NINTH SESSION, PART I

The net result of Part I of the Ninth Session of UNCLOS is not as negative as might appear on first sight. True the iron-clad schedule adopted at the end of the Eighth Session could not be maintained. Clearly, Revision II of the ICNT, which was supposed to be the final version of the formal Draft Convention, is not mature to meet this criterion, and a Revision III had to be conceived to make Revision II acceptable at all, and most of the "outstanding issues" -- from the outer limits of the continental margin and the settlement of disputes between States with adjacent or opposite coasts to the fundamental problems relating to the Seabed Authority and to the question of scientific research within exclusive economic zones and on continental marings -- are still "outstanding." It is unlikely that the lost time can be recouped at the resumed session in August. Two weeks of continued negotiations , one week of general debate, followed by the drafting and formalization of the Text and the discussion of amendments will hardly fit into the crowded agenda of five weeks. It is more realistic to assume that the adoption of the Convention will happen in 1981 rather than in 1980.

This said, however, it should be stressed that, quantitatively and qualitatively, significant progress has been achieved in this session -- in spite of the intrinsic difficulties of the negotiations, which undoubtedly were compounded by the difficulties arising from the world-political and -economic atmosphere of tension and crisis.

Significant progress was made with regard to the Preamble and Final Clauses, the Preparatory Commission and post-Convention co-ordination of marine activities. The establishment of a Preparatory Commission, on which there was, practically,consensus, is of the utmost importance for the smooth transition from signature to entry into force. Since most of the Commission's responsibilities will lie in the sphere of the Seabed Authority, it would be highly desirable that there should be a greater input from the First Committee before the text is finalized.

Should the Conference not be able to complete the conventional processes of voting on and signing the Convention, one might even conceive the possibility of the Preparatory Commission taking over, temporarily, the functions of the Conference, which might be called together again at a later date.

Significant progress, also, was made on the difficult problems relating to the Seabed Authority, on which these comments will concentrate. The final text of Revision II not yet being available, this analysis is based on A/CONF.62/ C.I/L.27, Parts I-V, and A/CONF 62/L.54. The articles will be dealt with in the order in which they appear in these documents.

Article 133

Chairman Engo pointed out (paragraph 11 of his report) that paragraph (b) of this article "had been changed, following the advice of experts on this matter." Most of the changes are purely technical, as a matter of fact. There is however one change that constitutes a fundamentally important improvement. The chapeau of paragraph (b) now reads

"resources shall include"

where the ICNT, Rev.I and all previous versions had

"Minerals shall include"

The change is important because "resources" -- according to the text -- are the common heritage of mankind. "Resources" are mineral resources in situ. When recovered from the area, such resources shall be regarded as minerals (paragraph (a)). At the same time, at recovery, there is passage of title, and they cease to be a common heritage.

Thus the use of the word "minerals" in the chapeau of (b) was either an inconsistency or it had to give rise to the interpretation that the substances enumerated under i - iv of this paragraph were indeed not common heritage.

Article 140

An effort has been made to unify the terminology. "Developing countries" has been changed to "developing States." There are, however, still some inconsistencies. (Article 8 bis, para.4, e.g., still has "developing country."

The revision of paragraph 2 of Article 140 is a clear improvement, and not controversial.

Article 150

The changes in article 150 are very minor.

Article 155 Changes are either to bring this article into line with technical changes made in other articles (paragraph 1) or they are of an editorial nature (paragraphs 1-2). Significant changes, however, have been made in paragraph 5. These have occasioned sharp objections from the Group of 77. Looking at this paragraph from an objective and nonpartisan point of view, however, one must come to the conclusion that, on its own terms, the paragraph is very weak and inconclusive -- even when the requirement of ratification of amendments by three-fourths of the States Parties is changed, in accordance with the demand of the 77, to a requirement of two-thirds. It is indeed quite possible that the Review Conference, whose difficult task is supposed to take six years to complete, fails to adopt amendments changing the system of production by a majority of two thirds.

What is to happen in this case? Since there is no moratorium, it is to be assumed that the Convention in its present

form, would remain in force indefinitely. There might, in fact, be a rush for new contracts during the fifth or sixth year of the Review Conference, practically ensuring this result. The purpose of fundamental revision by the Review Conference thus is flouted by the new provisions of paragraph 5, which should be unacceptable.

Annex II, articles 1-4

There are no changes.

Article 5

Article 5, however, raises a number of serious problems. "Information as to where such technology is available" may turn out to be a very misleading phrase, to start with. Discussion with experts makes it amply clear that "information" is a much more complex matter than might appear on the surface. Thus Jaenicke, Schanze, and Hauser, in A Draft Joint Venture Agreement for Seabed Mining[17], have the following comment:

> Seabed mining is not now and will not soon be "state of the art-technology," readily available from a number of transferors as a package for a fee. Rather, the technology involved will be characterized by very few or no previous applications, a short elapsed time since development and limited diffusion. In this stage, technology is aptly termed by recent empirical studies as leading-edge technology (cf. Teece, 87, Economic Journal 242 - 261, at 249,vol.87,June 1977). This kind of technology is in a state of flux: the engineering drawings will be subject to constant alteration and thus complicating the transfer. The transfer costs are likely to be high; there will be enormous information flow and constant personal involvement between the technology transferor and the transferee (Operating Company). The cost of adequate documentation of the information flow is likely to be prohibitive. The likelihood of encountering unusual new technical problems requires that R&D capability be either in house or at least readily available with the joint venture partner.

Paragraph 3(a) provides that commitment for the transfer of technology, on fair and reasonable commercial terms and conditions, "may be invoked only if the Enterprise finds it is unable to obtain the same or equally efficient and useful technology on the open market and on fair and reasonable commercial terms and conditions." This provision should be read in the light of the above quoted passage!Furthermore, it opens the possibility of very unreasonable delays and evasions. How many times is the Enterprise to be told that it has not yet looked hard enought on the open market? Or that the prices it has been offered on the open market are "fair and reasonable" when in fact they are not? Why put the burden of proof on the Enterprise?

Also paragraph (b), in its present form, is not functional. When will it be possible for the Contractor to obtain the right to transfer "not generally available technology" to the Enterprise "without additional cost to the Contractor"? Of course, if there are in fact additional costs, the whole arrangement is highly cost-ineffective, and the contractor would be well-advised to evade the whole system of mandatory transfer by taking refuge in paragraph 6 of article 5, which provides for different, and mutually more beneficial arrangements "in the case of joint ventures with the Enterprise."

It may be worth while to compare the vague and inadequate provisions of Article 5, Annex II, of the ICNT,Rev.II, with the precise and binding obligations arising under Articles 16-18, Part C, of theabove mentioned Draft Joint Venture Agreement for Seabed Mining.

PART C, ARTICLE 16:

Transfer of Technology:
Equipment, Services and Know-how

(1) Throughout the operation, the Investor shall make available to the Operating Company all equipment, technical knowledge and assistance to create, maintain, and impelement a seabed mining operation at the best available standards of technological, logistical, and managerial and commercial practice.

(2) If the Investor may not dispose himself of such equipment, patents or know-how, he shall use his best efforts to assist the Operating Company in obtaining such equipment and licences at fair, reasonable, and commercial terms.

(3) The individual terms of an agreement concerning the necessary technology transfer to the Operating Company, including inter alia the price of such transfer, the means of protection against proliferation to third parties and the rights of the Investor and the Enterprise to use technologies newly developed within the Operating Company shall be covered in a special agreement between the Investor, the Operating Company, the the Enterprise.

(Note: "The Investor," in this text corresponds to "the Contractor" in the ICNT. "The Operating Company" is the joint venture between the Enterprise and the Investor.)

PART C, ARTICLE 17:

Transfer of Technology:
Training by Operating Company

(1) To promote the transfer of technology and the knowledge necessary to carry out seabed mining in favor of the Enterprise, the Operating Company shall provide training opportunities for staff nominated by the Enterprise on all administrative and technical levels of the operation by establishing

i) an internship program on a rotating scheme,
ii) assistant managerial positions,
iii) an on the job training program,
iv) ten fellowships for attendance at higher educational and vocational institutions.

(2) It is understood that at least ten percent (10%) of the Operating Company's personnel shall be allowed to participate in the training program.

(3) The Enterprise will nominate a General Training Program Supervisor who shall be elected by the Board of Directors immediately after the Date of this agreement. The Supervisor shall coordinate, on equal footing with the Managing Director, all training questions covered by this paragraph.

(4) Within three months after the appointment of the General Training Program Supervisor, the General Training Program Supervisor and the Managing Director shall jointly prepare a detailed Training Plan for approval by the Board of Directors. The First Training Plan shall cover the Exploration Period. The Second Training Plan shall cover the Period of Commercial Exploitation and shall be submitted nine months before the commencement of that period.

(5) The Training Plans shall be reviewed on a biannual basis by the Board of Directors.

PART C, ARTICLE 18:

Transfer of Technology:
Training by the Investor

(1) Each year, the Investor shall accept ___ trainees nominated by the Enterprise for training in its processing facility, or, before the start-up of the processing facility, in its pilot plant or in related operations which are geared towards the completion of the processing facility, including the relevant research & development department.

(2) The trainees shall be trained in significant and suitable aspects of the Processing Sector, including

the various engineering, managerial and trade categories involved.

(3) The Investor shall propose to the Enterprise a Trainee Program within six (6) months after the Date of this Agreement.

(4) The Trainee Program shall be reviewed on a biannual basis by mutual agreement between the Enterprise and the Investor.

These proposals, coming from an industrialized country, go far beyond not only the present text of the ICNT, Rev.II, but also far beyond the modest amendments proposed by the Group of 77 on this subject.

While it is probably too late to introduce major changes in the text of the Convention, it might be highly advisable that a Group of Experts should be appointed ad quickly as possible, to prepare an Annex III (bis), containing the text of a model joint venture agreement. This might take much of the sting out of the present negotiations on this intractable subject.

Article 6

The changes in Article 6 constitute an improvement of an editorial nature.

Paragraph (2)(d)(ii) substitutes 2 percent of the total seabed area as a limit for the allocation of sites to any State or company. This is certainly better than the 3 percent in the previous texts. It should be pointed out, however, that this area still is enormous. Suffice it to remind ourselves that "...less than 1 percent of ocean bottom reserves would suffice to satisfy current needs in manganese, nickel, copper and cobalt for 50 years" (Roger Charlier, in Ocean Yearbook, Vol.I, 1979, p. 191. See also LaQue, Pacem in Maribus, 1972).

Article 7

Paragraph 5 gives rise to an ambiguity. Here the Authority is given priority to exploit the reserved area "either solely through the Enterprise or through joint ventures with States Parties or with private entities sponsored by them" whenever fewer reserved sites than non-reserved sites are under exploitation.

While this may, in practice, amount, after the first contract has been awarded for a site in the non-reserved area, to a mandatory joint venture system -- i.e., the Enterprise, has in fact, the option of applying for a joint venture with the next applicant, the provision appears to be in contradiction with Article 8 which provides that "the Authority shall designate the part which is to be reserved solely for the conduct of activities by the Authority through the Enterprise or in association with developing countries" (italics added). Article 8 bis, on the contrary, stipulates, once more, that "The Enterprise may decide to exploit such sites in joint ventures with the interested

State or entity."

Thus it is not clear whether it is only developing countries that have access to the reserved Area (interpretation preferred by the Socialist States concerned lest the anti-monopoly rules be contravened by the penetration of the reserved area by the Multinationals) or whether any qualified applicant is elegible (interpretation preferred by the Group of 77).

There are no changes in Article 9; changes in Article 10 are very minor. The guarantee of security of tenture to all partners in a joint venture is an improvement.

Article 11

This article appears to be somewhat superfluous. That the activities in the Area are governed by Part XI, etc., has been said before, and "the financial and technological capability" of the Enterprise are well known to the Authority since the Enterprise is its operational arm. It is meaningless to treat the Enterprise here like a stranger or newcomer on the scene.

Article 16

There are no significant changes in Article 16. It should be pointed out, however, that paragraph (d) appears to give to the Authority regulating powers with regard to resources other than manganese nodules, which seems to be in contradiction with the provisions of paragraph 3 of Article 151 according to which the regime governing the exploitation of such other resources is subject to the amendment procedure in accordance with final clauses Art... (entry into force of amendments to this Convention).

It also should be noted that difficulties might arise under paragraph (f) of this article which makes it incumbent on the Authority to make rules and regulations to secure effective protection of the marine environment from harmful effects directly resulting from shipboard processing immediately above a mine site, including the effects of dumping and discharge of effluents into the marine environment. Since the Authority has no jurisdiction over these ships, it is difficult to see how it could make such rules and regulations.

The remaining changes in this section (Art. 17-21) are of an editorial nature or of minor importance.

The section on production policy raises problems which appear to be insoluble. They certainly cannot be solved by the complex and contradictory provisions proposed. The basic, stark truth is that the perceived interests of land-based producers cannot be protected by a limit on the production of the international area only. The interests of these countries can be protected only by commodity agreements regulation the production of the affected metals globally. If there are such

agreements, the goal can be achieved, and the complex provisions of the ICNT become superfluous. If there are no such agreements, then the provisions of the ICNT can in no way replace them. All these provisions can do is to limit the Authority out of business, while total seabed production, responding to economic and technological conditions, will be carried out in areas under national jurisdiction (Mexico, USA, France) which can be expanded, as needed, by the manipulation of base lines.

Three provisions are now proposed to alleviate the possibly paralysing effects of production limitation: the "production authorization" which is issued later than the approval of a contract or plan of work, and not more than 5 years prior to the planned commencement of commercial production under that plan of work. The Enterprise, on the other hand, is assured from the outself a production authorization for 38,000 tons of nickel (paragraph c of Article 151) corresponding to 3 million dry tons of nodules. As pointed out in Chairman Nandan's report, "this scheme would avoid a situation where a contractor who does not intend to go into operation for say seven years would nevertheless be able to exclude one who may be operating within say five years."

On the other hand, as also noted in that report, it is impossible for an operator to invest hundreds of millions of dollars in an approved plan of work, if he is not sure that he will actually get the necessary production authorization. The report suggests that the floor mechanism that has been introduced would circumvent this difficulty. If it indeed does, then the provision of paragraph 2 of Article 151 is useless. If it does not, then this provision is unworkable.

The second provision envisages the possibility of a supplementary authorization should the 8 percent per annum allowed flexibility in production level be exceeded for more than two consecutive years. The supplementary authorization may not exceed 20 percent of the original allocation under any plan of work (paragraph e of Article 151).

The introduction of any element of flexibility certainly is an improvement, however limited.

The third provision is the introduction of a production floor or "minimum ceiling growth rate" of 3 percent. Since the actual growth rate, in view of decreasing demands and increasing depression, is not likely to be above 3 percent for the foreseeable future, it is indeed not likely that companies would want to produce more on a commercial basis. While the demands of the industrialized countries who are not land-based producers appear thus satisfied, the land-based producers cannot draw much joy from this provision which may allocate the entire growth segment, or at least 80 percent, to seabed mining, thus flouting the in any case unattainable goal of article 151.

Two further points should be noted: To base the production limit on a trend line for nickel consumption may

have paradoxical effects. As pointed out by the Aachen group, a decrease in nickel consumption may have either one of two causes: It may be due to a decrease in demand. In this case seabed production, as part of total world production, should be reduced accordingly, if price stability is to be maintained. Another cause for the decrease in consumption, however, may be inadequacy of supply: in this case it would be paradoxical to decrease seabed production so as to follow the falling consumption curve. On the contrary: seabed production should be increased to complement land-based production. This is a difficult problem.

The second point is that the provision of paragraph (f) that "the levels of production of other metals such as copper, cobalt and manganese extracted from the nodules that are recovered pursuant to a plan of work is no higher than those which would have been produced had the operator produced the maximum level of nickel from those nodules pursuant to this paragraph," is illusory. It is well known that the simultaneous extraction of the four major metals (nickel, copper, cobalt, and manganese) contained in the nodules results in an overproduction of cobalt and manganese and in a reduction of their prices. The purported purpose of this article: to regulate the production of these metals, thus is in no way served by this provision.

A great deal of work was done by Negotiating Group 2, on the question of financing the Enterprise, on financial terms of contracts, and on the Statute of the Enterprise.

Annex II, article 12

The changes introduced in this article, however, are very minor.

Paragraph 3 relieves the Contractor of the payment of the fixed annual fee of $1 million, if commercial production is postponed because of a delay in the production authorization, which is fair enough, and this is the only substantial change that has been introduced in this section.

Annex III, the Statute of the Enterprise

Article 1

a minor question arises from Article 1 which states that the Enterprise shall carry out activities in the Area as well as transportation, processing, and marketing.... This wording imposes an integrated operation as an obligation on the Enterprise, which "shall" engage in transportation, processing and marketing to the same extent as in "activities in the area." Since this is not the intention, the wording should be changed. "The Enterprise may also engage in transportation, processing and marketing of minerals recovered from the Area" would be more appropriate.

Article 5

Chairman Koh's report records that, during the discussion on Article 5 (the Governing Board) the Delegation of France proposed that representation on the Governing Board should take account of the financial contributions to the Enterprise by States Parties. More specifically, France suggested that "as long as the Enterprise has not repaid the whole of the loans furnished or guaranteed by States Parties, the members of the Governing Board shall be nominated by States Parties who together have furnished or guaranteed at least 70 percent of these loans." France also added that the Governing Board shall include at least two representatives of each geographical region.

The proposal was rejected by the majority of delegations, as it would have assured control by the rich nations over the Board of the Enterprise, which should represent mankind as a whole. It should be pointed out, however, that if a joint-venture approach were to be adopted, France's suggestion would be taken into account, without its negative implications. In that case, representation on the Board would be determined by investment: The States or companies investing would be represented on the Board, and voting strength would be proportional to investment share. The Enterprise itself, politically intact, would be represented in proportion to its own investment in the joint venture.

Paragraph 5 of Article 5 provides that members of the Board shall act in their personal capacity. This, certainly is an improvement and makes the Board more businesslike.

Article 5 (bis)

This is a most useful, clarifying, and noncontroversial addition to the text.

Article 9

A crucially important issue arose in connection with article 9. As it now stands, it is a compromise between the position of the developing countries, that is, that the Enterprise cannot be held to make payments to the Authority of which it is a part, and the position of the industrialized countries which consider the Enterprise as a commercial operator with the same rights and obligations as the other commercial operators engaged in activities in the Area. The compromise is that the developing countries view prevails for the first 10 years during which the Enterprise will be exempt from payments to the Authority, whereas, after this period, the view of the industrialized countries prevails, and the Enterprise will have to make payments under Article 12 of Annex II.

I do not think the view of the industrialized countries on this point is tenable. The Enterprise is the operational arm of the Authority: the revenues of the Enterprise are the revenues of the Authority which, in turn, and on the advice of the Board of Governors, determines which part of these revenues should be reinvested in the Enterprise, and which part should be distributed to member States or otherwise be disposed of.

The question arises: What happens in the case of joint ventures, if one partner (the Enterprise) is not subject to taxes while the other partners are?

There are two possibilities: The commercial partner(s) could be charged in accordance with Article 12 of Annex II, taking into account special incentives offered in accordance with paragraph 3 of article 10. How this would work out in practice, is spelled out in Part B, Article 2 of the "Draft Joint Venture Agreement" by Jaenicke, Schanze and Hauser. It should, similarly, be spelled out in an Annex III bis, providing a model statute for joint ventures.

The second possibility would be to assume that if one of the partners (the Enterprise) is not subject to a system of taxation, the other partner (the commercial partner(s)) should not either, and that produce and profits simply should be shared in proportion to investment. One could, in such a case, assume that the cost arising to the commercial partner(s) from the transfer of technology and training should be roughly equal to those that would accrue from a tax system in accordance with Articles 10 and 12 of the Text.

Article 10

The financing of the Enterprise raises major problems.

Paragraph 3 provides, as heretofore, that the Enterprise shall be assured the funds necessary for one integrated operation, including exploration, exploitation, transportation, processing and marketing. The amount required for this is to be determined by the Preparatory Commission (this latter provision is new, and appears generally acceptable). Paragraph (b) provides that half of the funding should be furnished in the form of interest-free loans by member States while the other half should be in the form of interest-bearing loans to the Enterprise guaranteed by States Parties. This, too, appears to be acceptable. It is in paragraph (c) that the difficulties arise. For here it is the ratifying States that are initially burdened with the whole amount to be raised. The fewer they are, the more their contribution will have to exceed the amount that would be due according to the U.N. scale of contributions, based on a sharing among all States members of the United Nations. The Text does set a limit to this increase: it is not to exceed 25 percent -- 15 percent in interest-free loans and 10 percent in guaranteed loans. It is expressly stated, also, that the increased contribution by ratifying States is voluntary and that it is to be repaid from the contributions paid by States ratifying the Convention subsequently.

The Text does not state what happens if the shortfall is greater than 25 percent: a situation that is more likely to arise than not -- assuming, e.g., that the ratification of the United States takes more time due to the constitutional and political complexities of the ratification precedure.

If the shortfall is below 25 percent, the provision of paragraph 3 is the greatest disincentive to ratification that could possibly have been invented. If the shortfall is above 25 percent, the problem of financing the Enterprise remains insoluble.

Not much can be said about the Assembly and the Council inasmuch as no agreement was reached on the crucial questions of voting procedure or on composition.

The Chairman's compromise proposal on Article 161, paragraph 7 represents a notable simplification of the previous cumbersome and controversial version. This is in any case an improvement, but the problems remain unsolved.

In general I feel tempted to repeat what I have said, and published, on previous occasions: that composition and voting (i.e., structure) of the Council depends on the functions of the Authority, which has never really been clarified. Is the Authority a forum to negotiate commodity agreements in which consumers and producers should be represented? Is the Authority a commercial enterprise in which financial interests should be represented? Or is it an intergovernmental institution responsible for the regulation of the multiple uses of a large and important part of ocean space, i.e., the international seabed? If this comprehensive concept of the Authority had clearly prevailed, representation in the Council would have been simple, based on the fullest possible participation on a geographic (regional) basis and on the sovereign equality of States. This has been, from the outset, the view of the developing countries. It would have been far more advantageous, also, for the group of medium and small industrial States (including our own) which do not fit into any of the "interest categories" with special representation in the present scheme and therefore have little chance of ever being elected to the Council.

If representation in the Council had been geographical, the Board of the Enterprise should have been the place for the representation of financial interests. Following recent trends in the development of public enterprises, there might also have been an advisory board representing consumers, labor, and any other interest group that might be desirable.

It certainly is too late to introduce a radical change in the composition of the Council at this stage, but should it turn out to be impossible to reach an agreement within the terms of the present text, "streamlining" might be the only solution -- and it would be definitely in our interest.

Not much need be said, either, about the part dealing with the Settlement of Disputes Relating to Part XI. This work has been extremely constructive and clarifying and certainly enhances the prospect of consensus.

As the Conference continues its cumbersom negotiations, political and economic world developments are following their own course. It is not realistic to assume that they have no impact on the negotiations.

One particular aspect should be stressed: It is an indisputable fact that, upon the successful conclusion of a series of tests establishing the technical feasibility of commercial-scale seabed mining, all existing consortia and their component companies have drastically reduced nodule mining activities. One company (Lockheed) is still carrying on R&D in nodule processing, on a very modest scale; the others all have reduced their nodule mining staff to a hold-over size of 3 or 4 persons, and no activities are scheduled.

The reasons for this recession are several. Uncertainties about the outcome of the Law of the Sea Conference do not play a major role. Such uncertainties could have been obviated, in the view of industry, through unilateral legislation or the convenient expansion of the EEZ (through the manipulation of base lines). Instead, the pressure for unilateral legislation has notably slackened: in Germany, e.g., where it had been very strong, it has all but disappeared.

Far more determinant reasons for the recession of activities are: (a) technological problems turned out to be more difficult and more costly than originally anticipated, and (b) the next step of exploration, establishment of pilot plants and large-scale feasibility studies requires investments of hundreds of millions of dollars. On the other hand (c) the general economic recession, (d) decreasing demands and oversupplies of land-based metals and (e) increased energy costs impacting heavily on an energy-intensive industry, are discouraging such investments at this time. However, once the apparatus has been dismantled, it will take ten years from the planning of an integrated operation to the coming on stream of the product.

This situation within the crucially important "private sector" suggests a novel kind of scenario: While the international community is wracking its brains to finance the Enterprise, or "public sector" of the nascent ocean mining industry, the "parallel system" may come to a grinding halt for the complete lack of bidders for contracts in the "private sector." No company, no consortium of companies is ready to make the necessary investment. Each one individually explains that it could face the risks and costs of the coming phase only with heavy government subsidies -- a Government participation of 50 percent at least, e.g., in the case of the German companies. But the German Government has other priorities.

In this situation we may look at the problem of "financing the Enterprise" in an entirely new and different light. If the first, and now concluded phase of research and development of the nodule mining industry dictated the merger of individual national companies into four or five large international consortia to spread risks and costs, then the second phase, be-

ginning now, may dictate the merger of the international private sector with the international public sector -- again, to spread risks and reduce costs. The private sector (the consortia) needs the public sector (the Authority and its Enterprise) for financial participation, unobtainable at the national level, as much as the public sector needs the private sector, for its technology and know-how.

Through the Authority, States would, collectively -- spreading risks and reducing costs -- finance the nascent seabed mining industry which, without governmental aid, could not get off the ground at the present stage. This could be achieved through a joint venture on research and development, including exploration, the establishment of a pilot plant for processing, and a large-scale feasibility study, between the Enterprise and States and as many of the four or five existing consortia as might wish to participate on this basis of risk- and cost-spreading and collective economic security.

If Governments are convinced about the long-term economic importance of seabed mining to their own countries, they may be willing to undertake the necessary subsidizing on a collective rather than on an individual basis, since a collective undertaking will be more cost-effective. The prospect of a concrete undertaking of this kind would undoubtedly contribute to hasten the successful conclusion of the Law of the Sea Conference. Rather than an unbearable burden, discouraging ratification, participation in the venture would be an incentive for immediate ratification.