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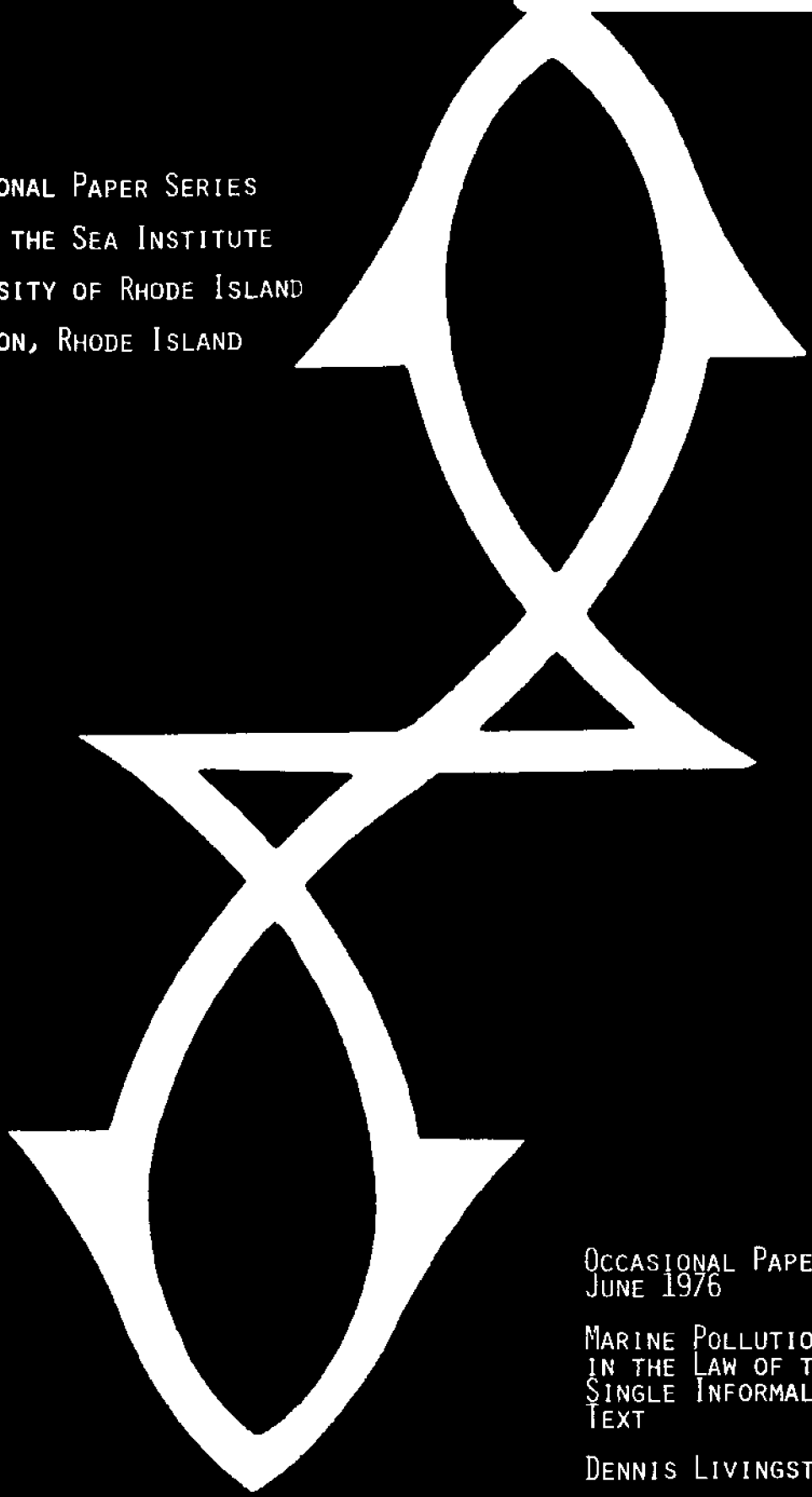

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MARINE POLLUTION ARTICLES IN THE LAW OF THE SEA SINGLE INFORMAL NEGOTIATING TEXT

DENNIS LIVINGSTON

MARINE POLLUTION ARTICLES IN THE LAW OF THE SEA

SINGLE INFORMAL NEGOTIATING TEXT

by

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TABLE OF CONTENTS

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by

DENNIS LIVINGSTON*

Introduction

The subject of this paper is the articles on international prevention and control of marine pollution contained in the document that emerged from the 1975 session of the UN Law of the Sea Conference (LOS). The future of this document, the Single Informal Negotiating Text, is unclear at this time of writing (June 1976). If the Conference goes on to complete one or more treaties on the law of the sea they are likely to generally reflect the marine pollution provisions of the Text, and in any case, the 1975 draft articles will be a significant benchmark in the negotiations leading to any final treaty. Should the Conference collapse of its own weight due to the number of participants and complexity of the agenda, the 1975 Text will still serve as a reference point for the international community in the bargaining process for marine issues during the near future and in any law of the sea meeting that may be convened at a later date. Thus, whatever the fate of the Text, an analysis of its provisions can clarify the present stance of governments on the extent to which they are willing to cooperate in efforts to deal with pollution issues, and can point the way toward strengthening such cooperation in the light of community needs.

The Text consists of three parts, each the product of the chairpersons of the three main committees at the LOS Conference . An introductory note by the President of the Conference to each part states that the Text "will serve as a procedural device and only provide a basis for negotiation." The Text simply takes account of all discussions to date, does not represent a compromise, and does not prejudice the position of any delegation.

The marine environment was one of the major agenda items of Committee III Consequently, its portion of the Text contains forty-four articles under the heading "Protection and Preservation of the Marine Environment," as well as additional sections on "Marine Scientific Research" and "Development and Transfer of Technology." Committee III, then, was not solely preoccupied with the marine environment, nor did it have exclusive jurisdiction over this subject. References to the environment are scattered throughout the material submitted by Committee I, titled "Convention on the Sea-Bed and the Ocean Floor and the Sub-Soil Thereof Beyond the Limits of National Jurisdiction," and Committee II, dealing with rights and duties of states within various maritime zones. Thus, the analysis which follows gives a coherence to the topic not presently found in the three parts of the Text. Moreover, I will not cover all articles relevant to the marine environment, but will focus on pollution, excluding such cognate areas as scientific research and conservation of resources. Given this focus, of particular importance is what the Text says regarding general obligations of states toward the marine environment, who is to set pollution control standards relevant to what maritime areas, who is to enforce such standards relevant to what maritime areas, what liability arises from damage caused by breaches of the standards, and what mechanism is available to settle disputes.

It should be understood that neither the Text nor whatever treaty crystallizes from it is intended to set detailed regulations or standards for the control of marine pollution. The task of establishing exact pollution limits and the means of attaining them has been left to more specialized and technically-competent bodies, in particular the Intergovernmental Maritime Consultative Organization (IMCO). In fact, in recent years treaties have been negotiated to establish regimes for shipbased sources of pollution, for the dumping of land-based wastes at sea, for intervention by coastal states on the high seas in cases of maritime casualties raising the threat of pollution damage, for liability arising from oil pollution damage, and for prevention and control of pollution in regional marine areas (enclosed or semi-enclosed seas). Any output

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from the LOS Conference dealing with marine pollution, as already reflected in the Text, would take the form of an umbrella treaty setting forth general procedural rules on who has jurisdiction to do what, where, and how, to be fleshed out in other forums as scientific knowledge, and the experience and willingness of states, dictate. Indeed, several of the international conferences held to date on specialized treaties almost floundered because of the lack of agreement on jurisdictional rules, which were purposefully left to the Conference to resolve. In addition, while the specialized pollution conventions set standards that may be changed from time to time, the LOS rules, being part of a broad overhaul of the law of the sea, will be relatively stable, solidifying the intentions of the international community toward the marine environment for some time to come.

In a sense, the international community has proceeded backwards, first building several of the upper floors of the house of pollution control, and then undertaking negotiations on the size and shape of the basement. However illogical this procedure appears, it has been a pragmatic necessity since states were prepared to specify detailed pollution regulations in certain areas while the formulation of more general rules became caught up in the context of lengthy, arduous bargaining preparatory to and during the LOS Conference. The Text, then, is in large part a product of recent international experience in controlling marine pollution. In particular, the wording of its articles relies heavily on the treaties completed to date, on relevant portions of the Declaration on the Human Environment and Recommendations for Action issued at the UN Environment Conference of 1972 at Stockholm, and on the Principles for Assessment and Control of Marine Pollution, a list of 23 principles discussed by an Intergovermental Working Group preparatory to Stockholm and, by Recommendation 92(a) of that Conference, offered as "guiding concepts" for the LOS meeting. The Text points the way toward a foundation or framework of general obligations which are to enhance and systematize both past efforts and future international negotiations on this subject, and to mandate the enactment by states of relevant domestic legislation.

The Setting

Article 1 of Part III* uses a definition of pollution of the marine environment first formulated as part of the UN Long-Term and Expanded Program for Oceanic Exploration and Research; marine pollution means

> the introduction by man, directly or indirectly, of substances or energy in the marine environment (including estuaries) resulting in such deleterious effects as harm to living resources, hazards to human health, hindrance to marine activities including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.

These burdensome consequences of the imposition on the ocean of the products of human civilization result from the fact that the ocean cannot indefinitely recycle, filter, or adapt to the increasing amounts of waste materials transported to it by human activities. This is especially true of the fragile coastal zone, the offshore area which contains the greatest abundance of sea life and which is bearing the strain of conflicting multiple uses, including fishing, recreation, mineral exploitation, and ship transit.

In a sense, all pollution is sooner or later marine pollution, for the ocean is the world's sewer, the great sink into which are transported effluents from the land, sea, and air. Pollutants from the land include human and animal waste, and industrial and agricultural chemicals, which enter the ocean via municipal sewage outfalls, rivers, and direct runoff. From the atmosphere, pesticides, PCBs, automotive combustion by-products, and other materials drift or are carried by dust particles out to sea. From ships at sea come the intentional and accidental discharge of oil and other hazardous cargoes, and the purposeful dumping of wastes generated on the land. The exploration and exploitation of oil and other resources on or under the seabed adds to the ocean's burden of pollution.

Control of pollutants emanating from the land rests exclusively with the relevant states. International standard setting in this area is almost non-existent, though there is growing interest on the part of international and regional organizations.

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*Unless otherwise noted, references to articles of the Text mean articles in the section on the marine environment in Part III.

Control of pollution originating from human activities on or under the sea is more complicated because of the historical division of the ocean into two basic zones, the territorial sea, under the sovereign jurisdiction of the coastal state, and the high seas, open to access for all nations, but belonging to none. Here there is a premium on establishing international norms to guide the regulation of marine pollution, not only because of the communal status of the bulk of the ocean, but because unilateral initiatives in offshore waters may hinder world shipping and will not work since pollutants may be transported great distances by natural processes.

In the process of formulating rules for pollution generated at sea, particularly from ships, the national interests of two overlapping sets of actors have clashed. One set is the maritime states, those possessing substantial fleets, and the coastal states, who do not. Traditionally, the former have controlled the evolution of the law of the sea, seeking to uphold the widest possible freedom of navigation and resource exploitation for the international community - meaning in practice, their ships and installations. On the other hand, the coastal states have had more concern with the use of the ocean off their doorsteps, seeking to protect offshore fisheries and other resources for use by their citizens and from pollution damage engendered by passing international ship traffic. This stance has led to ever-widening claims by coastal states to subject broad offshore areas to their exclusive national jurisdiction or control.

The second set of actors are the less developed and the developed countries. The latter tend to be among the maritime states, making use of modern technology to maximize commercial and naval uses of the sea. The former tend to be coastal states, resentful of the traditional law of the sea in whose formation they had no part and wary of the consequences of international environmental regulations for their economic development.

The contending interests of these actors are part of the modern development of the law of the sea. They were present in earlier UN conferences on the subject, and they are fully reflected in the provisions contained in the present Text. Such interests, however, do not necessarily coincide with the global need for an ocean preserved from irreparable harm for the benefit of present and future generations.

In fact, traditional formulations of the law of the sea are inadequate to fulfill this need. However much of it has contributed to the growth of world commerce, the permissive doctrine of freedom of the seas all too easily becomes a license to pollute in the absence of binding international norms. Heightened environmental awareness has led states to deal with this situation by negotiating treaties in the environmental areas noted above. But that is also not sufficient. Beyond the ad hoc, piecemeal emergence of pollution standards, often in response to the latest disaster and uncertain of enforcement, there must be established a coherent, integrated framework for guiding uses of the sea and controlling pollution resulting from such uses. In the words of Maurice Strong, we need "a comprehensive ocean management system." One component of this system is precisely the sort of "umbrella" treaty anticipated by the Text, which must be closely scrutinized for the extent to which it genuinely contributes to the maintenance of an environmentally viable ocean.

Unfortunately, one must begin without high expectations on this score. Fundamentally, the LOS Conference is not an environmental forum. It was convened to deal with conflicting interests related to navigation and resource uses of the ocean. Preservation of the marine environment is an afterthought on this agenda, rather than the supreme priority which ought to guide decisions on maritime activities. It is economic, political, and military factors that most clearly motivate national positions on LOS issues. In the ensuing debate among representatives of these special interest groups and the lawyers who dominate national delegations, marine scientists and environmentalists may be given little say. The many items on the agenda also encourage trade-offs among states, for example, the concession by maritime countries of an enlarged territorial sea and an exclusive economic zone, in return for the right of unimpeded passage for their ships through straits to be controlled by coastal states. In such bargaining, it is tempting to let environmental restrictions be the first to go, as long as what are perceived as more important national priorities are preserved. Thus, the environment may get lost in the shuffle or be deemed less significant than assuring economomic development or the maneuverability of commercial and naval ships.

This being the case, a mere reshuffling of roles between coastal and maritime states, however important for their individual interests, will not suffice in the

light of the planetary interest in a healthy ocean. The true issue at stake is not whether one set of national actors or another will gain an increase or not in its ability to establish and enforce maritime rules, but whether all actors will exercise their rights and duties under a global management regime. The touchstone of an environmentalist evaluation of the Text is the extent to which it attempts to forge such a regime. The components of this regime, to which relevant portions of the Text are compared below, may be outlined as follows:

Community policy must be rooted in a fundamental obligation of all actors - national and international - to cooperate in protecting the marine environment from damage by pollution of any origin. This obligation should be manifested by the setting of minimum global standards for pollution control for activities impacting on the marine environment, such standards being based on available scientific information and monitoring data and formulated and continually revised within the appropriate international forums.

Coastal states would give effect to international standards in their own legislation and could enact more effective standards on a non-discriminatory basis for areas under their jurisdiction. A "double standard," legitimizing less effective rules for economically developing countries, cannot be permitted, but they must have access to the necessary technical assistance to implement their obligations. Enforcement of violators of sea-based standards should be shared between coastal and flag states. In the event of inaction by the latter, ideally, coastal states should have the right to investigate and apprehend suspected violators passing through their waters, no matter where the violation has occurred, while port states should be obligated to bar persistent violators of international standards from their waters.

States and international organizations should be required to issue periodic reports containing information on maritime planning, environmental impact assessments of relevant projects and rules, and the effectiveness of pollution control regulations. Interested parties should have the right to challenge the appropriateness of intended projects.

Liability for damage to any part of the marine environment, no matter where occurring, should be the responsibility of the relevant national or international actor. Liability for hazardous enterprises should be absolute, with no ceiling on compensation. A mechanism for settlement of disputes on liability, or other issues in disagreement, should be established on the basis of compulsory arbitration by a permanent tribunal.

Ideally, an international marine environment organization should be created, with functions of standard setting, enforcement, research, adjudication, and general oversight of the implementation of their obligations by states and international organizations. Alternatively, such functions should be taken on by the appropriate international bodies. In any case, environmental duties must be kept separate from other tasks carried out by actors, while participation in all such functions should be open, to the maximum extent, to private, as well as governmental, groups.

General Obligations Toward the Marine Environment

Preserve the Marine Environment. With the exception of the functionally-limited London Ocean Dumping Convention (1972), there exists no general treaty provision obligating states to safeguard the marine environment as a whole. This commitment flows logically from community apprehension as to the long-run viability of the ocean, and is the necessary ground point of any umbrella treaty as an expression of the general goal of the community. Article 2 of the Text, borrowing from Principle 1 of the Marine Pollution Principles, thus obligates states "to protect and preserve all the marine environment." States are, in effect, custodians of the marine environment, accountable to the community for action, wherever taken, impinging on that environment. Because international organizations may take on operational roles in the ocean in the future, they should be included as parties to this basic obligation.

Prevent Pollution. The preservation obligation must be operationalized by requiring states to prevent marine pollution from all sources, as well as to reduce such pollution as already exists. The Convention on the High Seas (1958) does set the exercise by states of their designated freedom of the high seas in the context of "reasonable regard" for the interests of other states in their exercise of such

freedom; it could be argued that this prohibits a state from polluting the high seas when that unreasonably interferes with other states' uses of the seas. In addition, Article 25 of the same treaty asks states to cooperate with international organizations in preventing marine pollution "resulting from any activities with radioactive materials or other harmful agents." But a broader and stronger statement than a request for cooperation is needed. Article 4 of the Text, puts together Principles 2, 3, and 19 of the Marine Pollution Principles, Principle 7 of the Stockholm Declaration, and Stockholm Recommendation 92(b) as follows: "States shall take all necessary measures consistent with this Convention to prevent, reduce and control pollution of the marine environment from any source using for this purpose the best practicable means at their disposal and in accordance with their capabilities, individually or jointly, as appropriate, and they shall endeavour to harmonize their policies in this connection."

Taken literally, the phrases "best practicable means at their disposal and in accordance with their capabilities" (my emphasis) could render the obligation to prevent marine pollution using "all necessary measures" meaningless, where a state has no such means at its disposal or its technological and managerial capabilities of dealing with pollution are slight or nonexistent. Preferably, the "disposal and capabilities" phrase should be removed. "Best practicable" must have the connotation of "all possible steps" (as phrased in Stockholm Principle 7), using the most efficient technology available; states lacking the means to carry out their obligation must have access to them. Thus the fulfillment of this article is crucially dependent on a corollary obligation of states to render each other technical assistance, noted below.

That a state must not only prevent pollution, but is responsible for ensuring that pollution does not escape its territory so as to damage other countries is affirmed in Stockholm Principle 21 and Marine Pollution Principle 17, based in turn on the famous Trail Smelter case between the United States and Canada. Of necessity, Article 4 extends this concept to obligate states to take all necessary measures to ensure that marine pollution does not spread beyond their national jurisdiction and that activities under their jurisdiction and control are conducted so as not to cause pollution beyond the areas where states exercise sovereign rights. State responsibility for damage to the ocean commons, as well as to marine areas under national jurisdiction, is important in giving an impetus to other general obligations and to establishing a basis for assignment of liability in case of damage.

Measures taken under these articles, Article 4 continues, are to deal with all sources of pollution whatsoever of the marine environment, specifically including measures designed to minimize to the fullest extent possible the increase of toxic, harmful, and noxious substances, especially if persistent, from the land, through the atmosphere, and by dumping, and the prevention of pollution from vessels and installations and devices used to explore and exploit the seabed. Measures dealing with these sea-based sources are to comprehend accidents and emergencies, safety of operations at sea, intentional and unintentional discharges, and regulation of design, construction, equipment, operation, and manning of such vessels or installations.

The sources of pollution covered are quite inclusive, with one very important implication. The great bulk of marine pollution - perhaps as much as 90% - originates on the land, reaching the sea either directly from the land or through the atmosphere. Thus, the obligation of a state to curtail land-based sources of marine pollution is an obligation to prevent most of its pollution, - especially, pollutants known to be passed through inland rivers and sewage systems which discharge into the ocean, or known to be transportable through the air. Land-locked states and countries with industries inland from the coastal zone are clearly reached by this implication, which is a significant contribution to obligating the global control of pollution in general.

There are several qualifications in the Text on the pollution prevention rule. One which is quite logical notes that states taking the required measures must guard against merely transferring damage or hazards from one area to another or from one type of pollution to another (Article 5, based on Principle 13 of the Marine Pollution Principles). A second, in Article 4, is that states taking pollution measures must have due regard to legitimate uses of the ocean compatible with the Text and must refrain from unjustifiable interference with such uses. This article relates to fears of maritime states that pollution measures might be used for discriminatory, non-environmental reasons. This stricture against unjustified interference is repeated throughout the Text.

Third, Article 3 (reflecting Principle 21 of the Stockholm Declaration) provides

that "States have the sovereign right to exploit their natural resources pursuant to their environmental policies "and they shall take into account their needs and programs for economic development in accordance with their duty to protect and preserve the marine environment. While obviously designed to reassure developing countries that their environmental obligations do not inherently mitigate against their resource rights, this article is potentially troublesome. It should be clearer that economic plans are not only to be made "in accordance with" environmental duties, but that the latter must serve as guidelines for and be fully reflected in economic programs. The exploitation right of states "pursuant to their environmental policies" also sounds ominous if read in isolation--what if such policies are ineffective or nonexistent?--and should be set in the context of an explicit reference to the Article 4 obligations to prevent marine pollution and ensure that it does not spread beyond national jurisdictions.

There follows in the Text a series of articles that may be pulled together to describe the means by which states are to fulfill their general obligations, in particular their responsibility for preventing extra-territorial pollution damage.

International Cooperation To Set Pollutions Standards. It is obviously desirable for states to cooperate with each other, bi-laterally, regionally, or globally, as the need may be, in detailing the measures they must take to fulfill their basic obligations. This is provided in Article 6 (based on Principles 5, 8, 9, 11, and 12 of the Marine Pollution Principles), which mandates states to cooperate on a global or regional basis, as appropriate, directly or through international organizations in order to "formulate and elaborate international rules, standards and recommended practices and procedures" for preventing marine pollution, consistent with the Text and taking into account regional characteristics. In addition, Article 134 of Part II encourages states bordering enclosed or semi-enclosed seas to cooperate with each other, directly or through an appropriate regional organization, to coordinate the implementation of their rights and duties regarding preservation of the marine environment. Neither article, however, speaks to the crucial issue of the extent to which national pollution measures are to be based on standards established internationally; this point is clarified below.

Scientific Research. Undergirding pollution standards must be scientific criteria for what is needed, based on research into the sources, pathways, and effects of marine pollution and the overall status of the marine environment. It is the scientific justification for pollution controls that may substantiate their non-discriminatory (non-political) nature. Articles 9 and 10, drawing on Marine Pollution Principles 14 and 15, require states to cooperate in promoting such studies and research programs. They are also to endeavor to participate in international programs assessing the nature, extent, and risks of, and remedies for, pollution, and on the basis of this information, work out appropriate scientific criteria for pollution prevention rules and recommendations. States are encouraged to exchange information and data about marine pollution, but there is no such reference on exchanging information about remedies for pollution. This should be done, with the provisions that sharing takes place "in a timely manner." The Text should also adopt Marine Pollution Principle 16, calling for international guidelines to facilitate comparability in methods of detection and measurement of pollutants and their effects, the lack of which has interfered in the past with broadening the international data base and exchange of information on pollution.

Monitoring and Surveillance. Realistic, effective, and continually updated pollution standards must be based not only on the findings of research, but on monitoring of pollutants presently in the ocean and of projects which may give rise to them. Under Articles 13 and 14, states are to endeavor as much as is practicable to observe, measure, evaluate, and analyze the risks or effects of marine pollution, individually or through international organizations, and consistent with the rights of other states. Of significance is an ensuing obligation of states to keep under surveillance the effect of any activities which they permit or in which they engage to determine whether these activities are likely to pollute the marine environment. At appropriate intervals, states must provide reports on results relevant to risks or effects of marine pollution to the UN Environment Program or any other competent international organizations, for transmittal to all states.

Given the importance of land-based activities for marine pollution, the surveillance obligation is potentially quite sweeping and, if taken seriously, and coupled with the duty to report, could aid in operationalizing the concept of state custodianship of the global environment. In this respect, the Text should make explicit the right of states and international organizations to request that a state whose activities are detected to be a source of marine pollution phase them out or subject

them to proper controls, consonant with the duty to protect the marine environment. The Text should also require reports from states to include not merely the "results" of monitoring studies, but the findings from such studies from which the results were interpreted. In addition, the ability of many states to monitor the environment "as much as is practicable" will depend on the technical assistance they receive.

Notification of Danger and Contingency Plans. International cooperation is necessary not only to formulate standards, but to deal with and prepare for pollution damage about to occur or which has occurred. As regards oil, this is the subject of two regional agreements, one applying to the North Sea and the other signed by the Nordic countries, and as regards ship-based sources of any pollution, notification requirements are found in the International Convention for Prevention of Pollution from Ships (1973). The Text generalizes from this experience and Marine Pollution Principles 18 and 23 in Articles 7 and 8, in which a state aware of cases in which the marine environment is in "imminent danger" of being damaged or has been damaged by pollution (from any source) shall immediately notify other states it deems likely to be affected by the damage and the competent international organizations. In accordance with the latter and their own capabilities, to the extent possible states in the area affected are to cooperate in eliminating the pollution effects and preventing or minimizing the damage and, towards that end, in developing contingency plans for responding to marine pollution incidents. States should also be required to transmit reports on the effectiveness or methods used in coping with pollution incidents under their contingency plans to competent international organizations, for better diffusion of knowledge in this important area.

The Text, under Article 8, neither specifies nor restricts the areas in which states are to cooperate in dealing with "cases" giving rise to pollution damage. There does exist a 1969 convention and 1973 protocol to it on intervention on the high seas in cases of marine pollution casualties which may be expected to result in "major harmful consequences" by states facing grave and imminent danger to their coastlines and related interests. There is a provision in Part 1 affirming the rights of coastal states to take measures in accordance with international law as may be necessary to prevent, mitigate, or eliminate "grave and imminent danger" to their coastlines or related interests from pollution or threat of pollution resulting from or caused by any activities in the seabed area beyond national jurisdiction. (Article 14)

There should be an equivalent provision based on this and Marine Pollution Principle 21 in Part III of the Text clarifying the right of states or international organizations, as appropriate, to take necessary preventive measures in accordance with internationally agreed rules in areas beyond national jurisdiction following a pollution incident, whether accidental or not, which might result in major deleterious consequences to either coastal interests or the high seas per se.

Environmental Assessment and Planning. Beyond the need for standards, scientific research, monitoring, and contingency plans is the ultimate method for preventing pollution in the first place - careful advance planning of potentially polluting activities, in the context of land use and coastal zone resource management. Pursuant to their custodianship role, states should make environmental impact statements of activities impinging on the ocean and communicate the results to all relevant parties. Article 15 is an advance in this direction: "When States have reasonable grounds for expecting that planned activities under their jurisdiction or control may cause substantial pollution of the marine environment, they shall, as far as practicable, assess the potential effects of such activities on the marine environment and shall communicate reports of the results of such assessments" to appropriate international organizations for transmission to all states. Again, the linkage of marine pollution to land-based activities makes this a sweeping obligation, including "activities" not necessarily restricted to those taking place relatively near the sea. But this important article requires further elaboration.

To begin with, the word "substantial" should be removed. The degree to which any potential pollution is significant or not is precisely what an assessment is meant to determine. That is, an assessment should be a routine task for activities which it is reasonable to believe will have some effect on the marine environment. The "activities" requiring assessment should be understood to comprehend not just physical projects, but proposed regulations and policies as well.

International organizations should not be mere collection points for national assessments, but should be permitted to comment with criticism and advice on them, to request a state to initiate them, and to develop guidelines to assist states in their preparation. They should also be required to issue assessments of their own proposed

activities, wherever located. Moreover, states and international organizations should take into account in the planning of an activity any adverse commentary from affected parties, consult with them at their request, and prepare alternative plans for the activity in response to the views of other parties or indicate why alternatives will not be considered. Failure to engage in such consultations would have adverse implications for establishing liability arising from any damage subsequently caused by the activity.

Assessments are not enough. Marine Principle Pollution 10 speaks of international guidelines and criteria to provide the policy framework for control measures and of the need for "a comprehensive plan for the protection of the marine environment." The Text should provide for states, regarding areas within their jurisdiction and on an individual or regional basis, and competent international organizations, regarding areas beyond national jurisdiction, to issue periodic policy planning reports to the international community.

Such a report would indicate how multiple and potentially conflicting uses of the ocean in the various maritime areas were to be reconciled with the obligation to protect the marine environment, management programs for adjusting ocean use to ecological characteristics of marine environments, programs formulated for mitigating present and preventing future marine pollution (including the establishment of marine sanctuaries), and guidelines used in preparing environmental impact assessments. The goal of these reports is to enable national and international agencies to break out of the cycle of enacting new regulations based on the most recent breakdown, and instead to adopt a systematic, preventive, and anticipatory perspective toward the marine environment. Toward this end, a report could include, inter alia, information on water quality criteria on which pollution standards are based, data and results of monitoring marine activities, effectiveness of current pollution control programs, technological trends of potential relevance to the marine environment, and cost-benefit analyses of putting into effect or not putting into effect environmental regulations. Reports would be transmitted to relevant regional and global organizations for comment, particularly in the light of community interests and needs.

Through the marine planning reports, states and international organizations would be demonstrating to the community just how they intended to carry out their general obligations under the Text. Beneficial side effects of preparing the report might be the gathering together of information scattered among many governmental agencies and a highlighting of gaps in regulatory schemes.

The Text should also carry an article, based on Stockholm Principle 17, strongly encouraging states to organize national environmental regulatory bodies, with particular attention to the marine environment, and recommending that such bodies be established independently of those entrusted with policy making for uses of the ocean. It is the sad experience of many countries that when environmental functions of standard setting and enforcement are intertwined with exploitation and promotion activities in the same unit, the former usually suffer. Environmental interests have their own constituency and while such interests are not necessarily or inevitably opposed to development concerns, they deserve separate representation within the government in an organization whose sole purpose is the preservation of the environment. Such an agency could be the one charged with preparing the periodic planning reports and the environmental assessments of marine-impacting activities contemplated by itself, other agencies, and, where possible, private corporations.

Finally, the Text should strongly encourage, if not obligate, both states and international organizations to permit public participation, through any appropriate administrative means, in the regulatory, assessment, and planning processes suggested above. Whatever the routes open to private individuals and groups, including hearings, filing of briefs and petitions, or court challenges to inappropriate standards and assessments, the principle of public participation is important in view of the presumptive "common heritage" status of the marine environment and the impact of preservation of that environment on quality-of-life values. By broadly legitimizing this principle, the Text would make a significant transnational contribution not only to the law of the sea, but international law in general.

Technical Assistance and Technology Transfer. As noted, many of the above obligations are qualified by the phrase "as far as practicable" or its equivalent. This highlights the fundamental importance for technical aid from the community to those countries lacking the skills or equipment to fully implement the Text provisions on national pollution measures, cooperation in scientific research, monitoring of pollutants, notification of pollution incidents, contingency plans, and environment assessment.

In the absence of such aid, the criterion of "practicable" could only mean what a country can afford to do from its own resources, an unequitable burden for many.

Marine Pollution Principles 6 and 23 and Stockholm Principle 12 speak to this need, which, in terms of technical assistance, comprises Articles 11 and 12 of the Text. Directly or through international organizations, states are to promote programs of assistance to developing countries for preserving the marine environment and preventing marine pollution, including training of scientific and technical personnel, facilitation of their participation in relevant international programs, supply of necessary equipment and facilities, enhancement of the capacity of developing countries to manufacture such equipment, and development of facilities for and advice on research, monitoring, educational and other programs. States are also to provide appropriate assistance, in particular to developing countries, for the minimization of the effects of major incidents which may cause serious marine pollution and for the preparation of environmental assessments. For purposes of the prevention or minimization of marine pollution, developing countries receive preference in the allocation of funds and technical assistance facilities of international organizations and utilization of their services. This list well covers what developing countries might need in the way of assistance. Assurance of financial aid in particular might be on firmer ground if it could be tied, in part, to any funds accumulated by an international seabed authority.

Also relevant here is a section of Part III on "Development and Transfer of Technology," in which states, directly or cooperatively and within their capabilities, are to actively promote the development and transfer of marine sciences and technology at fair and reasonable terms, conditions, and prices. Development of the marine scientific and technological capacity of developing states is emphasized with regard, among other things, to preservation of the marine environment and its uses compatible with the Text. The establishment of universally accepted guidelines is encouraged for marine technology transfer, taking into account needs and interest of developing states, as is the establishment of regional marine scientific and technological research centers, among whose functions are study programs on preservation of the marine environment and control of pollution.

Standards and Enforcement: General Remarks

Most of the controversy surrounding the deliberations before and during the LOS Conference on environmental issues has not been so much on the general obligations as on the jurisdictional question of who is competent to formulate and enforce pollution standards, especially for sea-based sources of pollution.

The issue of competency has been at the heart of negotiations over a new law of the sea in general. There has been something of a schizophrenic atmosphere hovering about these deliberations. On the one hand, the concept of the ocean as the "common heritage of mankind" provided an idealistic spark in stimulating thinking about reform of the law of the sea. Though originally applied to the resources of the ocean floor lying beyond national jurisdiction, this concept has become coupled with the traditional notion of the high seas commons to connote the need for broad community control over exploitation and protection of the marine evnironment as a whole. On the other hand, it is precisely to ensure access to living and non-living resources lying off their shores, and to maintain the environmental health of these areas so closely related to the national domain, that coastal states have claimed increasingly wide swaths of the coastal zone as coming under their sovereign jurisdiction or control.

The latter trend, perhaps inevitably, has been dominant in recent years. This is evident in the consensus that has developed around extending the breadth of the territorial sea to twelve miles and creating an "exclusive economic zone," within which the coastal state has jurisdiction for activities of economic exploration and exploitation, extending 200 miles from the baseline of the territorial sea. This consensus would undoubtedly survive any unsuccessful conclusion of the LOS Conference. But such an arrangement could be disastrous for enactment of measures controlling marine pollution, even if states otherwise adhere to the general obligations of the Text, since it would leave to unilateral state interpretation how to implement the duty to preserve the marine environment. Cooperation in devising pollution standards also offers no guarantee about national responsibility, if states remain on their own in deciding the relevance of international standards to national legislation, that is, to regulations promulgated by states for areas within their jurisdictions.

Left to themselves, states might be tempted to let economic criteria or even political interests determine the shape of their marine environmental laws. Yet if

the ocean is an ecological whole, basic standards, in whose determination non-environmental considerations play no role, can only logically be applied throughout the ocean. The vital link between national obligations to take measures controlling marine pollution and to cooperate internationally in formulating these measures must be an explicit requirement that domestic pollution regulations be founded on minimum internationally agreed standards. In short, international minimum standards must be applicable for the entire ocean. Put this way, the precise extent of national jurisdiction over maritime areas becomes irrelevant, for the purpose of applying minimum rules. Put another way, a state would have to implement pollution standards receiving a wide degree of acceptance in the international community, or equivalent standards which are no less effective, whether or not that state adheres to specialized treaties or recommendations containing those standards.

For enforcement purposes, the breadth of maritime jurisdiction is important, but an extensive belt under national control need not work against community interests. In the absence of an international authority to enforce pollution regulations, there are only flag (maritime) and coastal states to do the job. Experience with international oil pollution rules all too clearly verified the general principle that coastal states have more at stake in ensuring compliance of passing vessels with pollution controls than do ships' distant home countries. Enforcement, then, can be shared between the two sets of actors, with coastal states empowered to enforce the standards if flag states do not.

Control of Land-Based Pollution

Standards. For reasons already explained, any comprehensive marine pollution convention that did not include coverage of sources of pollution emanating from the land would be grossly incomplete. However, states are more sensitive to international influence or control over pollution standards applicable to continental territories than to standards applied on or under the ocean itself. Here, the historical legal reality of the division of the Earth's surface between land areas and adjacent offshore strips under the sovereignty of states, and the high seas under the inclusive control of the community of nations, confronts the ecological reality of the widespread diffusion of pollutants from land to sea and, in many cases, back to the land again. By environmental, if not legal, logic, community oversight of marine pollution standards ought to reach from the ocean which receives effluents back to the land from which they originate.

As noted above, the Text does include among the measures to be taken by states in pursuance of their basic obligations those dealing with pollutants originating from the land (and reaching the ocean from the land or through the atmosphere). Under Articles 16 and 21, states are to establish national laws and regulations, and take such other measures as may be necessary, to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines, outfall structures, and the atmosphere, taking into account internationally agreed rules, standards and recommended practices and procedures. States must endeavor to harmonize their national policies at the appropriate regional level and to establish global and regional rules and practices relevant to land-based sources, taking into account, for the non-atmospheric sources, "characteristic regional features, the economic capacity of developing countries and their need for economic development." Emphasis, repeating Article 4, is laid on measures minimizing the release of toxic, harmful and noxious substances, especially if persistent, into the marine environment.

While a useful preliminary statement, these articles do not meet the linkage requirement formulated above, because states need only "take into account" any international standards they have devised - they are not instructed to base their national rules on such standards, or otherwise use internationally agreed standards in this arena as minimum global standards. It might be supposed that international action on territorial water and air pollution is at a primitive level, so that nothing is to be gained by more stringent provisions. That has been the case generally, but in the past few years a series of agreements have been worked out regionally which cover, in whole or part, standard setting for land-based sources of pollution of the North Sea, the Baltic, and the Mediterranean; also relevant is the work of such inland groups as the Great Lakes Commission and the International Commission on Water Pollution of the Rhine, and interest in pollution taken by OECD, the European Economic Commission, and UNEP. In short, this is precisely the time to look forward to the emergence of internationally agreed measures even for pollution originating within states. At least states should be required to inform the inter-

national community, perhaps through the periodic report suggested earlier, of the extent to which they have actually taken account of international measures in controlling their land-based sources of marine pollution. The expression of economic needs and capacities of states as one criterion in the cooperative development of standards seems stronger here than in the formulation of this issue in Article 3. This clause should be revised to give no appearance of a double standard for pollution rules according to economic status, especially for the all-important land-based sources. Pollution standards need not conflict with economic development and must be based solely on scientific grounds. To further stress this point and contribute to the prevention of marine pollution, coastal states should be firmly encouraged to establish, as part of their economic development plans, integrated coastal zone management regimes including water quality criteria and discharge licensing systems. It is in the productive and fragile waters overlaying the continental shelf that much of the effluent runoff from the land has its most severe effects. States should take this into account, according to their constitutional processes, and on a regional basis where appropriate, when they or persons under their jurisdictions make site allocations for pollution generating activities, such as housing, sewage and power plants, industries, and tourist facilities. In this fashion, overburdening of coastal waters may be prevented or mitigated.

Enforcement. The Text has even less to say about enforcing measures in this context than about standards, since the state is the supreme authority within its domain. Articles 22 and 40 simply note that states have the right to "enforce laws and regulations adopted in accordance with the provisions of this Convention for the protection and preservation of the marine environment" from land-based and atmospheric sources of marine pollution.

Control of Sea-Based Pollution from Ship Discharges

Standards: General. Article 20 contains the rules on formulation of standards applicable to vessel discharges, but its provisions must be interpreted in light of the articles in Part II relating to rights and duties of coastal and maritime states in various maritime zones. Under Paragraph one of Article 20, states are to establish as soon as possible and to the extent that they are not already in existence, international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels. This sets a proper tone of urgency that could well be applied to land-based sources.

Standards: Flag States. Under Paragraph two of Article 20, states must establish effective laws and regulations for marine pollution control from their flag ships, such laws being "no less effective than generally accepted international rules and standards referred to in paragraph one." The phrase "no less effective" firmly ties national legislation to international standards, with no economic qualifications. This phrase also implies that flag state standards may be more effective than international ones. It is already generally agreed that this is the case, though most countries, in order to maintain a competetive advantage, are not likely to impose requirements on their ships far in advance of international rules. It is these flag state rules that would essentially guide vessel behavior on the high seas.

One lingering question here, as with other articles for land or sea-based pollution using a similar phrase, is what exactly is meant by "generally accepted" international rules, particularly when the implicit reference is to treaties not yet in force (as the Ship Pollution Convention) and whose signatories may not coincide with states parties to the Text.

Standards: Coastal States and Innocent Passage in Nearby Offshore Waters. A coastal state has full sovereign powers over its territorial sea, but as an aid to international shipping, vessels have traditionally had the right to navigate through the territorial sea in a continuous and expeditious manner and for the purpose of traversing that sea or proceeding to or from internal waters or a call at a roadstead or port facility outside internal waters, as long as such passage is innocent, that is, not prejudicial to the peace, good order, or security of the coastal state. Ships exercising this right of innocent passage must still comply with appropriate coastal state and international laws. This language was codified in the Convention on the Territorial Sea and Contiguous Zone (1958) and is carried over into Part II of the Text (Articles 14-16).

A major point of contention between maritime and coastal states has been the extent to which the latter may restrict the exercise of innocent passage by foreign ships plying their waters in the territorial sea, particularly in straits used for international navigation. The focus of this contention is on any right of coastal states to apply to ships in innocent passage measures which impose stricter or higher standards than any required internationally. The specialized treaty dealing with vessels, the Ship Pollution Convention, leaves this issue open by including no provision on the matter; its signatories simply retain their prevailing rights under international law.

Practically speaking, this dispute is not so much over effluent discharge standards as the Ship Pollution Convention prohibits all discharge of tanker oil within 50 miles and non-tanker oil and noxious liquids within 12 miles of the land, as over ship design, construction, manning, and equipment rules intended to prevent marine pollution in the first place. Coastal states may well wish to impose higher standards than those internationally accepted for such matters, because they are easier to enforce. Experience and common sense dictate that it is more difficult to ensure that the exact amount of permitted effluent is being discharged or to trace a spill back to its source than it is to check if a ship has the proper preventive equipment and design. Moreover, the international minimum may leave too many loopholes. For example, the Ship Pollution Convention requires segregated ballast tanks only for new oil tankers of 70,000 deadweight tons and above, while the double hull design for tankers is not required at all. In addition, standards on these and related issues, such as crew training, ship traffic lanes, and navigation equipment, may be slow in gaining widespread acceptance or may not yet be covered by international agreements.

On the other hand, the main interest of maritime states is to achieve maximum possible uniform rules for international shipping, rather than to preserve the marine environment *per se*. They wish to avoid the presumed economic inefficiency of having to meet what might be widely varying discharge and, more significantly, non-discharge (design) standards of coastal states, some of them politically inspired, and in general, to maintain their right to freely navigate the ocean. Obviously, the higher the international norms adhered to by ships, the less necessary is coastal state unilateral action and, consequently, the less the threat to uniformity of shipping rules. On the other hand, more rigorous standards may be more costly for shippers and their customers, at least in a short term economic sense.

A logical *quid pro quo* between the contending positions is possible. The maritime states can agree to follow coastal state and internationally agreed rules when their ships are passing through waters under coastal state jurisdiction or control. Coastal states can agree not to unnecessarily impede such navigation and to base their national pollution laws on international standards. If the latter do not exist or if the coastal state has reason to believe that such standards are not sufficient to protect any portion of the marine environment under its jurisdiction or control, then it should have the right to establish non-discriminatory standards of any type higher than any that are internationally accepted. This right should be exercised under the conditions that a coastal state given advance notice of proposed higher standards, that this notice is accompanied by information explaining what environmental conditions or characteristics of ship traffic necessitate such standards, that opportunity is allowed for consultation about such standards with concerned maritime states and for review by the competent regional or global organizations, and that access to dispute-settlement mechanisms is available in case of disagreement over the propriety of such standards. To varying degree, this route is followed in the Text, but not in any uniform manner as stated here and with subtle and not so subtle differences in approach between arts II and III.

Beginning with Part III, Paragraph three of Article 20 is worth quoting in full:

> The coastal State may establish, in respect of the territorial sea, more effective laws and regulations for the prevention, reduction and control of marine pollution from vessels. In establishing such laws and regulations the coastal State shall, consistent with the aim of achieving maximum possible uniformity of rules and standards governing international navigation, conform to the international rules and standards referred to in paragraph one of this Article (noted above). Such laws and regulations must not have the practical effect of hampering innocent passage through the territorial sea.

The immediate context of this provision is Paragraph two of this article, which refers to flag state laws being no less effective than international rules. The coastal state, then, may establish "more effective" rules than any international ones, with the possibly contradictory provision that such more effective coastal rules "conform to" the international standards in the interest of uniformity. Whether they do conform or not is apparently up to the interpretation of the coastal state: There is no provision for international cooperation or approval in developing the "more effective" rules, but neither is there any qualification as to the nature of coastal rules regarding discharge or non-discharge standards. Presumably, a coastal state may also establish rules that are "at least as effective" as international standards (if not more so), or in the event the latter do not exist, but this should be stated explicitly. Finally, coastal states accept the responsibility not to use their laws to hamper innocent passage.

On the same subject, Part II is both more detailed and more restrictive for coastal states. Article 21 of Part II repeats the injunction at the end of Article 20 of Part III, that a coastal state, in the application of these articles or any laws made under them, cannot impose requirements on ships with the practical effect of denying or prejudicing the right of innocent passage, nor may it discriminate in its laws in form or fact against ships of any state or ships carrying cargoes to, from, or on behalf of any state. The latter clause could be used to inhibit the possibility that a coastal state, as some have proposed, could bar an oil supertanker or nuclear-powered ship from its territorial sea on the grounds that such a vessel is inherently or presumptively non-innocent due to the great potential damage that may be caused by coastal interests in case of accident.

Obligations of the flag state are noted in Article 16 of Part II, which specifies that passage is prejudicial to the coastal state if a ship engages in "any act of willful pollution, contrary to the provisions of the present Convention," and Article 18 of Part II, under which ships must comply with all coastal state rules and all generally accepted international regulations on prevention of collisions at sea (one source of marine pollution). In addition, nuclear-powered ships and ships transporting nuclear substances are to carry documents and observe special precautionary measures formulated for them by international agreements (Article 20 of Part II).

Coastal states may require ships to use sealanes and traffic separation schemes due to the density of traffic concentration, taking into account recommendations of competent international organizations (i.e., IMCO), channels customarily used for navigation, and special characteristics of particular ships and channels (Article 19 of Part II). Coastal states may also make laws and regulations regarding innocent passage conforming to the Text and international law, in respect of safety of navigation and regulation of maritime traffic and preservation of the coastal state environment and prevention of pollution to it (Article 18 of Part II). Coastal states must give their laws due publicity. As useful clarification, it would be desirable to alter the phrase describing the right of coastal states to make laws "taking into account" or "in conformity with" international rules to "at least as effective as" such rules.

So far the phrasing, though more elaborate, parallels that of Part III. However, there is no express allowance for coastal states to make rules "more effective" than international ones for the territorial sea. In addition, Paragraph two of Article 18 of Part II makes a major turn, golding that coastal state laws and regulations "shall not apply to or affect the design, construction, manning or equipment of foreign ships or matters regulated by generally accepted international rules unless specifically authorized by such rules." Since the interconnecting phrase here is "or matters" rather than "or other matters," the two clauses of this sentence appear to stand independently. If that is the case, then coastal states are prohibited from passing any rules on non-discharge standards, whether or not international standards exist, and are permitted to extend their rules to foreign ships for other "matters" covered by international rules only if so authorized by them. Presumably, such authorization could permit higher standards than the international rules, but if it does not, then the latter would pre-empt coastal state rule making in this area. In short, the Part II provisions do not allow unilateral establishment of rules by coastal states, of equivalent or higher effectivenesss than international standards, unless the latter permit this, and even then, such coastal rules are restricted to matters other than design and construction standards.

Another point of controversy in the context of innocent passage has been the status of straits and archipelagic waters. Many of these areas have been important high seas passageways for commercial and naval ships, which the extension of the territorial sea or the drawing of baselines around island states will bring under coastal state control.

By express provision, none of the material in Part III is to affect the legal regime of straits used in international navigation (Article 39). The regimes of straits and archipelagic waters as such are contained only in Part II and are identical, as regards pollution control. The straits of concern to Part II are those used for international navigation "between one area of the high seas or an exclusive economic zone and another area of the high seas or an exclusive economic zone" (Article 37). Excluded are straits used for international navigation if a high seas route or route through an economic zone of similar convenience exists through the strait. Thus the straits of relevance are comprised, in whole or part, of territorial waters. Archipelagic states, covered in Articles 117-130 of Part II, may draw straight baselines joining the outermost points of the outermost islands of the archipelago. The waters enclosed by the baselines are archipelagic waters, to which the sovereignty of the state extends, regardless of their depth or distance from the coast.

The major goal of maritime states has been to maintain their freedom of movement through these newly "nationalized" passageways. The provisions reflect this greater

interest of international shipping in such areas by tying coastal state rights even closer to international standards than in the case of the regime of innocent passage. This is done through a liberalized version of innocent passage, called "transit passage" for straits and "archipelagic sealanes passage" for archipelagic waters.

The basic quid pro quo is clearly struck: For their part, coastal states agree, in no less than three places, not to impede, hamper, impair, or suspend the right of transit passage (Articles 38, 41, and 43 of Part II - I will not repeat equivalent material for archipelagic passage). Otherwise, these strait states may make non-discriminatory laws and regulations relating to transit passage in respect to the safety of navigation and regulation of marine traffic - as long as sealanes and separation schemes conform to generally accepted international regulations and are referred, before designation, to the competent international organization - and in respect to the prevention of pollution, "giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait" (Articles 40 and 41 of Part II). If anything, the international link is stronger here than with similar articles for innocent passage, given the prior referral of traffic plans to an international organization and the use of "giving effect to" instead of "in conformity with" by way of basing national upon international standards. "Giving effect" could presumably include more effective coastal standards, as well as standards for matters not yet internationally regulated, but this is neither expressly permitted nor prohibited. In addition, coastal laws for pollution prevention are clearly restricted to discharge standards.

For their part, maritime states agree that ships in transit passage shall comply with generally accepted international regulations, procedures and practices for safety at sea and for the prevention and control of pollution from ships (thus including non-discharge standards), shall respect applicable sealanes and separation schemes, and shall comply with laws and regulations of strait states (Articles 39, 40, and 41 of Part II). Unlike the innocent passage provisions, strait states must not only give due publicity to their rules, but, again signifying the greater international interest here, must cooperate with used states in the establishment and maintenance of necessary navigation and safety aids in a strait or for the prevention and control of pollution from ships (Article 42 of Part II). It would be desirable, in the context of this provision, to explicitly allow strait states to extend "more effective" rules to ships, for all types of standards, under the conditions previously outlined.

Standards: Coastal States in the Exclusive Economic Zone. Beyond the territorial sea lies the economic zone, in which similar issues of coastal state control have arisen. Here, from the coastal state perspective, it is Part II which is more liberal and Part III which is more restrictive.

Article 45 of Part II establishes clearly that, within this zone, the coastal state has "jurisdiction with regard to the preservation of the marine environment, including pollution control and abatement," with no qualifications or conditions, except that in exercising its rights and duties, the coastal state must have due regard for those of other states. In addition, pertinent rules of the high seas regime and international law apply to the economic zone if they are not incompatible with the provisions of this section, while states carrying out their rights and duties in the economic zone are to have due regard to those of the coastal state and must comply with its laws and regulations enacted in conformity with this section and other rules of international law (Article 47 of Part II). In short, coastal state pollution rules for any standards may reach out to sea not just twelve, but 200, miles. Ships within the zone enjoy the freedom of navigation, subject to following such rules. Nothing further is said about basing coastal laws on or exceeding internationally agreed standards.

The phrasing of Article 45 of Part II is not quite compatible with that of Paragraph five of Article 20 of Part III, which also extends coastal rules to the economic zone, but only under certain conditions. Here, the coastal state may establish appropriate non-discriminatory laws and regulations for the protection of the marine environment "in areas within the economic zone" - not the entire zone - "where particularly severe climatic conditions create obstructions or exceptional hazards to navigation" and where accepted scientific criteria deem that marine pollution "could cause major harm to or irreversible disturbance of the ecological balance." No explicit connection is made between national and international rules and there is no restriction on these standards.

As to a coastal state exceeding international standards in the zone, this is expressly permitted in Paragraphs four and six of the same article, but again under qualified conditions. Where internationally agreed rules are not in existence or are inadequate to meet "special circumstances" and a coastal state has "reasonable

grounds" for believing that in a particular area of the zone oceanographical and ecological conditions, its utilization, and the particular character of its traffic require the adoption of "special mandatory measures" to prevent ship pollution, the coastal state may apply to the competent international organization for the area to be recognized as a "special area"; laws and regulations so established do not become applicable until six months after they are notified to the organization (apparently, whether or not the organization approves). This provision is based on the case Canada has made for such special areas, relevant to the fragile environment of its Arctic waters and on allowance for these areas in the Ship Pollution Convention.

While similar in their sweep, the provisions of Part III are more restrictive as to coastal state rights than those of Part II. The thrust of Part III rules is, in effect, to limit coastal state standard-setting over foreign ships generally to the territorial sea, as desired by maritime states. Regarding the economic zone, Part III ties in coastal state laws with certain environmental pre-conditions, something not done in the regime of straits, though neither Part directly requires national rules to "give effect to" international ones - a curious omission in view of maritime state interest in this broad swath of the sea traversed by much of international shipping. Part III's provisions on higher standards come close to the conditions suggested earlier, going one step further in that international approval, not just consultation, is provided for. However, as noted, such approval is not mandatory nor is any international review required under Article 20, Paragraph five, which could, in practice, nullify the attempt to limit coastal state economic zone jurisdiction.

Enforcement: Flag States. Throughout the provisions on standards, maritime states bear their share of the responsibility of seeing that their ships obey coastal and international rules on pollution prevention and control. This responsibility must be backed up by appropriate enforcement power, which is the subject of Article 26 of Part III and Article 80 of Part II. Both rely heavily on equivalent material in the Ship Pollution Convention.

Under Article 26, states are to ensure compliance with international rules for preserving the marine environment by their ships and provide for the "effective enforcement" of such rules no matter where the violation occurs, while Article 80 speaks of the state effectively exercising its jurisdiction and control in administrative, technical, and social matters over its ships and taking such measures as are necessary to ensure safety at sea with regard to the construction, equipment and seaworthiness of ships, manning of ships and crew training, use of signals, maintenance of communications, and prevention of collisions. The reference to "effective control" affects problems arising with "flag of convenience" states - countries with reputations for lax application of maritime standards to their correspondingly large shipping fleets. What is to be done about a state that does not exercise such control is not approached in this section.

Article 80 goes on to specify the measures states should take and includes those necessary to ensure that each ship, before registration and at appropriate intervals, is surveyed by a qualified surveyor of ships and has on board equipment appropriate to safe navigation. This generalizes from the Ship Pollution Convention, which requires such survey of oil and chemical tankers before issuance of certificates to show their construction is in compliance with that Convention. Other measures are to ensure that each ship is in charge of a master and officers with appropriate qualifications regarding navigation and corollary skills, and that ship personnel are fully conversant with and are required to observe applicable international regulations on safety of life at sea, prevention of collisions, and prevention and control of marine pollution. The issue of poor crew training has been a contributory factor in all too many collisions at sea, including those resulting in pollution, making flag state responsibility here an important preventive task.

Article 80 goes on to hold that these measures must conform to generally accepted international regulations, procedures, and practices; as noted previously, flag states, on their own initiative, may impose higher standards. A state with clear grounds for believing that proper jurisdiction and control of a ship have not been exercised may report the facts to the flag state, for investigation and, if appropriate, any action necessary to remedy the situation. Again, nothing is said about holding a flag state to this provision; at least, a report of the investigation and any action taken should be made to the complaining state. Finally, each state must inquire into every maritime casualty or incident of navigation on the high seas involving a flag ship and causing serious damage to the marine environment. The Text should also require that reports of such inquiries be sent on to the appropriate international organization, to further community knowledge about the causes and frequencies of pollution-generating accidents.

Article 26 also requires a flag state to investigate any violation of the international rules alleged to have been committed by its vessels, at the documented

request of any state. If satisfied that sufficient evidence is available to enable proceedings to be brought, the flag state shall do so as soon as possible, informing the requesting state promptly of the action taken and its outcome. The Text should link any persistent refusal by a flag state to take action against its ships at the request of other states with a loss of its rights under the Text. In addition, and reflecting Marine Pollution Principle Four, flag state penalties for its own ships must be adequate in severity to discourage violations and equally severe no matter where they occur. That is, a state cannot penalize its ships less for violations outside its jurisdiction than it does for the same violations inside its jurisdiction.

Enforcement: Coastal States. Jurisdiction over enforcement is not an exclusive prerogative of flag states, but shared with coastal states as well. The focus of controversy here has been the extent to which coastal state enforcement may be brought to bear for violations occurring beyond the territorial sea. The Ship Pollution Convention simply enables signatories to punish violations occurring within their "jurisdictions," leaving this term to be construed in the light of international law in force at the time of the Convention's application or interpretation. The interplay of interests involved in matters of standard setting, with maritime states wanting to ensure non-interference with their navigation and coastal states wanting to ensure the preservation of their offshore marine environment, is also evident in enforcement. It should be recalled, in this context, that Part III provisions for enforcement, as well as standards, do not apply to straits used for international navigation.

At present, a flag state retains its customary exclusive control over violations that its ships commit on the high seas - if a coastal state uncovers evidence of a violation occurring beyond its territorial sea, it can do nothing whatsoever except report such evidence to the flag state and hope for the best. Given the language of Article 80 ("if satisfied that sufficient evidence is available...", it is problematical whether flag states actually will prosecute violations occurring far from their shores. Experience has shown that they usually do not. Moreover, many ships flying flags of convenience seldom, if ever, visit their "home" ports. These coastal state concerns are reflected in Part III of the Text.

Regarding innocent passage, it should be recalled that a state may take the necessary steps in its territorial sea to prevent passage which is not innocent, one of whose definitions is an act of willful pollution. Articles 27-30 specify coastal state powers as follows: When a coastal state has reason to believe that a ship of any flag which is voluntarily within one of its ports or at one of its offshore terminals has violated international standards, no matter where occurring, it must undertake an immediate and thorough investigation of the violation and provide immediate notification of the results of the investigation to the flag state (for it to take appropriate action) and any states affected by the violation. The ship cannot otherwise be arrested, but the coastal state may prevent it from sailing if it presents "an excessive danger" to the marine environment - this should be required but may also authorize it to leave the port for the nearest appropriate shipyard for repairs - this should be qualified in cases where "nearest" may be a substantial distance. The coastal state's investigation may be aided by a provision permitting it to require a ship it believes has released a discharge in violation of international standards within an as yet unspecified distance from the baseline of its territorial sea to give information regarding the ship's identification, last and next ports of call, and anything else required to be given by the relevant international regulation. This information may be requested by radio or other means of communication, even, apparently, while the ship is in passage through this offshore area.

A foreign ship can be investigated and then, if necessary, arrested by a coastal state in the following cases: First, when a coastal state believes a ship in its ports or terminals has released a discharge in violation of international standards in an area extending the unspecified distance from the baseline of its territorial sea, it may institute proceedings and arrest the ship (Article 27, Paragraph 3). Second, a coastal state may apply these measures at the request of another state when a ship has released a forbidden discharge in the unspecified distance from the baseline of the territorial sea of the requesting state, if the latter is a party to the Convention containing the international standard alleged to be violated (Article 28, Paragraph 2). This provision does not say where the ship must be for the coastal state to act on behalf of the requesting state, but presumably, the ship should be in its port or in innocent passage. Thus a ship in port may be investigated and prosecuted for a violation occurring beyond, but within a certain distance of, the territorial sea; it may be investigated, but not prosecuted, for a violation occurring anywhere else at sea; and it may be investigated and prosecuted for a violation beyond, but within a certain distance of, the territorial sea of another state, at the latter's request.

Third, a coastal state may apply the above range of measures when a ship passing through its territorial sea has violated the international standards (Article 28, Paragraph 1) This is not qualified by reference to "releasing a discharge," nor is the location of the violation specified. Presumably, this paragraph is restricted to

violations occurring within the territorial sea itself. A ship in innocent passage which committed a violation beyond the territorial sea of that state, but within the unspecified distance, could be picked up at its next port of call at the request of the coastal state.

While this puts the coastal state in a somewhat anomalous position of having to rely on another state to enforce violations occurring in its offshore waters by a ship not otherwise proceeding to one of its ports, the coastal state is not entirely helpless in terms of investigation. Under Articles 31 and 32, if a coastal state has reason to believe that a ship navigating through the unspecified area from the baseline of the territorial sea has discharged in violation of international standards, the ship may be required to stop and may be boarded for inspection - even when it is still within that area beyound the territorial sea - provided that the violation has been of "flagrant character causing severe damage or threat of severe damage to the marine environment" or the ship is proceeding to or from the internal waters of the coastal state, that any such inspection is limited to examining documents the ship is required to carry by international regulations, and that a physical inspection of the ship is then carried out only if necessary to confirm the suspected violation. A coastal state exercising this right must promptly notify the flag state of the suspected violation and any measures taken. It should be noted that these provisions limit the enforcement action that a coastal state can take within its economic zone only to inspection of certain cases, and only within a portion of the zone still unspecified. More generally, it would be very helpful, though maritime states would be against this, for coastal states to have the broad right to prosecute ships entering their territorial seas for violations of at least international standards, no matter where occurring. In a sense, this would treat violators as ecological pirates, subject to arrest by <u>any</u> state whose waters they enter.

In exercising its rights of enforcement generally, the coastal state has a series of logical obligations. Its rights may be exercised only by agents having the proper authority, the consular or diplomatic representative of the flag state must be immediately informed when measures are taken against one of its ships, a ship may be detained only by virtue of a court order and immediately released if the person responsible pays the fine imposed, a ship may be detained only to the extent that it is not exposed to excessive danger and that no unreasonable risks are created for navigation or the marine environment, the coastal state must provide for recourse in its courts for loss or damage resulting from measures taken when they exceed those which are reasonably necessary in view of existing information, and the coastal state must not discriminate in exercising its rights in form or fact against foreign ships (Articles 35-38). A ship which is arrested or has proceedings against it must be immediately released if a bond not exceeding the maximum penalty for the violation is deposited; the ship must not be released if it cannot proceed to sea without presenting an "excessive danger" to the marine environment, but it may be permitted to proceed to the nearest repair yard available. (Article 29)

In addition, the arrest of a ship by a coastal state is carefully qualified by granting first priority for prosecution to the flag state. Thus, when a coastal state arrests a ship, or receives notification from another state to take measures, it must immediately inform the flag state of these facts, it must forward a report to the flag state, and it must not institute proceedings other than the arrest of the ship until six months have passed from the date of notification to the flag state nor at any other time after that period if the flag state has previously commenced and not discontinued proceedings. Coastal state proceedings cannot be instituted after three years have passed from the date of the violation and shall not prevent the flag state from exercising its own competence. If a flag state has initiated proceedings, they may not be instituted by another state in respect of the same violation. (Article 28) The thrust of these provisions is to give the flag state a right of refusal, so to speak, in taking measures against one of its ships. What may be more significant is that if it does not take proceedings, or if it discountinues them, the coastal state may proceed (up until the three-year deadline). However, merely by "initiating" proceedings, a flag state can block off any coastal state action, a provision open to abuse. It is vitally important for deterrence purposes that a ship in violation of the rules knows, should the violation be detected, that <u>some</u> state is going to move against it., even if its own flag state does not do so.

These provisions go a certain distance in enabling coastal states to fill in the slack caused by flag states unable or unwilling to enforce pollution regulations against their ships. But, whether intended or not, there are two drawbacks to these articles. One has to do with the restriction of enforcement by both flag and coastal states to international standards, even though articles in Part II obligate flag states in territorial seas, straits, and economic zones to follow both coastal and international rules. For enforcement to be held only to the international standards

would undercut the rationale for giving coastal states the right to enact regulations for offshore areas for subjects not covered by international rules or when the latter are inadequate. Presumably, a coastal state can press its laws against any violator in its territorial sea, but it could not do so for a violation of its laws occurring in the unspecified area beyond its territorial sea or that of a requesting state. In addition, a coastal state should be able to proceed against a ship which an investigation shows to be in violation of non-discharge standards. The Text should here borrow further from the Ship Pollution Convention, which does permit a coastal state to inspect oil and chemical tankers while in its port to ensure they have on board the documents certifying that they meet design and construction standards for their trade. This may be done whether or not a discharge has occurred.

The Text should also open the possibility for an enforcement role to be played by competent regional and global organizations. In addition to providing technical aid to states to improve their pollution detecting abilities, international organizations might, at the request of governments, carry out inspections and surveys, verify documents, and assess penalties for violations of international standards. On their own initiative, such organizations also should be able to investigate serious or persistent violations of international standards and to transmit information to appropriate parties of discharge violations detected by international monitoring systems.

Enforcement: Port States in Internal Waters. To the landward side of the baseline of the territorial sea lies the internal waters of a coastal state. While ships proceeding to such waters or calling at a roadstead or port facility outside such waters enjoy the right of innocent passage, Article 22 of Part II gives the coastal state "the right to take the necessary steps to prevent any breach of the conditions to which admission of those ships to internal waters or such a call is subject." Under current international law, states may apparently set whatever conditions they wish for admission of ships to their ports, presumably including pollution control standards higher than any internationally agreed measures. This being the case, a coastal state, pursuant to Article 22, could simply bar from entry to its internal waters or offshore ports any ship not meeting the conditions of admission.

This is environmentally significant, in particular because of the growing popularity of offshore terminals for unloading the cargo of oil supertankers, and in general because only a relatively small number of port (that is, importing) states could have, through their admission standards, a great impact on the pollution requirements to which ships carrying hazardous cargoes would have to adhere, regardless of the status of coastal state rights, in other respects, over traffic in the territorial sea, straits, and economic zones. However, Article 22 does not require a port state to bar from its waters a ship in violation of the standards - it only has "the right" to do so. It is also true that a state whose ships were so affected might raise a complaint under Article 21 of Part II, prohibiting coastal states from imposing requirements on foreign ships which have the practical effect of denying or prejudicing the right of innocent passage. Pragmatically, it may be open to question whether port states would enforce standards in this way at the risk of losing their shipping business.

Control of Sea-Based Pollution from Ocean Dumping

Standards. In addition to cargoes carried at sea, the other source of pollution from ships comprises waste materials such as dredge spoils, sewage sludge, industrial wastes, garbage, munitions, and some radioactive materials which are generated on land, then loaded onto ships for intentional dumping in the ocean in selected sites as an alternative to disposal on the land. Whether such dumping is harmful to the ocean depends on such factors as the nature of the wastes, means of disposal, and environmental characteristics of the disposal site.

Traditionally, the law of the sea has been permissive about the freedom of states to use maritime areas as dumping grounds, but as with other uses of the sea, it is now necessary to establish international ground rules for this activity as reflected in national legislation. This has been done in several regional agreements and the global Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972), which formulates a dumping permit system and associated criteria for designated categories of substances for national application.

With this background, Article 19 of the Text requires states to establish national laws and regulations, and take such other measures, as may be necessary to prevent, reduce and control marine pollution from dumping of wastes and other matter, in order

to ensure that dumping is not carried out without the permission of competent authorities of the state. States are also to endeavor to establish global and regional standards for dumping, as soon as possible and to the extent they are not already in existence. National rules must then be "no less effective" in preventing marine pollution from dumping than international ones, though nothing is said about permitting more effective national laws. Within an area yet to be determined, the coastal state has the exclusive right to permit and regulate dumping, which cannot be carried out without its express approval.

Enforcement. Enforcement of the Dumping Convention is shared between flag states, regarding their ships and aircraft, and coastal states, regarding ships and aircraft loading material in their territories or dumping material within their jurisdictions. As with the Ship Pollution Convention, "jurisdiction" is not defined, pending any results of the LOS Conference, and coastal state enforcement does not extend beyond such jurisdiction to reach dumping by foreign ships which have loaded their material in other states.

The Text fills this gap, as it does to some extent for vessel-source pollution, by holding that dumping laws shall be enforced by any state within its territory (presumably including its land and territorial sea), by the flag state regarding its ships and aircraft, by the coastal state on ships and aircraft dumping within its economic zone and continental shelf, and by the port state regarding ships and aircraft loading at its facilities or offshore terminals. It might be noted that coastal states, unlike the provisions on ship pollution, here have full power to enforce dumping rules within the economic zone, with no qualifications as location of a violation a certain distance from the shore. States should be required to include in any periodic reports, as recommended earlier, reviews of dumping activities and enforcement action, and competent international organizations should have a role in monitoring sites and serving as forums for the continual updating of dumping criteria.

Standards and Enforcement for Ship-Based Pollution and Sovereign Immunity

A general qualification to the above provisions on standards and enforcement with regard to the control of pollution from ships lies in the doctrine of sovereign immunity, which exempts military ships from falling under the jurisdiction of foreign states. The rationale for this traditional doctrine is the desire of naval officials not to hamper any operational mobility of their fleets that may be involved in adopting discharge regulations and not to open their fleets to possible harassment by coastal states enforcing such regulations. The formulation of this doctrine in the Ship Pollution and Ocean Dumping Conventions has been carried over into Article 42 (as well as Articles 80 and 81 of Part II) as follows:

> The provisions /explained above/ shall not apply to any warship, naval auxiliary or other vessel owned or operated by a State and used, for the time being, only on government noncommercial service. However, each State shall ensure by the adoption of appropriate measures not impairing the operations or operated by it, that such vessels or other craft act in a manner consistent, so far as is reasonable and practicable, with/ these provisions/.

This article is as meaningful as a flag state wishes to make it, since the unilateral decision of the state guides the extent to which its naval ships will follow "appropriate" pollution rules. From an environmental standpoint, such exemption is unjustifiable.

Coastal states are not entirely helpless, however. Traditional doctrine is expressed in Article 30 of Part II, whereby a coastal state may request a warship not in compliance with its laws and in disregard of requests for compliance to leave its territorial sea by a safe and expeditious route. Beyond this, warships ought to be brought under the requirement of full compliance with pollution standards, just like any other ship, but in deference to reality, their exemption from foreign enforcement action may continue.

Control of Pollution from Activities On or Under the Continental Shelf and Sea Bed

While still a relatively small contributor of marine pollution compared to other sea-based sources, activities carried out to garner the resources lying on or beneath the continental shelf and ocean floor are likely to increase in importance in response to expanding needs for energy and minerals. Since the facilities used to exploit such resources may conflict with other uses of the sea and since more of this exploitation is taking place under environmentally hazardous conditions, it is necessary

to include these activities within an environmental management system. For purposes of jurisdiction, the international community has already assigned exploitation rights to resources of the continental shelf - an extension of the continental land mass - to coastal states, in the Convention on the Continental Shelf (1958). The LOS Conference faces the task of placing an outer boundary to the shelf and establishing a regime for the sea bed area lying beyond the shelf, that is, the remainder of the ocean floor.

Standards. In Article 62 of Part II, the legal continental shelf is defined as the outer edge of the continental margin, or to 200 miles from the baseline of the territorial sea where the edge does not extend that distance. Thus, the level shelf is at least co-extensive with the exclusive economic zone and, with the exception in Part II noted below, their regimes for pollution control are identical.

Articles 45, 63, and 67 of Part II clearly place sovereign jurisdiction over the regulation of exploration and exploitation of the shelf and economic zone sea bed in the hands of the coastal state. Under Articles 48 and 66, the coastal state has exclusive jurisdiction over and the exclusive right to construct and regulate the operation and use of artificial islands, installations and structures in these areas. It may establish reasonable safety zones for these facilities as long as they do not cause interference to the use of recognized sealanes essential to international navigation, while ships must respect such zones and comply with generally accepted international standards for navigation in the vicinity of these facilities and zones.

The regime for the shelf specifies that the coastal state shall take appropriate measures for protection of the marine environment from pollution and ensure compliance with appropriate minimum international requirements provided for in Part III and with other applicable international standards (Article 68 of Part II). On this subject, Article 17 of Part III requires coastal states to establish national laws and regulations, and take any other measures as may be necessary, to prevent, reduce and control marine pollution arising from exploration and exploitation activities on the sea bed and from installations under their jurisdiction, harmonizing their national policies at the appropriate regional level. States are to establish global and regional standards for preventing such marine pollution and make their own rules "no less effective" than generally accepted international rules. Thus the international minimum provides the basis for national regulation for the shelf or sea bed throughout coastal state jurisdiction; presumably, states retain the right to make more effective laws and laws for matters not covered by international standards.

The point of difference is that, as already noted, the provision for coastal state jurisdiction over activities in the economic zone is not qualified by any reference to international rules. This issue may be moot, since the legal shelf will extend at least the 200 miles to sea that the zone extends, but it should be clarified for consistency. Another anomaly for clarification arises from the fact that the shelf whose edge extends 200 miles or more is defined as beginning at the end of the territorial sea; installations for such coastal states located within their territorial sea should also come within the international minimum.

At any rate, beyond the continental edge or beyond the 200 mile limit - that is, beyond the limits of national jurisdiction - lies the area of the sea bed which is the "common heritage of mankind," under the jurisdiction of an international Seabed Authority established in Part I. Part III defers to this organization by simply noting that provisions regarding measures to prevent, reduce and control marine pollution from exploration and exploitation activities of the international sea bed area are contained in Part I (Article 18).

The Authority is the Text's one fling at setting up a true supra-national institution, but it is not likely to come through whatever remains of the Conference in precisely the same form as in the present Text. Essentially, it reflects the desires of developing countries for an organization which would itself exploit sea bed resources (through an organ of the Authority called the Enterprise) or would license other state or private entities to do so, under its control. Industrialized countries, who possess the technology needed to carry out sea bed activities, are wary of such a framework, with its Assembly based on one state, one vote, and its powers to govern who may develop what resources with what impact on relevant world market prices. Fearing a watery OPEC, these countries prefer a system in which states and their citizens have direct access to the sea bed; the organization would serve as a clearing-house for development licenses, but would not control prices or production rates and would be guided by a small Council on which these countries would receive their due weight. Both models feature some proportion of revenues earned being distributed by the international body to developing nations.

Whether or not the Authority in the Text comes through unscathed, it contains some interesting environmental provisions which could be carried through to whatever organization finally emerges from the negotiations. In any event, the current Authority makes use of both an Assembly and a Council. It has full plenary powers to control activities in its area. These activities, including the erection, emplacement, and removal of stationary and mobile installations, are to be carried out subject to and in accordance with the regulations and supervision of the Authority and provisions of the Text (Articles 5 and 16 of Part I). As it determines, the Authority may conduct activities directly and through states or persons controlled by them, using any form of association which ensures direct and effective control over such activities (Article 22 of Part I). The Assembly of the Authority, consisting of all members, is its supreme policy making organ, establishing general guidelines and issuing directions of a general nature. It may discuss and make recommendations on any matter within the scope of the Text (Article 26 of Part I).

The major thrust of the substantive provisions is toward exploitation of area resources; the preservation of the marine environment takes place within this context and subsidiary to it. Thus, the list of "General Principles" in Article 9 of Part II refers to fostering the development of the world economy, avoiding adverse effects on economics of developing countries, rational management of area resources, expanding opportunities in their use, and equitable sharing in benefits from resource utilization - no mention at all is made of the environment. The Authority is also charged with taking measures to promote and encourage activities in the area and to secure the maximum financial and other benefits from them (Article 23 of Part I).

As for the environment, the Authority is to take "appropriate measures" for the adoption and implementation of international rules for activities in the area regarding, among other hazards, the prevention of pollution, contamination, and interference with the ecological balance of the marine environment, including the coastline, with particular attention to the extent to which such activities as drilling, dredging, coring, excavation, and waste disposal, and the construction and maintenance of installations, pipelines, and other devices related to such activities have a harmful effect on the marine environment (Article 12 of Part I and Article 12 of Annex 1 to Part I). In addition, the Authority is to encourage general survey operations by any entity which meets its environmental protection regulations, and may open for evaluation and exploitation sea bed areas it determines to be of commercial interest, though it may refuse to open any part(s) of the area when available data indicate the risk of irreparable harm to a unique environment (Article 3 of Annex 1 to Part I).

Institutionally, environmental rules originate in a Technical Commission of 15 individuals among whose qualifications is experience in ocean and environmental sciences and maritime safety. This group submits technical and operational rules to the Council, keeps them under review, recommends amendments, prepares assessments of the environmental implications of activities in the area and evaluates these implications before recommending rules, prepares special reports at the request of the Council, supervises all operations in the area, and notifies the Council of any failure to comply with provisions of the Text, prescribed rules, and contract conditions, with recommendations on measures to be taken (Article 31 of Part I).

The executive organ of the Authority is a Council of 36 members, of which the commission is one unit. Six of the Council seats are reserved, among others, for members with substantial investment in, or advanced technology used for, exploration and exploitation of the area, decisions on important issues require a 2/3 plus one majority. The Council approves and supervises activities of the Enterprise, approves and controls contracts, adopts rules recommended by the Commission concerning protection and preservation of the marine environment, and makes recommendations to states on policies required to give effect to principles of the Text. It is thus the Council, with its weighted proportion of developed states, not the Assembly, which will make final decisions on specific environmental rules.

There are some progressive features of this scheme, including the quasi-legislative functions of the Authority, its control of activities of state enterprises and private entities, the preparation of environmental assessments, reports, and studies, continual updating of standards, provision for marine sanctuaries (though the "irreparable harm" standard is too strict), and establishment of a Tribunal (explained below). Many of these proposals would be compatible even with the organizing model favored by developed countries, or with whatever compromise may emerge. However, whatever the degree of success of the Authority as a functional supra-national organization, there is good reason for concern about how well the marine environment will be protected in its area of operations, as there would be about any weaker entity and for the same reason. The simple fact is that the Authority is not an environmental organization, but one whose purpose is resource development, as reflected in its principles and functions.

Its members will have every interest in maximum exploitation of the area because of its link with economic benefits for them. They may not necessarily be indifferent to the environment, but its protection is not their primary purpose. The Technical Commission of experts may recommend perfectly respectable environmental regulations, but nothing requires the Council to follow them, and there may be great pressure on it not to. In any case, the Council will define the "appropriate" measures to take regarding the environment.

What is needed, at this level as much as within countries, as previously noted, is a separation of environmental functions from the Council's other duties. The Technical Commission should be an autonomous unit of the Authority with full power, perhaps under the control of its own governmental board of directors, to make environmental assessments and regulations, which would not require further approval by the Council. The latter could proceed with its mission, but instead of environmental rules adapted to the goal of maximum exploitation, the latter take place in the context of preservation of the marine environment. Ideally, of course, a sea bed environmental body of this kind ought to be part of a more general international regulatory organization for the ocean.

In a sense, this discussion is moot to the extent that the Authority, even if established, may not have much to do. The greater part of the resources available to present technology will lie within the area assigned to states, that is, the continental shelf down to the margin. Yet, the Authority's role is important because of the connection between the international minimum guiding national development of the shelf and the fact that the Authority would be the major forum for establishing this minimum. Thus, any factors affecting the elaboration of its own rules thereby also influence how the environment of the shelf will be treated.

One other missing component in the structure of the Authority is any role for private interests. For all the thrust it might give to international functionalism, the Authority itself is rooted firmly in the nation state. The LOS Conference here has a chance to contribute to transnationalism, if it will, by including in the membership of the Council private groups, both corporations and environmentalist concerns; their seats could be rotated just like those of the state members of the Council. If that is too radical, private groups should at least be given a significant advisory role to the Council. In practice, of course, resource developers are likely to play such a role in any case. This role should be formalized in the Text, and the way opened for environmental groups to play an equivalent part.

Enforcement. The only provision for states in the shelf area is that they have the right to enforce laws adopted in accordance with the Text for the protection and preservation of the marine environment from pollution arising from exploration and exploitation activities of the continental shelf (Article 23). For its part, the Authority, in cooperation with flag states, is to enforce rules it adopts on marine pollution arising from sea bed activities in its area. (Article 24)

More specifically, in Part I of the Text and analogous with the International Atomic Energy Agency, the Authority is given the right to establish a staff of inspectors to examine all activities in the area for compliance with the Text, rules prescribed pursuant to it, and terms of any contract with the Authority. The inspectors must report any non-compliance the Secretary-General, who immediately notifies the Council and Technical Commission Chairpersons. After consultation with the party concerned, the Secretary-General can send inspectors into the territory of any party and into the sea bed area and any installations established in it; the inspectors have access at all times to all places, data, and persons who deal with any activity in the area pursuant to the Text and any related records. (Articles 40 and 41 of Part I) Whether the "consultation" called for gives parties the right of veto over inspections must be clarified - it would be important for inspectors to have the right to pay unannounced visits to national and Enterprise installations.

This inspectorate would be an important contribution to functionalism, especially the global enforcement of global standards and particularly since the scope of the Inspector's potential area of purview includes the "territory" of member states (and not just their continental shelves). Presumably forays into members" territories would be to check on violations of Authority rules within its area, and not on how states were applying international standards on their continental shelves. The Authority should have the right to comment on the latter, and ideally it should be able to inspect and enforce international standards against installlations under coastal state jurisdiction, on its own initative or in cooperation with the state.

Finally, a state may be suspended from membership by the Assembly upon recommendation by the Council for gross and persistent violations of the Text (Article 68 of

Part 1). Depending on the economic benefits distributed by the Authority, this could be a potent sanction. Recommendations that the Technical Commission can make to the Council for failures to comply with rules and contract conditions could include measures short of suspension, including, supposedly, a full or partial revocation of a contract, or the right to make a contract, or the payment of a fine.

As with standard setting, the enforcement function should not be placed within the Authority, but combined with the duties of an autonomous environmental unit. Nowhere is it clear in the above provisions what the Secretariat inspectors would do if they found the Enterprise itself to have violated the rules. This factor adds to the practical reluctance the Commission and Council might feel to enforce too strictly the environmental constraints on resource exploitation of any kind in justifying the separation of enforcement and accompanying monitoring tasks from other Authority duties.

Liability and Compensation

Given a state's responsibility to protect the marine environment, take measures to prevent marine pollution, and, especially, ensure that such pollution does not escape its borders to cause damage elsewhere, a comprehensive treaty must include something on the liability of a state for damages so caused.

Liability plays several roles in both national and international law. Most obviously, it facilitates the recovery of costs born by parties suffering damage for which they are not to blame by imposing these costs for things like repair work or removing the harmful substance on the persons at fault. For persons engaged in risk-creating activities, liablility is a warning to engage in their enterprises with due care, or else be required to compensate anyone suffering damage from them. Liability is also a sanction, a punishment, against those violating poilution regulations in situations where harm results, and thus is one component of enforcement which will hopefully stimulate the observance of such regulations. It is always preferable to avoid environmental damage in the first place then to figure out who must pay what to whom after the deed is done. Liability can never take the place of preventive measures, but it is an important supplementary tool that may provide deterrence against carelessness.

There do exist specialized treaties relating to liability for nuclear damage and oil pollution damage from commercial ships (not in force) and several petroleum inter-industry agreements as well, which provide funds and accessibility to national courts for those harmed by pollution damage. Controversy in the international community revolves around the nature of the liability, scope of compensation, and location of damage.

In cases of ordinary liability, the injured party must prove that the damages caused resulted from the fault or negligance of the defendent. But in response to the rise of technologically large, hazardous ventures, whose mere operation may expose innocent people and the environment to serious harm, the concept of strict liablity has developed and is reflected in nuclear and oil liablility treaties. Here, the presumption of fault is placed on those responsible for the activity causing harm; they must rebut this presumption, using a specified, limited number of defenses (such as act of war and natural disaster). The idea of absolute liability uses the same justification as strict liability - it is unfair to place the burden of proof and of litigation on a party injured from the undertaking of an ultra-hazardous activity - but eliminates all defenses. Regardless of fault, the defendent is responsible as part of the risk taken in operating an activity which places a potential social cost on the community. Such a concept, already used in a treaty on damage from objects launched into space, obviously puts a premium on those in charge of a hazardous activity to proceed as safely as possible.

Whatever the form of liability, there is usually a monetary ceiling on the amount of money that can be claimed, whether or not the damage in fact caused in a particular case exceeds that ceiling. As to location of damage, the oil pollution treaties apply only to harm occurring to the territory or territorial sea of member states, and not to areas beyond such jurisdiction (economic zone or high seas).

In this context, Article 41 simply repeats the admonition of Article 4 that states are responsible for preventing damage from activities under their jurisdiction or control to areas (including the marine environment) under the jurisdiction of other states, adding that, in accordance with principles of international law, states are liable to other states for such damage. The "activities" of concern may thus originate on land or anywhere at sea, including flag ships and sea bed installations,

and the state is responsible whether the enterprise is public or private. It is otherwise left to international law to specify the nature and extent of liability.

Further provisions on liability to areas under national jurisdiction from ship-based pollution may be found in Part II. As part of the quid pro quo noted above, if a ship in innocent passage does not comply with the laws and regulations on navigation, it is liable for any damage to the coastal state, including its environment. Any noncompliance from a warship in innocent passage, including straits, with any laws and regulations of the coastal state, Text articles, or international law causing any damage to the coastal state and its environment puts international responsibility on the flag state (Articles 23, 32, and 41 of Part II). The provision on non-warships is unnecessarily limited to violations of navigation rules, nor is it clear whether the laws comprehended may be national and/or international - the broader formulation used for warships should be followed here as well. For its part, if in applying its laws, a coastal state acts contrary to provisions of the Text and loss or damage results to a ship in innocent passage, that state must compensate the ship owners. Liability for damage from ships transiting the economic zone to coastal state interests in the zone, territorial sea, or coastline would be covered by the general principle of Article 41.

For areas beyond national jurisdiction, Article 41, drawing on Principle 22 of the Stockholm Declaration, holds states responsible for activities under their jurisdiction or control that cause damage to the marine environment of such areas, but nothing further is said about state liability for such damage. Instead, states are mandated to cooperate, when necessary, in developing criteria and procedures for protecting the marine environment, including determination of liability, assessment of damage, payment of compensation, and settlement of related disputes. However, states and international organizations are both responsible and liable for damage caused by activities in the sea bed area which they undertake or authorize, although a defense in any proceeding may be based on a claim that damage is the result of an act or omission of, as the case may be, the Authority or a contractor. (Articles 17 of Part I and 19 of Annex 1 to Part I) There is no restriction on the location of such damage by activities originating in the sea bed area.

Except for the sea bed rules, the provisions on liability in Parts II and III are essentially holding actions, marking no advances in this subject. It is important that states be held responsible for damage they or entities registered in them cause to the high seas, but the nature of liability entailed is left under a vague injuction for states to work out whenever they see fit. While the Text cannot carry detailed rules on this complicated subject, any more than on pollution control regulations, it could list general principles for states to spell in ensuing negotiations.

Such principles could include the following: Most basically, the absolute liability of states, together with the owners or operators of enterprises and ships registered with them, for damage caused anywhere in the ocean from hazardous activities originating anywhere on land or sea, such liability to comprehend not only damage costs, but costs of pollution removal and of restoration of the viability of the impacted environment; the absence of a monetary ceiling on potential compensation, or if necessary, determination of a ceiling on the basis of maximum feasible damage from the activities covered; the obligation of states to ensure access to their courts by claimants; the right of initiation of or intervention in proceedings before a court by other states, competent international organizations, and private groups, even if not directly injured by the damage at hand and even if no damage to state territory has occurred, acting in the name of the international community; the right of states to impose higher than international standards, or supplementary rules, for liability regarding marine environments under their jurisdiction, and flag ships and installations registered with them; and the establishment of international compensation fund(s), as already contemplated for oil pollution damage, particularly regarding harm which cannot be traced to individual sources or which is born by the international community as a whole, such funds to be based on allocations from users and exploiters of ocean space and resources.

Dispute Settlement

Undergirding a comprehensive treaty should be provisions for settling disagreements on its interpretation and application. Disputes could result from charges that a state or international organization has failed to live up to its basic obligations, failed to enact appropriate pollution standards as required, enacted or enforced standards in a discriminatory way, failed to hold entities registered under it to relevant standards, or failed to pay due compensation for damage for which it is liable.

The Ship Pollution Convention provides for compulsory arbitration at the request of any party to a dispute, if it cannot be settled by negotiation. No proposals for

dispute settlement are in Part III of the Text, though this is anticipated by Article 44, by which any disputes on the interpretation or application of the Text regarding the preservation of the marine environment are to be resolved by settlement procedures to be provided. In addition, a working paper on dispute settlement issued after the appearance of the Text notes the possibility of a special body to handle pollution disputes or to engage in fact-finding and make recommendations for later review.

Part I does include a settlement for the sea bed area. Jurisdiction over the interpretation or application of the Text or its subject matter, its rules and regulations, and the terms and conditions of a contract lies with a Tribunal of nine judges. A dispute between the Enterprise, a contracting state, or its nationals (whether or not directly connected with a project) should first be solved by means of their own choice. Within one month of its commencement, if not resolved, any party to the dispute may institute proceedings before the Tribunal, which may also consider complaints from a party of the legality of Council measures. The latter may be declared void, Tribunal judgements are final and binding, the Tribunal may give advisory opinions, and it may order provisional measures, after seized of a dispute, to preserve the rights of parties or prevent serious harm to the marine evnironment. (Articles 32, 33, 57-60 of Part I and Article 20 of Annex I of Part I) It should be recalled that failure to comply with the Text can involve various sanctions, including suspension of membership.

These provisions provide an excellent model for the Text as a whole, which should, similarly, require compulsory arbitration before an independent court - preferably one specialized in environmental affairs, not the International Court of Justice - access by private parties, and provisional measures.

Other Conventions

On the relationship of the Text to other treaties, provisions of the former are without prejudice to specific obligations assumed by states under special conventions concluded previously on prevention of marine pollution or to agreements which may be concluded to further the general principles of the Text. (Article 43)

International Marine Environment Organization

The centerpiece of many of the proposals from non-governmental sources for a new law of the sea has been the elaboration of a new ocean governance institution, functionally diverse or devoted particularly to the marine environment. Except for the sea bed, the concept of an international marine environment organization, perhaps attached to the UN, is conspicuous by its absence in the Text, although the ecological unity of the ocean and the necessity for the international community to oversee the exercise by its members of their custodianship role of the ocean lead in this direction.

Such an environmental agency could carry out, within the broadest possible area of the ocean, all the responsibilities previously described. For example, it would prepare periodic indicative, ocean-wide plans for uses of the sea and their impact on the control and elimination of marine pollution; besides its own assessment of such uses, the plan could comment on assessments of states and other international organizations and should include relevant economic and technological trends and forecasts. The organization would also formulate minimum necessary measures for dealing with all sources of marine pollution (or, for the land, at least those sources located on the shore side of the coastal zone); make inspections of and carry out enforcement actions against national and international violators of these measures; issue permits for ocean dumping of land wastes and certificates of environmental fitness to ships; carry out scientific research and monitoring, and systematize such data from similar state programs; provide technical assistance to states; take preventive measures in cases of dangerous polluting incidents; establish marine sanctuaries and special areas; initiate proceedings in national courts to ensure implementation of pollution regulations and to bring suit for damage to the marine environment; and offer final and binding settlement procedures for disputes, including fact-finding and mediation services.

The organization could also certify the competence of private groups to act in the name of the community in requiring states and other actors to live up to their obligations, and it would include representatives from such groups in its membership. Private groups, which might include, for example, the Marine Environment Working Group of the International Assembly of NGOs Concerned with the Environment (a body that holds parrel meetings with UNEP) and the International Petroleum Industry Environmental Conservation Association, would hold seats throughout the subsidiary

organs of the organization and take part in all its activities, in recognition of the transnational stake all peoples have in the viability of the ocean commons. The allocation of rights and duties by international treaty to private entities is not unique, being the subject, for example, of treaties on settlement of investment disputes and on the establishment of an international fund for oil pollution liability.

Alas, there is no chance whatsoever that states at this LOS Conference wish to proceed on such a route, which would amount to turning the Conference into a constitutional convention for the ocean. States lack the political will and the time, most of their efforts to date having been devoted to establishing rights to exploit offshore resources. More positively, the community is not devoid of institutions that are exercising or could exercise de facto management duties for the marine environment on a global level, though they do not form a neat functional package or undertake the whole range of activities possible.

As noted earlier, interest in land-based sources of marine pollution is scattered among several regional and global agencies. The "lead agency" for establishing minimum world standards might well be the UN Environment Program, which has shown great concern for the subject, though it will need stronger funding and additional personnel for this. Control of pollution from continental shelf and sea bed activities will be lodged in the Authority, if it maintains the operational status which developing countries wish and, hopefully, if if is revised with the reforms suggested above.

For ship-based pollution (including ocean dumping), IMCO has taken on increasing tasks, and is, in fact, the only current international organization with regulatory powers directly relevant to marine pollution. However, IMCO has undergone criticism as an organization too closely tied to maritime interests to be effective in environmental affairs. Its original job was to facilitate the flow of maritime commerce by promoting international cooperation on standards and recommendations for the safety of life at sea, navigation, and shipping practices in general. Only since the Torrey Canyon disaster of 1967 has IMCO moved toward a substantial role as a forum for the negotiation of rules on abatement of marine pollution from ships. The locus of discussion was the Maritime Safety Committee, a powerful shipping club of 16 states, including the major maritime powers which reported in turn to the IMCO Council of 18 states. In response to complaints about the obvious potential for conflict of interest, the IMCO Assembly in 1973 created a Marine Environment Protection Committee (MEPC) to coordinate and administer IMCO activities in pollution. This group, for example, will consider amendments to the Ship Pollution Convention and enforcement measures for it. In the context of a general overhaul of IMCO, the Assembly in 1975 moved to make prevention and control of marine pollution from ships one of the basic purposes of IMCO and to make the MEPC a permanent organ, empowered to consider "any matter within the scope of the Organization" concerned with prevention of ship-based pollution. Whether these changes will make a difference remains to be seen. I am not certain if it will still be necessary for MEPC to send its recommendations through the Council (to the Assembly) and if pollution-related issues of navigation and accidents remain with MSC (they should not). In the light of IMCO's record, the appropriate stance is benign skepticism.

In any case, the community must build, perforce, on what exists. Indeed, this is encouraged by Marine Pollution Principle 22, which recommends that international action on marine pollution be taken through existing bodies, within and outside the UN system, as far as possible. Pragmatically, then, since the LOS Conference is not going to set up a new can-wide environmental group, it should urge present competent organizations to take on, where they do not already do so, the kinds of functions outlined above. In particular, they should arrange consultative status for private groups and provide a forum for the expression of their views, issue assessments of environment-impacting activities and reports on the environmental adequacy of programs and plans of member states, continually update and enforce prevailing international standards, and take on the capacity to participate in national legal or administrative forums, when necessary, on behalf of community interests.

Conclusion

Given that the Text is only a provisional document which may undergo various changes as it evolves through further drafts, it must be said that, on balance, the comprehensive provisions devoted to the preservation of the marine environment are unsatisfactory. Whether one is optimistic or pessimistic about the Text depends, in large part, on one's expectations about the Conference. As noted at the beginning of this paper, the ambience of the Conference and the circumstances of its origin are not wholly favorable to environmental concerns. Relatively speaking, then, it is good to see some positive elements in the Text.

These elements include the fundamental obligation to protect and preserve the marine environment by the prevention of all sources of marine pollution, wherever they originate, the extension of state responsibility for pollution damage to areas beyond national jurisdiction, and the obligations to provide technical assistance and undertake environmental assessments. It is helpful to establish the right of a coastal state to arrest a ship in its port for violation of international discharge standards occurring in a zone beyond its territorial sea, while, on their own ground, the powers of the International Seabed Authority to set and enforce pollution rules and carry out associated activities within its area provide an important model for the operation of other maritime organizations.

On the other hand, without holding up the ideal of the creation of a new international environment organization as the only criterion for judgment, there is much the Text could do within the confines of the present international system which it does not do. Some of the problem may be due to inconsistencies in language which will be clarified in the course of additional drafting, but there are also some real substantive problems.

First, the obligation to take measures to prevent pollution is qualified by the "disposal and capabilities" clause, and more generally, by an affirmation of the right of states to exploit their natural resources. Such language, especially when used for the vital land-based sources of marine pollution, leaves too wide a gap for evasion by states of their fundamental duties. If anything, the Text should stress the inclusion by states of coastal zone management (land and water use) regimes within economic development plans.

Second, the Text should provide for the right of international actors to take part in administrative and judicial proceedings within a state regarding the preparation of contingency plans and environment impact assessments. More generally, procedures for commentary, consultation, and feedback should be permitted in the context of maritime planning by states and international organizations, including challenges to the adequacy of standard setting and enforcement measures, or the appropriateness of marine-impacting projects. This procedure must be backed up by provision for the compulsory settlement of disputes before a permanent tribunal, yet to be spelled out in the Text.

Third, the Text is either inconsistent or inadequate in the links drawn between national pollution measures, especially for the land, and internationally agreed standards. This is no accident, reflecting continuing disagreement between coastal and maritime states on the extent to which the former may formulate pollution control rules in various offshore zones. The Text should adopt as a principle applicable throughout all areas under national jurisdiction or control that national rules must give effect to international ones, if any exist, and may exceed them in rigor, for any type of standard and on a non-discriminatory basis, as long as provision for international cooperation, consultation, and dispute settlement is made. This formulation seems best designed to match the characteristics of ship traffic to safeguards necessary for protecting any given maritime coastal area. In addition, the Text should modify the right of sovereign immunity to the extent that warships are required to obey all relevant standards.

Fourth, the Text should adopt an equivalent simple principle permitting the coastal state to investigate and arrest, and bar from its ports, any commercial ship traversing its territorial sea that has violated pollution standards of any type anywhere at sea. The Text does not go this far, but the assurance of apprehension by some state, somewhere, should go a long way toward deterring routine violations of standards, especially by flag of convenience ships. States providing such pollution havens should also be explicitly subject to deprivation of rights under the Text.

Fifth, more extensive provisions are needed for liability and compensation in case of pollution damage, to comprehend both responsibility and liability resting upon states and international organizations for damage to the marine environment within or beyond national jurisdiction as a result of activities undertaken by themselves or their nationals anywhere on Earth. The Text should also specify that damage from hazardous enterprises is assessed on the basis of absolute liability, with no compensation ceiling. Such principles would further the sanction against violations of standards and provide adequate sums for dealing with the aftermath of harm caused.

Sixth, the environmental functions contained within the International Seabed Authority should be separated out and put within the aegis of an autonomous body

whose regulations would be mandatory on Authority development units. The kinds of tasks already given to the Authority should also be adopted by other maritime regulatory organizations. The Text must also be altered to permit unannounced inspections of coastal installations by the Authority.

Finally, the Text should give explicit recognition to the role that private groups can play throughout the functions it envisions as obligatory for states and international organizations. Preserving the marine environment is a transnational effort, in which use can be made of the skills and concerns of non-governmental actors. Direct participation of such actors, with international legal rights and duties, is not unprecedented, but by giving them full sway as co-partners with public actors in implementing its provisions, the Text could mark as important a step in the evolution of the international system as the Treaty of Westphalia did for the transition between the medieval and the nation-state system.

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