WORKING PAPER FOR THE UNIS/UN STUDENT CONFERENCE ON THE LAW OF THE SEA

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THANK YOU for all your patience and kindness!

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INTRODUCTION : HISTORY OF THE UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA

To neglect the oceans is to neglect two thirds of our planet.
To destroy the oceans is to kill our planet.
A dead planet serves no nation.

Thor Heyerdahl

Throughout history men have regarded the sea with awe as an open, unowned, undivided expanse, a frontier of freedom and high adventure for all individuals. Its beauty and terror have inspired many tales. Its plentiful fish and food stocks, its tides and storms have regulated the lives of fishermen, sailors, and coast dwellers. During the last century it was discovered that all life originated in our seas, and more recently it has been recogni ed as influencing our weather, as controlling our oxygen - carbon dioxide balance, in short, as sustaining life each day. Until the last few years mankind saw the ocean as an infinite supplier of food and energy and simultaneously as a garbage dump with an infinite capacity to renew itself. Neither perception is valid; we have destroyed species and they cannot renew themselves - we ourselves choke on our greed and sewage. We have become quite suddenly aware that at present we live in a closed system. Our resources are not infinite. They must be preserved, and shared equitably.

Ambassador Arvid Pardo, addressing the General Assembly in 1967, called the oceans the 'common heritage of mankind,' and urged the United Nations to establish a Law of the Sea protecting its use. Machinery to put this solution into effect began to emerge. As one studies this attempt to protect our waters, one moves rather abruptly from the realm of fish gliding through coral reefs and sails in the sunset into the cold and complex detail of international law. National laws are made to give people a structure through which to satisfy their needs without infringing on the rights of others. International law serves the same purpose for countries. The need for laws to regulate the use of the oceans and settle disputes over rights is clear. Iceland and Great Britain came close to a shooting war over the boundaries of fishing waters claimed to belong exclusively to Iceland. Greece has protested Turkey's oil exploration in 'Greek' waters. Peru has seized foreign fishing and research vessels operating within 200 miles of its coast. Cambodia called the 'Mayaguez' a spy ship when it was caught in her territorial waters. Who has what rights?

These questions are being discussed within the framework of the Third United Nations Conference on the Law of the Sea (UNCLOS). The first two conferences were held in 1958 and 1960 before many of the new countries in the Third World had become part of the United Nations. Many factors made the calling of another conference imperative. Not only does the existence of new nations change the perspective of the United Nations, but new technologies are increasing both the rate of

pollution and the rate of exploitation of the resources of the ocean. Before these resources are carved up or 'colonized' by countries with the required technology and capital, or polluted beyond redemption by everyone, a convention or treaty governing the uses of the oceans must be devised.

The Third Law of the Sea Conference has had many sessions, the opening one in Caracas in 1974, the most recent in New York in 1977. The next and hopefully final negotiating session will open in Geneva on 28 March 1978.

ORGANIZATION OF THE CONFERENCE

In order to deal with the complexities of the subject the conference has divided itself into three committees.

The First Committee is primarily concerned with the deep seabed and establishing some form of Authority to regulate the exploitation of its main resource: manganese nodules. Should private or state corporations with the technology for deep-sea mining be allowed to exploit these resources for their own profit, or should the United Nations itself go into the mining business and use the profits for the benefit of the developing countries? Is a compromise possible? (See pp. 8-9)

The Second Committee is concerned with the division of the sea into various categories called the Territorial Sea, Exclusive Economic Zone (EEZ) and the High Seas and the Area. (See p. 4) It is discussing what considerations should be given the landlocked countries that cannot claim any costal sea and the countries with small coastlines or with coastal waters that are limited by neighboring states or islands. This group of countries, the Landlocked, Geographically Disadvantaged States (LL-GDS), is putting pressure on the conference to adhere to the perception of the oceans as 'a common heritage of mankind.' (See p. 10) Another problem dealt with by this committee is freedom of navigation and passage through straits. If coastal states escalate their claims to their waters they will demand control of the shipping that passes through them. (See p.12)

The Third Committee concentrates on Marine Scientific Research, Transfer of Technology and Pollution. The principle of freedom of research, previously unquestioned, has now been challenged by the developing coastal states who want to put a limit on it. A serious division exists between the countries that can do research and the countries that lack the resources to monitor or participate in such research. (See p.15) In dealing with pollution, this committee faces one of the most serious problems and one international lawyers find most complex.

The negotiating process in these committees is long and painstaking. The countries participating in the Conference have divided themselves into different interest groups which frequently cut across the

developed-developing categories, familiar to us from our study of the New International Economic Order. The 'Haves' in these confrontations may be the coastal states, and the 'Have-nots' the LL-GDS (landlocked and geographically disadvantaged states). In other debates the 'Haves' are those with continental shelves, or those with the technology for deep seabed mining, the 'Have-nots' those without shelves or technology. For example, the German Federal Republic becomes a 'Have' nation despite the fact that it is geographically disadvantaged. Negotiation is a process of bargaining, giving up one advantage to which one feels one has a legitimate claim in order to gain another. Sometimes the formal machinery of a conference is too rigid to enable delegates to explore just how far each side is prepared to go in a compromise. Committees have split into workshops and informal negotiating groups to find bases for consensus.

With the help of both formal and informal negotiations a text for a Convention (or Treaty) is emerging. The 1975 and 1976 Conferences produced the Single Negotiating Text and the Revised Single Negotiating Text. The latest document, the Informal Composite Negotiating Text (ICNT), written by the President of the Conference and the three Committee Chairmen, incorporates changes suggested by the sixth session of UNCLOS in New York in 1977. This document, of over 400 articles, will form the basis for negotiations in Geneva. With further changes this text could finally become the Convention that the Conference has been working to achieve for the past four years.

The Law of the Sea must meet numerous and complex demands made by nature and by man and be based on subjects as diverse as oceanography and international law. Somebody joked that the negotiators are ensuring future jobs for themselves because only they will be able to understand and supervise the Treaty. However, it is essential that a wider circle understands the issue; this pamphlet is an attempt to bridge the gap between the expert and the interested student. It is possible with effort to understand these issues, and one gets caught up in the excitement of the scientific problems, the negotiating process, and the possibilities the seas offer us. One veers from despair at the difficulty of solving international problems through the machinery of the United Nations to respect for how much the Conference has achieved nevertheless. This machinery is all we have, so let us understand and support it.

THE DIVISIONS OF THE OCEAN

The 12-mile Territorial Sea

In the past the sea belonged to no one and to everyone; it was 'res nullius' and free to all. In practice this meant that the strongest maritime powers controlled the sea, except for those areas that coastal states could protect with their land-based cannon. Waters extending 3 miles from the shore came to be accepted internationally

as a territorial sea in which the coastal state had complete control over navigation, fishing, mining, marine research, laying of cables, pollution and any other activities; that is, the state considered the 3-mile band of water as an extension of its own land. As 'cannon' can fire considerably further than 3 miles these days, and the desire for control and security of coastal waters has increased, states have been laying claim to waters further and further out from their coasts. Theoretically, the once free ocean, the 'common heritage of mankind,' could be carved up and divided among the coastal states.

The ICNT suggests four main classifications for describing the location of ocean waters.

1 The 12-Mile Territorial Sea
2 The Continental Shelf
3 The 200-Mile Exclusive Economic Zone (EEZ)
4 The High Seas and the Area

There is general consensus on extending the 3-mile territorial sea to 12 miles. To make the articles governing the other three areas acceptable to most nations further negotiations are required.

The Continental Shelf

The geological formations of the continental shelf make it rich in hydro-carbon deposits of oil and natural gas. It became evident after World War II that the technology to reach these resources would soon be available. President Truman was the first to claim the continental shelf of the United States to a limit of 200 miles. Other countries with continental shelves followed with their claims. Ninety percent of the mineral resources of the oceans lie on these shelves, and today more than 20 percent of the world's oil is produced by off-shore rigs. Other minerals are found on beaches and shallow shelves; from gravels, sands, and littoral deposits iron, titanium, zirconium and thorium can be extracted.

Oil, however, is the main prize available from these continental shelves. Fifty percent of the planet's most promising oil and gas reserves are on the continental shelves claimed by ten countries: Australia, Brazil, Canada, India, Japan, Mexico, New Zealand, Norway, the United States and the USSR. Several countries have continental shelves stretching out beyond 200 miles; for example, Argentina is now laying claim to the 600-mile-wide Patagonia shelf. The sediment at the rise of these shelves may be especially rich in oil deposits. By 1980 the technology to drill at 1000 metres will be available. The question then arises: Do coastal states have the right to the profits of oil drilling so far into the ocean, or should these profits be taxed for the benefit of less advantaged countries?

The Exclusive Economic Zone (EEZ)

(a) Control of Fisheries

Peru was the first to claim a 200-mile zone of the water column of her coast as an economic zone. Peru has no continental shelf, but her coastal waters, enriched by an upwelling of bottom waters full of nutrients, are teeming with fish. The fishing industry, essential to Peru's economy, was being threatened by sonar-equipped floating 'fish factories' from several countries. Other Latin American and African states followed Peru's example. Their justification went something like this: Fishing is essential both for the nutrition of our people and for export. We do not yet have the technology to fully utilize our resources, but by the time we catch up, our fish stocks will have been depleted or wiped out through overfishing by others.

In 1977 the United States Congress passed a 200-mile fishing limit. As a developed country that does not depend on fish for protein in its diet, it could not justify such a move as a protection of its food resources. In the United States, however, genuine concern exists over the depletion of marine life and overfishing of herring, cod, mackerel and haddock, once the pride of New England fisheries. The United States does not have the fishing fleets to supply its own markets, and by forbidding others to fish in waters which are some of the richest fishing grounds in the world, it appears to be holding on to food it cannot fully utilize itself. The conflicting interests of the New England fishing industry, the environmentalists, and the foreign fishing fleets anxious to operate in these waters can be resolved by setting fishing quotas and granting licenses.

Fisheries management is both an international and a regional problem as fish migrate. More and more fish are being caught. In 1950 the total catch for all the world's fishing fleets was 16-million tons. In 1975 thirteen countries caught 44-million tons out of a total world catch of 70-million tons. To prevent overfishing some national or international control must limit the amount of fish caught. Fisheries experts have tried to establish a total allowable catch (TAC), which establishes a balance between how many fish can be caught and how many must be reserved as a breeding population. This type of monitoring is difficult and cannot be done if coastal states apply different standards to the fish in their EEZ. A Law of the Sea may well be inadequate as a basis for enforcing fishing quotas and may have to be supplemented through cooperation with other United Nations agencies. The Committee of Fisheries of the Food and Agriculture Organization (COFI) could be one such agency.

(b) The Exclusive Economic Zone as a Territorial Sea

The escalation of coastal states' claims to sovereignty over adjacent waters has achieved so great a momentum that the ICNT recognizes the reality of a 200-mile EEZ. Just exactly what the coastal state controls in its waters besides fish is still under discussion. The present consensus is that in their 200-mile zones states can control

fish and marine scientific research, but cannot interfere with navigation, overflight, laying of cables, and pollution.

The High Seas and the Area

The part of the ocean that is left after the various claims have been made is now defined as the water above, that is, the 'High Seas' used for navigation, and the deep seabed, the Area. The most controversial topic in the regulation of the use of this part of the globe concerns the manganese nodules that lie on the ocean bottom.

(a) Manganese Nodules

These are porous potato like balls that lie on parts of the ocean bed, sometimes completely carpeting it. Their existence has been known for over a hundred years but the technology for recovering them is very recent. They are formed in concentric circles around a 'seed.' A nodule of average size could have taken 6-million years to form. The major content is manganese, a metal in plentiful supply. However, three rare and important metals are present in small quantities, and these become worth extracting when large amounts of nodules are collected.

Metal	Average Percentage of Nodule
Nickel	1.28
Copper	1.16
Cobalt	.23

These metals can be leached out by dissolving the nodules in a chemical solution and then extracting the metals from their soluble state. The technology for mining these metals is being tested by various companies. One method is the continuous line buckets, or CLB, which utilizes a kind of dredge that brings the nodules to the surface. Another method uses a vacuum cleaner or hydraulic lift system.

(b) Deep Sea Mining

The investment in these technologies is enormous, and before mining starts, companies need to know where the largest nodule beds are. Scientists would like to know what causes nodule formation and why certain sites in the ocean have produced more nodules than others. The interests of pure and applied science coincide, and research has been undertaken by organizations like the Scripps Oceanographic Institution in California and the Lamont-Doherty Geological Observatory of Columbia University. It has been found that nodules cannot grow in heavy sediment and prefer bottoms swept by ocean currents. The richest field, however, in the Pacific Ocean south of Hawaii, is an area deep in the debris of certain shellfish. This area, known as the Golden Horn, is carpeted by an estimated 1.5 trillion tons of nodules, worth possibly $300 a ton. There may indeed be vast profits to be made from deep sea mining.

Several groups with sophisticated technologies are interested in nodule mining. The USSR has state companies that could be organized for deep sea mining. In the West several companies have joined

together in transnational consortiums to pool the high cost of initial investment. These include:

1 The INCO group composed of the International Nickel Corporation of Canada, and United States, German and Japanese firms.

2 DOMA, Deep Ocean Mining Association, a partnership between the Japanese government and the Mitsubishi Company.

3 Tenneco, which includes US Steel and the Union Miniere of Belgium and operates Deep Sea Ventures, the company that has gone furthest in exploring the ocean bottom.

4 The Kennecot Copper Corporation, a consortium of Mitsubishi, British, Canadian and South African firms.

5 The Lockheed group made up of the Lockheed Missile and Space Company and United States, British, and Dutch oil companies.

The Howard Hughes Corporation entered the field of deep sea mining before all these companies by building the $300-million Glomar Explorer, and using it to search for a sunken Soviet submarine in the Pacific at the request of the CIA. Incidents such as this have tended to discredit research and technology.

(c) Problems of Deep Sea Mining

Full scale mining operations have been delayed by several factors. First of all return on investments must be guaranteed. It has been estimated that exploration and evaluation of one nodule bed and the development of the mining process and the smelting plant could cost one-billion dollars. Deep Sea Ventures has already made a claim to a large area in the richest field in the Pacific Ocean, but the United States government has refused to recognize that claim. Bills are pending before the Congress which would assure private companies of the support of the government in two important ways. Firstly, in the absence of an international authority, the consortiums would receive some national backing for their claims to the seabed. Secondly, in order for companies to raise the capital or investment, banks must be assured by the government that the return on their loans is guaranteed, whether the risky enterprise fails or succeeds. The United States taxpayer is being asked to subsidize the companies in case of bankruptcy. The companies argue that as pioneers in a venture that could be of long term benefit to the United States, they have a right to governmental support and the underwriting of loans. The profit might be minimal but the strategic importance of no longer needing to import metals may be more significant.

Congress has been slow in considering these bills as it waits to see whether the creation of an international ocean regime by UNCLOS will create a safer climate for investment and some control over trans-national consortiums which in the final analysis owe loyalty to no nation.

The second problem causing delay is the danger of pollution. Studies have been made by GESAMP (Group of Experts on Scientific Aspects of Marine Pollution), an advisory body to the United Nations, that consider the dangers minimal. The disturbance of ocean bed sediment by mining equipment and the bringing up of sediment and nutrient rich bottom waters to the upper layers seem to have small or even beneficial effects. Few tests have been made and further experiments are obviously necessary. At any rate, currently the consortiums are not seriously worried about pollution and do not consider it a hindrance to mining.

A third factor contributing to delay is competition with land-based mining. Several countries are major producers of nickel, copper and cobalt (see Table p. 22) and are concerned that overproduction of these metals will cause a drop in prices. Countries forced to import these metals would be delighted by such a drop, whether they are developed or developing. The United States would save $40 billion in imports over the next 20 years if private companies could free her from dependence on outside sources. However, developing countries whose income is dependent on the export of these metals would go bankrupt if prices dropped. Other developing countries that have land-based deposits of nickel, copper or cobalt would hesitate to invest in their exploitation if they could not be assured of high returns. Countries with territorial sources of these metals therefore want to put a limit on seabed production and have a guarantee on fair prices.

(d) The Organization of Deep Seabed Mining : The Enterprise

The mineral resources, lying in waters beyond any coastal state claims, are part of the common heritage of mankind and should be mined for the benefit of all. The New International Economic Order sees the profit from such mining as a source for development funds for the developing countries. With this in mind the ICNT proposes an International Seabed Authority (ISA) to regulate the uses of the Area. The Enterprise, a mining company working under the Authority, would control seabed activities through contracts, licenses, and taxes on profits.

The exact status and power of the Enterprise is one of the most difficult problems holding up agreement on a Law of the Sea Convention. There are three possible systems that could govern the exploitation of seabed resources.

i. The Unitary System

The Enterprise would be the only authority with the right to mine the seabed. In order to accumulate the required capital, technology, and trained personnel, it would grant contracts to private companies to mine in strictly defined areas of the seabed in return for taxes on profits, transfer of technology, and training. The Enterprise would keep half the seabed for itself and use the payments from the private sector to develop its own operations. This partnership would last for a period of years,

perhaps 20 or 25, after which the Enterprise would be self-sufficient. Its profits would go toward aiding the developing countries. This would be one way in which the Law of the Sea Convention would fulfill the 'dominant concern of the United Nations ... to close the gap between developing and developed countries.' (Speech of Secretary Kurt Waldheim to the General Assembly, December 1973) This system is favored by the developing countries.

ii. The Parallel System
The United States and some other developed countries prefer this system. They reason that private companies will not assume the risk of investment if profits are endangered by 'unreasonable' regulations by the Seabed Authority. The question is, of course, what is an unreasonable regulation. The private companies would like to form the loosest possible partnership with the Enterprise so that they may mine what they consider to be profitable nodule beds in return for some form of profit sharing which would enable the Enterprise to finance its own operations. The Enterprise would grant contracts on a competitive basis. The developing countries, with deep seated suspicion of transnational corporations, are afraid that these sophisticated companies will use their technological advantage to lay claim to the best nodule beds and leave the Enterprise with less profitable ones. The companies reply that no mining can start without them, and that they are entitled to a fair return both for their assuming risks and for the help they will give in funding and training the Enterprise.

iii. The Soviet Plan is a variation of the other two. The Soviets support a strong Enterprise, but they themselves would also like to go into the business of deep sea mining. They are not yet as advanced in their preparations as the private consortiums, and they do not wish to see all the best nodule beds taken over on a basis of competitive bidding before they are ready to enter the field. They suggest an equitable division of the nodule beds among all nations wishing to mine, whether they are ready to start now or later.

(e) The International Seabed Authority (ISA)
Most countries would prefer deep seabed mining to begin under the legal protection of an international treaty. The amount of authority the Enterprise will have is dependent on how the Authority governing the Enterprise is organized. It would be the first international agency with powers to regulate such an economic activity, and its structure will influence its decisions. The developing countries want a strong Authority where a system of 'one nation, one vote' in the Assembly and Council would give them the strength of numbers. The developed countries feel that their technological talent and economic strength will not be fully appreciated and utilized in this system. Most countries agree on an ISA Tribunal to hear disputes over seabed mining. Many countries are reluctant to create a large Authority that

could become an expensive bureaucracy more concerned with its own survival than the job it was created to do. A modest organization, pragmatically working to implement a Law of the Sea, could be a pioneer in creating a new international order, both economically and politically.

LANDLOCKED AND GEOGRAPHICALLY DISADVANTAGED STATES (LL-GDS)

These nations are watching the escalation of coastal states' claims to the ocean with some concern. Claims on the continental shelf and EEZ have reserved 35 percent of the ocean for coastal states. The LL-GDS have little interest in a Law of the Sea which excludes them and ignores their right to share the ocean's resources. As a group they wield considerable power. No consensus can be reached without their cooperation. A Law of the Sea Convention may have to be achieved by a vote requiring a two-thirds majority, and they control over one-third of the vote.

However, they are a disparate group, and have many interests pulling them away from the unity arising from their geographical similarities. Switzerland and Afghanistan are both land locked, but have vastly different needs and resources. The Federal Republic of Germany, with its short coastline, is as geographically disadvantaged as Gambia in West Africa, but considerably richer. Land-locked Zambia, developing but copper producing, has more in common with coastal Canada, developed and nickel producing, than with equally land-locked and developing Afghanistan. Alliances shift like a child's kaleidescope. On the first shake, geography, they form one pattern, the LL-GDS. On another shake, developed vs. developing countries, they form a different pattern. On a final shake, metal producers vs. non-metal producers, they again arrange themselves differently.

The political reality of negotiations at the United Nations is based on the sovereign rights of nation states. The coastal countries lay claim to resources in and under their waters, which in many instances is seen as a request to continue the trend of the rich getting richer. The coastal developing countries state they need the resources on their continental shelves and their EEZ for present and future development. The developed countries in the LL-GDS group would certainly like some share in the wealth of the ocean. However, the most desperate position is that of the developing LL-GDS. A Law of the Sea was seen as an aid in establishing a New International Economic Order, a means for finding a way to share a newly available resource which was considered the inheritance of all who live on this globe. Can this sharing become a reality through legislation that is formulated by nations but transcends national sovereignties? Through a process of negotiations, the United Nations can persuade "Have" countries, the coastal states, that it is in their long term interests to develop a working Convention of the seas equitable to the "Have-nots".

As members of the global community the LL-GDS are negotiating to share in the wealth from three sources: deep sea mining, the EEZ and the Continental Shelf. The Enterprise is designed to divert resources to the LL-GDS from deep sea mining, but what about the profits from oil, gas, minerals and fish? Should coastal states that enjoy the possibility of making such profits share them with others? Secretary of State Kissinger suggested a system of sharing, and the Trilateral Commission came out with another plan in 1976. But these plans, originating from the business community of a highly developed country, were suspect and gained little support. The question of what is an allowable profit for a coastal state to make has been raised. Where does one draw the line between retained profit and the surplus profit that should be taxed for the benefit of the LL-GDS? Obviously developing coastal states need more of their profits from the ocean for their own development than already developed countries. They need money for equipment and training, port facilities, market development, transport, and ship building, storage tanks, pipe-lines, and the development of the total infrastructure that would make the utilization of their resources effective.

Nepal, as a leader of the LL-GDS group, has presented a "Background Paper for the Establishment of a Common Heritage Fund in the Interests of Mankind as a Whole but Particularly in the Interests of the Developing Nations". This document proposes that

> "The basic purpose of the Common Heritage Fund is to ensure that a substantial portion of the mineral revenues of the ocean is used to promote human welfare, to nourish world community and world peace and to protect the marine environment. To this end revenues from the fund shall be used principally to assist developing nations. They shall also be used in limited amounts to protect the marine environment to aid the transfer of marine technology and to assist the work of the United Nations, especially in peacekeeping".

The oil and mineral resources of the Exclusive Economic Zones of coastal states would be taxed under a graduated system which would take more from the developed than the developing countries, and would increase over a period of years. Should such a plan not be accepted, the LL-GDS are left with two positions to safeguard their interests.

The GDS, those with limited coast-lines or seas that impinge on others' boundaries, are most interested in access to traditional fishing grounds and freedom of navigation. Through a system of permits and licenses many coastal states are allowing other countries to catch controlled quotas of fish in their EEZ. Cuba fishes in United States waters. Singapore fishes in Malaysian waters. The land-locked countries have a special problem of access to the sea for import and export of goods. They need port facilities and railroads where they will not be harrassed by delays and customs regulations. Some coastal states are prepared to make bilateral agreements with adjacent land-locked countries, though few are prepared to accept the principle of free access to the sea through their sovereign territory. The strength of the LL-GDS group during negotiations will determine how well their needs will be met by the terms of the Convention.

NAVIGATION

Trade between the nations of the world involves some means of transporting goods from the buyer to the seller. Goods are transported in a variety of ways, one of the most common being by ship. Military vessels ply the oceans every day, patrolling, practicing for war, or possibly spying on another country's activities. Great liners slash their way across the vast oceans carrying thousands of pleasure seekers to distant lands. These ships serve many nations and pursue various goals, but they all have in common their use of the sea.

Every state with a coastline has control over its territorial sea, has the right to treat this area as a part of its own country. Problems occur when ships of other nationalities have to enter or cross through those waters. A coastal state has the right to impose rules and regulations upon ships using its waters. It can set more stringent environmental standards than tankers entering its territorial seas have to face elsewhere. The coastal state may also enforce the use of sealanes or other navigational aids, or they may limit the number or types of ships that pass through their waters. The oceans beyond the territorial sea are referred to as the High Seas. They are free of controls and regulations imposed by neighboring coastal states, but they are subject to the regulations of international agreement.

Ships entering the territorial sea of another state have the right of innocent passage, the right to travel into or across the state's territorial sea on peaceful missions. This right also applies to warships (submarines must navigate on the surface if so required by the controlling state), but the coastal state has the right to suspend these privileges if it feels that certain foreign shipping is potentially dangerous or belligerent. Laws are subject to many interpretations, so coastal states sometimes close their waters to shipping arbitrarily. The issues of freedom of navigation and the extent of the territorial sea are closely linked. The ICNT recommends 12 nautical miles as the width of these waters. Such large territorial domains will cause many problems with free navigation through narrow straits and separate provisions are being negotiated for them. If the territorial seas of coastal states should ever be extended even further, for instance, to the 200-nautical-mile EEZ, it would be difficult for shipping. Many ships would be forced to go hundreds of miles out of their way just to avoid the unfriendly seas of another nation. This would increase shipping time and drive up the cost of the goods being transported. Both the United States and the USSR, two of the major maritime powers, are opposed to this extension. The smaller the territorial sea, the easier it will be for the world's shipping, whatever its purpose, to navigate the seas.

POLLUTION AND THE PROTECTION OF THE MARINE ENVIRONMENT

"Preservation of the marine environment, its life sustaining functions, and its living resources, are not getting the priority of attention they deserve--and require--in the larger interests of the whole human community. In the scramble for the oceans, someone must speak for the

environment." Maurice Strong, Executive Director of the United Nations Environmental Programme at that time and organizer of the Stockholm Conference on the Environment in 1972, made a strong plea for the protection of the ocean environment before the opening of the Third United Nations Conference on the Law of the Sea in 1974. The problems of pollution have been given much attention in the Informal Composite Negotiating Text. These problems have special complexities arising from the interaction of scientific, economic, and political factors.

Ocean pollution cannot be zoned or confined to one area. The main sources are sewage and the dumping of industrial wastes from land-based activities, oil spillage from off-shore drilling, and vessel-based contamination. Ships leave a trail of pollution behind them - sewage, and waste from the cleaning of tanks before refuelling. Vast oil tankers pose another problem. The Torrey Canyon which broke up during a storm off the coast of England in 1968 not only created much damage on beaches but led to even worse damage when detergents and bombing were used to dispel the oil slick. Thor Heyerdahl, sailing across the Atlantic Ocean in his papyrus reed boat Ra II, saw lumps of solidified oil miles from shore.

Environmentalists are concerned with the damage to marine life and to the health of the ocean itself because this pollution can kill the power of the ocean to regenerate itself. Some life can be restored. The oil spill off the coast of Santa Barbara was forgotten five years later. But the 30 mile stretch of water outside New York harbor seems to be permanently dead as a result of dumping. When fish and algae die, the oxygen producing capacity of the ocean significantly decreases. Carbon dioxide cannot be absorbed and climate changes.

Environmentalists are not agreed on how soon the oceans could die, but they are united in their concern over the "silent" pollutants. Industrial chemicals like mercury, PCB (Polychlorinatedbiphenol), DDT, and nuclear wastes all have a lifetime of thousands of years and are already affecting our environment. DDT has been found in the eggs of Antartic penguins; the villagers of Minamata in Japan suffered the cruel effects of eating mercury contaminated fish; cancer causing PCB s are found in tuna and swordfish. Containers of nuclear waste are sitting and possibly eroding at the bottom of the ocean.

Pollution control is expensive. Sewage and garbage must be processed, factories must be built with waste recycling plants, and vessels fitted with holding tanks for their effluvients. Developing countries cannot afford "clean" industrialization, and do not think it fair when the developed countries, who are the major polluters, force the added cost of environmental protection on them. Economic development, they believe, comes before concern over the environment. The one provides jobs and wealth now; the other may prevent a disaster over whose seriousness and imminence there is much controversy.

The immediate interests of the developing countries have weakened the pollution control articles in the ICNT. Another effort to limit the

power of the Convention to control and set penalties for pollution comes from the maritime nations. They are interested in unrestricted and low cost navigation for their merchant vessels, as well as their navies. They set themselves what they considered to be reasonable standards of pollution control in the 1973 Convention of the Inter-governmental Maritime Consultative Organization (IMCO). They are particularly concerned by the claims of several coastal states to set pollution standards in their EEZ. Canada has unilaterally imposed standards for the use of waters 100 miles out from her coast, and has divided the Artic Ocean with the USSR into pollution free sectors. Other countries are considering following this example. The expense of meeting these standards, paying fines and compensation for damages, and the delays caused by seizure of ships, would cause a rise in prices of all goods shipped by sea.

A Law of the Sea Convention can make regulations protecting the environment on the High Seas and in the area, the international zones under its jurisdiction. It cannot control land-based pollution. Coastal states have control of pollution in their territorial seas. The question which has not yet been settled is who makes pollution standards for the Exclusive Economic Zone.

MARINE SCIENTIFIC RESEARCH AND THE TRANSFER OF TECHNOLOGY

The principle of freedom of research is sacred to the scientist but is restricted in the Informal Composite Negotiating Text. To the oceanographer and marine biologist the sea is a new frontier. It covers over 70 percent of the world's surface and its exploration can bring benefits to all mankind. It offers food, minerals, and energy; its movements, within the seabed and through its currents, explain earthquakes, climate, the past and possibly the future of our globe. It is the source of oxygen and life itself.

Marine research is a relatively new field and requires sophisticated technology. Only a few countries can afford it, usually the more developed ones.

Existing Manpower and Institutional Capabilities in Different Nations* (top 19)

Country	Number of Marine Scientists	Number of Research Institutions and University Laboratories
USA	1,350	250
UK	680	116
Japan	550	164
USSR	500	53
Canada	360	17
Federal Republic of Germany	224	34
Australia	181	37
India	168	25
Brazil	140	18
France	120	43
Norway	94	21
Netherlands	77	21
Yugoslavia	74	20
Mexico	74	35
South Africa	59	12
Philippines	55	21
Korea (Republic of)	51	15
Peru	50	7
Argentina	41	17

* Source: S.Z. Qasin, "Development of Marine Science Capabilities in Different Regions of the World", in Bologna Conference Reports, 1973.

Pure research is more of a luxury than applied research; in marine studies the latter means looking for resources, including oil and minerals, the former experimentation to understand the oceans without thought of immediate economic gains.

Both kinds of scientific projects are suspect to the developing countries. They lack the technology and trained scientists required to judge the innocence of research expeditions which, as the representative from Nigeria stated in Geneva in 1975, could be a cover for "dubious clandestine activities". These suspicions are not entirely unjustified. The Pueblo, a US naval vessel claiming the right of innocent passage off the coast of North Korea, was seized and found to be equipped with highly sophisticated electronic listening devices. Other navies carry on similar operations. Transnational corporations, prospecting for oil on the continental shelves of developing countries, are suspected of giving incorrect information in order to claim the better sites.

The developing countries feel the need to protect themselves from exploitation that is made possible by the superior knowledge of the countries or organizations that can afford marine research. They demand detailed information before they allow research in their EEZ. Scientists find these demands very discouraging. There are bureaucratic delays and arbitrary last minute refusals of permits. A scientific report on ocean currents, for example, will have a missing piece in the 200 mile zone of the country that refused to allow that research.

The best way to overcome this problem of suspicion is to increase the ability of developing countries to monitor and participate in marine research. The scientists are usually only too happy to share the results of their research, but as yet the developing countries do not have the infrastructure to understand or use the information. The idea of the Transfer of Technology is new as a goal of the Law of the Sea, though it has been part of the New International Economic Order for some years. Scientists need to be trained, equipment bought, publications shared, investments made for laboratories and institutions. That is the infrastructure needed for an active marine research program in the developing countries and the production of scientists able to work with their colleagues in the developed countries. This kind of cooperation is already going on, but needs to be expanded. The Woods Hole Oceanographic Institution has worked for six years with the same group of Brazilian scientists off their coasts and has trained them to participate in the research.

Transfer of Technology is not simple. It is expensive and needs the kind of planning for which there is little expertise. Technology is expressed in patents for new machinery, equipment, processes. The owner of these patents is selling a commodity or service which loses value as he loses his monopoly of it. He must put a price on it that will compensate him for that loss and it is usually quite a high price. To expect him to want less is unrealistic, and at best what is equitable is debatable.

The developing country needs the capital from development funds to buy this technology. But before it undertakes this expense, the country needs to know what technology is available that would best suit its needs. But without trained personnel it cannot do the planning necessary to produce such training. The machinery to facilitate

training and transfer of technology does not yet exist. It could most conveniently be centered in some United Nations agency that would serve as an information data bank and clearing house for buying and leasing of equipment. The ICNT recommends the transfer of seabed research and technology through the Enterprise as part of the price companies and governments would pay for the right to mine the ocean bottom. Cooperation in marine coastal research could be supervised by other United Nations agencies whose work in this field, as in Fisheries Management, would supplement the provisions of the Law of the Sea Convention.

SETTLEMENT OF DISPUTES

A Convention regulating the uses of the ocean will be the legal framework within which states will continue the business of fishing, mining, navigating and so on. This Convention will be accepted by the Law of the Sea Conference by consensus, with some states entering reservations on some articles. However careful the process of negotiation to bring about such a consensus, different interpretations of the Law will arise. In many instances these disputes will be settled bilaterally between the two disputing parties. In those cases where such a settlement is not possible, the Informal Composite Negotiating Text recommends various procedures.

The most remarkable aspect of the section on Settlement of Disputes is the flexibility and choice of procedures. The emphasis is not on sanctions to force a party to a dispute to accept the decisions of the court or arbitral commission, but on the nature of the court itself. If the parties have confidence in the procedures, they will accept the decision.

Conciliation is always recommended as the first procedure. A Special Conciliation Commission would be set up for each case. If the dispute cannot be settled in this manner, four other alternatives are offered.

(a) The International Court of Justice at the Hague
This is the oldest court for the settlement of disputes under international law. However, some countries do not recognize its jurisdiction as overriding their national sovereignty, nor trust its competence in understanding their special problems.

(b) Arbitration
Older maritime nations have had satisfactory experience with arbitration through already existing agencies like the Inter-governmental Maritime Consultative Organization (IMCO). Some Third World countries object to this system as too expensive. It would require a large staff of competent judges representing different areas of the world to make up the arbitral tribunals for each case.

(c) The Law of the Sea Tribunal would meet the needs of developing countries. Twenty-one judges would be chosen from the five main areas of the world, at least three from each. These judges would sit as a permanent tribunal and would represent the interests of the developing and developed countries.

(d) Special Commissions to deal with disagreements over fisheries, navigation, environment, and marine research, staffed by specialists in these areas appointed by the parties to the dispute is the choice of countries usually reluctant to trust arbitration machinery.

With all these choices of procedures, who was to decide what court or commission would hear what case? The Netherlands suggested a solution to this problem. The defendant would have the choice of court, but if the plaintiff objected, they would both accept their second choice, which would generally be arbitration.

It became apparent in the course of these negotiations that the Convention would have two tribunals, the Law of the Sea Tribunal and one established by the International Seabed Authority. The Third World countries objected to the waste and the expense of two staffs, but no one was prepared to sacrifice one tribunal at the expense of the other. The maritime powers want the ISA tribunal to stay at the bottom of the ocean and not interfere with navigation, and those countries interested in a strong Enterprise were afraid that the LOS Tribunal would not safeguard their interests. A compromise was reached. An eleven judge ISA Tribunal would be chosen by lot on a rotating basis from the twenty-one judges on the LOS Tribunal. The jurisdiction of the ISA Tribunal would be confined to matters affecting the deep seabed only. The LOS Tribunal would settle disputes in all other areas of the ocean not subject to national sovereignty. Immediately the question arises of the status of the EEZ. How much sovereignty can a coastal state claim over its EEZ? Disputes concerning fisheries and marine scientific research will come under the jurisdiction of the coastal states, but problems of pollution and navigation will be dealt with by international tribunals.

If a party to a dispute refuses to accept the award or decision in a case, not very much can be done. Sanctions, such as suspension of rights and safeguards gained as a signatory of the Convention, could be sufficiently inconvenient to deter a country from ignoring the court. International lawyers seem to have much faith that if the court procedures have been fair up to this point, parties to a dispute will usually abide by a decision. There have been incidents of one country refusing to accept a decision in favor of another. Certain cases have dragged on, sometimes to be settled 50 years later. With patience and moderation most cases are settled, and those that are not ... will be eventually.

THE LAW OF THE SEA AS AN ASPECT OF THE NEW INTERNATIONAL ECONOMIC ORDER

The Law of the Sea can express how the concepts of the NIEO are to be put into action. The policies outlined in the resolutions of the Sixth and Seventh Special Sessions of the United Nations General Assembly are applicable to the oceans as well as the land; the sharing of resources between developed and developing countries can be sea as well as land based. The Law of the Sea recognizes two disadvantaged groups: the developing non-industrialized countries and the LL-GDS. In order to ensure the rights of these states the United Nations is given a large role in the Law of the Sea proposals, as, through the International Seabed Authority, in the control of deep sea activities. The management and operation of its mining company, the Enterprise, would provide an area of cooperation between developed and developing countries. According to Arvid Pardo and Elisabeth Mann Borgese in their book, The New International Economic Order and the Law of the Sea, the importance of the Enterprise rests on its providing a base for cooperation rather than on its function of mining the seabed. They also feel that whereas the formation of the Enterprise will be favorable to the NIEO, other parts of the text such as those dealing with fishing, navigation, and coastal sovereignty are more concerned with national interests.

The question of coastal sovereignty is especially controversial when seen in relation to the New International Economic Order. The extension of the exclusive economic zone (EEZ), over which a country has complete control of living and non-living resources, to 200 nautical miles, has been widely accepted. The extension of boundaries may be desirable for individual states, but draws 35 percent of the ocean away from utilization for the benefit of all nations. The extension of these zones tends to benefit countries with large coastlines and the technology to exploit marine resources. It tends to concentrate much of the wealth of the ocean in the hands of a small number of countries. Developing coastal states must hope for aid and cooperation from developed countries or transnational corporations. Landlocked countries hope to share in the 'common heritage of mankind.' Nepal has proposed the formation of a Common Heritage Fund.

Other aspects of the NIEO are mirrored in the proposals for the Law of the Sea. A transfer of technology is seen by both the NIEO and LOS as very important although how it will be accomplished is not clear. The developing countries should increasingly participate in world shipping and in the use of the General and Special Funds of the Seabed Authority. (This is similar to the proposal for increased participation of developing countries in the World Bank and the International Monetary Fund.) The role of the transnational corporations in the use of the oceans is not spelled out in the negotiating text, but, as participants in the NIEO stressed, a code of conduct is clearly needed.

The Law of the Sea can be seen as an opportunity to apply the New International Economic Order. If short-term national interests prevent agreement on the Law of the Sea, it becomes unlikely that those governments whose national interests are opposed to the NIEO will work seriously to implement it. However, if governments can work together to create a satisfactory treaty concerning the sea's resources, there is hope that they will cooperate to implement the proposals for a New International Economic Order also.

GROUP OF LANDLOCKED AND GEOGRAPHICALLY DISADVANTAGED STATES

Afghanistan
Algeria
Austria
Bahrein
Belgium
Bhutan
Bolivia
Botwana
Bulgaria
Burundi
Byelorussian SSR
Central African Republic
Chad
Czechoslovakia
Ethiopia
Finland
Gambia
German Democratic Republic
Germany Federal Republic of
Greece
Hungary
Iraq
Jamaica
Jordan
Kuwait
Laos
Lesotho
Liechtenstein
Luxembourg
Malawi
Mongolia
Nepal
Netherlands
Niger
Paraguay
Poland
Qatar
Rwanda
San Marino
Singapore
Sudan
Swaziland
Sweden
Switzerland
Turkey
Uganda
United Arab Emirates
Upper Volta
Zaire
Zambia

NOTE: Saudi Arabia and Yemen are considering joining the group

Source: Office of Public Information, United Nations

COPPER BEARING ORES : PRODUCERS

	In millions of metric tons (MMT)*	Percentage of World Exports**
USA	1.282	3.94
USSR	1.100	
CHILE	0.831	16.82
ZAMBIA	0.806	12.38
CANADA	0.724	6.26
ZAIRE	0.496	8.75
AUSTRALIA	0.236	
POLAND	0.230	
PHILIPPINES	0.226	
SOUTH AFRICA	0.179	

* From World Statistics in Brief, Department of Economic and Social Affairs, Statistical Papers Series V No. 2,ST/ESA/STAT/SER.V/2, United Nations, New York, 1977

** Value of copper exports as percentage of world market economies 1974, Year Book of International Trade Statistics, Vol. 2, United Nations

NICKEL BEARING ORES : PRODUCERS

	In thousands of metric tons*	Percentage of World Exports**
CANADA	245	28.94
NEW CALEDONIA (FRANCE)	133	37.7
USSR	130	
AUSTRALIA	49	5.22
CUBA	37	
DOMINICAN REPUBLIC	27	
INDONESIA	21	
SOUTH AFRICA	21	2.6
GREECE	15	
USA	15	

* World Statistics in Brief

** Year Book of International Trade Statistics

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