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A RESEARCH ON THE LAW OF THE SEA
" CONTROL OF OIL POLLUTION "

DILCIA MARIA PACHECO P.

THESIS SUBMITTED FOR THE
DEGREE OF MASTER OF LAW
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ABBREVIATIONS

- BYIL British Yearbook of International Law
- CLC The International Convention on Civil Liability for Oil Pollution Damage 1969.
- CRISTAL Tanker Owner's Voluntary Agreement Concerning Liability of Oil Pollution.
- CBT Clean Ballast Tanks.
- COW Crude Oil Washing.
- dwt Dead weight. The deadweight tonnage of a vessel is the cargo capacity of that vessel in tons.
- FAO Food and Agriculture Organization of the United Nations.
- grt Gross registered tons. The grt of a vessel is a measure of the volume of space occupied by the vessel.
- IILM International Legal Materials.
- ICJ International Court of Justice.
- INCO Inter-Governmental Maritime Consultative Organization.
- J Mer L & Comm The Journal of Maritime Law and Commerce.
- LOT "Load on Top" system.
- NATO North Atlantic Treaty Organization.
- OPOL Offshore Pollution Oil Liability.
- SOLAS (1960-1974) The International Conventions on Safety of Life at Sea 1960-1974, Conventions/Regulations.
- SBT Segregated Ballast Tanks.
- U.K. United Kingdom.
- UNTS United Nations Treaty Series.
- UKTS United Kingdom Treaty Series.

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INTRODUCTION

In earlier times the salt seas and oceans were considered to have everlasting resources. Everyone was entitled to use them for his own purposes for navigation, for fisheries and for the discharge and dumping of wastes.

Nowadays, the seas are used actively for peaceful purposes as aquaculture, mining, acquisition of water and various types of recreation. To this must be added, unfortunately, naval and military uses.

The present uses of the seas are not independent of one another.

It is proposed in this thesis to describe generally how the International Community is dealing with the problem of oil pollution from vessels, as there is an increasing world awareness of the need to reduce pollution of the sea.

This international concern for the protection of the marine environment was assessed at the International Conference called by the Food and Agricultural Organization of the United Nations, the Technical Conference on Marine Pollution and its effects on Living Resources and Fishing, held in Rome in December 1970.¹ It was shown that the pollution problem is indeed very real and that both national and international action against pollution is most urgently required.

In chapter I of this thesis we analyze one of the serious aspects of ocean pollution: its harmful effect on the life-giving capacity of the sea, upon which man must increasingly depend. Special comparative study of the control of pollution of the sea by oil will be dealt with in

chapter IV, in the area of the North Sea with special reference to the United Kingdom, and for one of countries whose coastline is situated in front of the Caribbean Sea: Venezuela, an important oil producer in the World to-day.

Geographical and geological considerations, as well as the study of the living resources in both areas, will be dealt with in chapter II, as well as the possible implications of oil pollution in the marine environment.

One difficult issue concerning the marine environment, vessel source pollution, will be studied in chapter III. Discharges of petroleum into the sea by tankers either through negligence or accidents would account for some 2,133,000 tons from the figure of approximately ten million metric tons of hydrocarbons entering the sea annually, which means more than a third of the total.² Considering that the seas, linking so many nations, have always been considered in the international sense and one result of this international concern is the network of international conventions, mainly concluded under the auspices of the International Maritime Organization, designed to reduce and mitigate the effects of marine based pollution. As ships particularly tankers are a major source of such pollution, this chapter III will take into account how these conventions are relevant to control pollution and its consequences. And finally chapter V, will be a special study of the Conventions on the Law of the Sea, adopted at the Geneva Convention of 1958, and to the revisions of the Third United Nations Conference on the Law of the Sea and the action they have taken to contribute to the Control of Pollution of the Sea.

CHAPTER I
MARINE POLLUTION

I GENERAL CONSIDERATIONS OF POLLUTION

(1) Introduction:

The world is full of poisonous substances, many of which occur naturally, and quite independently of any activity of man. However, when we consider pollution in the legal sense, it is the general belief that it is necessarily caused by man either directly or indirectly.

Therefore man is not the only one who made pollution harmful, though, as it is internationally recognised, the suddenness of the changes induced by him are often more dramatic than the long-term effects of naturally occurring poisons which we may have come to accept.

Pollution becomes a more serious problem as the world's population increases, and as our industrialisation becomes more intense. Primitive man, living in small numbers, had little adverse effect on his environment. His sewage could be harmlessly absorbed by rivers and his smoke soon disappeared into the atmosphere.

It was when the population grew and when he came to live in cities that his wastes began to make their impact by poisoning the waters and the air. Industrial development took place, causing serious damage as poisonous substances were directed by man into wrong situations. Clearly the fear must be that we shall be unable to contain our pollution. The population of the world is increasing and is expected to double by the year 2000. So far industrial development is mainly restricted to a few developed countries.

More people and more industry will pose even greater problems of food supplies, of power and of waste disposal.¹

Pollution is a great menace to the environment, the primary example of disruption of the ecology and a corresponding extermination of life can be seen in the water surfaces, constituting seven tenths of our planet.

It has been predicted that the rapid growth of ocean pollution will put an end to most forms of life within the next fifty years. It has even been predicted that this destruction of ocean life could have graver consequences in that the earth's supply of oxygen might be reduced, for the reason that a high percentage of oxygen is produced by phytoplankton.²

(2) Definition of Marine Pollution by United Nations:³

The most authoritative definition of marine pollution is that used by the United Nations, as set down for the U.N. Conference on the Human Environment in Stockholm in June, 1972:

"The introduction by man, directly or indirectly, of substances or energy into 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, impairment of quality from use of sea water, and reduction of amenities."

II FORMS OF POLLUTION

Thus, Pollution is defined as any substance added to the environment as a result of man's activities which has a measurable effect upon the environment.

Another use of the word Pollution is that which indicates a threshold level of damage or interference which is legally significant.

The main well known forms of pollution are:

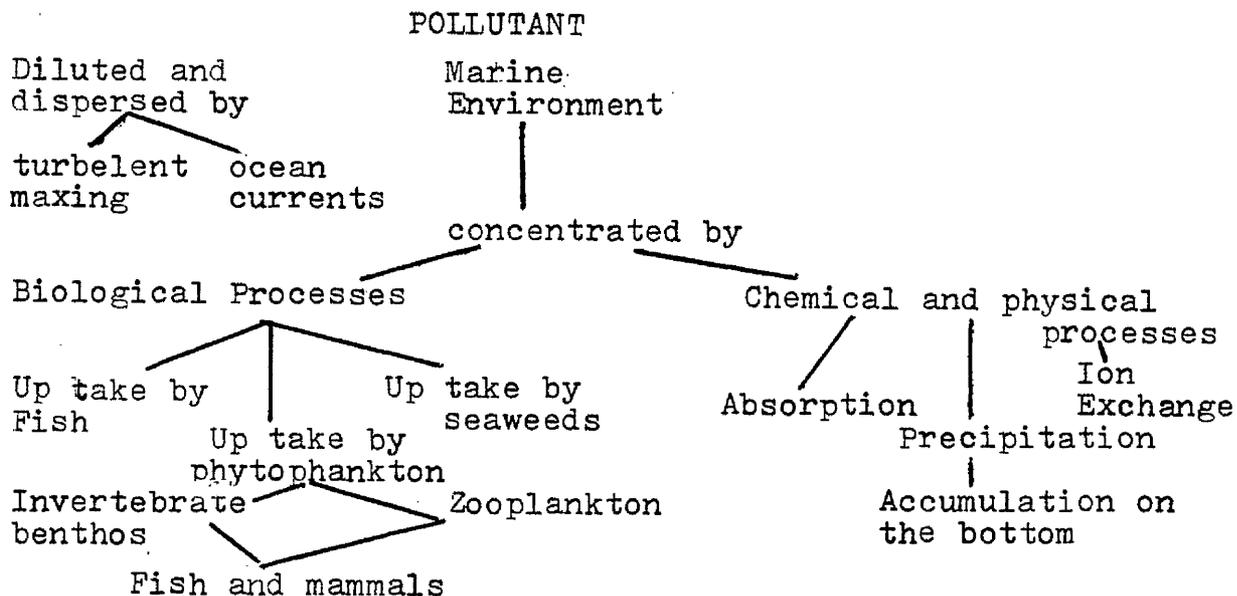
- (1) Air Pollution
- (2) Water Pollution: Rivers
Seas
etc.

In this work, study will be dedicated on the Pollution of the Seas by oil; in particular, a general comparative law study as to how sea pollution by oil is controlled in the United Kingdom and one of the main oil producing countries in the Carribean, Venezuela.

III POLLUTION OF THE SEAS:

Research has shown that as soon as oil enters the sea it is exposed to processes which modify it both physically and chemically. As a consequence, it becomes part of the environment of the organisms that live there.

Considering the rate of a pollutant added to the marine environment, the various processes are summarized in the following figure:⁶ (N.1)



(1) State of the Problem:

Chief Pollutants

Nuclear Waste this will probably become an increasing danger as more countries set up nuclear power plants.

Pesticides these are poisonous substances deliberately disseminated in order to exploit their toxic properties; they become when they reach the wrong targets.

Thermal Pollution mainly from nuclear power stations.

Detergents from domestic sewage and from their massive use in dispersing oil pollution.

Pollution by Metal the introduction of toxic heavy metals into the atmosphere, like mercury.

Other Chemicals as are the suite of polychlorinated biphenyls, which present a broad -scale bioxide.

Dredging Soil and Mining from ships, but threatened from submarine mineral exploitation.

Industrial Effluents these are a very serious threat as many factories are situated on estuaries, or bays and discharges may contain inter-alia-mercury or phosphorous in a dangerous level.

Domestic Sewage this to the best present knowledge is mainly a threat to amenities and public health and also to biological resource productivity.

(2) Oil Pollution:

The danger from this source received the greatest publicity and legal approach after the Oil Tanker, Torey Canyon, went aground on rocks off the coast of Cornwall on 18 March 1967 and when more than half its cargo of nearly 120,000 tonnes of oil escaped.

a) Types of Oil

When oil has been spilled into the surface of the sea, whether this has been caused by an accident to the vessel containing it or it has been discharged by some failure of the ship's equipment or fault of the crew, it will float on the surface and begin to spread.

Oil is a very general term, but our concern here is with persistent oil as defined by the International Convention for the Prevention of Pollution of the Sea by Oil 1954 and its amendments of 1969, 1971.

Crude Oils are complex mixtures of hydrocarbons of varying molecular weight and structure comprising the three main chemical groups: paraffinic, mepthemic and aromatic.

Petroleum Products The products derived from crude oil by refining will have chemical and physical characteristics which depend on the nature of the crudes and the various processes to which they have been subjected. They are:

Gasolines

Kerosine

Gas oils

Fuel oils

Lubricating oils

The behaviour of an oil spill at sea varies.. Thus when a highly refined oil, for instance, medicinal paraffin, is poured onto a clean surface, the oil forms a lens with a thickness, depending on the type of oil. When, however, a crude oil is poured on pure water and the quantity is small, the oil quickly spreads out to a very thin film.

On, clean sea water uninfluenced by wind or tide, spill

oil will spread into a circular patch quite quickly but when oil in large quantities is spilled on the sea, the spreading does not seem to follow the same pattern.⁹

b) Types of Oil Pollutants encountered:

Pollution by oil may be encountered anywhere in the marine environment or in inland waters.

The most frequent Distribution of Pollutants are shown in the following figure.¹⁰ (N. 2)

Seas, beaches Coastlines	{	Bilges
		Crude Oil
		Dirty Ballast
		Fuel Oil
		Tank washings

Estuaries, harbours, docks	{	Bilges
		Crude Oil
		Fuel Oil
		Lubricating Oil

Rivers, canals	{	Fuel Oil
Inland waters		Lubricating Oil
		Refined distillates

IV SOURCES OF POLLUTION OF THE SEA BY OIL

It has been reckoned that a total of 1.5 million tons of oil enters the oceans each year from ships with 1.79 million tons from all other sources.¹⁰ According to the Exxon Corporation, accidental spills, while significant and widely publicized, are estimated to cause less than one

fifth the amount of marine pollution produced by routine tanker operations including tank cleaning and deballasting. Furthermore, Exxon estimates that commercial vessels of all types place 2.5 million tons of oil and oily waste into the ocean annually.

Routine tanker operations are thought to account for about 40% of this total, while tanker accidents account for only 10% of the total.¹²

I will follow the IMCO Report of study No. VI submitted by the United Kingdom to distinguish the sources of Pollution.

(1) Marine Operations:

Tankers: Accidents

Deballasting and tank washing operations

Tank washing before operations or maintenance

Tank barges

Bilge pumping

(2) Non-Marine Operations:

Tanker technical operations

Offshore oil exploration and production

Refinery effluents

Pipelines and Headling spillages

Lubricants

Legislation on the prevention and control of pollution of the sea by oil must take account of the fact that, owing to the way in which the seas and oceans bind together the countries and continents in a multidirectional link, it is usually difficult and in some cases impossible, to isolate completely the effects of pollution incidents within the territorial confines of single states. For this reason, the control and prevention of marine pollution has for the most part been regarded as an international rather than a national matter, and many of the measures and schemes in this field have been derived through international discussion and cooperation.

(1) General principles of International Law:

The rules of Law which limit the rights of one state in order to safeguard the general interests of the international community have been regarded by authors like B.W. Bowett as attempts to limit abuse of rights. He points out that "the general notion of the freedom of the High Seas, has always contained an inherent danger of abuse and indeed, the International Community has long since evolved rudimentary rules to ensure that the High Seas do not become a legal vacuum, an area of lawlessness beyond the jurisdiction of civilized states."¹⁴

Thus, under the existing law, one important principle of international law is more properly expressed in its broader form as the rule of the harmless use of territory. In other words, this means that states, in their mutual relations, must abstain from the use of force or any other

method, such as deliberate massive pollution of neighbouring territory, which would violate the sovereignty of the polluted country and constitute aggressive behaviour. As it was stated by the court of arbitration in the Trail Smelter Case,¹⁵ that "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes on or to the territory of another or the properties or persons therein."

As a result, states have the obligation of due diligence to take all necessary steps to prevent substantial pollution.

Considering the seas, the more they are polluted the more the international community becomes conscious of the need to protect the marine environment against pollution.

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GEOLOGICAL AND GEOGRAPHICAL CONSIDERATION OF THE
NORTH SEA AND CARIBBEAN SEAI THE NORTH SEA AND CARIBBEAN SEAIntroduction

It has been accepted that one of the main difficulties in studying marine pollution and in finding the most acceptable ways of disposing of waste material in the seas is the lack of precise knowledge and understanding of how the water itself moves and how from one place or depth it will run into and with the surrounding water. The most continuous movements are due to tides.¹ Because of the effect of the earth's rotation the movements are generally along elliptical paths, rather than in simple backward and forward movements, but the actual paths depend on the depth of the water or nearness to land and on the irregular topography of the seabed. In shallow soundings tidal ellipses are not quite closed, the flood is not quite balanced by the ebb and, there is a tendency for the oscillating movement to be partially integrated into an overall forward movement. There is, for example the resultant creep across the southern North Sea due to tides. Winds have a large effect on horizontal transport. A thin surface film moves at about 3% of the wind speed in the same direction as the wind, but the average flow down to a depth of 30 feet would be only about half as fast and a considerable angle to the right of the wind.²

(1) North Sea Area

Geographical Considerations:

Dealing with Pollution in the North Sea it will be important to have a general idea of the surface waters² types of the North Sea and how it influences the living resources in the area.

The North Sea water masses, their characteristics and distribution were demonstrated by a special research.³

Type 1: North Sea Atlantic Water:

high salinity, poor in nutrients, depth c. 100m

Distribution:

Entering partly between Orkney and Shetland but mainly north from Shetland flowing to the south and mixing in the gyral⁴ on the north east slope of Dogger Bank, and the width is considerably greater during winter.

Type 2: Channel Water:

High salinity, poor in nutrients, low turbidity, relatively warm, especially in winter; seasonal temperature change, c. 10°C; shallow area.

Distribution:

Entering through the straits of Dover, distributing in a narrow strip to the north east and reaching the gyral in the north east of Dogger Bank.

Type 3: Scottish Coastal Water:

Medium salinity (34-35%), medium in nutrients, medium to high turbidity; seasonal temperature change c. 7°C, relatively shallow area.

Distribution:

Atlantic water, flowing south along the coast and forming gyral in the bays, receives fresh water

from several rivers and is mixed by strong tidal currents, in with the distribution along the coast is relatively narrow.

Type 4: English Coastal Water:

Low salinity (37-37.5%) rich in nutrients, high turbidity, low temperature c. 7°C; seasonal changes; shallow area.

Distribution:

Keel-shaped enclosure between Channel Water (type 2) and Atlantic Water (type 1), the flow, in general is the north east reaching the centre of a gyral south of Doggar Bank.

Type 5: Central North Sea Water:

Medium salinity (34-35%), medium in nutrients, medium turbidity; seasonal temperature change c. 10.5°C; medium depth.

Distribution:

Covering the central North Sea especially over Doggar Bank and north east of it.

(2) The Caribbean Sea

The Caribbean Sea could be considered the Venezuelan sea, with the Venezuelan coast surrounding it to an area of 2.712 km, bigger than the other two countries, inland, Colombia (1.160 km) and Cuba (1.800 km).⁵

In the Caribbean Sea a few kilometers north of the mainland of Venezuela are a number of small islands belonging to the United States of Venezuela. Of these, the Island of

Margarita is the largest and most important. The total area of these islands is about 800 square kilometres.

The United States Of Venezuela, which encompasses an area of approximately 9,120,000 square kilometres in north eastern South America, lies to the east of the Republic of Colombia and north of Brazil and British Guiana. On the north, the Caribbean Sea furnishes Venezuela with an irregular coast of over 1,800 kilometres in length and to the east a coastline of 600 kilometres is afforded by the Gulf of Paria and the Atlantic Ocean. All of Venezuela is located within the tropical zone between latitudes $0^{\circ}45'N$ and $12^{\circ}26'N$ and between longitudes $59^{\circ}35'W$ and $73^{\circ}20'W$.

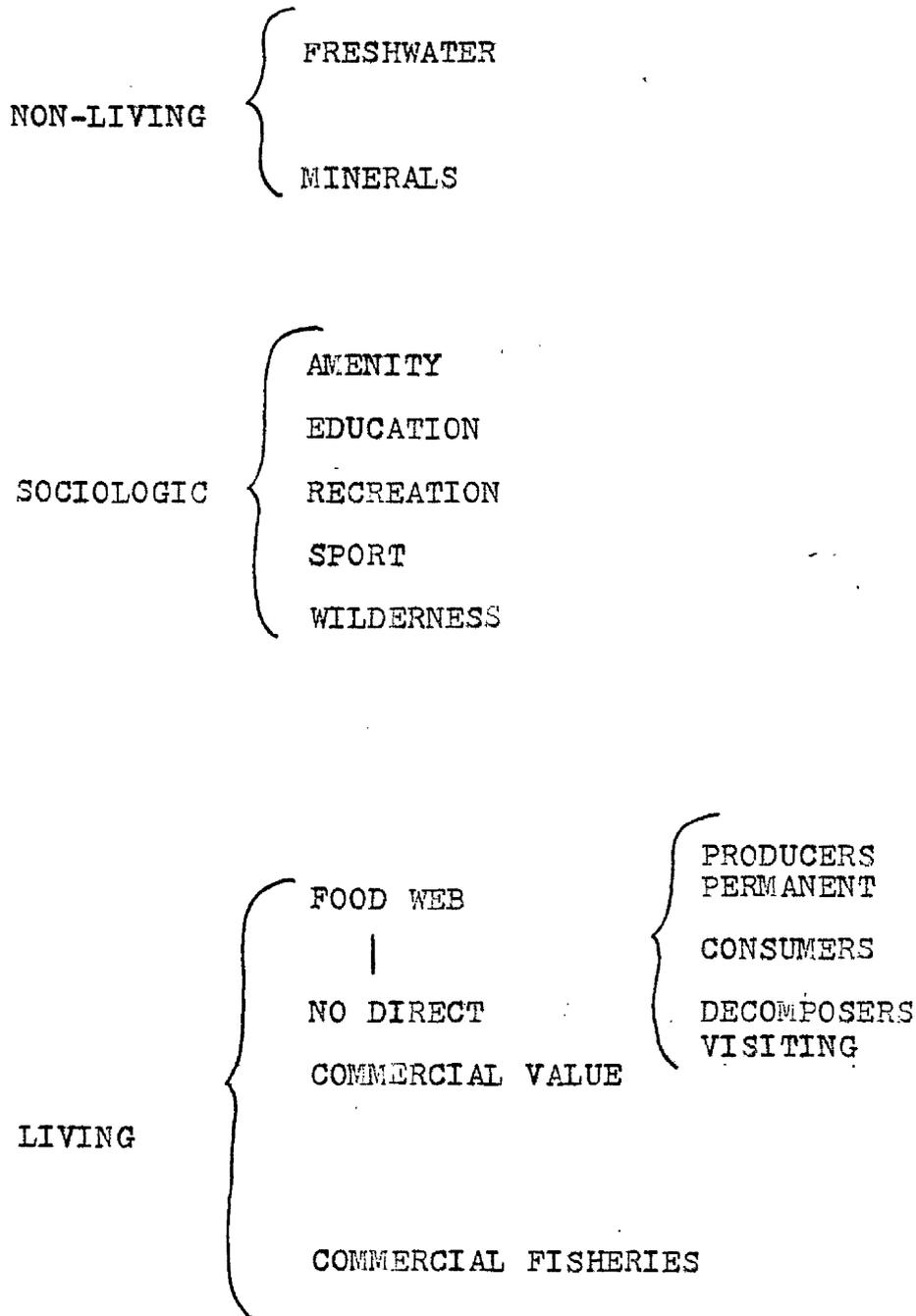
The temperature and salinity of the surface water in the Caribbean Sea, the seasonal changes in the temperature of sea water are minimal, they amount to a maximum of $4.4^{\circ}C$ around the Bahamas, $2.7^{\circ}C - 3.3^{\circ}C$ around the Greater Antilles and only about $2^{\circ}C$ in the centre of the Caribbean Sea.

Among the numerous kinds of fish in the Caribbean Sea the following are of particular importance in consumption: the tunny, the bonito, the mackerel, the swordfish, the snapper and the dolphin.

As far as oil pollution is concerned, in Venezuela, in an area where offshore petroleum production is well-established, Lake Maracaibo is reputed to be one of the most heavily oil polluted in the world. Although described as a "lake" Maracaibo is connected to the Caribbean Sea by an narrow entrance at Bahia el Tablazo.

Figure N. 5, taken from: Resources of the North Sea and some Interactions, North Sea Science, D. Bellamy, P. Edwards, D. J. Jones, P. Emans, p 383. (Figure N.4)

II RESOURCES OF THE SEAS



This Figure 4 is following p 15.

(1) Mineral Resources

Unlike biological resources, which are usually renewed annually, mineral resources are non-renewable.

Increasing attention is being directed towards the seas as an alternative energy source, principally by the development of undersea mining. Thus, it is possible that new techniques for mining below the seabed, including structures for shaft sinking, hoisting mineral treatment, living quarters and underwater transport facilities will be developed in due course. The cost and period of development however will be both very great and it is very unlikely that such operations will function in this century.

In his historic memorandum of August 1967 to the First Committee of the United Nations General Assembly, ¹⁰ Ambassador Amid Pardo of Malta gave a survey of the mineral resources of the seabed. He observed that the nodules, which are the principal form of seabed surface deposit, contain the following:

- i) 43 billion tons of aluminum, equivalent to reserves for 20,000 years at the 1960 world rate of consumption, as compared to known land reserves for 100 years.
- ii) 358 billion tons of copper equivalent to reserves for 400,000 years, as compared to known land reserves of only 100 years.
- iii) 7-9 billion tons of copper, equivalent to reserves for 6,000 years as compared to only 40 years for land.
- iv) Nearly one billion tons of zirconium, equivalent to reserves for 100,000 years as compared to 100 years on land.

- v) 14.7 billion tons of nickel, equivalent to reserves for 150,000 years, as compared to 100 years on land.
- vi) 5.2 billion tons of cobalt, equivalent to reserves for 200,000 years as compared to land reserves for 40 years only.
- vii) Three quarters of a billion tons of molybdenum, equivalent to reserves for 30,000 years as compared to 500 years on land.

In addition, the Pacific Ocean nodules contain 207 billion tons of iron, nearly 10 billion tons of titanium, 25 billion tons of magnesium, 1.3 billion tons of lead, 8,000 million tons of vanadium and so on.

In an area such as the North Sea, it is now clear that much of the North Sea's floor has been covered by the sea for millions of years, resulting in the formation of thick sedimentary deposits. In this geological environment, only three groups of minerals are likely to be present in sufficient quantity to allow them to be economically worked:

- (1) superficial unconsolidated deposits such as sand and gravel and perhaps, so-called "heavy" minerals (notably including sources of titanium).
- (2) bedded deposits such as coal evaporites (eg. halite (salt) potash and anhydrite)
and
- (3) petroleum and natural gas³⁰

The production of oil from the seabed currently amounts to about 20% of total world production (3.3 bn barrels out of 18.25 bn barrels in 1972). The latest figures for "proved recoverable reserves" i.e. "identified

deposits that are exploitable under the current locally prevailing economic circumstances" are divided between land and sea in similar proportions. But the more speculative figures for "ultimate recoverable resources" suggest that we may in the end get more than half our oil from the sea.¹² Thus the future is expected to bring a progressive increase in the ratio of off-shore discoveries; proved reserves and production to those onshore.

(2) Living Resources:

(a) Effects of Oil Pollution over the Living Resources of the Sea

History shows how man has used the ocean and coastal waters as a source of food. The biological productivity of the sea depends overwhelmingly on the abundance and rate of growth of floating microscopic plants, the phytoplankton. As with land-plants the phytoplankton have basic needs for adequate supplies of nutrients and sunlight. The phytoplankton are consumed by small planktonic animals and these in turn are eaten by larger animals, including fish. The dead bodies of animals and plants in the plankton sink to the bottom where they support a community of organisms living on or in the seabed. Thus, directly or indirectly, nearly all life in the sea, including all commercial fish species dependent upon the growth and production of phytoplankton.¹³

The fisheries and shellfisheries are, in main, the most important of the sea's living resources. The total world catch increased from 20 million metric tons in 1950 to 70 million metric tons in the 1970's when almost 3 million

metric tons were landed from the North Sea.¹⁴ The North Sea fisheries include pelagic and demersal fisheries, together with shellfisheries.¹⁵

(a) The pelagic (mid-water living) fisheries catch species are for instance, mackerel, herring, pilchard.

(b) The demersal (bottom-living) fisheries, are used mainly for human consumption are cod, coal fish, haddock, plaice, sole and whiting.

The shellfisheries include rather heterogeneous groups of molluscan and crustacean species which comprise only about 6% by weight (1970) of the total fisheries landings from the North Sea.

Oil pollution is the most inevitable consequence of our dependence on an oil-based technology. Large catastrophes like that of the Torey Canyon stranding in 1967,¹⁶ Santa Barbara oil spilled in 1969,¹⁷ and the Amoco Cadiz stranding in 1978,¹⁸ get the attention of the public because of the obvious aesthetic damage and the harm to birds. Oil enters the ocean from many other sources whose magnitudes are much less readily noticed, among these are shipping accidents, losses during exploration (oil-based drilling mud) production and pipeline breaks, also spent machine lubricants and incompletely burned fuels.

A major contribution comes from untreated domestic and industrial wastes.

The biological effects of oil pollution on bilateral communities, shows that oil can seriously interfere with local fisheries by causing sufficient tainting to render the shellfish unsaleable. This occurs in three ways.

(i) Firstly, when oil stands on shellfish in the inter-

lidal zone during the reclining tide, the shells can get oil on them. This does not harm the molluscs but makes them unsaleable. They may be oily enough to be rejected in the markets, but oil even in a very small quantity on a few shells of mussels, cockles and winkles can taint a whole batch when being cooked before removal from the shell.

(ii) The second form of tainting arises from the oil becoming partially emulsified by wave action, particularly during storms and the resulting small globules being ingested by such feeders as mussels, cockles and oysters.

(iii) The third form of tainting occurs where there is a persistent low level of oil pollution.

(1) Oil - destruction of fisheries resources

It has been said that "a review of the literature" indicates that in deep water, whether in the open ocean or a mile or so offshore, no significant damage to marine life is encountered from even large oil spills because pelagic fish avoid the spill and few other marine species are present.²⁰

The so called "tainting of fish and shellfish by oil spills; has been recognized for many years, but it has only recently been realized that oil passes through the intestinal barrier and is incorporated and stabilized in the lipid pool of the organisms.

It has been widely assumed that fish and shellfish "tainted" by oil will again be fit for human consumption

after a period from two weeks, to several months. Other opinions disagree and suggest that this is highly improbable.
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As a conclusion, it could be said that pollution by crude oil and oil fractions damage the marine ecology through different effects.
22

- (a) Direct destruction of organisms through coating and asphyxiation.
- (b) Direct destruction through contact poisoning of organisms.
- (c) Direct destruction through exposure to the water soluble toxic components of oil.
- (c) Destruction of the more sensitive juvenile forms of organisms.
- (e) Incorporation of substantial amounts of oil and oil products into organisms, resulting in reduced resistance to infection and other stresses.
- (f) Destruction of food values through the incorporation of oil and oil products into fisheries resources.
- (g) Incorporation of carcinogens into the marine food chain and human food sources.

(2) Oil pollution and bird populations

The sea provides a difficult but profitable environment for birds, the only animals which prey upon marine life from the air. It provides no shelter, so that birds are completely unshielded from predators and the weather; and while food is abundant, its movements may be erratic. For those birds which achieve a satisfactory adaptation to such conditions, the sea becomes a very safe environment.

Oil pollution affects aquatic birds sooner and more lethally than any other form of wild life. Indeed, the

worst damage to birds, may already have occurred long before the oil comes ashore and starts to affect sociological communities there. The consequences tend to be particularly serious because birds are highly mobile animals, with long feeding movements and migrations, so that populations from large areas may become involved in comparatively localized incidents.

On meeting oil, aquatic birds are particularly defenceless, since this is an unnatural hazard against which they have no innate defence. Aerial species are unlikely to plunge into oil deliberately, and indeed comparatively seldom get oiled at sea, but swimming species are compelled to bathe in the sea, and may become contaminated.

III INTERNATIONAL CONTROL AND PROTECTION OF THE LIVING RESOURCES OF THE SEA:

International management of marine pollution to date has been concerned primarily with the control of pollution causing activities occurring outside the territorial jurisdiction of the individual states. There, state powers of regulation, based solely on the tie of nationality, are clearly insufficient to provide any adequate system of control on their own.

Oil pollution endangers fish and other living resources of the sea, the plight of fishing is perhaps obvious, the effects of mining, drilling and trawling in the continental margins have been summed up by Dr. Sydney Holt of the Food and Agricultural Organization.²⁴ First, the seabed may become locally polluted with solid spoil, which will

change the quantity and quality of seabed life, thus indirectly affecting the animals that feed on it. Secondly, oil spillages are bound to occur with increasing frequency in proportion to the multiplication of oil drillings, effecting the living organisms of the sea and their food supplies.

Thirdly, pollution at the surface as the result of spillage from oil tankers and leaks in oil rigs can be transferred to the seabed by the sinking of oil masses.

Fourthly, the physical disturbances caused by fishing may affect the whole seabed life.

In addition, there is another and older danger to the living resources of the ocean - over fishing by trawler fleets, like those of the Soviet Union, Japan and Norway, which include fish processing ships, and apply increasingly mechanized and indiscriminate methods of fishing.

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OIL POLLUTION FROM VESSELS

I THE OIL TRADE(1) Vessels Source Pollution:

Vessels introduce pollutants into the marine environment in three principal ways:

(a) Collisions and other maritime casualties:

Most casualties occur in congested areas in internal waters, at port entrances or in heavily travelled shipping lanes close to a coast. Thus, individual states can and should act effectively to reduce pollution from such incidents by the provision of adequate navigational aids, warnings of dangers to navigation and other assistance to the mariner to ensure that collisions, groundings and other¹ casualties are minimized.

Also, such international actions as provisions of compulsory traffic separation schemes in congested areas and requiring double-bottom construction for large tankers, can assist in solving these problems. In addition, authority to take remedial action is given to coastal states in the Convention Relating to Intervention on the High Seas in cases of Oil Pollution Casualties.²

Oil spills resulting from casualties contribute about 10% of vessel source oil Pollution.

(b) Loading and Bunkering Operations:

It is estimated that approximately 5 to 10 % of vessel source oil pollution is caused by spills occurring during bunkering and loading operations.³ This source of

pollution is being reduced through provision of automatic loading controls on large tankers and improved personnel training. Also, significant advances are being made in the development of new techniques to clean up spills. Many ports are now providing the equipment and personnel to deal rapidly and effectively with such spills but continuing efforts are needed by maritime and port states.

(c) Operational Discharges:

The major source of vessel pollution is the intentional operational discharge of oily wastes from commercial vessels.

Operational discharge is due to the pumping of oily bilge wastes, tanker ballasting operations and the cleaning of tanker cargo tanks, prior to a change in the type of cargo or prior to overhaul. Such discharges are estimated to account for approximately three fourths of all oil pollution from vessels, with tank washing and ballasting providing about twice as much oil pollution as bilge pumping.⁴ After discharging a cargo of oil a tanker must take aboard seawater in her cargo tanks for use as ballast to facilitate handling in port and to provide proper seakeeping characteristics. For example, safe navigation requires ballast of approximately 40% of dead weight tonnage under normal conditions and as much as 80% in extreme weather conditions. Since some oil remains in the tanks by adhering to the tank surface, the ballast water will mix with that residue and become "oily". As the tanks must be empty before a new cargo of oil can be taken aboard, the oily ballast water is disposed of in one of two ways:

- (i) direct discharge at sea, or
- (ii) separation of the oil and its retention on board under

the "load-on top" system.⁵

"Load-on top" is a technique which reduces the amount of oil discharge into the sea. This technique involves pumping oily cargo tank residues to tanks known as slop tanks, where the mixture of oil and water is allowed to separate. Water is pumped from the bottom until the oil level is approached. Dirty ballast is decanted in cargo tanks in a similar manner. After water is pumped from these tanks, remaining oily residues are moved to slop tanks for further decanting. The next cargo is loaded on top of the oily residues remaining hence the same.

L.O.T. does not completely eliminate operational oil pollution. Separation of the oil and water in the slop and cargo tanks is normally incomplete and some oil discharge is made when water is pumped from the bottoms of the tanks.

Rough weather and short voyages reduce the effectiveness of the decanting procedure. The oil water interface cannot be determined precisely and oil may be pumped overboard with water. L.O.T. appears to be very people dependent and laxity in application of proper procedure may result in further loss of oil.

L.O.T. is not used on tankers hauling certain products which cannot be mixed with the sea water residue in the tankers. An alternative procedure involves the use of vessels with separate tanks for cargo and ballast.⁶ This system, known as segregated ballasting, nearly eliminates operational oil pollution.

Some oil discharge, however, occurs even with this more effective system because of the need for periodic tank washing to control sludge build up. The necessity for ballast capacity in addition to cargo capacity tends to make

segregated ballast tankers more expensive.

Load on top and segregated ballast are not mutually exclusive. In particular large vessels tend to become weight limited. This means that empty tanks must be provided during cargo voyages. These tanks are available for segregated ballasting.

The amount of oil discharge into the sea by a tanker using L.O.T. tends to vary positively with the amount of ballast used.

Similarly, the construction cost of a segregated ballast tanker tends to vary positively with the ballast capacity of the vessel. These facts suggest the desirability of minimizing the amount of ballasting. Additionally, there is apparently some disagreement on the level of ballasting actually needed. Examination of log book data for large tankers indicated that ballast levels of 45% and 60% of full load displacement encompass most ballasting levels for voyages on which heavy weather was encountered.

The introduction of this L.O.T. was made in 1963 and 1964.⁷ However, this technique has not been accepted by 100% of the tanker industry, although 80% of all tankers now applied it. The other alternative of segregated ballast tanks is included in the International Convention on the Prevention of Pollution from Ships,⁸ 1973: Regulation 13 of Annex I, provided that any oil tanker (one ordered after 31st December 1975 or delivered after 31st December 1979), of 70,000 tons cwt and above must be provided with segregated ballast tanks of specified capacity and that in no case should ballast water be carried in the oil tanks of such a vessel except in weather conditions so severe, that in the opinion

of the master it would be necessary to carry additional ballast water therein for the safety of the ship.

(2) International Aspects of the Oil Trade

Generalities

The international oil trade requires more tonnage than any other commodity trade and it is a trade which has been growing in volume almost without interruption since the First World War. At the end of the 1930's there were two main oil consuming regions in the world - North America's own oil output was merely refined and re-exported, Western Europe's oil production was, however, negligible and almost all her requirements had to be covered by imports. In 1938 a total of 38.5 million tons of oil were imported of which France and Great Britain took 13 and 11 millions tons respectively. Countries outside Europe which were also importing considerable amounts of oil at that time were Argentina, Brazil, Australia, India and Japan.⁹

The most important exporting centres before the war were Persia, Venezuela and the Netherland Antilles.

Before the Second World War, Venezuela shipped about 14 million tons of oil a year to Europe and Persia about 7 million tons. The rest of Western Europe's requirements were covered by North America which sent about 5 million tons a year and by Eastern Europe (Rumania). No exact figures are available on the amount of oil imported by the U.S. from Venezuela, but it was up in the region of several million tons.

The post war period has seen a significant and steady growth in output in both Venezuela and the Middle East, but especially in the latter region, for instance, Persia, Iraq,

Kuwait and Saudi-Arabia. Exports from the Middle East in 1979 have been estimated at 363,143 thousand metric tons compared with about 31,416 thousand metric tons from Venezuela and the other Latin American countries.¹⁰ This is a complete reversal of the pre-war position. Most of the oil from the Middle East goes direct to oil refineries in Europe. But some goes east to Australia and some west over the Atlantic Ocean to North America. European imports for 1979 have been recorded at 263,132 thousand tons and North American at 2,397 million barrels with most of the North American imports coming from Venezuela and Saudi Arabia. World oil consumption for the 1970's is estimated at 3.2 billion metric tons and may jump to 4.2 billion tons by 1980. Of this total, approximately one half is transported by sea by tankers. Approximately six million tons of oil entered the ocean in 1975 from all sources. Of the total oil entering the ocean the world tankership fleet contributed¹² approximately 1.35 million tons.

For these reasons, international and national measures to control pollution have today become a matter of great importance for the world community. The principal motivation factor is that nations of the world are dependent on the sea for transportation and for the exploitation of its living resources; these resources are threatened with serious damage, and in some cases even extermination, as a result of uncontrolled use of the sea.

The high seas comprise by far the greatest portion of the world's marine resources, despite efforts by some states to extend their national jurisdiction over a 200 mile zone.¹³

Under the Geneva Convention of 1958 in relation to the High Seas, article 2 stated that "the high seas being open

to all nations, no state may validly purport to subject any part of them to its sovereignty". It results that the high seas cannot be under sovereignty of any other state and that no state has the right to exercise jurisdiction over it. The sea must remain common to all nations in order to fulfil its main mission of an international highway, but it does not follow that the community of nations is not entitled to provide by international agreement binding rules on the proper use of the sea to the greatest possible advantage of all states and also for the purpose of establishing a legal order in and over it.¹⁴ Thus under International Law the principles of state responsibility must be taken into account in this area of the law of the sea. The general principles of law which were applied in the Trail Smelter Case¹⁵ could be applied to the International sources of marine pollution," ... the tribunal find that the above decisions taken as a whole constitute an adequate basis for its conclusions, namely that under the principles of international law, as well as the law of the United States, no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes on or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence." Therefore there can be no doubt that these general principles apply to the sea as well and that a state may consequently be responsible both for its own activities and for its lack of effective jurisdiction vis-a-vis nationals and vessels when pollution of the sea has been caused.

Another principle is that of the article 2 of the

Geneva Convention on the High Seas, which is declaratory of International Law, it sets out that the high seas shall be open to all nations and reiterates the international obligation to respect the right of every nation to its use.

This article 2, provokes a problem by the approach it takes to freedom of the high seas. Some commentators¹⁶ presume that the discharge of waste (oil) represents one of the implied freedoms, whereas others¹⁷ refer to the Trail Smelter decision and claim that an activity forbidden by international law could not be considered at the same time an internationally protected use of the high seas.

II INTERNATIONAL CONTROL OF OIL POLLUTION FROM VESSELS

(1) International Preventive Measures

(a) Operational Discharge

There is an increasing world awareness of the need to reduce pollution of the sea. One result of this concern is a network of international conventions, mainly concluded under the auspices of the Intergovernmental Maritime Consultative Organization, designed to reduce and mitigate the effects of marine based pollution. The rules of international law on Oil Pollution fall under two main headings: 1) the prevention of oil pollution, and 2) liability for oil pollution¹³

(1) London Convention and Amendments 1954

Thus, the International Conventions dealing with the prevention of pollution of the sea by oil, signed in London on 12 May 1954, with its respective amendments 1962, 1969 and 1971.¹⁹

This Convention prohibits the discharge of oil and oily mixtures in the prohibited zones: Article III; Ships with

a displacement of more than 20,000 gross tons for which the building contract has been placed after 18 May 1967 are prohibited from discharging oil in any part of the sea whatsoever unless in the opinion of the master it is neither reasonable nor practicable to retain it, in which case it is to be deposited outside the prohibited zones.

The Convention applies to ships registered in the territories of the contracting government or having the nationality of a contracting party, subject to certain exceptions including tankers of under 150 tons or other ships of below 500 gross tons.²⁰ In certain exceptional circumstances the discharge of oil or oily mixture is permitted such as when this is necessary to secure the safety of the ship, its crew or cargo. The prohibition makes sense only if facilities are provided at ports and oil loading terminals for the disposal of oil residues. The amendments of the 1954 Convention were made in 1962, 1969 and 1971. Under the 1969 standards, the Article III (b), discharges from tankers are prohibited unless the following conditions are satisfied:

- (i) the tanker is proceeding en route
- (ii) the instantaneous rate of discharge of oil content does not exceed 60 litres per mile
- (iii) the total quantity of oily discharge on a ballast voyage does not exceed 1/15,000 of the total cargo-carrying capacity
- (iv) the tanker is more than 50 miles from the nearest land

A tanker to comply with the 1969 amendments must operate L.O.T. or it must retain all its residues on board for eventual disposal ashore.²¹

As well the 1969 standard has replaced the old concept

of oil discharges being permissible except inside prohibited zones, with the new idea that discharges may be made if the oil is sufficiently dispersed on discharge.

Another important regulation was made in the 1971 amendment, which limits tanks size in individual tankers according to certain criteria with the purpose of diminishing oil outflow in the event of a casualty to such a ship.²²

The terms of the amendment require that the tank size limitation will apply to tankers for which the building contract is placed on or after 1st January 1972, and to any tanker delivered after 1st January 1977.²³ In practice these requirements will be met by any prudent shipowner contracting for a tonnage irrespective of the date of the formal entry into force of the amendment.

However, as we will see later in this chapter, the International Conference on Marine Pollution held in London in November 1973,²⁴ made new regulations and now all tankers are prohibited from discharging oil or oily mixture anywhere,²⁵ unless some conditions are satisfied.

- (1) For "new tankers" the total quantity of oil discharged to sea must not exceed 1/30,000 of the total quantity of the particular cargo of which the residue formed a part - whereas "existing tankers" need only keep to the 1/15,000 figure.
- (2) For the discharge to be lawful a tanker must have in operation an oil discharge monitoring and control system and a slop tank arrangement as required by Resolution I and Appendix I to include non-persistent oils.
- (3) The ship should be outside a special area and more than 12 nautical miles from the nearest land.

To enforce its provisions, the 1954 Convention, with the amendments 1962-69-71, contains the following regulations:
Inspector of oil record book: The 1954 Convention provides that every vessel which uses oil fuel and every tanker registered in each contracting state shall keep an oil record book in which to record various operations.²⁶ The competent authorities of any contracting party may inspect the book on board any such ship while it is in a port of that state and may furnish evidence of contravention of the convention to the state of registration which alone is empowered to take penal action.²⁷

By article x(2), upon receipt of particulars the flag state "shall investigate the matter" and if it is satisfied that sufficient evidence is available in the form required by its law to enable proceedings to be taken against the owner or master of the ship.

The amendment of 1971 to the 1954 Convention, added article 6, a requirement that tankers, broadly those for which the building contract is placed after 1971, must comply with specified standards of construction designed to reduce the size of oil cargo tanks and the rate of escape of oil in the event of an accident.²⁸

A certificate of compliance must be carried without which the ship is to be prohibited from trading by the flag state, furthermore if a coastal state after consulting the state of registry is satisfied that the tanker does not comply with the constructional requirements, it can forbid it access to its ports or offshore terminals.²⁹

(2) 1973 Convention

In 1969 the IMCO Assembly decided to convene a conference in 1973 to adopt a new instrument to place restraints on the contamination of the sea, land and air by ships, vessels operating in the marine environment. Nearly four years of preparatory work preceded the International Conference on Marine Pollution held in London, with 79 states represented in the autumn of 1973.³⁰ Oil pollution remained the central preoccupation of the anti-pollution measures of the new treaty, but it was not restricted to deliberate pollution and it was to be applied to all ship-borne substances in addition to oil, including: noxious liquid substances carried in bulk, noxious substances carried in packages or container-ships, generated garbage and ship generated sewage.³¹

All types of oil are covered by the 1973 convention and the discharge criteria still aimed at prohibition of all but the most insignificant discharge. To this end all oil carrying ships are required to retain oil residues and mixtures on board for discharge at oil reception facilities in ports.

Two important construction features are introduced for tankers. Every new tanker of 70,000 tons dead weight or above must be fitted with segregated ballast tanks sufficient in capacity to obviate the need for a ship to carry ballast water in cargo oil tanks with the resultant danger of pollution by disposal of oily ballast before taking on cargo.³² A tanker must also be able to survive side on bottom damage with the minimum pollution resulting therefrom. This is done in part by cargo transfer systems to move oil from breached tanks and by limiting tank size

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and the arrangement of tanks in a vessel.

The 1973 Conference decided to provide in the treaty for "special areas" where the discharge of oil of any kind is prohibited with only the smallest exception. The main areas are the Mediterranean Sea Area, the Black Red Sea Area³⁴ and the "Gulfs" Area.

The Convention applies to all ships entitled to fly the flag of a state party or operating under a state's authority.³⁵ With respect to ships of states not party to the Convention, however, it provides that such ships shall receive "no more favourable treatment" than the Convention³⁶ prescribes.

The sanctions for the violation of the 1973 Convention:

The treaty obliges every contracting state to prohibit its violation and to establish sanctions therefore, irrespective of where the violation occurs.³⁷ Within its jurisdiction any violation must also be punishable and punished by a Party, but such party may either take proceedings itself or furnish the flag state with evidence of the violation: article 4(2).

Also, it provides in article 6 that a ship to which the convention applies "may" in any port or off-shore terminal of a Party, be subject to inspection by that Party for the purpose of verifying whether the ship has discharged any harmful substances in violation of the provisions of the Regulations. However, if an inspection indicates a violation of the convention a report is forwarded to the Flag State for appropriate action. A certificate "International Oil Pollution Prevention Certificate" is issued after survey of the ship to ascertain that structure,

equipment, fittings, arrangements and materials are as required in the Convention.³⁸ In case that an inspection clearly reveals some form of non-compliance, the inspecting state must "take such steps as will ensure that the ship shall not sail until it can proceed to sea without presenting an unreasonable threat of harm to the marine environment."³⁹

Furthermore the convention stated that the only state which can institute proceedings on the high seas is the flag state, no matter what threat this poses to the coasts of another state. Thus, article 6(5) reads: "A party may also inspect a ship to which the present convention applies when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any port together with sufficient evidence that the ship has discharged harmful substances or effluents containing such substances in any place". In this only the flag state may prosecute.

(3) The International Conference on Tanker Safety and Pollution Prevention 1978:

One of the main everyday risks involved in the carriage of crude oil and other oil products is the pollution caused through the discharge of water ballast, that has come from cargo tanks that previously had carried cargo. There are many reported and unreported cases of this kind of pollution going on everyday in various locations throughout the world. IMCO brought in legislation to its member countries to help prevent pollution of the sea from ships. IMCO held a conference on February 1978 to discuss these matters and it was encouraging to see that 450 delegates from 62 nations attended.

The Conference was organized after a request from President Carter of the United States, for international action followed a series of tanker accidents in the United States waters in the winter of 1976-77. At the same time, the United States put forward a number of proposals for improving tanker safety and preventing pollution.

Many of the measures agreed to have now been included in Annexes to Protocols to two major conventions, the 1973 Marine Pollution Convention and the 1974 Safety of Life at Sea Convention the protocol to the 1974 convention is a separate instrument. The Protocol to the 1973 convention will be merged with the parent convention.

Among the measures adopted were a number which when they come into force will affect new and existing tankers; these are summarised as follows:

- (1) New crude carriers: Ships of 20,000 cwt and above will be required to be fitted with protectively located SBT,⁴¹ together with COW and IGS.
- (2) New product carriers: Ships of 30,000 cwt and above will be required to be fitted with protectively located SBT.⁴²
- (3) Existing crude carriers: For ships of 40,000 cwt and above clean ballast tanks (C.B.T.), segregated ballast tanks (S.B.T.) or crude oil washing (C.O.W.) will be required as from the coming into force of the Pollution Convention and Protocol.⁴³
- (4) For ships of 70,000 cwt and above an inert gas system (I.G.S.) will become mandatory two years after coming into force of the Protocol to the 1974 Safety of Life at Sea Convention, and two two years later for ships of 20,000-70,000 cwt.⁴⁴

In the case of crude carriers of 20,000-40,000 cwt there is provision for exemption by flag states where it is not considered reasonable and practicable to fit I.G.S. and high capacity fixed washing machines are not used.⁴⁵

Existing Product Carriers

- (1) C.B.T. or S.B.T. will be required on ships of 40,000 cwt and above at the time of coming into force of the 1973 Marine Pollution Convention and Protocol.⁴⁶
- (2) I.G.S. will be required on ships of 70,000 cwt, two years after the protocol to the 1974 Safety at Sea Convention comes into force, and two years later for ships of 40,000-70,000 cwt and down to 20,000 cwt for ships which are fitted with high capacity washing machines.⁴⁷

Among items included in the Annex to the Protocol to the 1974 Safety of Life at Sea Convention were:⁴⁸

- (1) All ships of 1,600-10,000 cwt shall be fitted with radar, while all ships of 10,000 cwt and above shall have two radars each capable of operating independently.
- (2) All tankers of 10,000 cwt and above shall have two remote steering gear control systems, each operable separately from the navigating bridge.
- (3) The main steering gear of new tankers of 10,000 cwt and above shall comprise two or more identical power units and shall be capable of operating with one or more power units.
- (4) A number of important regulations designed to improve the inspection and certification of ships were also adopted. These include modifications to the provisions relating to the intervals of surveys and inspections

and the introduction of unscheduled inspections and mandatory annual surveys.

One of the problems encountered by some nations in implementing marine safety and anti-pollution conventions is a shortage of trained and experienced personnel.

To help to overcome these problems, the Conference adopted a Resolution calling upon IMCO to establish a Marine Safety Corps of experts who would be made available by their Governments to countries requesting their services.⁴⁹

(b) Accidental Discharges:

(1) Generalities

The accidental spillage of oil occurs either in association with an operational discharge or in association with an accident to the vessel, for instance as a result of collision, stranding, foundering or fire.

Under International Law the standards which are relevant to the problem of accidental pollution are those relating to navigation, the design of ships and their condition, and fire safety measures aboard tankers.

The international agreements on safety of life at sea contain navigational standards.

Thus the International Convention for the Safety of Life at Sea 1948,⁵⁰ is still in force.

The current instruments are the International Regulation for the Safety of Life at Sea 1960⁵¹ and the International Regulation for Preventing Collisions at Sea 1960.⁵² These lay down international standards relating to the navigation of all ships on the high seas, they are relevant to the prevention of collisions, in other words they are important from the environment's point of view, as those provisions

concerning ships' routing.

As well, traffic separation schemes are important in cases of accidental discharge. It requires, radar and communications stations set up on shore as well as permanent staff employed to man these shore installations.

Furthermore there are two important international provisions in reference with tank size and construction. In the 1971 Amendments to the International Convention for the Prevention of Pollution of the Seas by oil 1954, they aim to avoid or limit the escape of oil cargo in the event of stranding or collision.

Tankers ordered after 1972 shall have cargo tanks so constructed and arranged that if certain assumed side or bottom damage is sustained, the hypothetical outflow of oil shall not exceed 40,000 cubic metres.⁵³

In the 1973 Prevention Convention Regulations 22-25 of Annex I retain the basic formula of the 1971 Amendments, described above, but make two additions:

(a) when a cargo transfer system interconnects two or more cargo tanks valves for separating the tanks from each other must be provided and must be kept closed while the tanker is at sea, (Regulation 24(5)),

and

(b) tankers must be so constructed as to comply with the subdivision and damage stability criteria specified, (Regulation 25).

Oil spills differ widely in size and therefore in consequences as was the case in the late 1960's, when on March 18th 1967, the Torey Canyon, 61,263 tons, carrying a cargo of 118,000 tons of crude oil from the Persian Gulf to Milford Haven, went aground on the Seven Stones Reef

between Land's End and the Isles of Scilly. Estimates of the cargo discharged range between 60,000 and 100,000 tons of crude oil which caused considerable pollution to both the British and French Coast.

As a direct result of this casualty, a request from the British Government, IMCO adopted two international conventions:

(1) the 1969 Convention Relating to intervention on the High Seas in cases of Oil Pollution Casualties

and

(2) the 1969 Convention on Civil Liability for Oil Pollution Damage.

(2) Intervention on the High Seas in cases of Oil Pollution Casualties

The 1969 Convention Relating to intervention on the High Seas in case of Oil Pollution Casualties, this instrument, which entered into force on May 6th 1975, empowers coastal states parties to take such measures on the High Seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil following upon a maritime casualty, which may reasonably be expected to result in major harmful consequences.
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However, no power to intervene arises unless there is grave and imminent danger.
56 The Convention, not applicable to warships and other government non-commercial vessels, provides that prior consultations should be held with other affected states, with the flag state and with persons known

to have interests at stake.

The Article II (4) defined "related interests" such as:

- (a) maritime coastal, port or estuaries activities, constituting an essential means of livelihood of the persons concerned.
- (b) tourist attractions of the area concerned.
- (c) the health of the coastal populations and the well being of the area concerned, including conservation of living marine resources and of wildlife.

The convention applies only where a maritime casualty has occurred. Thus Article 2(1) defines "maritime casualty" as "a collision of ships, stranding or other incident of navigation or other occurrence on board a ship or external to it resulting in material damage to a ship or cargo".

Furthermore, by Article 2(2) "installation or device engaged in the exploitation of the resources of the seabed and the ocean floor and the subsoil thereof" is excluded.

The measures taken shall be proportionate to the damage actual or threatened, article V(I). The same article V, in paragraph (II) stated that the measures "shall not go beyond what is reasonably necessary to achieve the end mentioned in Article I, and shall cease as soon as that end has been achieved". The coastal state is obliged to pay compensation to the extent of the damage caused by measures in excess of those reasonably necessary. In 1973 the London Conference on Marine Pollution drew up a Protocol relating to Intervention on the High Seas in cases of Marine Pollution by substances other than oil⁵⁸ as the 1969 Intervention Convention Convention applies only to oil pollution casualties.

(2) Other International Controls

(a) Ocean Dumping

The dumping of toxic or other hazardous or noxious substances in the sea, is another way of pollution of the sea from ships.

To a great extent to prevent, the dumping of toxic substances, standards are stated in articles 2, 24 and 25 of the Geneva Convention 1958. However, the practice whereby land based industries dispose of their waste by this method, confirmed that these articles have not been able to prevent this way of pollution of the sea. It may be observed that the material to be dumped in cases contains oil or substances which are to the kind to fall under the definitions of the 1954 London Convention for the Prevention of Pollution of the Sea by Oil (with amendments of 1962-1969-1971) which prohibits the discharge of "oil" or "oily mixture" into the sea.⁵⁹

This is not unusual especially as regards wastes from the petrochemical industry, which uses oil as a basic raw material.

(a) Dumping of Wastes at Sea 1972

The International community under the auspices of I.M.C.O., convened a conference on the convention of the dumping of wastes at sea; held in London 29th December 1972.⁶⁰ In article I the parties have undertaken a duty to take all possible steps to prevent pollution of the sea by harmful substances in general. The substances referred to are those "that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea".

This general obligation is not restricted to the question
of dumping.⁶¹

The preamble of the London Convention restates principle
21 of the Stockholm Declaration on the Human Environment:⁶²
States have a sovereign right to exploit their own resources,
and the responsibility to ensure that activities within their
jurisdictional control do not cause damage to the environ-
ment of other states or of areas beyond the limits of nat-
ional jurisdiction.

Also, the preamble points to the need for appropriate
regional arrangements supplementary to the general convent-
ion. Article (III) paragraph (1) contains a definition of
the word "dumping". Dumping means "any deliberate disposal
at sea of wastes and other matter from vessels, aircraft,
platforms or other man-made structures at sea." Dumping
does not include the disposal of wastes or other matter
incidental to or derived from the normal operations of
vessels, aircraft etc.⁶³

Disposal of waste directly related to exploration and
exploitation of the continental shelf is not covered by
the Convention. Article X contains a provision on the
question of state responsibility and liability for damage.

The parties, in this respect, undertake "to develop
proceedures for the assessment of liability and the settle-
ment of disputes", regarding dumping. This shall be "in
accordance with the principles of international law regard-
ing state responsibility for damage to the environment of
other states or to any other area of the environment caused
by dumping of wastes and other matter of all kinds".

(c) The Oslo Convention 1972

This is a regional arrangement for the north-east part of the Atlantic Ocean.

The Convention is directed against marine pollution by dumping from ships and aircraft.

In the preamble it is stated that concerted action by governments at "national, regional and global levels is essential to prevent and combat pollution. It also refers to the fact that pollution of the sea has many sources.

Article I: the parties declared that they pledge themselves especially to take all practical steps to prevent pollution of the sea by harmful agents.

In Article 3 the parties agree to apply the measures which they adopt in such a way as to prevent diversion of dumping into seas outside the Convention area.

Article 4 lays down an obligation to harmonise the policies of states and generally to "introduce individually and in common" measures to prevent pollution of the sea by dumping.

The obligations with regard to ocean dumping are divided thus: in Article 5 we find a total prohibition of the dumping of certain substances listed in Annex 1 to the Convention. Substances as organohalogen compounds, mercury, persistent plastic, and other persistent synthetic materials which may float and remain in the sea. In Article 6 and Annex II, there is no absolute prohibition, but dumping shall be subject to special control.

The dumping of these substances in quantities which the commission defines as significant shall be subject to a permit granted in each specific case from the appropriate national authority.

Article 15 deals with the question of jurisdiction.

III NATIONAL PREVENTIVE MEASURES:

Individual states have embarked on a course of unilateral action to preserve their interests:

(1) United Kingdom

The United Kingdom in the Prevention of Oil Pollution Act 1971,⁶⁶ asserts a competence to undertake appropriate action when any ship on the high seas threatens to degrade the coastline or territorial waters of the United Kingdom.

(2) United States of America

In the United States, section 311 (c)(1) of the Federal Water Pollution Control Act (FWPA) as amended by the Clear Water Act 1977⁶⁷ authorizes the President to act to remove any oil which is discharged "into or upon the navigable waters of the U.S.A. adjoining shore lines or into or upon the waters of the contiguous zone". This authority has been delegated to the Coast Guard for the Coastal waters of the U.S.A.

In broad terms, the congressional mandate is to protect the waters and the coastline of the United States from damage resulting from pollution by oil and other hazardous substances by (i) preventing the discharge of these substances, and (ii) authorizing the removal of any substances which are discharged.

(3) Oman

The Marine Pollution Control Law 1974⁶⁸ of the Sultanat of Oman, where a pollution free zone is established measuring 38 miles from the outer limit of the territorial waters of Oman which extend 12 miles from the coast or from the respective baselines. In this zone, it is unlawful for any

person or for any vessel to discharge a pollutant which is defined to compromise among other substances oil or oily mixture (art. 2.1 to 2.11). Persons or vessels charged with an offence may establish the usual defences (pollutant was discharged for saving life, securing safety of any vessel or for preventing serious damage to any vessel or to its cargo).

Article 3.1, stated that if the Minister is satisfied that the discharge of a pollutant was not necessary for the purpose alleged in the defence or was not a reasonable step to take in the circumstances, then the defences stated in Article 2.1 to 2.11 cannot be invoked. The Article 2.4 of the Law makes it unlawful for any vessel registered in the Sultanate to discharge a pollutant in sea areas outside the pollution free zone.

(4) Canada

Since 1970 Canada took unilateral action in protection of the Arctic environment. The problem of ocean pollution is intensified by the extreme climate of the Arctic Waters, while 50% of spilled oil in a temperate zone might be oxidised within a week, oil spilled in the Arctic may persist as long as fifty years. Thus these circumstances in the Arctic led to Canada's desperate attempts to combat oil pollution.

On June 26th 1970, the Arctic Waters Pollution Prevention Act ⁶⁹ received Royal assent and became law. By that act Canada asserted jurisdiction to regulate activities in its Arctic Waters through a national regime which governs everything from penalties for polluters to the actual construction of ships of any nation traversing the international waters of the Canadian Arctic.

Under the act "Arctic Waters" were defined as all those waters above latitude 60 north within 100 nautical miles off-shore plus continental shelf or other substrata that Canada had the right to exploit.⁷⁰

The objective of the Act was not just oil pollution but included any substance detrimental to the use of the Arctic Waters by men or fish and the plants men use.⁷¹

IV CIVIL LIABILITY AND COMPENSATION FOR OIL POLLUTION

(1) Common Law

Public control of pollution is in some ways a simple matter. The use of technical measures for the prevention of spillage, enforced through construction rules, records, reports, inspection, prosecution for illegal or unlicensed pollution, all have their place. The legal techniques are fairly simple, although effective enforcement may be extremely difficult.

Quite different considerations apply to the cost of pollution. The ordinary common law has not been very well equipped to deal with the legal questions that can arise as a result of pollution particularly those which might ensue after a major oil spill.

In *Esso Petroleum v. Southport Corporation* (1956)⁷², a small tanker left the Mersey on a voyage to the River Ribble in December 1950, as she left the Mersey, her steering gear began to behave erratically and she began to sheer alarmingly. On entering the narrow deep channel in the mouth of the Ribble, she sheered and went aground upon a revetment wall. After an attempt to get her off using her own engines, the propeller struck a hard construction and it became dangerous to continue the same procedure.

The vessel was in serious danger of breaking her back and in worsening weather conditions, the master ordered the cargo to be discharged to save ship and crew. The oil floated on to Southport beach. The local authority removed it and sought to recover the cost from the owners of the ship. The action was based upon negligence, nuisance and trespass. It failed in the House of Lords. It was accepted that the decision of the master was a proper one and made in good faith.

It can be seen that there is sufficient doubt and difficulty in the application of the ordinary rules of common law in the U.K. to the costs and consequences of oil spillage that the only result that could be expected is that the parties involved in a major disaster would be inhibited from taking the necessary swift action because of the general uncertainty as to who was responsible.

(2) International Law

On an international level, the Torey Canyon disaster in March 1967 highlighted the need for a new international regime on the rights of a coastal state to intervene in an oil pollution threat and on civil liability for oil pollution damage.

Some legal machinery was required for allocating the responsibility to compensate those states, corporations or individuals which suffer thereby. Two International Conventions are of particular importance:

(a) The International Convention on Civil Liability for Oil Pollution Damage (hereinafter referred to as "the civil liability convention") in 1969,

and

(b) the international convention on the establishment of an international fund for compensation for oil pollution damage, drawn up in 1971 (hereinafter referred to as "the Fund Convention").

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(a) The Civil Liability Convention:

The preamble of the Liability Convention narrates that the parties thereto are "convinced of the need to ensure that adequate compensation is available to persons who suffer damage caused by any pollution resulting from the escape or discharge of oil from ships". The Convention was signed at Brussels on 29th November 1969. At present, although the Liability Convention is in force only 25 states have satisfied it and among those who have not are some of the bigger maritime nations.

The Liability Convention provides that the owner, defined in article 1(3), person or persons registered as the owner of the ship or, in the absence of registration, the person or persons owning the ship. However, in the case of a ship owned by a state and operated by a company which in that state is registered as the ship's operation "owner" shall include such company.

Ship is defined in article I(1) as any sea-going vessel or any seaborne craft or any type whatsoever actually carrying oil in bulk as cargo. However, the provisions of the Convention do not apply to warships or other ships owned and operated by a state and used for the time being on government non-commercial service. The owner shall be liable for any pollution damage, which is defined in article I(6) as loss or damage caused outside the ship carrying oil by contamination resulting from the escape or discharge of oil from the ship, wherever such escape or discharge may

occur and includes the costs of preventive measures and further loss or damage caused by preventive measures.

Article 1(7) stated that preventive measures means any reasonable measures taken by any person after an incident has occurred to prevent or minimise pollution damage. Oil is defined in Article I(5) as any persistent oil such as crude oil, fuel oil, heavy diesel oil, lubricating oil and whale oil, whether carried on board a ship as cargo or in the bunkers of such ship. Incident is defined in article I(8) as any occurrence or series of occurrences having the same origin which causes pollution damage, provided that the damage was caused on the territory including the territorial sea of a contracting state.

Liability is strict and the owner is liable to any individual or partnership or any public or private body whether corporate or not including a state or any of its constituent sub-divisions.⁷⁴

Where oil has escaped or been discharged from two or more ships, and pollution damage occurs, the owners are jointly and severally liable if it is not reasonably clear which damage was caused by each ship.⁷⁵ There are however, various defences available and the owner will not be liable if he can demonstrate that the damage was caused by any of the following,⁷⁶ viz:

- (i) an act of war, hostilities, civil war, insurrection or a natural phenomenon of an exceptional, inevitable and irresistible character.
- (ii) an act or omission done with intent to cause damage by a third party. If the owner can prove that the pollution damage was caused in whole or in part by such an act or by the negligence of the person who

suffered the damage, he may be exonerated in whole or in part from his liability to that person.

(iii) by the negligence or other wrongful act of any Government or other authority responsible for the maintenance of lights and other navigational aids in the exercise of that function.

The owner of a ship registered in a contracting state and carrying more than 2,000 tons of oil in bulk as cargo is required to maintain insurance or other financial security to cover potential liability.⁷⁷

Article VII (1) gives two examples of acceptable financial backing, viz: a bank guarantee and certificate delivered by an international compensation fund. Each ship will be issued with a certificate to the effect that such financial backing is in force; that certificate must be carried by the ship and a copy deposited with the authorities who keep the ship's registry. Limitation of liability is dealt with in Article V which provides, that the owner of a ship from which the escape or discharge occurred may limit his liability in respect of any incident to 2,000 francs for each ton of the ship's tonnage, which is defined in article V(10), up to a maximum of 210 million francs provided the incident occurred without actual fault or privity on his part.

The Convention deals with jurisdictional matters providing that each contracting state must ensure that its courts possess the necessary jurisdiction to entertain claims for compensation.⁷⁸ Where pollution damage has been caused in more than one Contracting State and the preventive measures have been taken in such territories, the action may be brought in the courts of any such states, but

after the fund has been deposited with a court, that court has exclusive jurisdiction in relation to apportionment and distribution.⁷⁹ In each case, unless reasonable notice is given to the defendant or he is denied a fair opportunity to present his case, other contracting states need not recognise the judgement given.⁸⁰

The other ground for refusing to recognise a judgement is that it was obtained by fraud, but in all other cases, contracting states must recognize a final judgement.

It must be emphasized that the liability convention creates civil liability for a pollution discharge of oil no matter where the spill occurs so long as the "pollution damage is caused on the territory including the territorial sea of a contracting state".⁸¹

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(b) The Fund Convention 1971:

The institutions of the Fund consist of an Assembly, a secretariat headed by a Director and an Executive Committee elected by the Assembly on the basis of geographical distribution and the quantity of oil received by the states so qualifying.⁸³ The members of the Executive Committee hold office only until the end of the regular meeting of the Assembly succeeding that of their election.⁸⁴

The fund itself is to be formed out of contributions drawn from the oil industry in amounts assessed by the Assembly on the quantities of contributing oil, received in the ports or terminal installations of the Contracting Parties.⁸⁵

The fund has the twofold purpose of providing compensation to the victims of a maritime oil pollution casualty who have suffered damage to the extent that they fail to

be protected by the liability convention and of indemnifying shipowners and their insurers for the additional burdens which the liability convention imposes on them. ⁸⁶

As with the Liability Convention, the Fund Convention is applicable only to damage caused in the territory or territorial sea of a contracting state and to preventing measures taken to avoid such damage. ⁸⁷

Claims which remain unsatisfied after the Liability Convention's maximum amount of damages of some \$14,112,000 has been paid can receive from the Fund further compensation up to a maximum under both treaties of \$ 32,400,000.

The exceptions from liability permitted to the Fund are more limited than those provided by the Liability Convention. The fund incurs no obligation if: ⁸⁸

(1) it proves that the pollution damages resulted from an act of war, hostilities, civil war or insurrection or was caused by oil which had escaped or been discharged from a warship or other ship owned or operated by a state and used at the time of the incident only on Government non-commercial service.

or

(2) the claimant cannot prove that the damage resulted from an incident involving one or more ships.

The fund may be exonerated either wholly or partially if it proves that the pollution damage resulted from an act or omission by the claimant was done either intentionally to cause the damage or negligently. ⁸⁹

(3) TOVALOP and CRISTAL

After the catastrophe of the Torey Canyon, the oil industry, spurred by the major international companies,

realized that it could by itself play a useful role and this in two ways. First, in organising to fight accidental pollution and guarantee adequate compensation to the victims, but also, in devising appropriate techniques to reduce the risk of pollution and in encouraging operators to make rational use of them.

The first objective corresponds to the setting up of TOVALOP in January 1969 and of CRISTAL in January 1971.

TOVALOP:⁹⁰ (TANKER OWNERS Voluntary Agreement concerning Liability for Oil Pollution)

TOVALOP came into operation on October 6th 1969 by which time owners of at least 50% of the tanker tonnage of the world had become parties. At the present time, owners of over 90% of the free world's tanker tonnage are parties.

"A tanker" for purposes of TOVALOP is any tank vessel, whether or not self propelled, designed and constructed for the carriage by sea in bulk of crude petroleum and hydrocarbon fuels and oils derived therefrom, excluding liquified petroleum gas and liquified natural gas, whether or not operated in sea going service' (Clause I(a)).

As noted in its preamble, TOVALOP reflects the opinion of its signatories that traditional maritime law, did not always provide an adequate means for compensating "National Governments who incur expenditures to avoid or mitigate Damage by Pollution" to Coast Lines, from a discharge of oil as a result of a marine casualty or for reimbursing tanker owners who incur such expenditures, or for encouraging joint government owner mitigating measures.

TOVALOP stated in its preamble, represents a "voluntary effort" on the part of tanker owners to establish their responsibility to governments for paying compensation

for such clean-up costs, to assure tanker owners' capability to fulfill this responsibility and "otherwise to alleviate the situation". Under TOVALOP, each tanker owner undertakes to do one of two things, either to "remove" a spill (discharge) of persistent oil which through negligence originates from one of his tankers and causes or threatens to cause damage by pollution to coast lines or to reimburse a National Government which reasonably incurs costs on removing such spill. It is important to emphasize that a party's obligations under TOVALOP apply to all tankers owned by a participating owner, and the obligations set forth in Clause IV relate to any participating tanker and its participating owner. When there is a "grave and imminent danger" of such spill, without an actual discharge - the tanker owners undertake either to remove the threat or to reimburse a National Government's reasonable cost of removal.

The words "remove" and "removal" refer to reasonable measures to prevent or mitigate Damage by Pollution.⁹¹ For TOVALOP to apply the tanker need not be on a loaded run.

There is no restriction as to where the spill or threat must occur in order to fall within TOVALOP coverage. So long as it causes, or threatens to cause damage by pollution to coast lines, it is within the ambit of the Agreement.⁹² "Damage by pollution" means physical contamination damage and excludes fires, explosions, consequential or ecological damage.⁹³

Coast lines means land and improvements thereon whether the land adjoins the sea, inland waterways, harbours or other bodies of water.⁹⁴ Although negligence of the tanker is an essential ingredient to a government's right

to reimbursement from a party to TOVALOP and his alternative duty to clean up himself, provision is made that the owner of a tanker from which a spill occurs, or a threat thereof develops, has the burden of proving absence from negligence.⁹⁵

The maximum amount of a tanker owner's liability per incident under TOVALOP is \$100 per gross registered ton of the tanker involved or \$10,000,000 whichever ever is less where both a government and the tanker owner spend money for removal their expenditures exceed them.⁹⁶

TOVALOP is administered by the International Tanker Owners Pollution Federation an association of which all parties to TOVALOP are members.⁹⁷

The federation, in accordance with TOVALOP, requires, that the parties establish their financial capability to meet their obligations under the agreement.⁹⁸

A claim by a government under TOVALOP must be presented within a year of the discharge or threat thereof.⁹⁹

The claim must be filed against the tanker owner involved within a copy being sent to the federation.¹⁰⁰

A government receiving payment by a Party to TOVALOP must release all its claims against that Party which arise from the incident.¹⁰¹

In the event of a dispute between a government and a party to TOVALOP, the matter may be taken to arbitration, to the International Chamber of Commerce procedures.¹⁰²

TOVALOP has been amended on a number of occasions. The definition of "oil" originally crude oil, fuel oil, heavy diesel oil and its residual, including but not limited to asphalt, bitumen, etc.¹⁰³

The definition of "Government" originally meaning only a National Government was changed so as to include a

local government or governmental agency within the jurisdiction of a particular agency within the jurisdiction of a particular National Government on behalf of whom that National Government is willing to act.

Thus a local government may be in a position to recover removal costs under TOVALOP. TOVALOP was also amended so as to apply to expenses incurred to prevent potential damage by pollution even when no discharge from a tanker which would probably lead to pollution damage or create a menace of such damage,¹⁰⁴ as noted above originally TOVALOP applied only when there was an actual discharge but actually the definition of remove covers both discharge and threat of discharge situations.

CRISTAL: means Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution.

CRISTAL is an agreement among oil companies as owners of persistent oil cargoes and the Oil Companies Institute for Marine Pollution Compensation Limited, the Institute, a Bermuda association of which all parties are shareholders.¹⁰⁵

CRISTAL was originally conceived as a means of supplementing liability of tanker owners for pollution damage and supplementing monies available under TOVALOP or under the Civil Liability Convention, pending preparation and ratification of a suitable convention establishing supplemental compensation for pollution damage.¹⁰⁶

CRISTAL came into effect on April 1st 1971, little less than three months after signing, when Oil Companies receiving over 50% of the world seaborne crude oil and fuel oil had become signatories.

The receivers of well over 90% of the world's cargoes

of crude and fuel oil are presently parties to the agreement.

Under CRISTAL, the Oil Company parties undertake to pay contributions into a fund maintained by the Institute and the Institute undertakes to make payments out of this fund to reimburse certain clean-up expenses incurred by tanker owners and also to compensate persons sustaining pollution damage from tanker oil spills who would otherwise receive inadequate compensation thereof.¹⁰⁷

CRISTAL comes into play only in the case of a tanker actually carrying a cargo of persistent oil.¹⁰⁸ Unlike TOUALOP, it does not apply to a ballast run. It does apply, however to a spill of bunkers or lube oil (as in the case of cargo) from a tanker on a loaded run when the cargo is persistent oil, as does the Civil Liability Convention.

Three basic conditions must be met before the Institute is obliged to make a payment under CRISTAL for a tanker owner's clean up expenses or for another person's pollution damage arising from a discharge of oil.¹⁰⁹

First, the oil carried by the vessel must have been "owned" by a Party to CRISTAL at the time of the incident.

CRISTAL defines "ownership" within the meaning of this first condition very broadly.

A party "owns" a shipment of oil when it has actual title thereto, when, prior to the incident, it has transferred title to a non-Party but has nevertheless elected to be considered as owner, provided notice of such transfer has been made to the Institute and when title is in a person not a Party, who, prior to the incident contracted to transfer the shipment to a Party. This provision also

~~establishes that bunker oil and lubricating oil "owner-~~
ship" follows cargo ownership for CRISTAL purposes.

Second: and prior to the time the Civil Liability Convention comes into force, the tanker from which the oil escaped must be entered in TOUALOP at the time of the incident.

Third: the escape must have occurred under circumstances where the tanker owner would have been liable for the resulting pollution damage had the Civil Liability Convention been in force at the time of the incident.

Insofar as a tanker owner incurring clean-up expenses is concerned, CRISTAL will reimburse such costs incurred as a result of a spill from his tanker to the extent that they exceed \$125 per gross or \$10,000 whichever is less. ¹¹⁰

In relation to persons sustaining pollution damage (other than owner's clean-up) are concerned, CRISTAL will compensate them to the extent that recovery for the damage is not available from other sources, once the damaged person has exercised due diligence to make a recovery and up to certain limits.

CRISTAL imposes per Incident limits for reimbursing tanker owner's clean-up costs and persons sustaining pollution damage.

Insofar as persons sustaining damage are concerned, the Institute will reimburse them (per incident) up to \$30,000,000 less (a) the amount that, in the Institute's judgement, should have been incurred up to \$125 per grt, or \$10,000,000 whichever is less; (b) any compensation paid by the Institute for owner's clean-up costs, as described above, (c) the amount of owner's liability to a government electing to take advantage of TOUALOP, and (d) any amounts reasonably recoverable from other sources.

A person sustaining pollution damage would be expected to exercise due diligence to recover his damage from the tanker owner who caused the spill and from any local fund established by statute to compensate pollution damage. ¹¹²

Claims against the Institute must be presented within one year from the date of the incident causing the damage or the incurring owner's clean-up costs. ¹¹³

The Institute has the right to make rules and directives concerning interpretation of CRISTAL'S provisions.

The contract is governed by the laws of England and the courts of England have jurisdiction over any disputes arising thereunder. This forum was probably selected because of the familiarity of English courts with maritime "matters".

CRISTAL, contains provisions concerning the raising of the "fund" out of which the Institute will make payments. It provides for the establishment of an initial capital of \$5,000,000 out of "calls" on the Oil Company Parties, and provides for supplementary calls to assure the adequacy of the funds to fulfill the obligations the Institute has assumed.

Recent amendments parallel those made to TOUALOP such as those applicable when a spill occurs apply to the threat of a spill when a grave and imminent danger of pollution damage is present and under those circumstances CRISTAL compensation is available for reimbursement of tanker owners who take appropriate measures to forestall such calamity. ¹¹⁴

Though TOVALOP and CRISTAL were conceived as interim measures pending the entry into force of the 1969 Convention on Civil Liability for Oil Pollution Damage and of the 1971 Convention on the Establishment of an International Fund in Compensation for Oil Pollution Damage, the coming into force of these two conventions did not affect the functioning

of TOVALOP and CRISTAL, and this for various reasons. First, it will be noticed that, even in the 15 - odd nations which have ratified CLC represent about 60% of the gross tonnage of the world tanker fleet in service, the greater part of the globe remains uncovered by the convention. This includes North America, South America, the Far East and nearly all of Africa.

Another reason more important is that the scope of TOVALOP and CRISTAL is wider than that of CLC. For instance, unlike TOVALOP and CRISTAL, CLC does not apply to bareboard charters. Neither does it cover pollution from the bunkers of such a ship. CLC does not cover situations where there exists a mere threat of imminent pollution but with not actual discharge of oil into the sea.

V NEW DEVELOPMENTS IN THE LAW OF THE SEA IN THIS MATTER

(1) UNCLOS

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The Third United Nations Law of the Sea Conference:
Pollution of the Sea from Vessels.

The debate on vessel-source pollution at Committee III of UNCLOS III centres around the question of who is going to exercise competence in relation to

- (a) the adoption of construction, manning and equipment standards for vessel, and
- (b) enforcement.

The maritime states insist on the need for adoption of generally accepted international standards, although they may agree to the exercise of enforcement powers by the coastal states or the port state, whereas, most coastal states claim the right to adopt their own standards and

enforce them on all ships navigating not only their territorial sea but also through their economic zone.¹¹⁶

However, whichever way the issue is decided there is going to be severe control of pollution which will be directly concerned with ships.

(a) Control of pollution in the territorial sea

Thus, chapter six, provides that states shall establish international rules and standards regarding vessel-source pollution, shall establish global and regional rules regarding ocean dumping.¹¹⁷

In the territorial sea, the coastal state's powers are subject only to not hampering innocent passage, there is no obligation on the coastal state to conform to international rules and standards.¹¹⁸

A state has the right to establish conditions of entry to its ports. The flag state is obliged to provide for the enforcement by its vessels with applicable international rules and standards including any pollution requirement, not only when a violation occurs any where in the world but also before their vessels leave their ports. It must also investigate any violation alleged and if the evidence is sufficient, cause proceedings to be taken under its laws.¹¹⁹

The port state has substantial enforcement rights and duties. Thus,

(i) a duty to investigate and report if there are reasonable grounds for believing that a vessel has violated the international rules and standards regardless of where the violation occurred.¹²⁰

(ii) a right to enforce dumping standards.¹²¹

(iii) a right to institute proceedings if a violation of international discharge standards has occurred in the

territorial sea or within an as yet unspecified distance from the coast of either the port state or another state which is a party to the Convention containing relevant standards and which requests such action by the port state.¹²²

The port state may arrest the vessel, which is subject to release upon the parting of bond or other reasonable security, however, the port state must give the flag state six months to institute proceedings before instituting its own proceedings.¹²³

If a coastal state has reasonable grounds for believing a vessel has violated international discharge standards within an as yet unspecified distance from its coasts, it may require identification and other specified information including the next port of call from the vessel by radio or other means of communication.¹²⁴

If the discharge violation has been of a flagrant character causing severe damage or threat of severe damage to the marine environment or the vessel is proceeding to or from the internal waters of the coastal state, the coastal state has the power to board and inspect.¹²⁵

It is required to notify the flag state and it can also request an investigation and proceedings by a port state.¹²⁶

(b) Control of Pollution in the Exclusive Economic Zone (E.E.Z.)

In the Exclusive Economic Zone; the coastal states, for the purpose of enforcement may establish vessel source pollution laws and regulations, conforming to and giving effect to international rules and standards established through the International Community.¹²⁷

Under a separate section, the text provides coastal states with very wide powers to curb and abate vessel source pollution in respect of ice-covered areas within their economic zone.¹²⁸

As the powers conferred to the Coastal State, the Revised Negotiating Text, gives the coastal state a series of enforcement powers in the Exclusive Economic Zone:

- (1) to request information
- (2) to stop and board the vessel for physical inspection
- (3) to arrest the vessel.

This sequence will emerge in the order described whenever there are clear grounds for suspecting a discharge violation causing major damage.¹²⁹

(c) Liability and Responsibility for Oil Pollution

Section 9, contains provisions on responsibility and liability, that states are responsible for the fulfilment of their international obligations and they shall be liable in accordance with international law for damage resulting from violations of these obligations. They shall ensure that their legal systems can give prompt and adequate compensation in respect of damage caused by pollution of the marine environment by persons natural or judicial, under their jurisdiction.¹³⁰

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MUNICIPAL LEGISLATION OF THE UNITED KINGDOM
VENEZUELA TO CONTROL OIL POLLUTION

I INTERNATIONAL LAW OF THE SEA: GENEVA 1958

THE LAW OF TERRITORIAL WATERS:

(1) Geneva Convention in this respect

The Convention on the Territorial Sea and the Contiguous Zone, concluded at the United Nations Conference on the Law of the Sea held at Geneva, which entered into force September 10, 1964¹ contains the following critical article

- 1) "The Sovereignty of a state extends beyond its land territory and its internal waters, to a belt of sea adjacent to its coast described as the territorial sea.
- 2) This Sovereignty is exercised subject to the provisions of these articles and to other rules of International Law."

The Commentary of the International Law Commission on article 1 of its 1956 draft read:²

- 1) Paragraph 1 brings out the fact that the rights of coastal states over the territorial sea do not differ in nature from the rights of sovereignty which the state exercises over other parts of its territory. There is an essential difference between the regime of the territorial sea and that of the high seas, since the latter is based on the principle of free use by all nations ...

Clearly this sovereignty over the territorial sea cannot be exercised otherwise than in conformity with the

positions of international law. In this respect one limitation of the sovereignty of the coastal state on its territorial waters is, described in the Geneva Convention on the Territorial Sea and Contiguous Zone, under section III, Right of Innocent Passage. Sub-section A Rules applicable to all ships.³

"article 14

- 1) Subject to the provisions of these articles, ships of all states, whether coastal or not, shall enjoy the right of innocent passage through the territorial sea."

The Commentary of the International Law Commission with reference to its above quoted draft of article 15 (article 14 of the 1958 Geneva Convention on the Territorial Sea) read:

- 1) This article lays down that ships of all states, including fishing boats have the right of innocent passage through the territorial sea.

Therefore it reiterates a principle recognized by international law and confirmed by the 1930 Codification Conference of Hague, which in its report of the Second Commission of territorial sea, article 3 contained the draft on the "legal status of the territorial sea" of which on the right of passage read":⁴

"Passage is not innocent when a vessel makes use of the territorial sea of a coastal state for the purpose of doing any act prejudicial to the security, to the public policy or to the fiscal interests of that state"

Observations of Sub-Committee I on the article as drafted contained the following statements.⁵ " ... it

is immaterial whether or not the intention to do such an act existed at the time when the vessel entered the territorial sea, provided that the act is in fact committed in that sea. In other words, the passage ceases to be innocent if the right accorded by international law and defined in the present convention is abused and in that event the Coastal State resumes its liberty of action ..."

Another important rule about the rights of the coastal state in relation with the right of innocent passage is stated in the Hague Convention 1930 and in the Geneva Convention 1958.

The first of these Conventions in its article 5,
6
reads:

"The right of passage does not prevent the coastal state from taking all necessary steps to protect itself in the territorial sea against any act prejudicial to the security, public policy or fiscal interests of the State and in the case of vessels proceeding to inland waters, against any breach of the conditions to which the admission of those vessels to those waters is subject.

Thus this article gives the coastal state the right to verify if necessary, the innocent character of the passage of a vessel and to take the steps necessary to protect itself against an act prejudicial to its security, public policy or fiscal interests.

Under article 17 of the Geneva Convention 1958, on the Territorial Sea and the Contiguous Zone provides:
?

"Foreign ships exercising the right of innocent passage shall comply with the laws and regulations

enacted by the coastal state in conformity with these articles and other rules of international law and in particular with such laws and regulations related to transport and navigation."

The commentary of the article above cited, by the International Law Commission at its eighth session 1956,⁸ reads:

- "(1) International Law has long recognized the right of the coastal state to enact, in the general interest of navigation, special regulations applicable to ships exercising the right of passage through the territorial sea.
- (2) Ships entering the territorial sea of a foreign state remain under the jurisdiction of the flag state. Nevertheless, the fact that they are in waters under the sovereignty of another state imposes some limitation on the exclusive jurisdiction of the flag state. Such ships must comply with the laws and regulations enacted by the coastal states in conformity with the present rules of international law, in particular with the laws and regulations relating to transport and navigation, such as:
- (a) The safety of traffic and the protection of channels and buoys.
 - (b) The protection of the waters of the coastal state against pollution of any kind caused by ships.
 - (c) The conservation of the living resources of the sea.
 - (d) The right of fishing and hunting and analogous rights belonging to the coastal state.

(e) Any hydrographical survey.

(2) Geneva Convention in reference to pollution of the sea by oil:

In 1958, the first U.N. Conference on the Law of the Sea at Geneva dealt with questions of territorial water boundary definitions and fisheries rights. Four Conventions were concluded which make reference to provisions for some water pollution control:

The Convention on the territorial sea and contiguous zones, article 24(1) states:

"In a zone of the high seas contiguous to its territorial sea, the coastal state may exercise the control necessary to

- (a) prevent infringement of its, sanitary regulations within its territory or territorial sea
- and
- (b) punish infringement of the sea above regulations committed within its territory or territorial sea."

So far as oil is concerned, article 24 of the High Seas Convention, supplemented by article 5 of the Geneva Convention on the Continental Shelf (1958) offers further guidance.

Article 24 provides that every state shall draw up regulations to prevent pollution of the Seas by the discharge of oil from the exploitation and exploration of the seabed and its subsoil, taking account of existing treaty provisions on the subject

Article 5 of the Continental Shelf contains two relevant rules. Thus, paragraph 1 requires that: the exploration of the Continental Shelf and the exploitation of its natural

resources must not result in any unjustifiable interference with navigation, fishing or the conservation of the living resources of the Sea, nor result in any interference with fundamental oceanographic or other scientific research carried out with the intention of open publication. And more specifically, paragraph 7, requires that,

"the coastal state is obliged to undertake in the safety zones (around installations and devices on the Continental Shelf) all appropriate measures for the protection of the living resources of the sea from harmful agents. The High Seas Convention also provides further guidance on what the standard of reasonableness requires in relation to "activities with radioactive materials or other harmful agents."

Thus, article 25 provides that every state shall take measures to prevent pollution of the seas from the dumping of radioactive waste, taking into account any standards and regulations which may be formulated by the competent international organizations in taking measures for the prevention of pollution of the seas or air space above, resulting from any activities with radioactive materials or other harmful agents.

Article 7 of the Convention on Fishing and Conservation Resources of the High Seas, provides that,

"any coastal state may with a view of the maintenance of the productivity of the living resources of the sea, adopt unilateral measures of conservation appropriate to any stock of fish or other marine resources in any area of the high seas adjacent to its territorial sea, provided that negotiations to that effect with the other states concerned have not yet come to an agreement within six months."

II UNITED KINGDOM'S REGIME IN THIS MATTER:

There are many sources of marine pollution and they have a multiplicity of harmful effects. ⁹ Of those which are detrimental to the United Kingdom - whether to her inhabitants directly or to her shores - not all are susceptible to the control of her laws, for international law restricts the jurisdictional competence of each individual state.

The United Kingdom is entitled to, and does exercise legal control over:

- (i) The quality of water flowing from her territory into the sea, including direct discharges from land into coastal waters (land based pollution)
- (ii) Discharges from ships of whatever nationality within national waters from ships wherever they may be, and from offshore installations within national waters and on the British portion of the Continental Shelf.

(1) Land Based Pollution:

(a) Common Law: ¹⁰ At Common Law control of water pollution is based upon the property rights of owners of land abutting a river or a part of the sea, (the owner of the sea shore is presumed to be the crown unless a claimant can prove a grant to him or to his predecessors). The owner has the right to have the waters of the river or sea come to him in its natural state in flow, quantity and quality, and he has a Common Law action in nuisance against anyone who interferes with this right.

(b) Statute: ¹¹ The Water Act 1973:

The Water Act 1973, set up nine regional water

authorities to take over functions previously carried out by other statutory undertakings with regard to public water supply, sewerage and sewage disposal, control of inland water pollution.

(2) Pollution from Ships and Installations:

The United Kingdom has in general anti-pollution law, legislation tends to follow the international conventions and it was originally concerned more with pollution by oil than any other kind.

(a) Oil Pollution Act 1971¹²

The Prevention of Oil Pollution Act 1971, consolidating earlier legislation, (the Oil in Navigable Waters Act 1955, 1971 and S.5 of the Continental Shelf Act 1964) came into operation on March 1973.

It provides that it is an offence for British ships to discharge oil (crude, lubricating, fuel and heavy diesel oil) in any part of the sea outside the United Kingdom.¹³

(Heavy diesel oil is defined by the oil in Navigable Waters Regulations Act 1967).

With this prohibition the Acts replace the old system whereby the discharge of oil in "specified prohibited zones" was a criminal offence but discharging oil anywhere else in the sea was permitted.

It is clear that the Act's provisions draw their inspiration from the 1969 Amendments to the London Convention (International Convention for the Prevention of Pollution of the Sea by Oil, 1954-62 for 69, Amendments)¹⁴ but the Act is more stringent than the Amendments, which permit ships to discharge oil anywhere beyond fifty miles from

the land if certain conditions such as maximum rate of oil discharge are fulfilled.¹⁵ As regards British national waters, British and foreign ships are prohibited by the Act from discharging oil therein.¹⁶ Such a prohibition on foreign ships would seem to be justified by general international law.

Criminal liability for a forbidden discharge of oil rests with the owner or master of the vessel and the penalty on conviction is a fine not exceeding £50,000.¹⁷

Defences which may be advanced under the Act are almost identical with those of the Convention (S.5 of the Act, article IV of the Convention): that the discharge of oil was affected to secure the safety of human life or of a vessel or to prevent damage to ships or cargo or that it resulted from damage to the vessel or unavoidable leakage.

The Act, like the Convention, requires that vessels carry Oil Record Books containing particulars of specified operations.¹⁸

Ships which are neither British nor flying the flag of a "Convention Country" are nevertheless required to keep records of all transfers of oil taking place within United Kingdom National Waters,¹⁹ (S.17(12)) Oil in Navigable Waters (Transfer records) Regulations 1957.

Powers are conferred on a harbour master to board such ships while they are within his harbour, to require production of the transfer records and to inspect any part of the ship or its equipment in the course of an inquiry relating to an alleged discharge of oil into harbour waters.²⁰ The Convention contains requirements that ships are to be so fitted as to prevent the escape of oil into the ships

bilge or otherwise to ensure that the oil in the bilges is not discharged; the Act incorporates this provision by empowering the Secretary of State to make regulations requiring British ships to be fitted with equipment to prevent or reduce the discharge of oil and to comply with any other specified requirements.

(b) The Merchant Shipping Act 1974²²

The construction of oil tankers, ever larger in size gives rise to the possibility of very serious pollution from even a single accident.

In the United Kingdom, Part II of the Merchant Shipping Act 1974, provides for the implementation of the 1971 amendments by empowering the Secretary of State to make rules for the design and construction of United Kingdom Oil Tankers.²³ The Act differs from the Amendment in that the rules may be applied to tankers whenever constructed, where the international provisions cover only tankers constructed after a certain date. The rules may be applied whether or not the amendments or any other convention on this subject is at the time in force and binding on the United Kingdom Government.²⁴

One of the sanctions for failing to meet these standards is to be found in the prohibition of any tanker from leaving a United Kingdom port unless it qualifies for a certificate confirming with the rules or exempting it from their application.²⁵

Tankers not registered in the United Kingdom may be issued with leave to sail by the Secretary of State if he considers it appropriate and if the tanker complies with any conditions which he sees fit to impose with a view to

preventing or limiting the danger of oil pollution.

Certificates issued by other convention countries will be recognized.²⁶ Moreover, tankers without certificate may be refused entry to all United Kingdom ports or to one or more specified ports, or conditions may be imposed upon their entry. Not complying with the prohibitions on entry or exit from a port will be met by fines.²⁷

(c) Some legal differences between the Intervention Convention on the High Seas in cases of Oil Pollution Casualties 1969 and the Oil Pollution Act 1971

In March 1967 the Torey Canyon, a Liberian registered vessel ran aground on the seven stones rocks and lost some 10,000 tons of oil.

The result of the incident was the convening of the 1969 Conference at Brussels at which the Public Law Convention was drawn up (International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties).

The relevant provisions are contained in the Prevention of Oil Pollution Act 1971, which entered into force before the Convention itself did. The powers exercised by the Secretary of State and the Minister are contained in S.12²⁸ of the Act.

The Minister's power to give directions under the Act is exercisable only in relation to United Kingdom citizens or corporations.²⁹ But this power to undertake operations with respect to the ship itself is applicable also to foreign ships if he is satisfied that there is "grave and imminent danger of oil pollution".³⁰

Under the Act the powers of intervention may be exercised

following an "accident" to a ship - defined as "the loss,
stranding, abandonment of or damage to a ship.³¹ The
Convention is more specific and lists the different kinds
of "marine casualty" which bring the powers into operation.

The Convention provides that damage to a ship (or the
threat of damage) is sufficient to allow the use of the
powers of intervention, whereas the Act refers only to
damage to a ship.³²

Before any protective action may be taken a fairly
elaborate procedure of consultation and notification of
interested parties is required by the Convention (article
III), the Act on the otherhand imposes no duty on the
Minister to consult the state against whose ship it is
proposing to take action or to notify anybody at all.³³

Another important difference between the two instruments
is that the Convention specifies the "interests" which are
to be protected from oil pollution by the exceptional
measures of intervention permitted (article II).³⁴ The Act,
on the other hand does not name any particular kind of
damage that it aims at preventing and there is no scale of
values to assist the Minister in deciding on the degree of
forcible action to be taken where the threatened damage
is, say, to a recreation area, on the one hand, or to a
commercially valuable oyster bed on the other.

(3) Civil Liability:

(a) Common Law

At Common Law the owner of property damaged by pollution may have the right to sue the person who has caused the damage in nuisance, negligence or trespass. The plaintiff in an action resulting from oil pollution will

generally be the owner of the foreshore or of coastal fisheries.

(b) The Merchant Shipping (Oil Pollution) Act 1971

The Merchant Shipping (Oil Pollution) Act 1971, places near-absolute liability on a shipowner for any damage in the United Kingdom caused by an escape or discharge of oil from his ship.³⁵ His liability covers the cost of preventive measures and of any damage in the United Kingdom caused by an escape or discharge of oil from his ship.³⁶ His liability covers the cost of preventive measures and of any damage such measures may have caused.³⁷ The only defences are that the discharge of oil resulted from an act of war or from an "exceptional, inevitable and irresistible natural phenomenon" or was due wholly to the act of another individual (who was not the owner, servant or agent) done with intent to cause damage or to the negligent or wrongful act of an authority charged with the function of maintaining navigational aids.³⁸

In order to ensure that the plaintiff receives what is due to him the S.10 of the Act requires compulsory insurance or other security, for all tankers, British or foreign, carrying a bulk cargo of more than 2,000 tons of oil. Thus the Act provides a measure of financial protection to many victims of oil pollution damage, however, these will all be persons who suffer loss in spite of, or even because of the terms of the Act. These include persons suffering damage which comes within one of the exceptions to the Act, and for which the victim cannot therefore recover any compensation and persons who cannot obtain full compensation because the owner of the ship is either unable to meet all his obligations or has limited his liability

under the Act and the damage suffered exceeds that amount. To provide compensation for persons such as these the 1971 International Convention on the Establishment of an International Fund for compensation for Oil Pollution Damage was set up.³⁹ Part I of the Merchant Shipping Act of 1974 provides for its implementation in the United Kingdom.

The fund is also assistance to the shipowners themselves, if they incur liability by virtue of the Merchant Shipping (Oil Pollution) Act 1971, they may recover from the Fund that part of their total liability which exceeds an amount of 1,500 gold francs for each ton of their displacement (or 125 million gold francs in all, if less) but which is not in excess of 2,000 francs per ton.⁴⁰

III VENEZUELA'S REGIME

(1) Introduction

The Environmental policy. The venezuelan experience:

Venezuela has the strong point of its economy in the exportation of raw materials derived from natural resources, which means a super-exploitation of nature with aims to improve profits to meet the expenses originated for its own dependent condition.

Venezuela literally floats on oil, a fact, which not only makes this country unique in Latin America but from which it has gained international stature at the global level. After 1973, Venezuela increased its oil revenues approximately by four times to some nine billion U.S. dollars per year.⁴¹

Traditionally, in Venezuela the legislative policy to protect the environment against pollution has been

spread in different statutes, but with very little administrative implementation towards the development of conservation programmes.

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(2) The Constitution of the Republic of Venezuela:

(a) The Territory and Political Divisions

Article 7: the National Territory is that which belonged to the Capitaincy General of Venezuela before the political transformation initiated in 1810 with the modifications resulting from treaties validly concluded by the Republic.

The sovereignty, authority and vigilance over the territorial sea, the contiguous zone, the continental shelf and the air space, -as well as the ownership and exploitation of property and resources contained within them, shall be exercised to the extent and conditions determined by law.

(b) Territorial Sea and Contiguous Zone

Article 14: the territorial sea of the Republic of Venezuela, along its continental and insular coasts has a breadth of 22 kilometres and 224 metres, equivalent to 12 nautical miles measured from the base lines. The national sovereignty in the territorial sea is exercised over the waters, the soil and subsoil and the resources therein.

Wherever the limit established by this article overlaps with foreign territorial waters, the question will be resolved through agreements or other means recognized by International Law.

Article 3: for the purposes of maritime vigilance and policing for the security of the Nation and the safeguard of its interests, a zone of 5 kilometres and 556 metres, equivalent to three nautical miles, contiguous to the

territorial sea is hereby established.

(c) Jurisdiction over Merchant Ships in the territorial sea:

In relation with jurisdiction over merchant ships in the territorial sea, there is the practice in Latin American states of having no uniformity. Some states indeed, adopt the Anglo-American practice which asserts that a State's jurisdiction over foreign ships in territorial waters is absolute, although, as a matter of convenience and usage, the state may disclaim jurisdiction in cases where only the internal order of the ship is involved, or if they have no relation with the country and inhabitants and do not disturb its tranquility.⁴⁴

France and other continental countries recognize as a rule of law that such matters or disputes be left to the jurisdiction of the flag state.

Therefore, the majority of Latin American states adhere to the Continental approach.

Thus, the Bustarriante Code, of the Convention on Private International Law (Venezuela is part of this Convention),⁴⁵ provides that "the obligations of the officers and seamen and the internal order of the vessel are subject to the flag, Article 281, and that the penal laws of the coastal state are inapplicable with respect to offences committed in territorial waters or in national air, or foreign merchant vessel or aircraft, if they have no relation with the country and its inhabitants and do not disturb its tranquility (Article 301).

(3) Environmental Legislation:

(a) National Constitution

If a case of pollution of the sea occurs in the venezuelan coasts or venezuelan territorial waters, the law applicable will be the venezuelan law; the National Constitution in force establishes in its Article 106,⁴⁶ as the state's obligation the defence and conservation of its natural resources within the national territory and accord its exploitation to Venezuelans collective benefit.

(b) Statute of vigilance to prevent water pollution by oil

Under Venezuelan law exists the Statute of Vigilance to prevent water pollution by oil.⁴⁷ The main aim is to regulate hydrocarbon industry's activities, especially some aspects about its conveyance in land or near it.

Its exclusive end pursued is constituted in defence of the waters to protect the diversity of public and private interests that obtain its developments and profits in that environment.

The said statute established a fine to those who did not comply with its regulations.⁴⁸ The liability varies according to the importance of the fault where satisfaction is practically a compensation for the resulting damage for the suffered pollution into the community's goods.⁴⁹

This statute is applicable to all kinds of pollution coming from negligence or improvisation in its industrial activities.⁵⁰ However, the fine established by this statute of vigilance does not enjoy criminal character, it is mainly a civil matter regulated by Administrative Law.⁵¹

It stated that if a carrier of oil does not have the standards established by the statute of vigilance will

commit a serious fault even when it had not caused pollution, because the absence of the appropriate standards in the carrier of oil creates the potentiality of possible damages.⁵²

On the other hand even when the carrier of oil has the required standards but the technical efficiency is absent, the fault will be in less degree but a fine will be imposed.⁵³

The prejudice that must be taken into account to impose the fines are health riches and public convenience's character.

The final fine's decision for pollution of the waters by oil is not appealable but it could be heard by the administration if it is agreed that merits for revision exists.⁵⁴

But even when Venezuela had this special statute of vigilance and others for the protection of the environment in fact not much had been achieved in that sense.

(c) Organic Environmental Law

The new organic statute of environment in force since 16th June 1976,⁵⁵ determines the basis to develop a policy asserted under environmental principles.

This organic statute of environment fixes the main policy to all other statutes and regulations concerned with the environment's conservation. Its Article 2,⁵⁶ stated as public utility the environment's conservation, defence and improvement activities. Article 35,⁵⁷ of the organic statute, estimates as limitations to the property the prohibitions and restrictions that are imposed to the benefit of nature.

Chapter V, Article 20 stated:⁵⁸ "the following

activities are agreed to cause harm to the environment.

"Direct or indirect activities that pollute or damage the air, the sea, the marine bottom, soil and sub-soil or to fall contrary upon fauna and flora."

Chapter VI,⁵⁹ of the said statute, established the sanctions to persons liable for damaging the environment.

The penalties are fines or privation of the liberties which are established in the special statute, the Ecologic Criminal Act.

The Venezuelan participation in International Law of the Sea and other Regional Agreements in which, will be in fact studied in the next chapter. (No. V).

NOTES

CHAPTER IV

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UNITED NATIONS CONFERENCES IN RELATION
WITH MARINE POLLUTIONI THE FIRST LAW OF THE SEA CONFERENCE(1) Introduction

The earliest uses of the oceans were easy to reconcile, Navigation and Fishing were not incompatible, the amount of waste disposed of in the sea increased and the regulations of conflicting uses becomes more and more essential. Gradually the uses of the seas increased and the regulation and control of marine pollution became a necessity, a recognizable element of international law. However this was only since World War II.

In the past several centuries the high seas have been regarded as open and free to all people. However from Roman times up to the Renaissance, one empire after another had claimed exclusive jurisdiction over vast areas of the high seas. In 1609, from the fact of the Dutch protecting their fishing industry against an English claim and the claims of the Danes, Grotius published his treatise in the nature of a brief that the high seas are res communis, or ¹common and open to all people.

Marine pollution is a global problem, but national legal systems cannot unilaterally regulate it beyond their territorial and contiguous zone; without running to the well established principle of freedom of the seas. States, have relied on the international control of pollution-causing activities outside these zones. Particularly if the effects of marine pollution on the living resources of the sea are considered, very few marine pollution

problems can be considered matters of exclusively local interest.

Therefore, freedom of the high seas retains primacy as navigation is concerned but it is controlled by the international community mainly in

- (i) specific treaties and conventions, and
- (ii) in major areas of sea law that relate to pollution control in a more general jurisdictional sense.

Article 13 of the United Nations prescribes that the General Assembly shall initiate studies and make recommendations for the purpose of encouraging the progressive development of international law and its codification. Pursuant thereto, the Second General Assembly in 1947 set up the International Law Commission with the dual purposes of "codification" and of "progressive development" of international law.³ This aim was reached with the first law of the Sea Conference in 1958,⁴ which achieved agreement in codifying over 100 articles embodying such principles as the freedom of the high seas, rights of innocent passage for surface vessels through international straits and territorial waters, the right of vessels of all states to fish the high seas, the right of each coastal state to exploit the resources of its continental shelf contiguous to its coast, the right of landlocked states with respect to access to the sea.⁵ In recognizing the coastal states' rights to the continental shelf, care was taken to make clear that the superadjacent waters above the shelf and beyond the coastal state's territorial sea "would remain a part of the high seas".⁶

The First U.N. Law of the Sea Conference:

As the control of marine pollution is concerned the

1958 Geneva Convention added little to the existing 1954⁷ Convention on Oil Pollution.

(2) The Continental Shelf Area

The Convention on the Continental Shelf 1958, which was the result of the famous Truman proclamation of exclusive United States jurisdiction and control of the resources of the seabed and subsoil of the continental shelf off the coast of the United States on September 28th 1945,⁸ with precedents in Latin American practice in areas beyond the territorial seas for instance, Colombia in the 1919 Law No. 120 concerning deposits of Hydrocarbons stated in article 38:⁹

"The Nation reserves the right to exploit deposits which are situated under the waters of the territorial sea, of the lakes and navigable waters. In order to enable the verification of the exploitation of these deposits, it is necessary that all contracts authorizing such an exploitation be confirmed by the congress." This law was amended in 1923 by article 17 of law 14,¹⁰ which provided:

"For the purpose of article 38 of law 20 of 1919, concerning deposits of hydrocarbons and of law 96 of 1922, relating to fishing in the sea of the Republic, the term territorial sea shall be understood to refer to a zone of twelve marine miles around the coasts of the continental and insular dominions of the republic."

Other, Latin American countries practice in relation with the Continental Shelf prior to 1945 were Argentina and Venezuela. Argentina enacted a decree 1,386 of 1944:¹¹ "article 2: the zones of the international frontier of

the national territories and the zones of the ocean coasts, as well as the zones of the continental sea of Argentina, shall be deemed to be temporary zones of mineral reserves."

As in Venezuela, the Venezuelan Act of July 22nd 1941¹² there is a provision in which the term "continental shelf" is used for the first time, thus, this article states:

"Article 7, the exploration and exploitation of fixed fishing grounds in the continental shelf of Venezuela shall be subject to the prior authorization of the National Executive".

"Article 8, outside the territorial sea of the contiguous zone the state shall determine those maritime zones over which it shall be responsible for the development, conservation and rational exploitation of the living resources of the sea contained therein, whether those resources are developed by persons of Venezuelan or foreign nationality".

This Venezuelan contribution was supplemented a year later in a treaty with the United Kingdom which was concluded on 26th February 1942. Article 1 of the said treaty¹³

"... the sea bed and subsoil outside the territorial waters of the High Contracting Parties ..."

As consequences of this proclamation it was evident that a new law of the sea would have to be developed. In addition to redefining the whole of sea law, the International Law Commission and later the Geneva Conference¹⁴ addressed itself to oil and nuclear pollution.

Coastal state jurisdiction over adjacent sea bed resources became customary law when the Convention on the Continental Shelf of the 1958 Geneva Conference came into

force on June 10th 1964.

Responsibility for leasing, supervising and controlling exploitation activities, although not specifically mentioned, was placed under the coastal state's jurisdiction and control.

The danger of pollution from operations for the exploration and exploitation of the resources of the continental shelf were apparent, and although the operations creating the dangers of pollution often take place outside the limits of the territorial sea, the exclusive rights of the coastal state to control these activities on the continental shelf is recognized by article 2 of the said convention.

Article 5.1 and 5.7 of the Convention on the Continental Shelf cover pollution by oil as well as other forms of pollution. "Any unjustifiable interference with navigation, fishing or the conservation of the living resources of the sea" as a result of exploration and exploitation operations is forbidden and coastal states are obliged to undertake "all appropriate measures for the protection of the living resources of the sea from harmful agents", in the safety zones around installations for the exploration and exploitation of the resources of the continental shelf.

As the Court, in the North Sea Continental Shelf cases,¹⁵ stated "... what confers the ipso jure title to the coastal state in respect of its continental shelf, is the fact that the submarine areas concerned may be deemed to be actually part of the territory over which the coastal state already has dominion in the sense that, although covered with water, they are a prolongation or continuation of that territory, an extension of it under the sea".

(3) The High Seas Area

With respect to the regime applicable to the High Seas in the first law of the Sea Conference 1958, with reference to control of pollution in that area, it is necessary to make a distinction of two areas within the high seas, the contiguous zone and the high seas.

(a) The Contiguous Zone:

The contiguous zone was provided for as a general regime of international law for the first time in the Convention on the Territorial Sea and the Contiguous Zone adopted in Geneva on April 1958, in article 24, 1(a).¹⁶

As far as the deliberations of the International Law Commission, the article 24, (a) is concerned the word "sanitary" was intended to be limited to disease, as well it must be noted that the pollution control granted in the said article 24 is strictly limited.¹⁷

As International Law is developed by the practice of states, it will be more deeply studied in reference to the approach given in the Third United Nations Law of the Sea Conference about the zonal pollution control in International Law in chapter V.

(b) The High Sea Convention:

The Convention on the High Seas concluded in 1958, contains the following articles concerning pollution of the seas, article 24.¹⁸

In 1956 the Report of the International Law Commission on the Law of the Sea part II of which dealt with the "High Seas" contained the following article on "Pollution of the High Seas".¹⁹

Article 48, which was the same adopted in the Geneva

Conference 1958, and the Commission commented with reference to that article:

"Water pollution by oil raises serious problems: danger to the life of certain marine species, fish and birds, pollution of ports and beaches, fire risks. Almost all maritime states have laid down regulations to prevent the pollution of their internal waters and their territorial sea by oils discharged from ships. But these special regulations are clearly inadequate ..."

By the time the Geneva Convention on the High Seas was concluded the London Convention for the Prevention of Pollution of the Sea by Oil 1954, was not yet in force.

The high seas refer to the waters that lie beyond the outer limit of the territorial sea, article 1 of the Convention on the High Seas, signed at Geneva 1958, "the term high seas" means all parts of the sea that are not included in the territorial sea or in the internal waters of a state. National jurisdiction approaches zero in time of peace although certain regulations have been agreed upon by states to ensure safety of navigation to minimize the risk of accidents and to provide assistance to vessels in distress. Nations have also agreed in the interests of preventing pollution, in other words freedom of the seas was governed by minimal restraints accepted by maritime powers in the interests of safeguarding all users and interested parties.

(c) Hot Pursuit:

Another important development in the Geneva Convention 1958, was the article 23 of the Convention on the High Seas, about the right of Hot Pursuit,²⁰ which being a rule of International Law since the Hague Conference of 1930,

had been again approved by the states, thus giving it the stature of a Rule of Positive International Law.

The Commentary of the International Law Commission with reference to the right of Hot Pursuit: "(2) the rules laid down above are all in conformity with those adopted by the Hague Conference". However, the article adopted by the Commission differs from that of 1930 on two points only:

(i) The majority of the Commission agreed that the right of hot pursuit should also be recognized when the ship is in a zone contiguous to the territorial sea, provided such pursuit is undertaken on the ground of violation of rights for the protection of which the zone was established

and

(ii) that the right of hot pursuit may be exercised only by warships and government service specially authorized by the flag state to that effect.

Other characteristics of hot pursuit, under the said article 23 is that

- (a) the foreign ship be within the territorial (waters) sea when the pursuit begins
- (b) Hot pursuit must be continuous
- (c) if the foreign ship is within a contiguous zone, the pursuit may only be undertaken if there has been a violation of the rights for the protection of which the zone was established
- (d) the right of hot pursuit ceases as soon as the ship pursued enters the territorial sea of its own country or of a third state.

Famous cases of Hot Pursuit into the high seas are
the Church & Hubbart,²² insuring territorial security, the

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famous I'm alone on March 22 1929, -and over the years there has been a broadening of the zone from within which hot pursuit is permitted to commence.

II THE SECOND UNITED NATIONS CONFERENCE OF THE LAW OF THE SEA 1960²⁴

At the end of the 1958 conference, and due mainly to the failure to achieve some important goals, such as the agreement on a breadth for the territorial sea, and some aspects of the regime applicable to fishing and the conservation of the living resources of the High Seas a Second Conference was called by the General Assembly to implement the Resolution for the Convening of the Second United Nations Conference on the Law of the Sea.²⁶

Unlike the first conference, the second conference saw no proposals which envisaged the three-mile limit as the maximum limit for all states. The two "camps" were those of the "twelve-milers" and those of the "six-milers" taking those figures representing maximum limits. However the conference failed to adopt any proposal on the two questions before it namely the breadth of the territorial sea and of fishery limits. Thus a third conference was advocated in the closing stages of the conference.

III CONTRIBUTION OF THE MALTESE PROPOSALS IN THE PROTECTION OF THE SEA RESOURCES:

(1) The Proposal

The development of technology has made it possible to exploit the resources in the soil and subsoil of the Continental Shelf, an area which until 1945 was subjected to the High Seas regime. Technology makes it possible to carry

out a more complete and sophisticated exploitation of marine resources. This exploitation is dangerous because it can become harmful and destructive. The Grotion idea that marine resources could not be exhausted, has been proved wrong with time. The population explosion and their urgent economic needs, as well as the growing scarcity of land based resources make it all urgent for states to rely on sea resources. As a result of this, it is the growing concern of the international community for the protection of the marine environment from pollution which means limitations to the freedom of the High Seas.

In view of the new development of technology and the growing interests of the coastal states, mainly the developed nations, in August 1967, Mr. Arvid Pardo, Maltese Ambassador to the United Nations, launched in the General Assembly what amounts to an international movement to centralise management of the ocean's resources, as a means for redistributing the world's wealth and assure that the seabed is used only for peaceful purposes.²⁷

In its note verbale to the Secretary General the Permanent Mission of Malta proposed the inclusion in the agenda of the twenty second session (1967) of the General Assembly an item entitled "Declaration and treaty concerning the reservation exclusively for peaceful purposes of the sea bed and the ocean floor, underlying the seas beyond the limits of present national jurisdiction and the use of their resources in the interest of mankind". In the memorandum which accompanied the note verbale the Maltese proposal pointed out that "the seabed and ocean floor beyond the territorial waters and the continental shelves had not yet been appropriated for national use because of their

innaccessibility and because their ~~for~~-defence purposes or economic development had not been technologically feasible".

It was time to declare the seabed the "common heritage of mankind" and promptly draft a treaty incorporating the principles that "the seabed and the ocean floor, underlying the seas beyond the limits of present national jurisdiction are not subject to national appropriation in any manner whatsoever."

"The exploration of the seabed and of the ocean floor underlying the seas beyond the limits of present national jurisdiction, shall be undertaken in a manner consistent with the principles and purposes of the Charter of the United Nations".

"The use of the seabed and the ocean floor ... and their economic exploitation shall be undertaken with the aim and safeguarding the interests of mankind. The net financial benefits derived from the use and exploitation of the seabed and of the ocean floor shall be used primarily to promote the development of poor countries."

"The seabed and ocean floor ... shall be reserved exclusively for peaceful purposes in perpetuity."

(2) Implications within the United Nations

The significance of this proposal within the United Nations caused that the General Assembly adopted on 28 6th October 1967, the examination of the question of the reservation exclusively for peaceful purposes of the seabed and the ocean floor, and the subsoil thereof, underlying

the high seas, beyond the limits of national jurisdiction, and the use of their resources in the interests of mankind. In 1968 on 21st December four General Assembly resolutions were adopted:

- (1) The Resolution on the Establishment of the Seabed Committee (General Assembly resolution 2467 A (XXII)).
- (2) The Resolution on Prevention and Control of Marine Pollution (General Assembly resolution 2467 B (XXIII)): this resolution called for the Secretary General to make a study in order to clarify all aspects of protection of the living and other resources of the seabed, the superadjacent waters and the adjacent coasts against the consequences of pollution and other harmful effects arising from exploration and exploitation to submit a report thereon to the General Assembly and the Seabed Committee.
- (3) The Resolution on Study on an Appropriate International Machinery (General Assembly resolution 2467 C (XXIII)).
- (4) The Resolution on the International Decade of Ocean Exploration (General Assembly resolution 2467 D (XXIII)).

In 1969 during the 24th Session of the General Assembly, a resolution originated in a draft resolution by Malta, was adopted with amendments of the original Maltese proposal, the convening of a conference on the Law of the Sea,²⁹ the third conference on the law of the sea to review particularly the regimes of the high seas, the continental shelf, the territorial sea and contiguous zone, fishing and conservation of the living resources of the high seas, in order to clarify the definition of the area of the seabed and ocean floor beyond the limits of national jurisdiction in the light of an international regime for that area.

During the 25th Session of the General Assembly 1970
the resolution on the Declaration of Principles governing
the Deep Ocean Floor was adopted on 17th December.³⁰

(General Assembly resolution 2749 (XXV)). The declaration
was composed of 15 provisions. The most important for our
present study, are:

- (1) The deep ocean floor, the seabed and ocean floor and
the subsoil thereof beyond the limits of national
jurisdiction and the resources of the area are the
common heritage of mankind.
- (9) An international regime, including international
machinery, shall be established by an international
treaty. The regime shall provide for the orderly and
safe development and rational management of the area
and its resources and for expanding opportunities to
ensure an equitable sharing in the benefits, taking
into particular consideration the interests and needs
of the developing countries, whether land locked or
coastal.
- (11) States shall take appropriate measures for the adoption
and implementation of international rules, standards
and procedures for (a) the prevention of pollution,
contamination and other hazards and of interference
with the ecological balance of the marine environment,
(b) the protection and conservation of natural resources
and the prevention of damage to the flora and fauna
of the marine environment.
- (12) States shall pay due regard to the rights and legiti-
mate interests of coastal states, as well as of all
other states, which may be affected by such activities.
Consultations shall be maintained with the coastal

states concerned with a view to avoiding infringement of such rights and interests.

- (14) Every state shall be responsible for ensuring that activities under its jurisdiction shall be carried out in conformity with the international regime. The same responsibility applies to international organizations and their members. Damage caused by such activities shall entail liability.

These principles adopted by the General Assembly reflected the fact that there was an international area beyond that of national jurisdiction even when its precise delimitation and legal regime were to be determined.

Another important resolution was adopted by the General Assembly on 13th December 1969 (UNARES 2566 XXIV).

Promoting effective measures for the prevention and control of marine pollution. Under this resolution, the Secretary General was requested with special reference to the forthcoming U.N. Conference on the Human Environment,

- (1) to review harmful chemical substances, radioactive materials and other wastes which dangerously affect the marine environment and coastal areas,
- (2) to review the activities of states, specialized agencies and intergovernmental organizations dealing with prevention and control of marine pollution including suggestions for more comprehensive action and improved co-ordination,

and

- (3) to seek the views of Member States on the desirability and feasibility of an international treaty on the subject. From 1967 with the proposal of Dr. Aiurd Paido, till during the coming years of 1963-1970, the idea

that the deep ocean floor being the common heritage of mankind should be utilized for the benefit of all mankind became almost accepted.³¹

IV THE THIRD U.N. LAW OF THE SEA CONFERENCE:

(1) Organizations and Committees

Resolution 27500 (XXV) adopted the convocation of a law of the Sea Conference in 1973 in New York and then in Caracas from June to August 1974,³² The sessions were held, the last one took place in New York from May to July 1977.³³ The conference organized three main committees:

The first committee was concerned with the international regime and machinery for the seabed beyond the limits of national jurisdiction.

The second committee had the broadest mandate, embracing nearly all of the traditional law of the sea subjects. These included issues regarding the territorial sea, straits and high seas, as well as the economic zone including living and non-living resources, the continental shelf and access to the sea.

The third committee was concerned with pollution and with scientific research and transfer of technology.

(2) The Territorial Sea and Economic Zone

The different provisions on the territorial sea submitted by the various participants at the Caracas and Geneva sessions of the third conference were in agreement that the sovereignty of a coastal state should extend over the air space and the seabed above and below the territorial sea.³⁴

Historic waters are also recognised as being a potential part of the territorial sea, thus giving recognition to the fisheries case principle. The major conflict at the conference was between those who favoured the "A" formula which would permit each state to establish a territorial sea up to a breadth of 12 nautical miles, and those favouring the "B" formula which could comparably allow a 200 mile territorial sea.^{34a}

So a new trend in International Law emerged a 12 mile territorial sea coupled with a 200 mile economic zone in which a coastal state would have an imperium sovereignty therefore, a change from the old "three mile limit" was long overdue, the cannon shot rule ceased to have practically more than two generations ago.

An economic zone up to 200 miles also appears to have been given approval. A notable characteristic of the conference was the view of the U.S.A. which in the course of the conference took unilateral action by proclaiming a 200 mile fisheries zone, with effect from March 1st 1977.^{34b}

(3) The Continental Shelf:

The 1958 Convention imprecisely defined the continental shelf as covering, "the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or beyond that limit, where the depth of the superadjacent waters admits to the exploitation of the natural resources".

This definition does neglect the technology of the 1970's or for the year 2000 and beyond.

The 200 mile economic zone would protect and assure a state control within its area and it seems likely that

in the case of the natural extension of the shelf beyond the 200 mile limit a wider jurisdictional control would be granted to states desiring it.³⁵

(4) The Right of Innocent Passage

In the new development of the Law of the Sea, the Law of the Sea, the right of innocent passage, as defined in the 1958 Territorial Sea Convention (art 14-23) Section III, were revised, particularly in the new trend towards a 12 mile territorial sea. This affects particularly the more than 100 international straits currently in use that are more than six but less than 24 miles in breadth.

Under International Law, the English Channel, the Straits of Gibraltar and other key passages for international travel includes areas not subject to national control. With a 12 mile territorial sea, areas formerly viewed as high seas would, under the current approach no longer necessarily be subject to unimpeded rights of transit. Especially affected would be submerged transit by submarines and aircraft overflight, neither of which is permitted as innocent passage.³⁶

In the same way, the passage of certain types of vessels, nuclear submarines navigating on the surface and oil tankers and supertankers which are frequently cited examples, might be denied passage by reason of a declaration of inherent non-innocence by the relevant coastal state.^{36a}

(5) Committee III:

Care of the marine environment and its exploration for scientific purposes, as well as the transfer of technology from the developed to the developing countries were the

main subject areas handled by the Third Committee. There was no conflict among states concerning this problem of the preservation of the marine environment since the prevention of marine pollution is the common interest of all.

The alternatives debated have now been included in the informal negotiating text adopted at the Geneva Session in May 1975.

The first chapter, General Provisions sets out the basic legal obligations to protect and preserve the marine environment.³⁷ These articles provide in part:

States have the obligation to protect and preserve all the marine environment.

States have the sovereign right to exploit their natural resources pursuant to their environmental policies and they shall in accordance with their duty to protect and preserve the marine environment, take account their economic needs and their programmes for economic development.

States shall take all 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 connexion.

States shall take all necessary measures to ensure that marine pollution does not spread outside their national jurisdiction and that activities under their jurisdiction or control are so conducted that they do not cause damage by pollution to other states and their environment,

nor cause pollution beyond the areas where states exercise sovereign rights in accordance with this Convention.

These articles deal with all sources of pollution of the marine environment.

The second chapter³⁸ sets out obligations to formulate and elaborate international rules, standards and recommended practices and procedures for the prevention of pollution, to cooperate in eliminating the effects of pollution and preventing or minimizing damage and to cooperate in scientific research and data exchange programmes (negoty) regarded pollution and its remedies.

Chapter three,³⁹ contains broad provisions on the promotion of scientific, educational, technical and other assistance to developing countries for the preservation of the marine environment and the prevention of pollution.

Chapter four,⁴⁰ obliges states to "endeavour as much as is practicable" to monitor pollution of the marine environment and to report the results to the UN Environment Programme or any other competent organization "which should make them available to all states".

Chapter five,⁴¹ provides that states, "shall as far as practicable assess the potential effects of activities on the marine environment" where there are "reasonable grounds for expecting that they may cause substantial pollution of the marine environment.

Chapter six,⁴² regarding standards to prevent, reduce, and control marine pollution raises perhaps the most difficult issue in this section. It provides that states "shall establish ... international rules and standards and recommended practices and procedures" regarding pollution from exploration and exploitation of the seabed (continental shelf) and

from installations under their jurisdiction, shall endeavour to establish as soon as possible such global and regional measures regarding ocean dumping, pollution from atmospheric sources and from land based sources, taking into account characteristic regional features, the economic capacity of developing countries and their need for economic development.

In the case of pollution from land based and atmospheric sources, states are required to establish national laws and regulations "taking into account internationally agreed rules, standards and recommended practices and procedures.⁴³

A coastal state with respect to seabed exploitation in its economic zone, and a flag state with respect to seabed exploitation and its economic zone, and a flag state, with respect to vessels flying its flag, would be obliged to carry out the relevant environmental duties and would have the right to impose more stringent environmental measures than those required by the duty to respect international standards.

Three exceptions, however, to this jurisdictional approach to environmental standards for vessel source pollution are suggested in articles 19 and 20 of the single negotiating text:

- (1) Dumping of wastes and other matter within a zone as yet unspecified distance from the coast would require the express approval of the coastal state.
- (2) It appears that the coastal state would be permitted to establish "more effective" standards for useful source pollution in its territorial sea provided they do not have the practical effect of hampering innocent

passage. There is an apparent inconsistency of intent with article 18 in the Committee II text, which would exclude ship design, construction, manning and equipment from coastal state regulation.

Part III, article 20(4) and (6) proposed two kinds of "special areas". One based on oceanographical and ecological reasons requiring "special mandatory measures". For recognition of such areas the coastal state will have to apply to the "competent international organization".

Chapter seven deals with the general approach of relying on the state conducting the activity to enforce international standards, as judicial and practical questions arise with respect vessels.⁴⁴

V REGIONAL AGREEMENTS AGAINST POLLUTION:

(1) North Sea Area: U.K. participation

The first step towards achieving regional cooperation on pollution matters was the convention concluded in 1969, entitled the BONN Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil.⁴⁵

The agreement was signed and ratified by Belgium, Denmark, France, Germany, the Netherlands, Norway, Sweden and the United Kingdom. The agreement provides that parties will exchange information on competent authorities in each nation to receive reports of pollution as well as on new methods for combating pollution.⁴⁶ The North Sea is divided into eight zones of responsibility, six assigned to individual nations and two assigned jointly.⁴⁷ Parties undertake to request that masters of ships and pilots of aircraft registered in their countries report accidents likely to harm the coasts or other areas of interest to one or more

⁴⁸ parties. Each zonal authority is responsible for assessing the extent of pollution, as well as the direction and speed of drift, and it must immediately inform other parties of its findings and what actions it is taking. ⁴⁹ If a nation does choose to deal with a pollution problem, it may call upon the assistance of other parties, who must use their "best endeavors" to provide such assistance. ⁵⁰

A further more substantial step was taken with negotiation of a convention establishing civil liability for international oil pollution damage in the North Sea, the Convention on Compensation for Oil Pollution Damage from Offshore Operations, ⁵¹ it was negotiated in London in 1976 and put forward for signature in May 1977. Until now, the Netherlands, Norway, Sweden and the United Kingdom have signed it. ⁵² In order for the convention to come into force, it must be ratified by four countries, and implementing legislation must be drafted by each of the parties. ⁵³ The convention provides for the strict liability of offshore operations for damage caused by oil released in the course of offshore operations. ⁵⁴ Parties to the convention may set maximum levels of liability but the maximum may be no less than \$35 million, rising to \$45 million in May 1982. ⁵⁵ Claims for damage may be brought in the courts either of the state in which the pollution originated or of the state in which the damages occurred. ⁵⁶ Offshore operators must be required to take out insurance necessary to meet their potential liabilities. ⁵⁷

On February 15th 1972 at Oslo, was signed a Convention for the Prevention of Marine Pollution by Dumping from ships and aircraft, ⁵⁸ by Belgium, Denmark, Finland, France, Federal Republic of Germany, Iceland, Netherlands, Norway,

Portugal, Spain, Sweden and the United Kingdom, in other words states bordering the North-east Atlantic.

The article 14 of this Convention made special reference to pollution caused by oil, thus "The contracting Parties pledge themselves to promote within the competent specialized agencies and other international bodies, measures concerning the protection of the marine environment against pollution caused by oil and oily wastes, other noxious or hazardous cargoes, and radioactive materials".

Another important voluntary agreement in the North Sea Area, in the private sector was the Offshore Pollution Liability Agreement 1974,⁵⁹ (known as OPOL) whereby the operating companies agreed to accept strict liability for pollution damage resulting from the storage or escape of oil and for the cost of remedial measures, up to a maximum of \$25 million⁶⁰ per incident.

At first OPOL (which came into effect on May 1st 1975 for an initial duration of 6 years, continuing thereafter from year to year) applied to offshore facilities within U.K. continental shelf waters but has subsequently been extended to Denmark, West Germany, France, Ireland, Holland⁶¹ and Norway.

(2) Caribbean Sea Area: Venezuelan Participation

The Caribbean Sea is surrounded by many Latin American countries Mexico, Colombia, Venezuela, Panama, Santo Domingo, Cuba and other countries such as Trinidad and Tobago and Guyana. Since 1945, Latin American concerted action on Law of the Sea with a list of multilateral meetings. These meetings have been held at the regional level, through the organs of the Inter-American system and of the Organization

of American States and also through the few conferences to which participation has been limited to Latin American countries.

As far as 1954 an important Inter-American conference was held in Caracas, Venezuela, in relation with the "Conservation of Natural Resources"⁶².

The only project before the working group at the outset of its deliberations was an Ecuadorean proposal under which the tenth Inter-American Conference would have stated that:

"the sovereignty and jurisdiction of each of the American reparation states shall extend to the submarine continental and insular shelf off the continental and insular coasts of their territories, regardless of the depth of the ocean above the said shelf, and to the existing natural resources, or those that may be discovered therein and in the waters above,"

"that such national sovereignty and jurisdiction shall include an area of 200 marine miles reckoned from the outermost points of the coast as the most adequate means of preserving and facilitating the conservation and utilization of the natural resources of each state."

"that, consequently, it shall be the duty of the reparation state to supply the legal, regulatory and technical measures for the conservation and prudent utilization of the natural resources now existing or those that may be discovered in the said areas under its sovereignty, for its own benefit, the benefit of the hemisphere and the community of nations."

"this declaration shall not affect the legal status

of the waters of the sea for innocent navigation."

However, following extended discussion in the working group, sweeping modifications were made in the proposed broad pronouncements of the Ecuadorean proposal relating to sovereignty and jurisdiction over the continental shelf and the waters above it so that, instead, the resolution recommended for adoption reaffirmed the interest of the American States in the national declarations or legislative acts and reaffirmed that riparian states have a vital interest in measures for the conservation and prudent utilization of the national resources in the areas mentioned. This resolution as modified was adopted by the committee and in turn by the Conference.

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The Declaration of Santo Domingo 1972:

On the initiative of Venezuela, thirteen Caribbean countries met informally in 1971 in Caracas, to discuss Caribbean cooperation regarding matters as transport, tourism, trade and the sea. The Communique issued by this meeting called for a specialized conference of the Caribbean States on Problems of the Sea.

The preparatory meeting of the said Conference took place in Bogota 1972. The Conference took place in Santo Domingo in 1972, attended by 15 Caribbean States and held at ministerial level. Two thirds of the Latin American states participated in it, forming a group in the region.

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The Declaration distinguishes between territorial sea and patrimonial sea. The territorial sea has an extension of 12 miles, from the baseline, and foreign vessels have the right of innocent passage in that zone. The patrimonial sea includes sovereign rights over the natural resources in the waters, soil and subsoil of a zone not exceeding

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200 miles from the baseline. ⁶⁷ In this zone, the coastal state has the right to rule on scientific research and prevention of pollution, ⁶⁸ and the freedom of navigation and overflight, laying of submarine cables and pipelines remain unaffected. ⁶⁹

The Declaration is different from those adopted in Santiago in 1952 and in Montevideo and Lima in 1970, in relation with the separation between the territorial sea and the functional zone up to 200 miles. ⁷⁰

The Declaration of Santo Domingo is important because it deals not only with territorial sea and patrimonial sea, but with other law of the sea issues as well. It embraces provisions of the Continental Shelf, the international sea bed, the high seas, pollution and regional cooperation.

The Declaration made reference to the importance of "adopting a common policy vis a vis the problems peculiar to the Caribbean Sea relating mainly to scientific research, pollution of the marine environment, conservation, exploration, safeguarding and exploitation of the resources of the sea.

This Declaration represents the position of the majority of the Caribbean States, since ten states, Colombia, Costa Rica, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Dominican Republic, Trinidad and Tobago, signed it, representing two thirds of the group.

VI INTERNATIONAL MARITIME CONSULTATIVE ORGANIZATION (IMCO)

(1) Creation and purposes

Recognizing a need for a permanent international organization to coordinate maritime affairs, the United Nations

Economic and Social Council, approved the recommendations of its Temporary Transport and Communications Commission in June 1946 calling for such an organization, which after two years of these recommendations culminated in Geneva at the United Nations Maritime Conference (19th February to 6th March 1948) where the convention creating the Intergovernmental Maritime Consultative Organization was approved. ⁷¹

Some of the reasons for the creation of this particular International Organization can be summarized as follows:

- (1) Functional needs of commerce and navigation (shippers, shipowners and seamen).
- (2) Instances of disaster (all segments of maritime industry, including insurers, general public, governments).
- (3) Exigencies of warfare (governments temporarily assuming far reaching control over all ships).
- (4) Trust and requirements of new technologies (ship-builders, shipowners, seamen, national maritime bureaus, other international organizations).

It was 6th January that the first official meeting of IMCO could be held, when the requisite of 21 states had become parties.

Emerging from this array of issues IMCO has in practice been limited almost solely to the resolution of technical issues involving standards pertaining to ship construction, navigation procedures, carriage of goods, safety practices, training of merchant mariners and prevention of ocean pollution.

A summary of the issues with which IMCO has been concerned are as follows: ⁷²

- (1) The regulation of sea traffic to increase safety navigation (including the establishment of perform-

ance specifications for navigation equipment.

- (2) Facilitation of maritime traffic standardization of forms and procedures for ports and harbours, loading unloading and shipping.
- (3) Questions of general marine pollution. IMCO is the administrative centre for the U.N., FAO, UNESCO, WMO, IAEA and GESAMP.
- (4) Prevention of oil pollution damage and the technical and economic studies of oil tanker to prevent pollution.
- (5) Advancement and coordination of oceanographic research.
- (6) Development of operational requirements for the use of satellites in navigation as well as radio communications purposes.
- (7) Revision of the Maritime Distress System to increase safety and make maximum use of modern technological advances.
- (8) Setting of safety requirements for Ocean Data Acquisition Systems, life saving appliances and fishing vessels and gear.
- (9) Organization of search and rescue operations.
- (10) Training of Master, Officers and seamen.
- (11) Carriage of dangerous goods.
- (12) Regulation, testing and evaluation of container transport and other innovations in shipping.

(2) The IMCO legal and technical regimes

- (a) to prevent or minimize deliberate pollution from ships in consequence of their "routine" operations.
- (b) to prevent or to minimize by a wide range of protective measures pollution emanating from ships, casualties

or other accidents.

- (c) to define and distribute the liabilities for coastal pollution which has taken place and to assure compensation to its victims.

The treaties regimes which fall into the first category namely of assuring that the routine operations of ships will not pollute coastal or other waters are:

- (1) The International Convention for the Prevention of Pollution of the Sea by Oil, 1954⁷³ with its amendments adopted in 1969 and 1971.
- (2) The International Convention for the Prevention of Pollution from Ships 1973.⁷⁴

In the second category of treaties and other instruments devoted to the prevention of accidents or the subsequent dealing with accidents resulting in pollution or the threat thereof are:

- (1) The International Conventions on Safety of Life at Sea, 1960 and 1974⁷⁵ with relevant amendments to the former treaty.
- (2) The International Regulation for Preventing Collisions at Sea, 1960 (not a treaty) and the Convention on the International Regulations for preventing collisions at Sea, 1972.⁷⁶
- (3) The International Convention on Load Lines, 1966.⁷⁷
- (4) Ships Routing and Traffic Separation Schemes (not a treaty).⁷⁸
- (5) The Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties, 1969, with Protocol of 1974.⁷⁹
- (6) The Conference to prevent pollution of the sea from ships of 1978.⁸⁰

Finally, the third category of conventions regulating liability and compensation for damage from oil pollution from ships comprises:

- (1) The International Convention on Civil Liability for Oil Pollution Damage, 1969.⁸¹
- (2) The International Convention on the Establishment of an International Fund for compensation for Oil Pollution Damage 1971.⁸²
- (3) Convention on Civil Liability for Oil Pollution Damage resulting from Exploration and Exploitation of Seabed Mineral Resources 1977.⁸³

(3) Other Legal Considerations

The "Torrey Canyon" disaster of 1967,⁸⁴ emphasized in a very dramatic way the increasing risk of serious oil pollution resulting from accidents to ships, particularly tankers. This accident brought to the international community the need for speedy and effective action to deal with the threat of massive pollution of the sea by oil tankers. Consequently as the Torrey Canyon accident involved pollution by oil, the reaction within IMCO was, at first, confined solely to the problems created by marine pollution by oil. But after it soon became clear that no effective scheme could be evolved if attention were paid solely to pollution caused by oil. IMCO therefore, directed its attention in both the technical and legal fields to the problems of marine pollution arising from shipborne cargoes other than oil, pollution arising from the use of the marine environment by ships and other devices and to pollution from the exploration of the oceans and the oceans floor and exploitation of the resources of the marine area.

It has been proclaimed by the International community with the developments of the Law of the Sea that states should accept international standards for the protection of their most vital coastal interests rather than find their own statutory solutions. One reason, is that a major source of oil pollution of any body of coastal water is ships, the function, direction and control of which are par excellence international. Another is that pollution of water like water itself is mobile and the marine environment is in a sense of unity. It is stated in the words of principle 21 of the Stockholm Declaration,⁸⁵ "States have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction.

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CHAPTER VI

CONCLUSIONS

The quantity of oil entering the oceans from transportation related sources has been increasing every year. Given future increases in production and transport it is possible that transportation related inputs will continue to increase despite the current interest and activity in control measures.¹ Thus the crude "oil explosion", whereby the annual quantities carried have almost trebled in the last decade has in turn aroused international concern regarding the quantity of oil unnecessarily disposed of into the sea by tankers in their everyday operations. The Load on Top system was developed to reduce this form of pollution. At the present time it is estimated that 80% of the world's crude oil tanker tonnage operates under LOT.² We have seen the drastic consequences of oil pollution: oil can kill marine life directly through a variety of mechanisms, eg. coating and asphyxiation, poisoning, and it may have harmful indirect effects, including destruction of food sources, reduction of reproductive success. The prevention of the increase of oil pollution requires then a unilateral solution, international political will, and International Responsibility to abate the problem. Every day which passes without affirmative action increases the risk, that sooner than later, the limits of the assimilative capacity of the oceans will be reached.

Since the Torrey Canyon disaster, some 40 tanker accidents have caused more or less serious pollution damage to the marine environment.³ It is a fact that despite all the technical progress and all the regulations designed to

reinforce the security of navigation in recent years, more of those accidents were due to human failure. For the international community, to suppress entirely the cause of such accidents appears impossible. However, it can be observed with some satisfaction their dramatic effects are now far better controlled.

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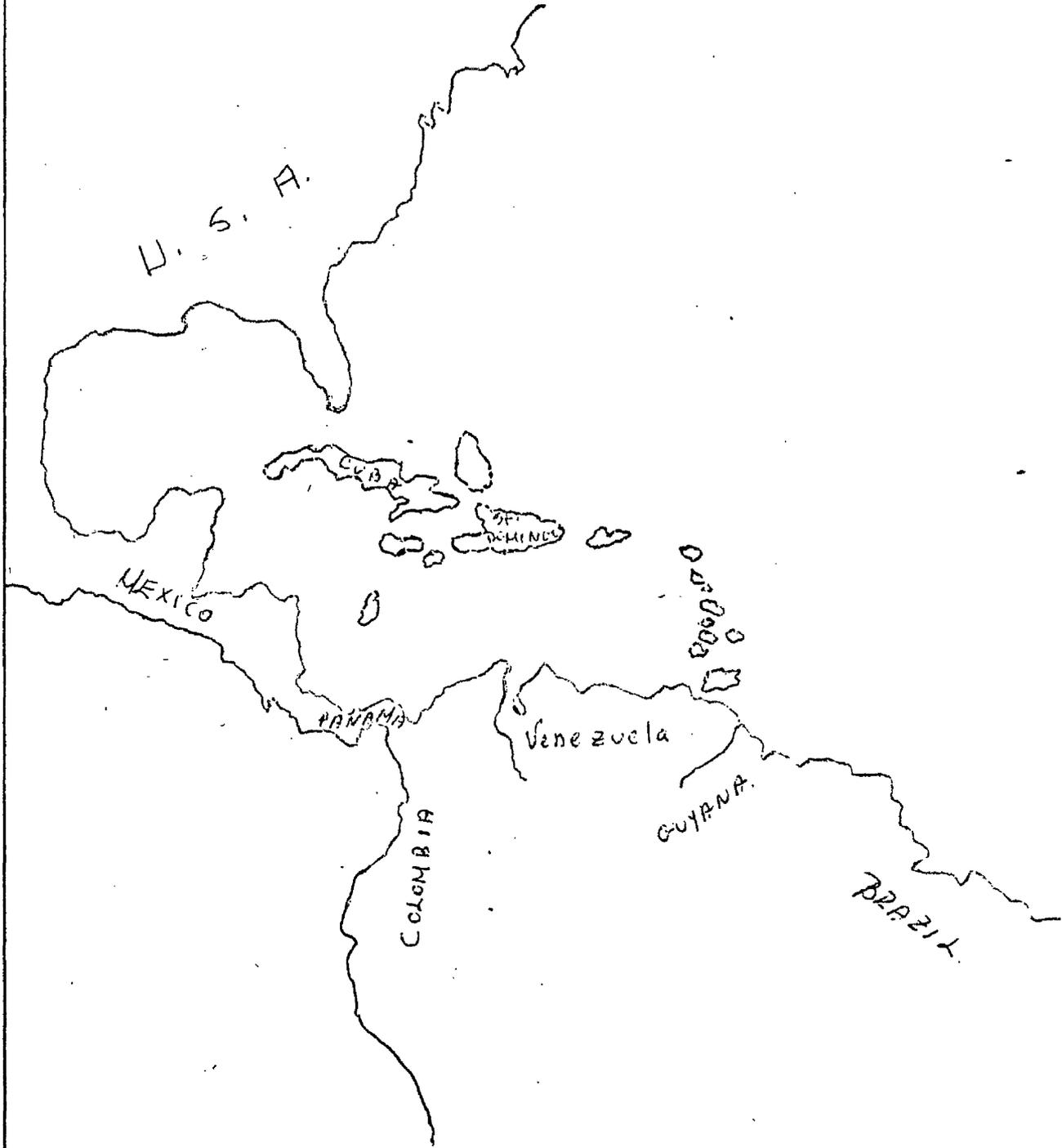
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APPENDICES

- (a) Caribbean Sea Area
- (b) North Sea Area
- (c) Oil Refineries in the North Sea at beginning of 1975.
- (d) Western Hemisphere: Movement of Crude Oil and Refined Products. (1965-1977)
- (e) Venezuela: Directs Exports of crude oil and Refined Products.
- (f) World Oil Tanker fleets. (1971-1975)

Appendix (a):

Caribbean Sea Area Source: John P. Stuebelly, Caribbean Lands
p. 16.



North Sea Area :

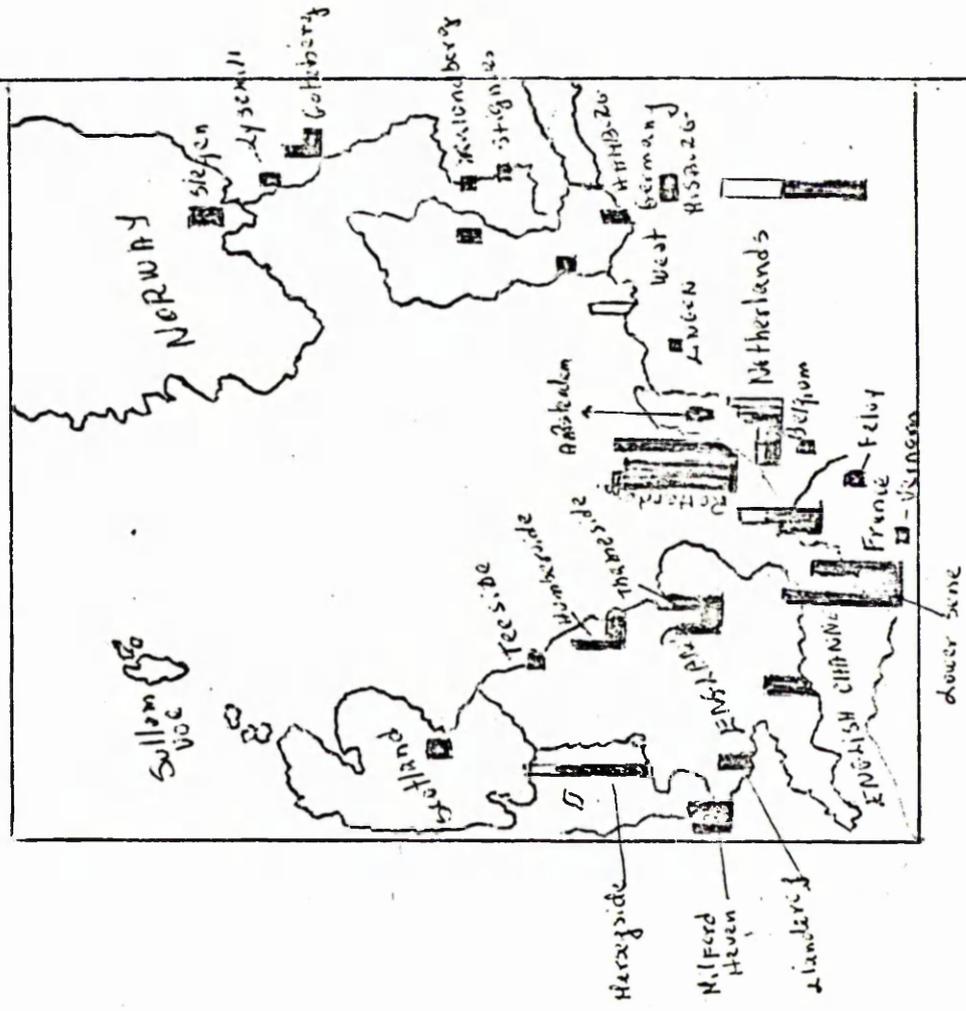
Summer & Winter:
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Oil Refineries in the North Sea at beginning of 1945

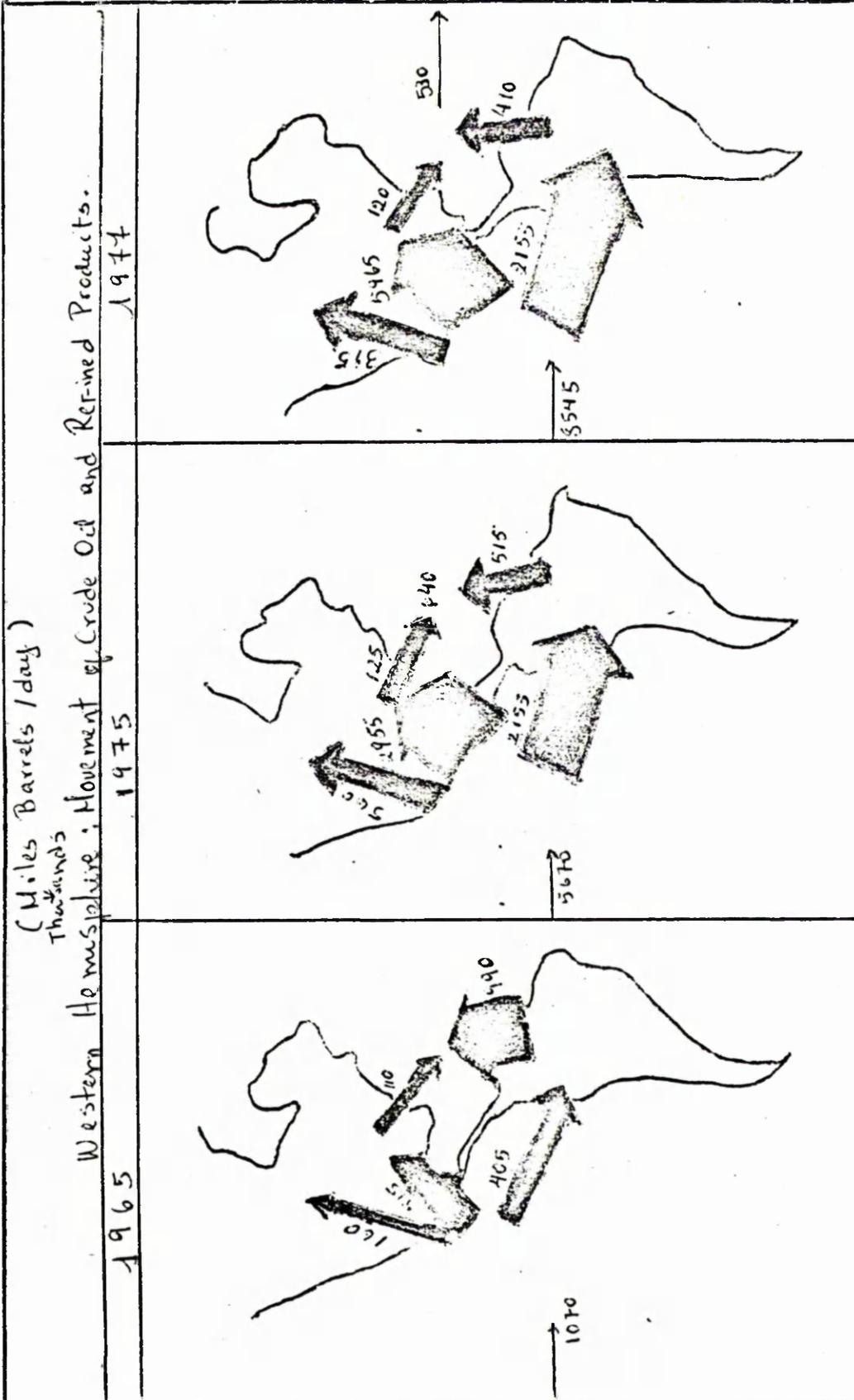
- Oil Refineries in operation
- Oil Refineries in construction



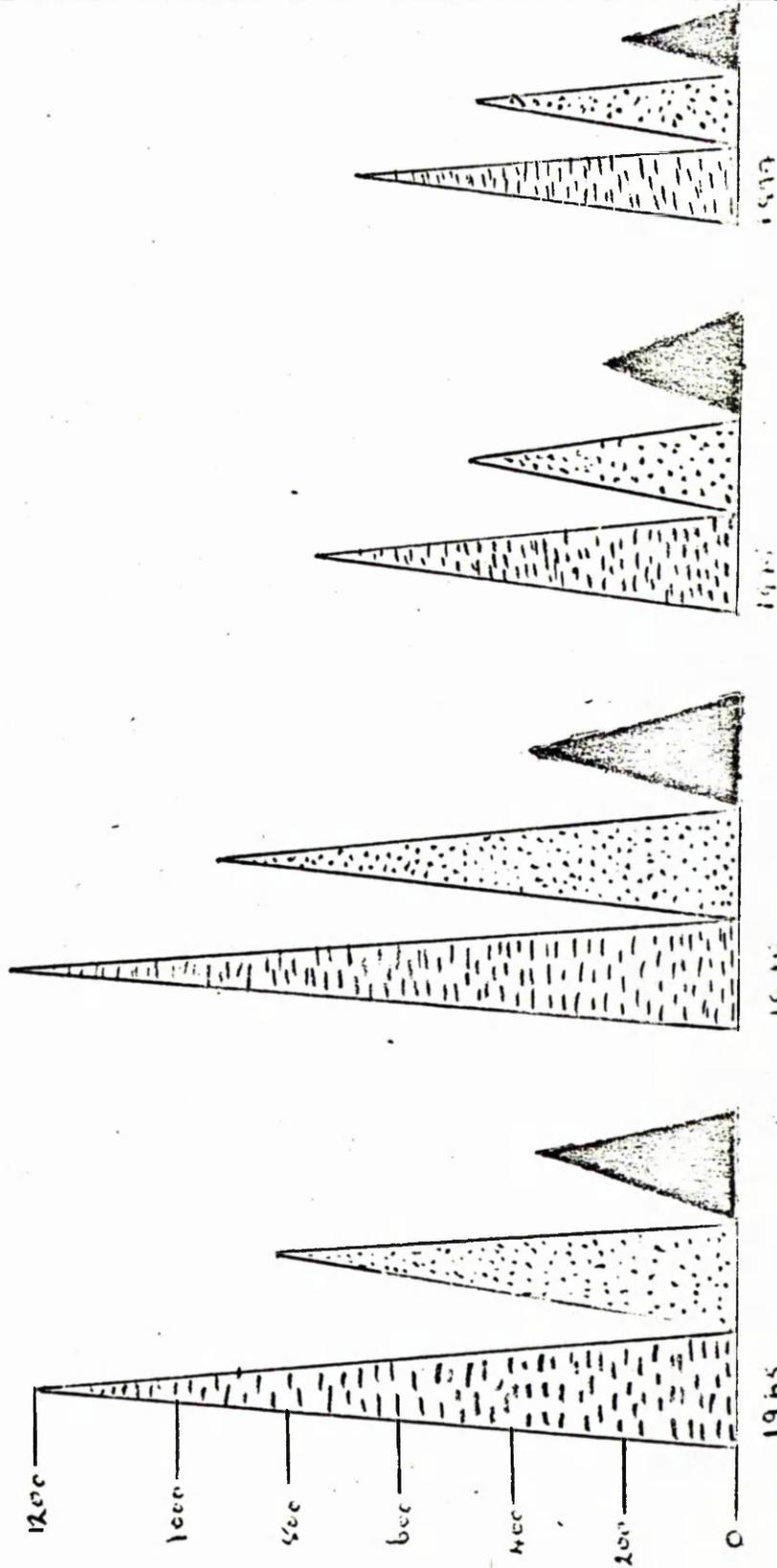
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Appendix (d)

Source: Petroleo y otros datos Estadisticos. 1977
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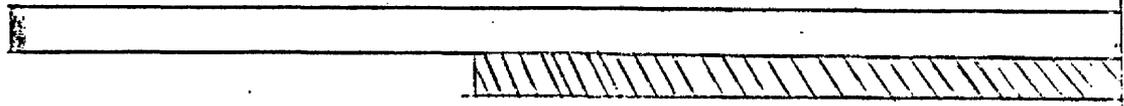
Appendix (e)



Venezuela:
 Direct exports of crude oil & refined products
 "Petroleo y otros Deros Estatales" 1977
 MINISTERIO DE ENERGIA Y MINAS
 Republica de Venezuela.

Oil
 Total
 Products
 (Millions Barrels)

Mn dust
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10



1st Feb 1971

1st July 1975

World Oil Tanker fleets:
Source:
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