The Deep Seabed Hard Mineral Resources Bill

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On November 2, 1971, Senator Metcalf introduced the Deep Seabed Hard Mineral Resources Bill,[1] drafted by the American Mining Congress. The Bill is designed to provide the Secretary of the Interior with authority to promote the orderly development of the hard mineral resources of the deep seabed pending adoption of an international regime. According to Senator Metcalf, it is structured to order only the affairs of U.S. nationals.[2] The introduction of the Bill, whether it becomes law or not,[3] represents a major advance in the seabed debate requiring detailed analysis. If the Bill does not become law, there can be little doubt that similar legislation will soon be requested. This may be shown from a brief review of the circumstances preceding the presentation of the Bill.

Commercial manganese nodule exploration has now reached the stage of exploitation. A Japense government-supported consortium has successfully tested a continuous line bucket system for recov-

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1. S. Res. 2801, 92d Cong., 1st Sess. (1971).

2. 117 CONG. REC., 17,491 (daily ed. Nov. 2, 1971) (remarks of Sen. Metcalf).

3. The Senators sponsoring the Bill did not necessarily endorse each of its provisions.

ering nodules at water depths of 12,000 feet.[4] Deepsea Ventures plans to operate a 1,000,000 ton per year nodule processing plant by 1975 or 1976, the nodules are to be extracted from a 4,000 square mile mine site in the Pacific, between the continental United States and Hawaii.[5] Hughes Tool Company is reported to have ordered a 35,000 ton prototype deep-sea mining ship capable of operating in depths of more than 10,000 feet which is due to be working in 1973.[6] The company has not specifically stated that it is working on manganese nodules, but this may be inferred from the nature of activities envisioned.[7] The French Government, in cooperation with private industry, has begun work on analysis of nodules raised near the Tuamotu Islands in 1970 and 1971.[8] The Soviet Union has launched a Comecon International Coordinating Center of Marine Exploration to undertake joint expeditions to select suitable mineral exploitation sites.[9] Other enterprises are involved in research.[10] A feature of several of these projects is cooperation between nationals of various developed states. Dr. Mero of Ocean Mining Co. is assisting the Japanese.[11] Deepsea Ventures is associated with a large West German firm.[12]

The investments already made generate their own momentum for the expansion of the industry. Knowledge and expertise invested in such extensive projects cannot be veiled in secrecy for long.[13] Nor can the location of desirable sites be hidden indefinitely. Furthermore, it does not appear that the enterprises working in this field intend to stop their research and development.

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4. J. FLIPSE and R. KAUFMAN, PROGRESS IN MINING MANGANESE NODULES FROM THE DEEP OCEAN, paper presented at "Oceanexpo 1971" (March 1971) 14-15.

5. Taylor, *Worthless Nodules Become Valuable,* OCEAN INDUSTRY 27-28 (June, 1971).

6. *Deep-sea Mining Ship Planned by Global Marine,* The Wall Street Journal, Apr. 12, 1971.

7. ". . . engineering studies and surveys of selected sites in the Pacific Ocean have been made to assess their value as sources of minerals", *Deep Ocean Mining Planned by Hughes,* Houston Chronicle, Jan. 17, 1971.

8. C.N.E.X.O., RAPPORT ANNUEL 1970, 19.

9. T. Shabad, *Soviet Bloc Plans Big Seabed Study,* New York Times, Apr. 24, 1971.

10. See, e.g., Kennecott Exploration Inc.; C. Schatz, Observations of Sampling and Occurrence of Manganese Nodules (Offshore Technology Paper No. OTC 1364) (1971).

11. C.N.E.X.O., *supra,* note 8, at 20.

12. Deepsea Ventures, Inc., News Release (June, 1970).

13. *See, e.g.* (on dredges) "It is impossible for such benefits to be completely internalized by patent protection, for neither knowledge diffusion nor imitative art can long be controlled." Sorensen and Mead, *A Cost-Benefit Analysis of Ocean Mineral Resource Development: The Case of Manganese Nodules,* 50 AM. J. AGRIC. ECON. 1611, 1619 (1968).

A further spur to settling a legal framework for deep sea mining was provided by the Moratorium Resolution of the Seabed Committee and the General Assembly of the United Nations. Under the Moratorium Resolution,[14] nations and persons were bound to refrain from all exploitation of the seabed and ocean floor beyond national jurisdiction, pending the establishment of an international regime. The State Department regarded the Moratorium Resolution only as advisory. Its view that it did not anticipate any efforts to discourage American nationals from continuing exploration plans for deep seabed minerals such as manganese nodules[15] must have caused reflection among those in the industry intent upon such exploitation. The State Department's views were formulated in a draft Convention on the International Sea-Bed Area presented to the Seabed Committee in August 1970.[16] This draft, is development orientated and assures some measure of certainty for operating companies.[17] The Petroleum Industry was not satisfied with the draft, despite the fact that present petroleum resources would lie in the International Trusteeship Area and therefore under the direct control of the coastal state.[18] However, on International Seabed Resource Authority, to be created under the draft, would be vested with considerable powers which could seriously affect private operators on the seabed.[19] It is therefore not surprising that those concerned with deepsea mining, which would take place in the area under international control, were not in agreement with the State Department draft.

14. G.A. Res. 2574 D (XXIV) (1969), *discussed in* Auburn, *Deep Sea Mining,* 15 ARCHIV DES VOLKERRECHTS 93 (1971).

15. *Hearings before the Special Sub-committee on Outer Continental Shelf of the Senate Committee on Interior and Insular Affairs,* 91st Cong. 1st and 2nd sess. 210-211 (1970) (hereinafter cited as *Hearings* 1970).

16. *Draft United Nations Convention on the International Sea-Bed Area: Working Paper* (United States) U.N. Doc. A/AC.138/25 (1970). It is suggested that the statement that the Convention and Appendices "do not necessarily represent the views of the U.S. Government" may be attributed to the Senate's views (hereinafter cited as Draft United Nations Convention).

17. Knight, *The Draft United Nations Conventions on the International Seabed Area: Background, Description and Some Preliminary Thoughts,* 8 SAN DIEGO L. REV. 459 at 548-49 (1971).

18. National Petroleum Council, *Petroleum Resources under the Ocean Floor—A Supplemental Report* 31 (1971).

19. *E.g.,* Art. 40(j) would give the Council power to issue emergency orders to prevent serious harm to the marine environment: Auburn, *The International Seabed Area,* 20 INT'L & COMP. L.Q. 173, 188 (1971).

The American Mining Congress was well aware that this draft was likely to be the most favourable regime possible, from their point of view, if an international convention for the seabed is to be promulgated at the Law of the Sea Conference in 1973. Two of the papers presented to the Seabed Committee in 1971 define views which find wide, if not overwhelming support among a majority of members of the United Nations. The draft submitted by Tanzania[20] would establish an International Sea-bed Authority empowered to explore and exploit the seabed by means of its own equipment and services,[21] and a Council having wide powers of licensing and control.[22] Until self-sufficient, administrative costs would be met by members in conformity with the United Nations' scale of contributions, income would be distributed on the basis of equitable sharing "to be determined by the Assembly."[23] As this Assembly would be modelled upon the General Assembly of the United Nations, the distribution of revenue would presumably (and perhaps rightly) favour the developing states. A working paper presented by Chile and twelve other Central and South American states[24] would establish an enterprise to undertake all exploration and exploitation activities.[25] Wide powers would be given to an Assembly and Council, and the benefits from exploitation would be distributed equitably among all states, irrespective of geographical location, with special consideration being given to developing countries' needs.[26] It is not possible to review in detail the various proposals before the Seabed Committee,[27] but the general trend may be gathered from the material presented here.

The ocean mineral industry, and the American Mining Congress, could hardly view such proposals with favor. Few businessmen would be willing to undertake a novel, risky and expensive enterprise under the daily supervision and control of an organisation modelled upon the United Nations.

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20. *Draft Statute for an International Sea-Bed Authority* (United Republic of Tanzania) U.N. Doc. 138/33 (1971).
21. *Id.* at Art. 16(1).
22. *Id.* at Art. 29.
23. *Id.* at Art. 33.
24. *Working Paper on the Regime for the Sea-Bed and Ocean Floor, and The Subsoil Thereof Beyond the Limits of National Jurisdiction* (Chile, Columbia, Ecuador, El Salvador, Guatemala, Guyana, Jamaica, Mexico, Panama, Peru, Trinidad and Tobago, Uruguay, and Venezuela) U.N. Doc. A/AC.138/49 (1971).
25. *Id.* at Art. 33.
26. *Id.* at Art. 4.
27. Particularly, the comprehensive draft covering all aspects of the law of the sea presented by Dr. Pardo and submitted by Malta, U.N. Doc. A/Ac.138/53 (1971).

A concept which gained much support in industry, was that seabed minerals could be mined under existing international law, through the development of custom by participating nations.[28] In June, 1970, Deepsea Ventures recommended that the United States issue a unilateral declaration of intent to establish an interim national claims registry. Under the recommendations, other nations undertaking deep sea mining would be urged to do likewise and to enter into an agreement to respect the reasonable claims of all nations on a basis of reciprocity. An International Registry Clearinghouse would be created and invested with recording duties. National jurisdiction would not be territorial, but confined to the purposes of exploration and exploitation for minerals.[29] A proposed Deep Ocean Floor Resources Act would provide for U.S. licensing.

In September, 1970, T.S. Arn of the American Mining Congress, in testimony before a Senate Subcommittee[30] submitted that ocean mining demanded a secure investment climate and security of the tenure of its claims beyond the limits of national jurisdiction. It was suggested that control of the ocean activities by United States citizens "might establish a customary pattern of rules and practices that could be the basis for agreement with like-minded nations."[31] A substantial outline of the provisions of the present Bill was prepared by the American Mining Congress as part of its comments upon the State Department draft, and sent to the Department of the Interior in January 1971.[32] The resultant Metcalf Bill thus presents a framework within which the United States ocean mining industry believes that it can explore and exploit seabed minerals with what it considers to be sufficient security for its investments.

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28. "If the nodules or other sea-bottom resources prove attractive enough to justify the expense of harvesting and processing them, the accompanying evolution of international law may well take the form of an agreement among the half-dozen nations capable of undertaking such huge efforts." Ely, *Legal Problems in Undersea Mineral Development*, J. PET. TECH. 237, 245 (1970).

29. J. Flipse and R. Greenwald, *The Marine Operator's Role in the Rational Formulation of Principles of Law Governing Mining Activities in 'shared' Ocean Space*, MARINE TECHNOLOGY SOCIETY (June/July, 1970).

30. Statement of T. Ary on behalf of the American Mining Congress in Outer Continental Shelf, *Hearings* 1970, *supra* note 15 at 36, 37.

31. *Hearings* 1970, *supra* note 15 at 38-39.

32. Letter from T.S. Ary to Hon. Hollis M. Dole, January 27, 1971 (Exhibit A).

The Bill would affect the "deep seabed," which is defined as the seabed and the subsoil vertically below, lying seaward and outside the continental shelf.[33] For the purposes of this Bill, the expanding continental shelf boundary is retained. In a Bill establishing an interim regime it may well be considered wise not to raise the question of defining the boundary between the continental shelf and the seabed. But the Secretary of the Interior, in licensing, will be forced to decide whether the area concerned comes within the present Bill or within the Outer Continental Shelf Lands Act.[34] Such a decision will be necessary because, *inter alia* under the Outer Continental Shelf Lands Act, the subsoil and seabed of that area "appertain to the United States and are subject to its jurisdiction, control and power of disposition,"[35] whereas the seabed beyond the shelf is "not . . . subject to appropriation by any means by States . . . and no State shall claim or exercise sovereignty or sovereign rights over any part thereof."[36] The provision that the Secretary's issuance of any lease under the O.C.S. Act shall not prejudice the ultimate settlement of the question whether or not the area involved is in the Outer Continental Shelf;[37] is of little practical effect in the present context.[38]

Under the Bill no person subject to the jurisdiction of the United States shall directly or indirectly develop any portion of the deep seabed except as authorized by license under the Act or by a reciprocating state.[39] "Development" means any operation of exploration and exploitation, other than prospecting, having the purpose of discovery, recovery, or delivery of hard minerals from the deep seabed.[40] The Continental Shelf Convention's requirements of adjacency and exploitability have, in state practice, been reduced to

33. S. Res. 2801, *supra* note 1, § 2(b).

34. Presuming that manganese nodules superjacent to the bed of the sea are capable of coming within the definition of the Continental Shelf Convention of shelf resources. On this question, *see* Auburn, *New Zealand and the Seabed*, 3 PACIFIC COMMUNITY, 313, at 322 (1972).

35. S. Res. 2801, *supra* note 1, § 3(a).

36. G.A. Res. 2749 (XXV) (1970).

37. S. Res. 2801, *supra* note 1, § 8(h).

38. The Department of the Interior has taken the position that the submerged land areas included in Outer Continental Shelf leases "are unquestionably within those areas over which the United States has exclusive natural resource jurisdiction under the terms of the Convention; Dep't of the Interior, *Petroleum and Sulfur on the U.S. Continental Shelf* 6 (1969).

39. S. Res. 2801, *supra* note 1, § 3.

40. § 2(e). "Indirect development" is mentioned in § 3, but not defined. One possibility is that a United States company participating in a consortium incorporated in and based upon a non-reciprocating state may be required to obtain a license under the Bill. This point would of course be raised by enterprises already licensed under the Bill in a United States court action under § 12(a).

exploitability widely defined.[41] The Continental Shelf Convention demands that the "depth of the superjacent waters admits of the exploitation of the natural resources."[42] Taking the test of superjacent waters it would appear that, since the tests by Deepsea Ventures and by the Japanese consortium at 3,760 metres, water depth is no longer a bar to exploitation capabilities, and this is supported by the plans for a full-scale commercial nodule processing plant for 1975 or 1976. Therefore manganese nodules may be considered capable of exploitation today. Promising mine sites appear to be situated, *inter alia*, between the continental United States and Hawaii. In such a location the United States would be the nearest coastal state, and the mine site would therefore come within the O.C.S. Act, as the present Bill contains no definition of the seaward boundary of the United States Outer Continental Shelf. This argument would become even stronger when the exploitation stage was actually reached. Therefore a license issued by the Secretary under the proposed Bill would, insofar as it was granted for the recovery of manganese nodules in the projected mining areas, automatically take the site out of the definition of "deep seabed" and put it within the outer continental shelf. Thus, the effect of a license would be to place the licensed area outside the ambit of the Bill.

This problem of shelf-seabed delineation is inherent in the Bill. In the absence of a defined boundary between the deep seabed[43] and the outer continental shelf[44] confusion and litigation are inevitable. It may be presumed that the Bill's draftsmen sought to avoid any suggestion of prejudging the United States position on the seaward boundary of the outer continental shelf for the 1973 Conference on the Law of the Sea. However, even an interim regime requires at least a general indication of boundaries.

41. Canadian state practice covers areas at least 300, and possibly 400 miles offshore, and United States, Australia and New Zealand licensing does not lag far behind: Auburn, *The 1973 Conference on the Law of the Sea in the light of current trends in state seabed practice*, AUSTRALASIAN LAW SCHOOLS ASSOCIATION CONFERENCE 15-22 (August, 1971).

42. The Convention on the Continental Shelf, Art. 1. [1964] pt. 1 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 311. *Done* at Geneva April 29, 1958; *entered into force* June 10, 1964.

43. Under the present Bill.

44. Under the Outer Continental Shelf Lands Act.

The boundary question becomes acute in the case of ocean minerals on the seabed relatively close to the coastal state, but in deep water outside the territorial sea. This problem is of course especially relevant to the United States which still has a three mile territorial sea.[45] An instance of this problem is presented by the Kauai Channel manganese deposits in waters 5,000 to 8,000 feet deep, five to eight miles from the Kauai shoreline. It has been suggested that these deposits may be worth billions of dollars and constitute an economically important reserve which is relatively accessible.[46]

An application by a United States company for a license under the Bill to develop these deposits would present the Government with difficult problems of international law.[47] The State Department has held that each island of the Hawaiian Archipelago has its own three mile territorial sea, and that waters seaward of these belts of territorial seas are high seas over which no State exercises sovereignty.[48] American courts have taken the same view.[49] Therefore the Kauai Channel deposits, and possible seaward extensions, are regarded by the United States as outside its territorial waters. A United States claim to seabed areas as continental shelf at a depth of 8,000 feet in the Kauai Channel could be viewed as a partial reversal of the United States stand against 200 mile territorial sea and archipelago claims[50] and an encouragement for a fresh round of extensive claims to the seabed. As the United States will only agree to a twelve mile territorial sea accompanied by free transit through international straits, an extension of territorial waters by this means must await ratification of a convention on these lines. This conflict of interests between Hawaii and the Federal Government has already been foreseen by Hawaiian officials.[51] The latent Hawaiian archipelago claim will presumably be fought out between the State and Federal Governments in due course. But if it were raised in court, under the present Bill, the State Department's dip-

45. The United States proposal for a twelve mile territorial sea is linked to freedom of navigation and overflight in straits used for international navigation between one part of the high seas and another part of the high seas or the territorial sea of a foreign state: Art. II, U.N. Doc. A/AC.138/SC.II/L.40 (1971).

46. Morgenstein, Hawaii Institute of Geophysics, quoted in *Manganese on Ocean Floor,* New Zealand Herald, Jan. 5, 1971.

47. *See* Comment, *The Problem of Delimitations of Base Lines for Outlying Archipelagos,* 9 SAN DIEGO L. REV. — (1972).

48. WHITEMAN, 4 DIGEST OF INTERNATIONAL LAW 281 (1965).

49. *E.g.,* in Island Airlines Inc. v. Civil Aeronautics Board, 352 F.2d 735 (1965).

50. There are indications that further archipelago claims may be made following the example of Tonga.

51. OCEAN SCIENCE NEWS (April 16, 1971).

lomatic preparations for the Law of the Sea Conference would be considerably embarrassed.

The Bill has taken from the Continental Shelf Convention the description of the shelf as the "seabed and subsoil."[52] The Bill, although primarily concerned with manganese nodules which are the major mineral resource of the deep seabed of present interest to an interim regime, does not define the boundary between the "deep seabed" and the superjacent high seas—the epichthonic interface.[53] There is little difficulty with the expression "subsoil vertically below," which may be taken to cover the area beneath a national two dimensional "seabed". However, the Bill leaves unanswered the question whether the seabed has any depth, and if so, how this is to be measured. As manganese nodules and manganese deposits are found superjacent to the surface and resting upon it, this question is of major importance to any would-be licensee. To recover manganese nodules lying on the surface, a licensee must obtain a surface block "comprising not more than 40,000 square kilometers and extending downward from the seabed surface to a depth of 10 meters."[54] If the seabed has a "surface" it would appear to have depth, but, if this is so, the boundaries are not defined. The Secretary of the Interior would be empowered to issue licenses which in regard to surface blocks "shall extend to manganese-oxide nodules and all other hard minerals at the surface of the deep seabed or located vertically below to a depth not exceeding 10 meters."[55] Presumably the surface of the deep seabed here is that same area previously referred to as the seabed surface. If so one of the two definitions should be amended. There can be little doubt that the draftsmen intended to cover manganese-oxide nodules lying on the surface, but this is not what the Bill states. "At the surface" taken literally means embedded in the surface, but not projecting above it.

This problem goes beyond a matter of draftsmanship. The Bill is purely municipal legislation. As has already been shown, and as will appear later, by ignoring the international law implications,

52. § 2(b) of the Bill, *and* Art. 1 of the Convention.
53. A similar problem has arisen in the United States Seabed Draft: *See* Auburn, *supra* note 18, at 199.
54. S. Res. 2801, *supra* note 1, § 2(c).
55. *Id.* at § 4(a).

the Bill raises serious, and perhaps, insoluble conflicts. A principal tenet of State Department policy has been that the freedom of the high seas must be preserved. Thus the United States Draft Seabed Convention provides that neither the Convention nor any rights granted or exercised pursuant thereto, shall "affect the legal status of the superjacent waters as high seas".[56] The present Bill ignores this problem, but does not thereby solve it.

A licensee's rights are confined to "hard minerals"[57] defined as any mineral, metalliferous mud or other nonliving substance other than oil, gas, hydrocarbons and any other substance which both naturally occurs and is normally recovered in liquid or gaseous form.[58] It would therefore appear that metalliferous brines such as those in the Red Sea will not come within the Bill if they (a) are suspended in liquid and (b) are normally recovered in liquid form. As present suggestions indicate that liquid recovery is feasible,[59] such brines, in liquid form, would not come within the scope of the Bill if situated at either the surface or under the seabed. Brines forming part of the seas above the seabed are not part of the "deep seabed" under the Bill and clearly do not come within the Bill. It may therefore be asked why the term "metalliferous mud" was added to "any mineral" if the latter includes the former. Perhaps the draftsmen of the Bill intended to include Red Sea type brines, on the one hand, but on the other hand wished to carefully exclude any liquid substance in any way related to oil and gas. Legislation to cover the Red Sea brines has proved difficult to draft comprehensively[60] and if the present Bill is to cover similar minerals which are likely to be discovered elsewhere it is suggested that special provision should be explicitly made to ensure that brine minerals are covered. Under the present Bill it is possible that the Secretary would have power to license brine mineral exploitation at a site insofar as the minerals were both within the seabed and did not naturally occur in liquid form. A licensee might then be subject to the regime of the Bill after an International Seabed Convention came into force,[61] for that part of brine minerals coming within the definition of "hard minerals" under the Bill. At the same time, exploitation of superjacent brine minerals, naturally occuring and

56. Draft United Nations Convention, *supra* note 16, at Art. 6.
57. S. Res. 2801, *supra* note 1, § 4(a).
58. *Id.* at § 2(d).
59. Boes and Bade, *A System for the recovery of heavy metal sediments from the Red Sea Brines,* 3 UNDERWATER JOURNAL 220 (1971).
60. *See,* for instance, Law relating to the Acquisition of the Red Sea Resources, 1968, *sanctioned by* Royal Decree M/27 of October 1, 1968 (Saudi Arabia).
61. Presuming that § 10(a) of the Bill was enacted.

normally recoverable in liquid form, would be directly subject to the possibly quite different regime of the Convention without the protection of the Bill.

It would appear possible, in theory, for persons subject to United States jurisdiction to engage in a number of different types of exploitation in one area, under the scheme formulated by the Bill—(a) a surface block (b) a subsurface block (c) oil or gas in a surface block (d) oil or gas in a subsurface block (e) liquid mineral brines in a surface block (f) liquid mineral brines in sea-water. This hypothetical list does not include various other activities such as deep drilling for scientific research, anti-submarine devices or environmental research. This is not so much a question of multiple uses, like fairways between oil rigs, but of complicated procedures involving conflicts of national and international authority and uncertainty as to tenure.

Unlike the resources of the continental shelf, minerals of the seabed are not vested in the coastal state, or in any state, for that matter. The General Assembly has declared the *resources* of the seabed to be the common heritage of mankind and that no state or person shall claim, exercise or acquire rights with respect to these resources incompatible with the future international regime.[62] It may be logically assumed, therefore, that no state may claim or exercise sovereign rights over the resources of the seabed, and this position has been specifically advocated by the United States.[63] The Bill does not vest title to the minerals in the miner, under the projected United States law.[64]

The Bill does attempt to provide for a limited measure of international recognition. It has been suggested that an interim regime among like-minded nations, a type of functional regionalism, would be an acceptable alternative to a United Nations seabed regime if present negotiations fail, and, in any case, might serve as a testing ground for theory and development of customary practice.[65] The American Mining Congress has pointed out that an interim re-

62. G.A. Res. 2749 (XXV) (1970).
63. Draft United Nations Convention, *supra* note 16, at Art. 2(1).
64. *See also* Greenwald, *Problems of Legal Security of the World Hard Minerals Industry in the International Ocean*, OFFSHORE TECHNOLOGY CONFERENCE 4-5 (April, 1971).
65. *Id.* at 6.

gime "might establish a customary pattern of rules and practices that could be the basis for agreement with like-minded nations."[66] The Bill permits the Secretary to issue licenses recognizing rights exclusive against all persons subject to the jurisdiction of the United States or of any reciprocating state.[67] "Person" means any government or unit thereof and any juridicial or natural person.[68] A license shall be issued to the first qualified person making written application and tendering 5,000 dollars per block. "Qualified persons" means a citizen of the U.S. or a corporation or other juridical entity organized under the laws of the U.S. meeting prescribed technical and financial requirements.[69]

A "reciprocating state" is any foreign state designated by the President as a state having legislation or state practice or agreements with the United States which establish an interim policy and practice comparable to that of the United States under the Bill.[70] Reciprocating developing states will be aided by the escrow fund.[71] Any person subject to the jurisdiction of the United States may be enjoined from directly or indirectly violating the Bill.[72] These provisions affecting licensees and permitting the establishment of an international system are of great interest.

The definition of persons qualified to obtain licenses under the Bill is limited to United States citizens and juridical entities. It is not clear whether this is wide enough to include the Federal Government. Even if this is so, the Bill makes no provision for non-developmental uses of ocean minerals, such as the reserving of specific areas as strategic reserves of minerals.

The technical and financial requirements for licensees are not defined by the Bill. The National Petroleum Council submitted that the fees and other payments and expenditures laid down by the United States Draft Convention were too high.[73] The present Bill sets very low license fees[74] and minimum annual expenditures.[75] It is difficult to understand why the technical and financial requirements, which are of equal importance to licensees, are not specified in the Bill. Such provisions are also required to en-

66. *See* note 31, *supra.*
67. S. Res. 2801, *supra* note 1, § 4(a).
68. *Id.* at § 2(h).
69. *Id.* at § 5(a).
70. *Id.* at § 2(i).
71. *Id.* at § 9.
72. *Id.* at § 12(a).
73. *See* Nat'l Petroleum Council, *supra* note 18, at 29.
74. S. Res. 2801, *supra* note 1, § 5(a).
75. *Id.* at § 7.

able other countries to adopt similar rules and become reciprocating states. Furthermore, the President must decide whether the rules of other states are "comparable,"[76] which may be difficult if the United States rules are not clear.

Although the Secretary may only issue licenses to American citizens and juridical entities, "any person subject to the jurisdiction of the United States"[77] may be enjoined from directly or indirectly violating the Bill or any regulations thereunder, interfering with licensed development or removing hard minerals without the permission of the licensee. In view of the large amounts of minerals to be produced, one likely source of friction may well prove to be international trade practices. In this field, courts of the United States have assumed jurisdiction over the activities of foreign enterprises[78] under circumstances in which both foreign courts[79] and commentators[80] have regarded United States courts as jurisdictionally improper fora. In the absence of stated limitations on the courts' jurisdiction, the foreigner can only assume that similar views will be applied to cases under the present Bill. Should a reciprocating state have an even wider definition of persons subject to its jurisdiction, it may be presumed that United States courts will follow the scheme of the Bill and adopt such a definition.

One of the basic aims of the Bill is to encourage other states to adopt uniform rules. The criterion for designating states as reciprocating is that of "an interim policy and practice comparable" to that of the United States. This subjective test is too general to be relied upon as a basis for a coherent body of international rules. If Shakespeare could compare his love to a summer's day, any comparison drawn by the President of the United States, as to the seabed mineral regime, must remain wholly within the bounds of speculation. Would a Soviet Act establishing a state corporation with exclusive powers to develop deep sea minerals be comparable to the present Bill? Many, and quite diverse, licensing systems are indeed "comparable". The fault with this definition is that it does not expressly indicate which elements of the United States legisla-

76. *Id.* at § 2(1).
77. *Id.* at § 12(a).
78. United States Aluminum Co. of America, 148 F.2d 416 (1945).
79. *Cf.* British Nylon Spinners Ltd. v. I.C.I. Ltd. [1955] Ch. 37.
80. *E.g.*, Mann, *The Doctrine of Jurisdiction in International Law*, RECUEIL DEA COURS at 100-08 (1964).

tion must be present in the rules of another state's system in order for the latter to qualify as a reciprocating state. At present it is suggested that the state practice of all developed states capable of exploiting deep sea minerals places them within this wide definition.

In view of the vagueness of the definition of a reciprocating state, it is quite clear that there would be large differences between the rules in the various reciprocating states. States not having ocean mining capacity, including developing and landlocked states, can qualify as reciprocating states. Presumably they may do this by enacting legislation along the lines of the present Bill. If this were done it would be difficult for the United States to refuse them reciprocating status. A United States company could then form a foreign subsidiary in the state offering inducements such as lower financial requirements than that demanded by the United States.

The Bill's licensing conditions must be viewed against the background of comments made by the petroleum and hard minerals industry on the United States Draft Convention. It has been suggested that the rental fee would retard development and should be eliminated,[81] but, on the other hand, work commitments would encourage exploration.[82] The American Mining Congress viewed the fees, rentals, and bonuses as excessive and forming a "large front load."[83] The Congress later suggested that measures should be taken to avoid the acquisition of large contiguous blocks[84] and suggested a "nominal registration fee."[85] The National Petroleum Council prepared a detailed table comparing the petroleum license conditions under the State Department Draft with illustrative current provisions,[86] according to which the Draft's requirements in fees, work obligations, production bonuses and production payments were substantially in excess of current petroleum industry practice. The license conditions of the present Bill are of special significance, representing the first detailed plan put forward by a substantial portion of the ocean minerals industry, setting out the financial provisions under which it believes that ocean mining may be economical.

Under the Bill, a license would be in force for 15 years.[87] If com-

81. Drechsler, *The Value of Subsea Mineral Resources,* LAW OF THE SEA INSTITUTE CONFERENCE (June 21-24, 1971) at 14.
82. *Id.* at 15.
83. *See Hearings* 1970, *supra* note 30, at 41.
84. *See* Letter, *supra* note 32, at 9.
85. *Id.* at 15.
86. *See* National Petroleum Council, *supra* note 18, at 29.
87. S. Res. 2801, *supra* note 1, § 4(c).

mercial recovery is reached within this time, the license shall continue in force as long as commercial recovery continues.[88] Commercial recovery is defined as recovery at a substantial rate of production, regardless of profit or loss, for the primary purpose of marketing or commercial use.[89] This term is considerably clearer than the parallel "exploitation" in the State Department Draft.[90] Abandonment of the distinction between exploration and exploitation is a welcome step forward to the divorce of seabed terminology from the notably unclear vocabulary of the continental shelf. The license fee of 5,000 dollars[91] is slightly more than the current petroleum provisions described by the National Petroleum Council as nominal.[92] Minimal development expenditure on a 10,000 square kilometers surface block for fifteen years is 1,350,000 dollars.[93] In this sum is included off-site expenditure on operations, facilities or equipment directly related to development of the licensed block. A manganese nodule enterprise may well require only one surface block license. In such a case a large proportion of its off-site expenditure would be directly related to development of that block. The minimal annual expenditures provided would not then provide a clear impetus to speedy mineral development.

Licenses could be revoked for wilful substantial failure to comply with the Bill, regulations or license conditions, in United States District Court proceedings provided the Secretary has given written notice of the violation, and it has not been remedied within a reasonable period of that notice.[94] It can safely be assumed that a licensee with an investment of 200,000,000 dollars will contest any attempted revocation to the bitter end. United States court cases with international implications have been known to take a considerable amount of time.[95] This procedure is quite inconsistent with any workable rules to prevent major damage to the marine en-

88. *Id.*
89. S. Res. 2801, *supra* note 1, § 2(g).
90. Draft United Nations Convention, *supra* note 16 at Art. 75(7) *discussed in* Auburn, *supra* note 19, at 184-86.
91. S. Res. 2801, *supra* note 1, § 5(a).
92. *See* Nat'l Petroleum Council, *supra* note 18, at 29.
93. S. Res. 2801, *supra* note, § 7. The block area is reduced by 75% within ten years under § 8(a).
94. *Id.* at § 8(b).
95. *E.g.*, the municipal proceedings in the Interhandel Case [1959] I.C.J. 5.

vironment.[96] Possible types of environmental damage have been suggested, such as the leaching of elements leading to dangerous concentrations in aquatic organisms,[97] but much research will be needed to define and regulate such hazards. No provision is made for non-wilful substantial failure to comply with the prescribed rules. It might well be suggested that the fault principle has no place in regulating a large-scale mining industry using completely new techniques in a hostile environment.

The sole licensing authority under the Bill is the Secretary of the Interior. It is difficult to understand why the Department of Commerce, and in particular its National Oceanic and Atmospheric Administration (N.O.A.A.)[98] have no status whatsoever under the Bill. A vast amount of preparatory work[99] and debate went into the establishment of N.O.A.A., and ocean mining is one of the fields in which its work is of importance. Defense interests are not even mentioned under licensing conditions. There is no mention of ocean dumping. Can the licensee deposit wastes in the ocean? If limits are to be placed on waste disposal, it is submitted that they should be prescribed in the Bill, as this is a matter of importance to the United States,[100] and the source of considerable present controversy.

The only areas in which licensing conditions are detailed are fees and expenditures, and aggregation of blocks. It is clearly very difficult to lay down detailed guide-lines for licensing in regard to defence, scientific research, the environment and other areas, but this is not a sufficient reason to leave such vital matters to administrative rulings.

The surface block which is the licensing unit for manganese nodule mining conists of 40,000 square kilometers,[101] to be reduced to 10,000 square kilometers within ten years.[102] But after ten

96. Contrast the proposed powers of the International Seabed Resource Authority's Council to take emergency action to prevent serious harm to the marine environment in the State Department Draft Convention: *supra,* note 16, § .40(j).

97. U.N. Doc. A/7924 (1970) at 5.

98. As one example of N.O.A.A. activity in this area, its Marine Minerals Technology Center (M.M.T.C.) is spending substantial sums on assessing the possible effects of marine mining on the environment. White, *Federal Plan for Environmental Prediction* 59 (1971).

99. *E.g.,* Commission on Marine Science, Engineering and Resources, OUR NATION AND THE SEA (1969).

100. *cf.* United States Draft Convention on Ocean Dumping, 10 INT'L LEGAL MATERIALS 1021 (1971).

101. § 2(c) of the Bill.

102. *Id.* at § 8(a).

years the licensee may hold 10,000 square kilometers areas from four adjacent blocks,[103] making a total of 40,000 square kilometers. Deepsea Ventures project exploration objectives are "twenty year" mine sites of about 2,600 square kilometers[104] and "is ready to file a claim on a specific ore body now".[105] Presuming that the United States has licensed such an aggregated block, what will happen if a non-reciprocating state, or a national of such a state, begins development in the same area, or even on the same mining sites? Under § 4(a) of the Bill licenses are only exclusive as against all persons subject to the jurisdiction of the United States and reciprocating states. It is submitted that in such circumstances full United States government support would be given to the United States licensee whose investment is worth at least 200,000,000 dollars. Such government backing, which is not mentioned in the Act, is virtually assured by § 10, under which the government, for a premium, would guarantee to reimburse the licensee "for any loss caused through any interference by any other person," with the licensee's development. The licensee's loss would be passed on to the United States Government. It is difficult to suggest an actuarial basis upon which such a premium could be calculated.[106]

Under these conditions an aggregated license would permit the licensee to develop blocks of 40,000 square kilometers for an indefinite period.[107] It is submitted that the Bill is therefore in direct conflict with the Moratorium Resolution,[108] as it categorically provides for exploitation of the seabed pending the establishment of an international regime.[109] From the point of view of the United States government this objection may not be vital. The State Department regards the Moratorium Resolution as recommendatory and does not anticipate efforts to discourage its nationals from exploration for manganese nodules.[110]

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103. *Id.*
104. Rothstein, *Deep Ocean Nodule Mining,* UNDERWATER SCIENCE AND TECHNOLOGY JOURNAL, 133, 134 (1970).
105. Greenwald, *supra* note 64, at 3.
106. It is also possible that non-reciprocating states' nationals may be held to be "subject to the jurisdiction of the United States". *See* text accompanying note 78 *supra.*
107. ". . . so long as commercial recovery from the block continues." See S. 2801, *supra* note 1, § 4(c).
108. G.A. Res. 2574 D (XXIV) (1969), *supra* note 14.
109. *Id.* at 93.
110. *See Hearings* 1970, *supra* note 15.

A weightier objection is that the control of so large an area for an indefinite period under the protection of the United States government constitutes the exercise or acquisition of rights with respect to the seabed and its resources which is incompatible with a future international regime.[111]

The only international authority in the Bill is the "international registry clearinghouse", an agency designated by the President in cooperation with reciprocating states.[112] Its functions would consist solely of keeping records of license applications and dealings with licenses.[113] If the regime established by the Bill is not in fact interim, but of long duration, if not permanent,[114] the clearinghouse cannot be reconciled with the frequently repeated view of the General Assembly that an international seabed regime shall be established "including appropriate international machinery to give effect to its provisions."[115]

The seabed debate in the United Nations is to a large degree due to the proposals which favor giving a part of the expected revenues to the developing states. The Bill provides for an escrow fund for "assistance", as Congress may direct, to developing reciprocating states. An unnamed percentage of United States license fees and income tax directly attributable to hard minerals recovery is to be deposited in this fund. A developing reciprocating state means a reciprocating state designated by the President, taking into consideration per capita gross national product and "other appropriate criteria."[116]

Developed reciprocating states undertaking or licensing development stand to gain considerable advantages from the Bill. Their licensees will be protected as against United States nationals and other persons subject to the United States jurisdiction, before United States courts.[117] In addition, the United States government will have a very large financial stake of its own as guarantor of American licensees' operations. As the Bill would establish a system of interdependence among reciprocating states active in mining, the United States government will also have a large stake in the system itself, and will no doubt be called upon to assist

111. G.A. Res. 2749 (XXV) (1970).
112. S. Res. 2801, *supra* note 1, § 2(i).
113. *Id.* at § 5(c).
114. On which see text for note 133, *infra.*
115. The quotation is taken from Res. 2749, *supra* note 111. The United States Seabed Draft contains detailed provision for international machinery, *supra* note 16.
116. S. Res. 2801, *supra* note 1, § 9.
117. *Id.* at § 12.

in the defense of reciprocating states' licensees as against non-reciprocating states. It may also be suggested that the United States government will be called upon to intervene on behalf of operations by subsidiaries of United States companies under flags of convenience.[118]

It does not appear that United States payments to the escrow fund would involve any additional expenditure by the licensee. The government would in effect be making the payments to the fund from the license fees (which would be nominal) and tax receipts. The fund would be used for "assistance".[119] If, as this term would indicate, the fund is considered part of the United States foreign aid programme, the government will actually save money if it does not increase foreign aid by the equivalent of its contribution to the escrow fund. The "appropriate criteria" to be fulfilled by developing states, to qualify, are far from clear. It may be presumed that states not recognised by the United States would not qualify. Another criterion for exclusion, in the present context, could be that the state has recently nationalised investments of the United States or of a reciprocating state without adequate compensation. This category would exclude a large number of influential developing states. Such nationalisation might also be considered to render the policy and practice of the state concerned not comparable with that of the United States. That state would therefore be outside the definition of a reciprocating state.[120] It may be assumed that this pressure point will not be ignored by companies whose investments have been nationalised.[121]

It is clear from the Bill that any developing reciprocating state so designated by the President could receive funds. Assistance shall be "as Congress may hereafter direct". There is no indication of criteria for the allocation of funds, nor the purposes for which funds may be allocated.[122] Could such funds be tied to the

118. A recent example of action in such a case, by the United Kingdom, was taken at the request of the British captain of the Liberian registered "Central Asia": *Crazed Chef moves Navy,* Auckland Star, December 15, 1971.
119. S. Res. 2801, *supra* note 1, § 9.
120. As defined by § 2(i).
121. The escrow fund might then be a much more effective weapon than the Hickenlooper Amendment has proved to be.
122. *Cf.* Art. 5 of the Draft United Nations Convention, *supra* note 16.

purchase of United States' goods? Could they be used to purchase military requirements, thus substituting for American military aid?

Developed states, whether reciprocating or not, which did not license deep seabed mineral development, would obtain no benefits from the system established by the Bill. No incentives, economic or otherwise, are expressly contained within the Bill for those nations which are not either (a) developed states licensing exploitation and having policies comparable to the United States, or (b) developing states offering a flag of convenience. The benefits to "developing reciprocating state" are represented by a fund whose resources are not defined, further payment is subject to future direction by Congress, and nomination for such status is dependent upon criteria to be laid down by the President in the future. Whatever benefits may arise will be "assistance" which does not promise to increase present aid levels. This portion of the Bill would offer no incentive to the vast majority of states. On the contrary, it could only encourage them to continue their efforts to establish an active international seabed regime. Even the possibly illusory benefits of an international seabed authority with powers to exploit minerals must be more attractive to most states than the benefits under this Bill.

From the point of view of the ocean mining industry the most important provisions of the Bill relate to investment protection. The American Mining Congress regards a secure investment climate and security of tenure as the most serious needs.[123] The Congress is particularly concerned with Art. 73 of the United States Seabed Draft as licensing conditions under the future international regime are unknown and the Article implies that other states could grant seabed licenses to be recognised by the regime thus giving the licensees priority over United States enterprises.[124] The concern expressed by the Congress may be reinforced by the terms in which the government has already licensed seabed activity.[125]

Licenses issued under the Bill may be made subject to any future international regime agreed to by the United States provided the

123. *Hearings* 1970, *supra* note 30.

124. Letter, *supra* note 2, at 4.

125. "In accordance with the policy statement of the President dated May 23, 1970, exploration permits issued pursuant to Section 11 of the Outer Continental Shelf Lands Act of 1953 pertaining to areas of the seabed beyond the depth of 200 meters are subject to the provisions of any future treaty, regarding the exploration and exploitation of the natural resources of these areas, to which the United States is a party. Accordingly, this permit is subject to the policy conditions incorporated in that statement." OCS Permit E 3-70 (June 29, 1970).

regime fully recognizes and protects the exclusive rights of licensees to develop blocks for the term of the license, and further provided that the United States fully reimburses licensees for any investment loss or increased cost incurred within forty years of issue of the license due to conditions of the regime more burdensome than those of the Bill. The United States shall bear "any payment of whatever kind required of the licensee under the international regime."[126] For an undetermined premium the United States shall insure licensees for any loss caused through any interference by any other persons "whether or not violative of international law" with development under a license and from any loss caused by recovery of minerals from the block by any person not authorised by the licensee.[127] It is not proposed to analyse in full the details of these provisions,[128] but rather to consider their effect as a whole. As has been previously pointed out,[129] a license under the Bill may be in force for an indefinite period after commercial recovery has been achieved. The system set up by the Bill will continue to function unless, or until, the United States ratifies a future Seabed Convention. Even if the Convention is thus ratified licenses under the Bill would only be subject to the Convention if it "fully recognizes and protects" development rights under licenses.

On one estimate the capital cost of an efficient production unit processing about 1,000,000 tons of dry nodules per year is 180,000,000 dollars.[130] Such a unit would yield each year 279,000 tons of manganese, 14,000 tons of copper, 14,400 tons of nickel and 2,880 tons of cobalt.[131] Large capital requirements per unit and the significant percentage of world requirements produced will limit the number of units. Under the Bill licensees must pay a 5,000 dollar license fee plus 1,750,000 dollar total minimum expenditure to secure a block. The rapid progress of United States, and Japanese research, together with the entry of France and the Soviet Union into the

126. S. Res. 2801, *supra* note 1, § 10(a).
127. *Id.* at § 10(b).
128. For instance it appears that the United States would be liable to reimburse its licensees for pollution fines imposed by the international authority. (". . . any payment of whatever kind . . .").
129. *See* text accompanying note 88, *supra.*
130. *Committee on the Peaceful Uses of the Seabed and Ocean Floor Beyond the Limit of National Jurisdiction* (statement by Dr. V.E. Mckelvey, Subcommittee I) at 3. U.N. Doc. A/AC.138/SCI (1971).
131. *Id.*

field, suggest that a number of promising blocks would be licensed immediately under the system set up by the Bill. The total expenditure for each 10,000 square kilometer block or fifteen years, before commercial recovery, is approximately 1% of the estimated capital required for a single processing unit.

Clearly the expected return on capital must be far greater than 1% to justify investment. The financial requirements of the Bill therefore further encourage immediate applications for licenses. As it will be only economically feasible, on present forecasts, to develop a limited number of mining sites, the Bill would set up a system which would endure, at least for United States miners, for a number of years, regardless of the establishment of an international regime. The United States government would, under the Bill, guarantee its licensees, both directly, and by insurance, against losses due to more burdensome provisions of an international regime. Several proposals before the Seabed Committee would set up an international authority having powers of exploitation.[132] Therefore the possible losses to be indemnified by the United States government under the Bill could reach the total investment by a licensee, together with loss of future profits. On one recent estimate, the net present value of ten years' revenue from one nodule operation processing 1,800,000 tons per year would be 564,000,0000 dollars.[133] To pay the sums due to a number of licensees under the Bill, if the international regime were to take over exploitation, would involve the United States government in a minimum outlay of several hundred million dollars, and a maximum of well over a billion dollars. These amounts would be reduced to the extent to which the international regime approached the requirements of the Bill, but it is difficult to envision the General Assembly of the United Nations subscribing to a system similar to that of the Bill.

The Bill is therefore far from an interim regime. The Bill would provide full protection, at several levels, for the licenses granted under it. Section 10 ensures that licenses shall prevail against the provisions of an international regime, and that any losses of any kind shall be borne by the United States government. If Congress is asked to approve an international regime involving an indemnity of several hundred million dollars to United States licensees, it is difficult to envision its agreement, other objections apart. It is submitted that the present Bill provides a regime of a semi-perma-

132. *See* text accompanying notes 21 and 24 *supra.*

133. Hubred, *New Slant on the Economy of Manganese Nodules,* OCEAN INDUSTRY 26, 27 (August 1970). Other estimates suggest even larger returns: Mero, *A Legal Regime for Deep Sea Mining,* 7 SAN DIEGO L. REV. 488 at 497 (1970).

nent nature, insulated at several levels from the possible effect of a future seabed convention. There would then be little point in having an international regime for ocean minerals.

The Deep Seabed Hard Minerals Resources Bill is a carefully framed code for exploitation of ocean minerals by United States industrial enterprises, under government protection. But for the vast majority of states who do not have the technological capabilities or capital to take part in mining, it offers no benefits from the area which the General Assembly holds to be the common heritage of mankind.