . ."

Second, following on the principles described previously, *no nation is guaranteed a seat on the executive council of the Seabed Authority, even though a handful of countries possess the technology to develop the resources.*

Third, *the policy decisions and discretionary acts of the Seabed Authority (and virtually all important decisions are discretionary) are not subject to impartial judicial review in the international court established by the law of the sea treaty.* The reasoning which leads to this result is that the common heritage of mankind must be disposed of in accordance with the will of mankind. Since the one-nation-one-vote Assembly is the manifestation of that will, it cannot be second-guessed by a small, select panel of judges. In short, when the treaty says the Assembly is supreme, it means business.

* Indeed, the law of the sea treaty now expressly permits discrimination in favor of developing countries as provided for in the treaty.

Fourth, no state nor any of the citizens of any state has the right of access to explore or exploit the resources, except as accorded by the Seabed Authority and subject to such terms and conditions as it may lay down. Again, the principle of the common heritage, it is thought by most, cannot be fairly implemented if any state has automatic access to the resources which are owned in common by all countries. This is buttressed by Article XI, paragraph 3, of the moon treaty, which says that no part of the natural resources in place shall become anyone's property. In short, title to the resources can only be given by the new organization which owns the resources on behalf of all mankind. This result is exactly how those same principles were spelled out in the law of the sea treaty.

Fifth, the law of the sea treaty contains elaborate provisions for the regulation and control of production of the natural resources of the seabed and severely limits the amount of natural resources which can be brought to the market, regardless of actual market conditions or consumer needs. This provision of the law of the sea treaty was derived at first from a preambular paragraph in the 1970 Declaration of Principles which called for respect for the interests of developing countries who may possess the same minerals on land as would come from the seabed. The industrialized countries argued, however, in the negotiation of the treaty that they were not bound to follow the guidance of the preambular paragraphs of the Declaration of Principles. Accordingly, Third World negotiators changed the justification for seabed production controls, which is now derived from operative paragraphs of the Declaration of Principles also contained in Article XI of the moon treaty as among the main purposes of the new moon resources treaty. Article XI, paragraph 7(b), states that one of the main purposes of the international regime is the "rational management of those resources." Paragraph 7(a) of the same article calls for "orderly and safe development of the natural resources of the moon." These two phrases turned out to be the principal phrases which were used to justify control of seabed production at the Law of the Sea Conference. "Orderly development" is generally thought to suggest economic controls for the purpose of conservation. "Rational management" is a code word for centrally planned production policies. Mr. Chairman, it is no accident that these two phrases were elevated to the status of "main purposes" of the new moon resource regime.

Sixth, the law of the sea treaty creates as an arm of the Seabed Authority an inter-state mining company called the Enterprise. The original intention of the developing countries, doggedly pursued for many years in the Law of the Sea Conference, was to have the Enterprise be the sole authority in the world entitled to develop and market the resources of the deep seabed. Once the deep seabed was supplying a significant share of the world's nickel and other metals, the Enterprise would have acquired power quite similar to the power of OPEC with respect to oil.

On this issue, the industrialized countries drew the line. They would not accept an international operating monopoly as the proper meaning of the common heritage principle. Instead, they proposed a so-called parallel system of development in which states and their nationals could have access to the resources and so could the Enterprise. During the last three years of negotiation, however, this so-called parallel system was so tortured in the negotiating of its detailed provisions that it is now clear that it is a euphemism for a system which creates an international monopoly Enterprise. For example, the treaty now provides that:

a. There will be tax incentives for anyone who joins with the Enterprise to carry out development.

b. In order to acquire the direct right to explore and exploit, a state or mining company must explore two mine-sites of equivalent value—one to be selected by the Auth-

ority and given to the Enterprise.

c. All technology for the development of the resources of the deep seabed must be transferred to the Seabed Authority for use by the Enterprise. Indeed, a proposed operator must even obtain the permission of his sub-contractors to transfer their technology to the Seabed Authority, if he is to have and maintain operating rights. The mandatory transfer of technology principle was derived from the principle now found in Article XI, paragraph 7, of the moon treaty calling for "equitable sharing" of benefits whereby the interests and needs of developing countries shall be given special consideration.

d. In case there are competing applications (and because of production controls this is assured, since the number of available mine-sites each year is strictly limited), the treaty through its permissible discrimination in favor of developing countries allows the Authority to make its selection on the basis of which application benefits developing countries the most. Again, we see the special discrimination in favor of developing countries.

In short, Mr. Chairman, even the so-called parallel system of access is so structured in the interest of full implementation of the common heritage principle and the principle which permits discrimination in favor of developing countries that no sane investor with billions of dollars at risk could do other than take the Enterprise as his partner and locate the means of production in a developing country. This is all the more true since the Enterprise is immune from state and international taxation. (Indeed, its early development efforts are to be subsidized by grants and loan guarantees by states parties, thus making available to its potential partners lower interest rates.)

"One can hardly imagine the ramifications ... when a single world agency takes control of all the people who will one day work and live in space and have anything to do with the resources of the moon and other celestial bodies."

Seventh, even though the law of the sea treaty is tilted so as to cause the natural growth of a monopoly Enterprise, the developing countries insisted that this method of disposing of the resources should be restricted to the first 25 years of the treaty's operation. The parallel system, it was believed, was inconsistent with the common heritage but could be accepted on a temporary basis so as to begin its development process and enable the Enterprise to take over. At the end of that time, the treaty empowers the one-nation-one-vote Assembly to prohibit mining by states and private mining companies, but to allow the continuation of mining by the Enterprise.

Eighth, the Seabed Authority is given the power to impose a system of international taxation on any state or company which explores for or exploits the resources. This system of taxation is designed to ensure the "equitable" sharing of benefits.

Ninth, the apparently innocuous phrase found in Article XI, paragraph 7(c), that one of the main purposes of the international regime shall include "the expansion of opportunities in the use of those resources" has been used at the Law of the Sea Conference to justify a so-called quota or anti-monopoly system in which any nation's access to the resources, if it gets access at all, is limited by the relative access of other countries. If one country is deemed to have an excessive share of the available production, access shall be denied its nationals until other countries—including developing countries—catch up.

It is unlikely, when this system is superimposed on the control of production system, that the U.S. will ever be entitled to more than one or two of the production minesites in the deep seabed.

Tenth, Mr. Chairman, the provisions of Article XI, paragraph 8, of the moon agreement are of incredible importance, not just to the development of the resources of the moon and other celestial bodies but to the basic right of the United States to decide how to govern its citizens when they are in space vehicles which fly our flag. That paragraph is a grant of authority to a new space resource agency to be created under paragraph 5 to control and regulate all activities with respect to the natural resources in a manner compatible with the purposes spelled out in paragraph 7. These same concepts in the law of the sea treaty fundamentally impair the ability of the flag state to control its own citizens when aboard a vehicle which is carrying out resource-related activities.

One can hardly imagine the ramifications of this paragraph when a single world agency takes control of all the people who will one day work and live in space and have anything to do with the resources of the moon and other celestial bodies.

Can the Law of the Sea Model Be Justified for Outer Space?

Mr. Chairman, the U.S. uses approximately one-fifth of the world's natural resources. Yet it is on the verge of agreeing to a treaty on the law of the sea which places one of the earth's most plentiful resources under the system I have described above, a system that forever requires American consumers to import their raw materials from an organization under the control of developing countries. Members of this Subcommittee who are not overly familiar with the law of the sea negotiations may be startled by my statement today. It will seem unbelievable that the U.S. would be willing as one of the only nations in the world with the technology to develop these resources to place them under a system of international socialism and out of the reach of American technology. What international interest, you may ask, justifies this wholesale giveaway of access to vital minerals. The answer, Mr. Chairman, is rooted in national security considerations. The U.S. has watched with anxiety over the last 15 years as nations have reached out into the oceans to claim vast expanses of water under their jurisdiction, including a few international straits. The developing countries were prepared to memorialize in the law of the sea treaty the right of freedom of navigation for surface vessels and submarines in exchange for American and other industrialized country recognition of the principle of common heritage as it applies to seabed resources. The present American negotiators seem willing to make that trade. Mr. Chairman, no such justification can be given for the moon treaty, because the 1977 Outer Space Treaty already guarantees freedom of navigation for our space craft and prohibits extension of territorial claims to outer space. The moon treaty is a giveaway of unprecedented proportions for which the U.S. obtains nothing in return.

Mr. Chairman, I do not know of any past or present government official who has been concerned with the law of the sea negotiations who believes that the law of the sea treaty would be in the interest of the United States, if it were restricted to that part of the treaty which deals with the resources of the deep seabed. I would urge the Committee to hear further from responsible Americans who have been connected with the law of the sea treaty. I am certain that all would share my view that the seabed portions of the treaty, by itself without any other provisions on freedom of navigation which benefit the U.S., would be against this nation's best interests. I am equally

confident that they would share my view that the 10 years of negotiating history spelling out international consensus on the meaning of common heritage could not be avoided in any new resource negotiation which attempted to use the same principle. Indeed, Mr. Chairman, if the law of the sea treaty does enter into force, approximately 120 developing countries will have every incentive to ensure that the common heritage doctrine is not watered down in any other treaty negotiation.

The Moon Treaty Imposes a Moratorium on Commercial Exploitation

Mr. Chairman, the Administration will argue that the moon treaty does not deter private enterprise and certainly does not impose a moratorium on commercial exploitation. I strongly disagree on both counts. You will recall that the moon treaty calls for a subsequent treaty when exploitation of the resources of our solar system "is about to become feasible." Mr. Chairman, exploitation will never be "about to become feasible" through the efforts of private enterprise, if the moon treaty is allowed to become the law of the land.

The development of natural resources is a long and expensive process and normally goes through certain chronological stages. First, there is the period of scientific investigation in which private companies in their own laboratories study and extrapolate assumptions about the resources which have been retrieved by scientists and governments. Second, if they have found scientific samples to be of interest, they may begin to develop inexpensive methods of resource sampling so as to gain a clearer picture of the quality, quantity and distribution of possible resource deposits. Should this activity, which is frequently called prospecting, be fruitful they will at that point, and sometimes even earlier, enter the phase of exploration. At the beginning of exploration the economic feasibility, technological feasibility and marketing considerations are studied. These are fairly general studies, since they occur a decade or more in advance of commercialization. During this period, they may build prototype technology to help test their technological assumptions and better define an ore body. While throughout these first three stages they will try to minimize costs in view of the high degree of speculation involved, they may spend tens and perhaps hundreds of millions of dollars. These three phases must all precede exploitation. In an area that requires new technology and highly speculative predictions about future markets, it is impossible for a public corporation to also take the risk that at the end of a 15 or 20 year period of such significant capital spending for R & D, it will be politically impossible to enter the exploitation or commercial recovery phase of their activity.

Mr. Chairman, we are all familiar with the current thinking that solar power satellites may at least in part be built from raw materials found in outer space. What company could seriously begin to develop solar power technology which would be dependent on mining the mineral resources of the moon if, just as the technology is proved feasible, the U.S. is bound by a treaty to enter into negotiations which may over another period of 10 or more years lead to a treaty anything like the law of the sea treaty? In short, Mr. Chairman, it is my very strong view that the moon treaty in its present form imposes a *de facto* moratorium on private enterprise use of outer space in connection with the development of natural resources.

This treaty does not foreclose the possibility that governments (with private company sub-contractors whose losses are underwritten by the taxpayers) may one day wish to develop the technology under a centrally planned, internationally controlled economic system. What it does do, however, is doom free enterprise initiative in outer

space. And it does so at a time when a very long period of government subsidy of the space program may at last be sufficient to spark private initiative. It is hard to believe that Congress has spent tens of billions developing this country's space technology without the expectation that some day our traditional private enterprise system would be in a position to take over. The moon treaty precludes this possibility.

Mr. Chairman, it should also be noted that not only as a practical matter, but also as a legal matter, the moon treaty can be deemed to be a moratorium. The American Delegate in the Outer Space Legal Subcommittee in an effort to make clear that this moon treaty could not be construed as a moratorium, compounded the problem when he said:

"I am particularly pleased (that the draft agreement) places no moratorium upon the exploration of the natural resources on celestial bodies, pending the establishment of an international regime. This permits orderly attempts to establish that such exploration is in fact feasible and practicable, by making possible experimental beginnings, and, then, pilot operations, a process by which we believe we can learn if it will be practicable and feasible to exploit the mineral resources of such celestial bodies."

Can there be any doubt, Mr. Chairman, that the American delegate has made it clear by his statement that the treaty does not permit exploitation itself?

Mr. Chairman, the Administration may also argue that the view I have expressed today, which I am sure will be shared by many witnesses if you decide to hold broader hearings on this subject, could be wrong in the context of the outer space negotiations. This may be the only argument they can make to justify what they have done. But, Mr. Chairman, over 150 countries, ours included, have just spent 10 years negotiating a hundred treaty articles with thousands of pages of written records and it all says that there is a global consensus on the meaning of the term "common heritage." I submit Mr. Chairman, that outer space cannot escape that net. But—even if there was a chance that outer space negotiators could rewrite all that diplomatic and legal history—this nation cannot afford to take the very substantial risk that they will fail.

Mr. Chairman, my testimony today represents the beginning of what may turn out to be a long struggle with the Administration. Congress has had virtually no opportunity to learn about the moon treaty and to consider its long-term implications for the future of man's productive activity in outer space. The L-5 Society will make

every effort to bring this issue to the attention of every member of Congress and to the American people. We have no doubt that once the Administration's action is understood and publicized, the Congress will be inundated by mail in opposition to this treaty. The American people will not want to give up the hopes and aspirations for America's future in space—their sense of national achievement and accomplishment. I believe that an important part of our national psyche and feeling of self-worth in this generation comes from our proven ability to conquer outer space, and it will not easily be taken away from us.

Mr. Chairman, this treaty has been under negotiation for several years, and those negotiations have now concluded. The UN Committee on the Peaceful Uses of Outer Space has laid the treaty before the UN General Assembly and asked that at its next session, which begins in two weeks, the treaty be opened for signature. We ask that you and your colleagues do everything in your power to convince President Carter to instruct his Delegation to the United Nations General Assembly to oppose the opening of this treaty for signature and to recommit the treaty for further study. It is a principle of international law that, once a treaty is signed, nations are bound to act in such a manner as is not incompatible with the treaty they have signed. Thus, the mere act of signature has important legal attributes.

For our part, we will now turn our attention urgently to the Senate and particularly to the Senate Foreign Relations Committee. We hope that before the UN General Assembly convenes in a few weeks the Carter Administration will be advised in no uncertain terms by influential members of Congress that this treaty must be given the most careful study in Congress, by both the Foreign Affairs Committees as well as the Space Oversight Subcommittees.

Mr. Chairman, I greatly appreciate your willingness to hear our testimony today. I hope we have successfully conveyed to you both our sense of alarm and urgency. We stand ready to assist you in any way possible in the further congressional review and oversight of the provisions of this treaty and its impact on our nation.

Editor's Note: Due to the length of this month's feature article *News Notes* have not been included in this issue.

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