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THE FUTURE OF UNITED STATES DEEP SEABED MINING: STILL IN THE HANDS OF CONGRESS

This Comment analyzes the present dilemma of the United States ocean mining industry. The Comment reviews the detrimental effects of a forthcoming Law of the Sea treaty on the ocean mining industry and discusses the inadequacy of the protection offered by Congress against these effects. The Comment stresses the economic and political importance of deep seabed mining to the United States and concludes by suggesting that Congress provide further incentive for U.S. industry to proceed with ocean mining.

INTRODUCTION

Over one hundred years ago, the British oceanographic ship H.M.S. Challenger discovered mineral nodules on the ocean seabed floor. Nevertheless, nodules have only been considered a valuable mineral source for the last fifteen years. In 1980 the Deep Seabed Hard Mineral Resources Act (hereinafter the Deep Seabed Act) established a licensing and regulatory scheme for the exploration and commercial recovery of hard mineral resources of the deep seabed by United States citizens. The timing

2. Id.
3. 30 U.S.C.A. § 1401 (West Supp. 1981). The Deep Seabed Act is designed to be interim in nature. If and when the United Nations Conference on the Law of the Sea reaches an agreement on an international treaty, and such treaty comes into force with respect to the United States, all deep seabed mining operations
of the statute reflects the technological development of the United States ocean mining industry. United States industry has completed the research and development stage of ocean mining and is now prepared to develop technology for exploration and commercial recovery of ocean nodules.\(^4\)

In passing the Deep Seabed Act, Congress acknowledged the need for ocean minerals\(^5\) and recognized that the development of technology must proceed if deep seabed minerals are to be available when needed.\(^6\) Because United States industry has assumed the role of developing seabed mineral technology, it is imperative that U.S. industry proceed with these mining operations.

The assumption that U.S. industry will so proceed may be premature. Mining operations will require enormous amounts of capital.\(^7\) To justify these expenditures, management must evaluate the commercial and political risks involved in seabed mining to determine whether an acceptable rate of return is possible.\(^8\)

Although exploration for and commercial recovery of ocean minerals are considered freedoms of the high seas,\(^9\) the Third United Nations Conference on the Law of the Sea (hereinafter conducted by U.S. citizens will be conducted under the terms of that international agreement. \textit{Id.} § 1401(b)(3). Provisions of the Act not inconsistent with an international treaty shall continue in effect with respect to U.S. citizens. \textit{Id.} § 1442.


6. \textit{Id.} § 1401(a)(11).

7. The industry average for the first operational system has been estimated as follows:

<table>
<thead>
<tr>
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<th>Millions of dollars</th>
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<tr>
<td>Exploration</td>
<td>25-50</td>
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<tr>
<td>Research and development</td>
<td>100-150</td>
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<td>Prototype system:</td>
<td></td>
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<tr>
<td>Miner and mining ship</td>
<td>100-150</td>
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<tr>
<td>Processing</td>
<td>200-300</td>
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<tr>
<td>Transportation</td>
<td>75-100</td>
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<tr>
<td>Total</td>
<td>500-750</td>
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9. 30 U.S.C.A. § 1401(a)(12) (West Supp. 1981). This position has also been asserted by the executive branch of the Government. A letter written to the United States Senate by John N. Moore, State Department Counselor on International Law, reads: "The Executive Branch continues to hold the view that deep seabed mineral exploitation constitutes a reasonable use of the high seas and is presently permitted under international law. We have made this position clear to other nations on many occasions." \textit{Deep Seabed Minerals: Hearings Before the Senate Subcomm. on Minerals, Materials, and Fuels,} 93rd Cong., 2d Sess. 994 (1974). This view, however, is contested by the majority of the developing nations. They consider any deep seabed mining under a municipal regime to be an interna-

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UNCLOS III) seeks to produce a treaty placing the seabed under the control of an international organization beyond national jurisdiction. The uncertainty surrounding this regime has discouraged further investments by U.S. mining interests.

One of the most controversial issues related to the passage of the Deep Seabed Act was whether to include some type of mechanism to protect pre-treaty miners' investments from adverse effects of a forthcoming Law of the Sea treaty. It was believed that some type of government assurance would inspire further investments in technological development. The protection currently offered by the Deep Seabed Act is inadequate. Because of the importance of ocean mining to the United States, Congress must provide further assurance to the U.S. ocean mining industry.

**Political Barriers to Continued Investment in Seabed Mining**

United States industry has spent over fifteen years in the research and development stage of ocean mining and has incurred costs of close to 200 million dollars. The next stage of operations involves the development of prototype equipment which must be designed for a specific ocean site. Industry has been reluctant to proceed with this next stage because political developments have created an unsatisfactory investment climate. This hesitancy does not stem from a fear of violating any existing internationally illegal act. See Murphy, *The Politics of Manganese Nodules: International Considerations and Domestic Legislation*, 16 *San Diego L. Rev.* 531, 538-41 (1979).


12. This protection was to be implemented in the form of an insurance program. Supporters of this insurance protection point to the Overseas Private Investment Corporations (OPIC) as precedent. This political risk insurance offered by the Government has been established to encourage U.S. private investment in friendly, less developed countries and covers losses due to inconvertibility of currency, expropriation, war, revolution, and insurrection. 22 U.S.C. § 2194(a)(1) (1976). This statute, however, could not be extended to seabed mining because it is limited to investment in an actual country. *Id.* § 2197(a).


15. The design and process specifications will be predicated upon specific mine site attributes such as topography of the ocean floor, depth, ocean currents, weather conditions, and size and composition of the nodules. H.R. Rep. No. 95-588 pt. 1, 95th Cong., 1st Sess. 20 (1977).

16. This next stage would consist of exploration and equipment development.
tional law, because the freedom to mine the deep seabed is recognized under the 1958 Convention of the High Seas. Instead, U.S. mining interests fear that new international law will take effect after mining activities in the ocean are underway.

UNCLOS III is still in the negotiating stages after eight years of conferences. Regulation of seabed exploitation has been one of the most controversial issues in the UNCLOS III negotiations. As the draft treaty now stands, United States industry could be subject to substantial restrictions and controls that could impair the value of investments made before a treaty enters into force. Furthermore, there is no guarantee that pre-treaty miners will be able to retain any sites mined before the treaty becomes effective.

United States miners are ready to proceed with mining operations from a technological standpoint. Yet to proceed at this time industry needs a precise definition of its future rights and obligations. Without this, and without assurance that investments will not be significantly devalued, U.S. ocean mining will be brought to a standstill. A review of specific proposals in the draft treaty illustrates that fears of investment impairment are not unfounded.


17. The authority for this freedom is derived from Article 2 which provides: Freedom of the high seas is exercised under the conditions laid down by these articles and by other rules of international law. It comprises, inter alia, both for coastal and non-coastal states:

(1) Freedom of navigation;
(2) Freedom of fishing;
(3) Freedom to lay submarine cables and pipelines;
(4) Freedom to fly over the high seas.

Convention on the High Seas, done Apr. 29, 1958, 13 U.S.T. 2312, T.I.A.S. 5200, 450 U.N.T.S. 82 (1962). Although the freedom to exploit the seabed is not expressly mentioned, commentary to earlier versions of the article indicate that this does not negate its existence.

The list of freedoms of the high seas contained in this article is not restrictive; the Commission has merely specified four of the main freedoms. It is aware that there are other freedoms, such as freedom to explore or exploit the subsoil of the high seas and freedom to engage in scientific research therein.


18. Of the three committees formed to decide issues at UNCLOS III, one was devoted solely to deep seabed mining.

19. These restrictions and controls amount to a de facto expropriation which would effectively frustrate U.S. initiatives.


21. See note 4 supra.
Political Structure

A brief analysis of the proposed political structure in the draft treaty demonstrates that the political system is not designed to favor United States interests. The International Sea-Bed Authority, of which all States Parties will be members, will control mining activities in the deep seabed. The primary governing body of the Authority is to be the Assembly, an organization to be comprised of all States Parties and managed on the basis of one nation-one vote. The Group of 77 would command more than a three-fourths majority in this one nation-one vote system in which a two-thirds majority prevails. Thus the industrialized nations could have little influence over policies and decisions. Even if all other seabed mining provisions of the draft treaty were considered acceptable by United States standards, a political system weighted heavily in favor of developing nations could quickly change that outlook.

The Authority is granted the power to permit states and their nationals to undertake ocean mining on a contractual basis. A licensee may be granted the right to mine a specific ocean site in consideration for agreeing to comply with certain specified terms outlined in the treaty. Although the Authority is not permitted to discriminate in the granting of a license, it can give special consideration to developing States. The treaty also creates an Enterprise which acts as the mining arm of the Authority. The Authority is granted the power to permit states and their nationals to undertake ocean mining on a contractual basis. A licensee may be granted the right to mine a specific ocean site in consideration for agreeing to comply with certain specified terms outlined in the treaty. Although the Authority is not permitted to discriminate in the granting of a license, it can give special consideration to developing States. The treaty also creates an Enterprise which acts as the mining arm of the Authority.

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23. DCLOS, supra note 10, Art. 156(2).
24. Id. Art. 159(5).
25. The Group of 77 is a term which has come to embrace the majority of Third World developing nations. Originally composed of 77 countries, the Group now numbers 132 nations. Sea Treaty “Sabotage”, 25 WORLD PRESS REV. 53 (1981).
26. DCLOS, supra note 10, Art. 159(6). A two-thirds vote is needed on decisions on questions of substance. Only a majority vote is needed on questions of procedure. Id. Art. 159(7).
27. Id. Annex III, Art. 6(2).
28. Applicants must have the nationality or control and sponsorship of the State Party of which the applicant is a national in addition to such qualification standards as financial and technological capability. Id. Annex III, Art. 4.
29. Even this, however, is acceptable to industrial nations in view of earlier drafts of the treaty. Earlier drafts gave the Authority complete discretion to reject an applicant on even political grounds. Under the present draft, the approval of mining rights is virtually automatic based on purely technical criteria.
Enterprise would be in direct competition with States and their nationals.30

The Authority's other governing body is the Council, which is responsible for determining specific policies conforming to Assembly decisions.31 The thirty-six members of the Council are chosen based upon geographical areas and special interests.32 While the industrialized nations have a much greater voice in decisions in the Council than in the Assembly, the Council is subordinate to the Assembly, which is the "supreme organ of the Authority."33

Production Limitations

The draft treaty imposes limitations on the amount of minerals that can be extracted from a specific minesite.34 It restricts production to levels governed by the growth in the nickel market.35 This might prevent an adequate return on investment and could result in the abandonment of a minesite.

The location of a minesite can also be restricted.36 A proposed plan for a site may be denied if the licensee is already mining under another plan in the same area and the aggregate size of both sites would exceed specified limits.37 This denial could inhibit siteholders from applying for licenses for newly-discovered sites for fear that valuable sites would be turned over to another nation.

Technology Transfer

The United States clearly has a technological lead over the developing nations.38 Yet these nations stand to reap the benefits of

30. DCLOS, supra note 10, Art. 170(1). This organ of the Authority will mine the seabed, sell its products, and then turn its profits over to the Authority.
31. Id. Art. 162. The voting system of the Council has been a very difficult issue to resolve. Decisions on questions of substance require either a two-thirds majority, a three-fourths majority, or a consensus, depending upon the provision on which the issue arose.
32. Id. Art. 161(1).
33. Id. Art. 161(1).
34. Id. Art. 151(2) (a). Nevertheless, the Authority is to reserve for production by the Enterprise a specified amount from the available production ceiling. Id. Art. 151(2)(c).
35. Id. This ceiling based on nickel consumption is considered by U.S. industry to be both stringent and arbitrary.
36. DCLOS, supra note 10, Annex III, Art. 6(3)(c).
37. Id.
38. Development of the Hard Mineral Resources of the Deep Seabed: Hearings Before the Subcomm. on Mines and Mining of the House Comm. on Interior and Insular Affairs, 95th Cong., 1st Sess. 60 (1978). It is also estimated that the United States has a five to seven year lead over Japan and the United Kingdom and ten to fifteen year lead over Russia.
United States research and development. Every applicant for a minesite must agree to certain contractual provisions that require a disclosure of technology. An applicant must make available to the Enterprise at reasonable terms mining technology it plans to use if such technology cannot be found on the open market by the Enterprise. An applicant that refuses will not be permitted to use the technology. The effect of these technology transfer provisions is to make available the technologies of the industrialized nations to the developing nations. The United States technological lead would be neutralized and all nations would start on an equal footing.

Financial Requirements

In order to subsidize the mining operations of the Enterprise, licensees are obligated to make certain payments to the Authority. The administrative fee for processing an application is $500,000 less any applicable refund. Once a contract is made, a contractor is subject to an annual assessment of the greater of one million dollars or a production charge that could amount to as much as seventy percent of the net proceeds from a mine.

A contractor must submit at least two suitable mining areas in applying for a minesite. Consequently, expenses for exploration could be almost doubled. The Enterprise has first choice of the two sites submitted. United States miners will have to delay mining until the Enterprise has made the investigation necessary to its informed choice.

The Enterprise is granted further preferential treatment. It is

39. Total United States investment in research and development is estimated to be 250 million dollars.
41. Id. Art. 5(3)(a). An applicant may use third-party technology only if that third party will make it available to the Enterprise at reasonable terms if it cannot be found on the open market. Id. Art. 5(3)(b).
42. DCLOS, supra note 10, Annex III, Art. 5(3)(b).
43. The technology transfer provision in the treaty is considered to be mandatory by the developing nations. Without it, the Enterprise would not be able to develop technology in time to compete with the industrialized nations.
44. DCLOS, supra note 10, Annex III, Art. 13.
45. Id. Art. 13(2).
46. Id. Art. 13(3).
47. The production charge is a function of the number of years in production and the return on investment from a minesite. Id. Art. 13(6)(c)(ii).
48. Id. Art. 8.
49. Id. Art. 9(1).
given interest-free capital and guaranteed loans to meet the costs of its first minesite.\(^5\) The financial terms required of licensees do not apply to the Enterprise and the Enterprise is permitted to negotiate for immunities from taxation.\(^5\)

It is evident that there is a tangible threat to the economic interests of ocean miners who proceed before a Law of the Sea treaty is finalized. Not only is there no guarantee that a pre-treaty minesite will be recognized, but there is also no guarantee that any minesite can be maintained on an economically viable basis once the treaty is in effect.

**ECONOMIC AND POLITICAL NEED TO ENCOURAGE UNITED STATES MINING OF THE DEEP SEABED**

Congress is well aware of the economic and strategic importance of seabed nodules to the United States. Nickel, copper, cobalt, and manganese can be extracted from these nodules and are of primary concern to the United States.\(^5\) The United States is heavily dependent on other nations for three of these four metals, which results in a balance of payments deficit.\(^5\) Congress recognizes that demand for mineral sources will continue to exceed domestic supply and that it is within the national interest to decrease this dependency on other nations.\(^5\) In passing the Deep Seabed Act, Congress thus acknowledges the need for an alternative source of supply.

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50. *Id.* Annex IV, Art. 11(3)(d).
51. *Id.* Art. 13(5).
52. Copper's physical characteristics and relatively low cost make it particularly attractive to U.S. industry for various uses. Nickel is used by U.S. industry almost exclusively in alloys and is important in the manufacture of equipment parts used in chemical and petroleum refining. Cobalt plays a very important role in defense applications. It is a necessary ingredient in making heat-resistant alloys used in turbine blades for jet engines.

Of the metals that are anticipated to be produced from seabed nodules, manganese is by far the most important to the United States. Virtually all of the manganese is used to extract unwanted sulphur in the production of iron and steel. Manganese is considered to be an essential element of the steel industry as there is no known substitute. U.S. DEP'T OF COMMERCE, COBALT, COPPER, NICKEL, AND MANGANESE: FUTURE SUPPLY AND DEMAND AND IMPLICATIONS FOR DEEP SEABED MINING (1979).

53. *Id.* The United States currently produces both copper and nickel domestically. There is no domestic production of cobalt and manganese, however, so the United States must rely on imports to meet its demand. Most of this country's cobalt comes from Zaire. It is significant that the world is dependent on Zaire for approximately sixty percent of the noncommunist production of cobalt.

Present supplies of manganese are adequate, but it is predicted that by the end of the century, South Africa and the USSR will account for the majority of land-based production. This is not particularly encouraging to U.S. economists since neither of these sources are considered reliable.

In the last decade, the United States has become aware of the dangers inherent in depending on other nations for vital raw materials. At the present time, land reserves of the four metals found in seabed nodules are concentrated in very few foreign nations.\textsuperscript{55} Five nations control virtually all of the free world’s manganese reserves; two nations control two-thirds of the free world’s nickel resources; and five nations control virtually all of the free world’s cobalt supplies.\textsuperscript{56} This, coupled with a lack of domestic supply, increases vulnerability to both price fixing and curtailment.\textsuperscript{57}

Opinion is strongly divided as to whether the economic and political conditions exist to sustain an effective price fixing cartel in one of these metals.\textsuperscript{58} Even if the opportunity for cartelization does not presently exist, those nations that the United States depends on for nickel, cobalt, and manganese have evidenced an intent to form cartels.\textsuperscript{59} Article 5 of the “Charter of Economic Rights and Duties of States”, adopted by the United Nations General Assembly at the 29th session asserts, in effect, both a positive right to form a commodity cartel and a duty not to resist the objectives of such cartel.\textsuperscript{60} It is significant that of the nine coun-

\textsuperscript{55} U.S. DEP’T OF COMMERCE, COBALT, COPPER, NICKEL, AND MANGANESE: FUTURE SUPPLY AND DEMAND AND IMPLICATIONS FOR DEEP SEABED MINING (1979).
\textsuperscript{56} Id.
\textsuperscript{58} The conditions that are usually considered important include: producer control over a substantial share of world production; financial resources adequate to cover loss of export earnings involved in restricting exports; inability of consumers to develop alternative sources of supply; low price elasticity of demand; absence of consumer stockpiles; limited possibilities of substitution; and political objectives and economic situations that are similar among the producers. SCIENCE POLICY RESEARCH, FOREIGN AFFAIRS AND NATIONAL DEFENSE, AND ECONOMICS DIVISIONS: DEEP SEABED MINERALS: RESOURCES, DIPLOMACY, AND STRATEGIC INTEREST, 95th Cong., 2d Sess. 60 (1978).
\textsuperscript{59} This only expresses a willingness to form a cartel. One can only speculate as to whether the conditions exist for these nations to form a cartel. Many economists did not believe that the conditions existed for the Organization of Petroleum Exporting Countries (OPEC) to form a cartel.
\textsuperscript{60} This section specifically provides:
All states have the right to associate in organizations of primary commodity producers in order to develop their national economies, to achieve stable financing for their development and, in pursuance of their aims, to assist in the promotion of sustained growth of the world economy, in particular accelerating the development of the developing countries. Correspondingly all states have the duty to respect that right by refraining from applying economic and political measures that would limit it.

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tries that export these three metals to the United States, none joined the United States in voting against this resolution.\textsuperscript{61} One Congressman has suggested that in view of this uncertainty, the assumption of cartelization would be a rational and reasonable basis on which to structure future resources policy of the United States.\textsuperscript{62} Furthermore, even unsuccessful attempts to establish cartel-like control over world mineral markets could have destabilizing market impact and result in significant short-term economic cost.\textsuperscript{63}

Without seabed mining, the United States is vulnerable to economic and political pressures from manganese, cobalt, and nickel producing nations. The congressionally expressed interest in becoming self-sufficient in these metals cannot be realized through domestic production alone.\textsuperscript{64} Currently, the United States imports more than a billion dollars worth of these metals annually and the import deficit is expected to grow to six or seven billion dollars by the end of the century in the absence of deep seabed mining.\textsuperscript{65} It is estimated, however, that if United States industry promptly commences ocean mining, the United States could become self-sufficient and would be in a position to export these metals by the year 2000.\textsuperscript{66}

\section*{Adequacy of Protection Against an Adverse Law of the Sea Treat\textsuperscript{i}y and Its Practical Effect on United States Industry}

Predecessor bills of the Deep Seabed Act reflected congressional intent to encourage U.S. ocean mining by providing insurance for U.S. investments.\textsuperscript{67} The bill originally included a blanket government guarantee covering the entire amount of the invest-

\begin{footnotesize}
\begin{enumerate}
\item Id. The nine countries were Brazil, Canada, Chile, Finland, Gabon, Norway, Peru, South Africa, and Zaire.
\item Id. at 144.
\item Legislation on deep seabed mining had been under consideration since the 92nd Congress. In the 93rd and 94th Congresses, bills were reported to the Committee on Merchant Marine and Fisheries but they did not reach the House. A bill, H.R. 3350, was reported to the 95th Congress and was passed by the House,
\end{enumerate}
\end{footnotesize}
ment at risk from losses resulting from the creation of an international regime, as well as any loss caused by interference from third persons. This guarantee evolved into a narrowly constructed insurance program. Before being deleted, the insurance provision was limited to loss on equipment, facilities, and services used for exploration, commercial recovery, and processing up to the lesser of $350 million or ninety percent of the investment. Those insured would also be required to pay an annual premium dependent on the total value of the investment.

The debate on these insurance provisions and their costs to the United States resulted in Congress choosing a less costly alternative. In lieu of insurance protection, the Deep Seabed Act passed by Congress included a grandfather clause. The clause expresses the intent of Congress that any international agreement should provide nondiscriminatory access to the deep seabed and should provide security of tenure for pretreaty miners. It is normal practice in this country to include a provision for grandfather rights for existing operators when making radical changes in the laws governing commercial activities. This helps maintain in-

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70. It was believed that the United States could be subject to a claim close to two billion dollars from U.S. miners if investments were vitiated by UNCLOS II.

It is the intent of Congress-

(1) that any international agreement to which the United States becomes a party should, in addition to promoting other national oceans objectives-

(A) provide assured and nondiscriminatory access, under reasonable terms and conditions, to the hard mineral resources of the deep seabed for United States citizens, and

(B) provide security of tenure by recognizing the rights of United States citizens who have undertaken exploration or commercial recovery under subchapter I of this chapter before such agreement enters into force with respect to the United States to continue their operations under terms, conditions, and restrictions which do not impose significant new economic burdens upon such citizens with respect to such operations with the effect of preventing the continuation of such operations on a viable economic basis.

vestment stability and avoids confrontation with the constitutional obligations to compensate persons whose property has been taken by government action. The protection offered by the grandfather provision in the Deep Seabed Act, however, is illusory in that the Act does not confer any rights to United States miners but merely expresses an intent to secure rights for them in the future Law of the Sea treaty. It is, in essence, a promise to secure a grandfather clause. From the wording of the statute, a Congressional mandate to the United States negotiators at UNCLOS III cannot be inferred. Furthermore, grandfather rights for United States miners should naturally be part of the United States negotiating position even in the absence of the grandfather provision of the Act.

A grandfather clause in the Law of the Sea treaty would eliminate the need for Congress to protect United States investments. Yet Congress cannot guarantee to investors that the United States will only ratify a treaty that contains grandfather rights. It may be impossible for United States negotiators to obtain an ocean mining grandfather clause in a treaty that must be agreed upon by 150 countries. When the Senate votes on a treaty, its decision will be influenced not only by the treaty's provisions on the deep seabed, but also by its effect on other national interests. Thus it is conceivable that the United States may ratify a treaty that does not contain grandfather ocean mining provisions.

In an effort to implement congressional intent, the United States submitted an informal working paper to the conference at the 1980 UNCLOS III spring session. The working paper included a treaty provision and language to be inserted into the conference
resolution. This provision suggests an approach to interim protection of investment by granting a pre-treaty investor priority to a specific site in the event a subsequent applicant requests all or part of the site. At the resumed spring session of UNCLOS III, the Group of 77 expressed concern that these proposed provisions would move private mining activities even further ahead of the Enterprise than they were already. The USSR also indicated that under this investment protection arrangement early applicants could secure prime sites to the disadvantage of later entrants. These reactions indicate that the inclusion of a grandfather clause in the Law of the Sea treaty is far from assured.

Present Status of U.S. Ocean Mining

Without any type of assurance against the adverse impact of a Law of the Sea treaty on economic interests, it is uncertain what effect the Deep Seabed Act will have upon United States industry's decision to further invest in ocean floor mining. The Act, which in its earlier draft form was designed to give some assurance to the United States ocean mining industry, now has virtually deprived United States industry of any international right to mine the ocean. Prior to the enactment of the statute, United States miners were free to mine the ocean floor under international law. With the passage of the Act, United States miners are now governed by a stringent regulatory framework and are actually prohibited from mining the ocean unless certain criteria are satisfied. The Act thus serves to retract a prior international right by imposing mandatory restrictions and controls.

80. Id. at 44-48.
82. Id.
83. See note 17 supra.
84. An applicant must demonstrate that he will be financially able to meet all obligations that may be required to engage in exploration or commercial recovery, that he will have the technological capability to engage in such exploration or commercial recovery, and that the proposed plan meets the requirements of the chapter. 30 U.S.C.A. § 1413(c) (West Supp. 1981).
States industry must now take into consideration the obligations imposed under the Act in addition to those that will be imposed by the future Law of the Sea treaty.85

United States industry could proceed in the hope that United States negotiators at UNCLOS III will be able to secure grandfather rights for pre-treaty miners. Yet it would be difficult to justify expenditures to corporate shareholders while there is a significant risk that a treaty will subsequently enter into force containing terms that will vitiate that investment.86

The availability of financing is a critical factor in deciding whether to proceed with mining. Financial institutions are reluctant to finance United States mining companies so long as the investment's security is subject to uncertainties related to the venture's legal status.87 Banks are not willing to assume the political risk that government authorities will materially affect the project's cash flow and ability to service debt.88 Even the recruiting of financial backers for land-based mining projects is not an easy task.89 Land-based miners can at least point to unfettered title to the minerals to be mined and to the technological certainty that comes from participation in an established venture.90 The ocean mining industry, in contrast, is entering into a totally new industry and a new physical environment.91 It is unlikely that banks would consider a promise of U.S. negotiators to attempt to obtain grandfather rights for United States industry as satisfactory assurance against political risks.

Private insurance companies are willing to offer the ocean mining industry limited insurance for such political acts as terrorism, sabotage, and seizure.92 Yet the private sector is unwilling to offer protection from the possible loss of investment caused by an international treaty which negates or diminishes the possibility of productive ocean mining.93 Government participation in sharing some of the political risk is an essential precondition to participation by the private sector.94

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86. Oceanography Hearings, supra note 7, at 54.
87. Id. at 172 (statement of C. Thomas Houseman).
88. Id.
90. Id.
91. Id.
93. Oceanography Hearings, supra note 7, at 370-96.
94. International Hearings, supra note 72, at 50.
United States industry has considered abandoning ocean mining.\textsuperscript{95} If this were to occur, the United States could lose the benefits of a new secure source of mineral supplies free from the control of other countries.\textsuperscript{96} Further, United States industry's technological position would fall far behind that of other industrialized nations. United States miners have already entered into consortia with foreign companies to spread the risks of early investments for which borrowing was not available.\textsuperscript{97} In exchange for foreign companies' agreement to share the risk, United States industry has agreed to work jointly with these nations in the development of technology.\textsuperscript{98} Consortium agreements already provide for some automatic technology transfer in the event that the United States company is unable to continue with the project.\textsuperscript{99} Some companies of other nations are state-owned or state-subsidized.\textsuperscript{100} If the United States abandons plans to mine the ocean, these foreign companies might be in a position to take the political risk of mining before a treaty enters into effect.

United States industry could also wait until a treaty is finally passed. Legal and economic obligations could then be determined before making the decision to proceed with mining activities. It is uncertain, however, when and if a Law of the Sea treaty will be ratified. Recent developments suggest that a final agreement is not as near as had been anticipated.\textsuperscript{101} The Reagan administration has expressed an intent to delay UNCLOS III
negotiations for the purpose of re-examining the proposed Law of the Sea treaty, specifically the deep seabed issues. This may indicate that the Reagan administration will strive for a Law of the Sea treaty that will afford more protection for United States interests. The inevitable result would be further delay in treaty agreement.

In addition to the delay anticipated before an agreement is reached on a final treaty, the period for ratification needs to be considered in determining when legal rights of the miners would finally be defined. The history of other conventions demonstrates that long periods of time have elapsed before the requisite number of States ratified to bring the treaty into effect.

As another alternative, U.S. industry could mine under the sponsorship of one of the developing countries or one of the other industrialized nations, particularly one of the nations already a party to the consortia. Currently, one other nation, the Federal Republic of Germany, has passed interim seabed legislation and several others are considering it. Although West Germany's legislation was patterned after that of the United States, it is dissimilar in two significant respects that could make mining under a foreign flag more appealing. The legislation of both countries has provisions dealing with the protection of the environment, but the requirements of the Deep Seabed Act are more stringent and could impose a more significant economic burden. United States miners are required to use the "best available technologies" for the protection of the environment except when it is not

103. Id.
104. There are indications that although the conference is prepared to give the new administration time to review the draft treaty, they are determined to complete the convention in the near future. 18 U.N. CHRONICLE 13 (1981).
105. Convention on the Territorial Sea and Contiguous Zone 6
Convention on the High Seas 4
Convention on the Continental Shelf 6
Convention on Fishing and Conservation of Living Resources of the High Seas 8

It should be recognized that these treaties were not as controversial as is the one presently being negotiated. Development of the Hard Mineral Resources of the Deep Seabed: Hearings Before the Subcomm. on Mines and Mining of the House Comm. on Interior and Insular Affairs, 95th Cong., 1st Sess. 168 (1978).

107. Only one consortium, Ocean Management, Inc., involves participation of both a United States company and a West German company. See note 97 supra.
cost justified.\textsuperscript{109}

The second major difference deals with vessel documentation. Mining under United States law requires that all vessels used for commercial recovery and at least one vessel used for mineral transportation be documented under United States law.\textsuperscript{110} Additionally, the processing of the minerals must be conducted within the United States unless there is assurance that if they are processed abroad, the minerals will be returned to the United States for domestic use if so required.\textsuperscript{111} This poses possible economic burdens that would not exist if mining under West German law.\textsuperscript{112}

**Conclusion**

Failure of the Deep Seabed Act to protect against adverse effects of a Law of the Sea treaty has created a dilemma for the United States ocean mining industry. Since precatory grandfath-er language in the statute does not give assurance to financial supporters, it is uncertain whether exploration and development of equipment will continue at this time. Mining now under the sponsorship of another country is another possibility, but is difficult because of the Deep Seabed Act's jurisdiction over a broadly defined "U.S. citizen."\textsuperscript{113}

United States industry is in a position where it may abandon ocean mining or postpone it until a Law of the Sea treaty has been agreed upon and finally ratified. Either choice results in a delay of the political and economic benefits this nation could gain from deep seabed mining.

Congress is well aware of the national importance of seabed

\textsuperscript{110} Id. § 1412(c)(2)-(3).
\textsuperscript{111} Id. § 1412(c)(5).
\textsuperscript{112} West German legislation contains no provisions dealing with ship documentation or processing sites.
\textsuperscript{113} "U.S. citizen" is defined so as to encompass, \textit{inter alia}, "any corporation. . . (whether organized or existing under the laws of any of the United States or a foreign nation) if the controlling interest in such entity. . . is held by an individual who is a citizen of the United States or a corporation or other entity organized and existing under the laws of the United States. 30 U.S.C.A. § 1403(14) (West Supp. 1981). "Controlling interest" is defined broadly to cover an interest in or influence over another person arising through "ownership of capital stock, interlocking directorates or officers, contractual relations, or other similar means, which substantially affect the independent business behavior of such person." \textit{Id.} § 1403(3).
mining. It considered incentives for United States industry to mine the ocean but finally chose the less costly alternative of only showing general negotiating support for the ocean mining industry. Although cheaper in the short-run, it may ultimately prove to be a very expensive decision. Grandfather rights for ocean miners in the Law of the Sea treaty are not presently foreseeable, and private sector United States ocean mining may not proceed without them. The future of United States ocean mining still remains in the hands of Congress. Now is the time for Congress by new legislation to provide the necessary impetus for the domestic ocean mining effort to continue. Private sector insurance companies have expressed a willingness to insure United States ocean miners' investments against an adverse treaty if there is some type of government participation in sharing the risk. It is recommended that Congress explore a type of insurance program in which the government would offer insurance protection in conjunction with private insurance companies. Once the considerations are balanced, the benefits to be gained by this legislation will certainly outweigh the costs to be incurred.

ROGER A. GEDDES

114. See text accompanying note 54 supra.
116. See text accompanying notes 79-82 supra.