Towards the development of maritime safety administration in developing countries

Ngongboh Barnabas Akwo

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Towards the Development of Maritime Safety Administrations in Developing Countries

A THESIS PRESENTED TO
THE WORLD MARITIME UNIVERSITY
IN PARTIAL FULFILMENT
OF THE REQUIREMENTS OF THE DEGREE OF
MASTER OF SCIENCE

BY
AKWO Ngongboh Barnabas
- (B.A.Hons - LINGUISTICS
- D.E.S. GESTION DES TRANSPORTS
MARITIMES ET INTERNATIONAUX)

SUPERVISED BY PROFESSOR GUNNAR STUBBERUD

MALMÖ, JUNE 1985
ACKNOWLEDGEMENTS

The material for this study comes from three main sources:

- Classroom lectures and notes both from permanent and visiting professors.
- Personal research, and
- Material got from visits to the following Maritime Administrations:
  * The Norwegian Maritime Directorate
  * The Swedish Maritime Directorate
  * The Dutch Maritime Directorate
  * The Canadian Coast Guard
  * The Polish Maritime Administration.

I would like to seize this opportunity to thank heartily the entire personnel of the above-mentioned Administrations, in particular those I have had the honour to discuss lengthily with, and who have been very free and frank in giving out information.

Also, my special gratitude goes to the permanent professors and staff of the World Maritime University, particularly to Professor Gunnar STUBBERUD who, during the last two years, has shown a tremendous unrelenting effort to give us more and more information. My thanks also go to all my colleagues for the spirit of friendliness and cooperation which they have exercised during this period.

Words cannot express the invaluable and unconditional help I have received from the VANEKs - Vladimir, Lucia and Fredrik, for the completion of this study. I will remain deeply obliged to them.

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AKWO B.N.
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A few prefatory remarks on the concept of safety are necessary at this early stage of our study in order to understand the importance of maritime safety and to appreciate the numerous endeavours of the maritime world to maintain it at a high level.

From time immemorial, "safety" has always been the key word behind any decision to embark on a venture. In most cases, this has been calculated or measured in terms of the risks involved, the probability of their occurrence, and the chances of success. In well planned undertakings, the custom has always been to take measures geared towards eliminating or at least counteracting the different tangential forces which might impair or even prevent the smooth development of the venture and likely to change the face of the expected positive results.

The concept of safety has obtained from the primitive ages to the industrialised world where its intensity and complexity have increased with the invention of machines for mass production.

In the transportation industries, critical studies of the economic aspect of safety (i.e., the economic repercussions of accidents) have obligated many nations and international organisations to invest large sums of money in research towards the conception, establishment, and maintenance of safety standards.

In Road Transportation, the need has been felt to ameliorate road construction and signals, construct wider roadways, and to take a deeper look at the present problems of motorways (signing, lighting, surfacing etc.), and accidents resulting from tyre bursts due to overheating at high speed, and multiple collisions.

In Air Transportation, accidents resulting from collisions, bad weather, and wrong directives from vessel traffic towers, have given those concerned with aircraft safety, more than enough food for thought.
Ocean Transportation, on the other hand, is an adventurous calling. The dangers and uncertainties remain proverbial in spite of safety codes and conventions, improvements in the design of ocean going ships, and increased nautical knowledge. The fitness of a ship to make a voyage and to encounter bad weather with safety, i.e. its seaworthiness, is dependent on many variables in the interrelated fields of naval architecture, engineering, and navigation. Everyone engaged in the design, construction, operation, upkeep, and inspection of ships must therefore give of his best to the common task of mitigating the effects of natural perils at sea and promoting seaworthiness in all its aspects.

Despite the cooperative work of International Organisations, Government Maritime Administrations, Shipbuilders, Classification Societies and all those engaged in the improvement of safety at sea, "human error" in some form or another will remain of prime importance since it is the chief factor in most causalities, and no relaxation may be permitted in giving attention to the problem of maintaining adequate safeguards without undue complexity.
INTRODUCTION

Despite the fact that one of the contributory factors to the fast development of maritime transportation in the late 19th century was the recognised need to construct appropriate vessels for the transferring of raw materials from Developing Countries (colonies during that period) to Europe and North America, most of the coastal states of the developing world seem to have merely surpassed the embryonic stage in maritime development. Nonetheless, many economists, having effectuated analytical studies on maritime transportation development, have come out with the results that the centre of gravity of shipping is slowly drifting towards the developing world.

The truth and foundation of these results cannot be completely refuted. In fact, the fastest growing section of the world fleet in the last fourteen years has been that of Developing Countries. This expansion has regrettably almost been entirely centred around the "Newly Industrialised Countries" of Eastern Asia, and South America, some of them almost tripling their fleets in the last ten years. The Table on page 4, taken from the Lloyd's Register of Shipping will be a more telling corroboration of the findings of the economists.

The situation in Africa has been slightly different in that the growth has been rather slow. Apriori, the constraints to which are imputed this slow growth are based on scarcity of resources or lack of sufficient capital to invest in shipping, this in view of the fact that shipping is a very capital intensive industry. But a close study of these impediments will relegate to the second place the problem of capital resources and highlight the negative effects of bad, inappropriate, and inefficient organisation and management.

It is an indisputable fact that the growth and expansion of any enterprise depend more on the systems of management (natural and human resources available) than on the amount of capital invested. (*)

(*) Owing to its importance, many economists now place "Management" alongside with Land, Labour and Capital and consider it the fourth factor of production.
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**FLEETS OF DEVELOPED WORLD (OECD COUNTRIES)**

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W.T = World Tonnage.

Source: Lloyds Register of Shipping.
This, nevertheless, should not reduce in any way the importance of capital in the building up and the smooth running of an enterprise. It is simply necessary here to emphasise, on the one hand, the primus inter pares nature of management and organisation in the development of any venture, and, on the other hand, the fact that whatever amount of capital is used in building up a production industry, the expected yield of such capital will be null or even negative if appropriate management schemes are not put forth to exploit the various resources involved.

The complex nature of the maritime industry renders more acute the problem of organisation and management. In fact, the organisation/management requirements here transcend their traditional limits in that they are twofold:

- On the one hand, we have shipping companies operating as an entity and having their respective management schemes depending on the trade in which they are involved.

- On the other hand, there is the involvement of the government concerned in deciding:
  a) The type and quantity of goods for exportation, and where to export these goods.
  b) The policy to adopt, taking account of her trade commitments and the international nature of the industry as a whole, inasmuch as laws and regulations are not made unilaterally, but with due regard to the needs and views of neighbouring countries and foreign trading partners.
  c) In view of the international nature of shipping mentioned above, certain differences and conflicts involving national shipping companies and their foreign counterparts are best resolved at governmental level than at the level of the companies involved.

The need for a governmental organisation well acquainted with related problems becomes imperative here if internal and external frictions have to be warded off or resolved without hurting international trade.
It is in this connection that the Ministerial Conference of West and Central African States on Maritime Transport was created to bring together the states of this subregion and to have them liaise together for the betterment of their maritime development.

The following study is not intended to give a general organisation and management of maritime transportation as it were. It will be based mostly on the commitment of governments to ensure that sea transportation is carried out in the safest ways possible, and that similar safety standards are ensured in the carrying out of other operations in, or on the sea and which are not directly linked with transportation. It is my humble opinion that it is only when these safety standards are put up and efficiently enforced that the different commercial operations involving the sea (chosen instead of many others because of the vital role they are going to play in the economic development of the nation) will effectively yield positive results.

The subject will be treated in four broad sections:

In the first section, we will - basing our arguments on the premise that international trade (exchange of goods and earning of foreign currencies) is the main pillar behind the economic development of a nation, that no nation is self-sufficient and that even if the contrary were true, there will still be the general advantage to be found in "Division of Labour" and "Specialisation" - briefly examine the three major modes of transport which are, by the very nature of their functions, a tool to, and a servant of international trade. The supremacy of the sea mode over surface and air will be seen together with related short-comings and constraints which, when well handled, will render the sector a profit - yielding one.

In the second section, the raison d'etre of the Maritime Administration will be seen through a careful examination of the different responsibilities entrusted on this organisation, and the activities she is called upon to effectuate for the promotion of the sector in general. The case
of Developing Countries, especially those along the West Coast of Africa, will be given a closer examination and proposals for a harmonious development of the organisation in this area will be made.

In the third section, we will look at the Maritime Safety Administration which is inextricably related to the Maritime Administration. While dilating on some of the functions and activities cursorily examined in section two, we will look at the impact of technological developments on safety standards and the subsequent repercussions of such developments on the structure, level, and maturity of the Maritime Safety Administration in Developing Countries. This will be examined in the light of long established similar organisations in the Developed World. The various ways of expanding the activities of this administration and coordinating them with similar safety activities carried out by public, para-public and private organisations will be discussed.

In the fourth and last section, we will have a close look at the CAMEROON MERCHANT SHIPPING DEPARTMENT. In the light of the past and present facets of this Administration, we will have a critical examination of the various factors likely to prod and promote her expansion, enabling her to increase the percentage of exploitation of the available resources for the carrying out of the duties entrusted upon her by the government.
PART 1

ECONOMIC DEVELOPMENT, INTERNATIONAL TRADE AND TRANSPORT SYSTEMS AND ECONOMICS.

I. - 1

Every nation has to produce in order to survive. The need to feed oneself can only be traced back to the very inception of human existence. The subsequent need to provide for "tomorrow" sprang from the inevitable changes in the seasons. Inasmuch as crops could only grow during certain seasons and under particular conditions, it was imperative for man to ensure the availability of food for subsistence during the unfavourable seasons. This was done through over production during the favourable seasons and storage of the surplus for the bad times.

With time and civilisation, man discovered more ways of production. His basic needs (food, shelter and warmth) increased proportionately with the acquisition of new knowledge. Instead of storage, he exchanged his surplus produce for money which he could, when his needs demanded it, change into anything necessary for his subsistence or comfort. This money also permitted him to acquire goods which, for many reasons, he was not able to produce. The notion of trade came into existence. From the national level it extended to an international level, and goods began their slow but steady journey round the world to satisfy the needs of people and nations.

The swift expansion of international trade can be attributed to the following reasons:

a) Man's (and subsequently the nation's) inability to produce all his needs.

b) The relatively cheap price of certain commodities when produced outside the country. (**)

(**) Consideration is taken here of the cost of the different factors of
c) Opportunity cost considerations and the need for specialisation.

d) The need to sell because the nation is forced to buy, or the balance of payments considerations.

Basically, the economic development of a nation will depend not only on what she produces to satisfy the needs of her population, but also on what she is able to produce and trade abroad. (§) Similarly, the building up of many of her development sectors will demand the employment of goods (equipment) produced outside the country and which can only be procured through international trade. Since exportation brings in foreign currency while importations send out foreign currency, the need to develop local industries so as to render local products marketably competitive in foreign countries becomes a pre-requisite for the avoidance of deficits in the nation's balance of payments. In this way, foreign trade obliges nations not only to increase and diversify their industries, but also to ameliorate the quality of the goods they produce. The assertion then that the economic development of a nation depends on the level of her international trade is not a mere postulate but an empirical fact.

I - 2 ROLE OF TRANSPORTATION.

If International Trade is the pillar on which reposes the economic development of a nation, transportation is, on the other hand, a tool and a servant to trade and affects to a very great extent the economy of a nation. In fact, it is the vehicle which links producers to consumers. It is of public nature and is essential to the successful operation of the economic system. People produce goods and services for actual use, for accumulation of a reserve, or for exchange for other goods and services. What people produce depends on the kinds, numbers and intensities of their wants. What people want is dependent to a considerable extent

production - land, labour, capital and management - which come into the production of the commodity. A good example is that of the textile industry now being firmly implanted in S.E Asia (Korea, Hong Kong) and China etc. because of the high cost of labour in Euroe.

(§) Services too are to be considered as products.
on the availability of goods. **Availability** in turn, is effected by the transportation service.

As the cost of transportation decreases, goods can be secured from more distant points with an expenditure of less time and effort since a reduction in transportation costs reduces total cost at destination. Wider markets and an increased degree of specialisation are possible since the cost of production at a more distant source plus the cost of transportation to the point of consumption may be less than the cost of the production process performed at, or near the point of consumption. The transportation industry especially at the national level usually follows the level of production activity within the country. This is natural since the primary function of transportation is the movement of goods and people. Thus, as industrial and agricultural activity increases, the level of transportation activity increases proportionally. Decreases in production will produce similar adverse effects on the transportation movement.

In a nutshell, transportation has far-reaching influences in that it increases wealth, is an important determinant of industrial location, promotes territorial specialisation, and raises the standard of living. Transportation itself has been very sensitive to change, both socially and technologically. Methods of carrying goods and people have constantly changed, and this change has resulted not only in a very intricate competitive system, but also in variations in the percentage carried by the different transportation media.

In a bird's-eye-view examination of the different transportation modes - surface (Road and Rail), air, and sea - it is seen that:

a) Surface transportation has experienced sophisticated developments and expansion mostly in the developed countries of Europe and North America, Japan, and in some of the Developing Countries of Asia and South America. In these countries, national motorways are linked to those of neighbouring countries. The railway system is given similar treatment. The movement of people and goods within neighbouring countries does not pose any major
problems here. On the other hand, most of the countries of the developing world do not enjoy these infrastructural developments. Their internal road systems are bad and inadequate. Railway development is still at its embryonic stage. The constraints impeding communication and the circulation of people and goods are many, seem insurmountable, and are imputable to the heavy capital investment involved in road and railway construction. Such a situation unfortunately favours and promotes illegal circulation of people and goods.

b) Relatively speaking, the development of air transportation has been evenly distributed the world over. But the constraints posed by the inherent nature of this means of transportation are far from being solved. Air transportation is fast and comfortable, but it is much more adapted to passenger transportation than to cargo transportation. Inasmuch as it is very expensive, only very high value, light, and incumbersome cargo can be transported once in a while. And even then, the amount of cargo which air transportation handles is relatively small, compared to the total volume of cargo which moves round the world through international trade.

c) The expansion of ocean transportation has been uncommonly fast in the last century. Technological developments have transformed ships to render them more serviceable. When well organised and administrated, sea transportation singles itself out as the back bone of international trade because of the total volume of goods transported.

Between 80 and 90% of international trade is effectuated through the sea. Whereas surface transportation demands a lot of investments in road and railway construction, ocean transportation demands simply the determination of sea lanes for ocean-going ships. Whereas air transportation is more adapted to passenger transportation (account is taken of the size and weight of planes, and of cargo which could be transported), sea transportation serves both passengers and goods. It is true nevertheless, that shipping is a high capital intensive industry. But heavy investments here will tend to be overlooked when compared with those involved in the develop-
ment of surface infrastructure since consideration must be taken here of the length of time it takes to pay back invested capital. In the absence of sea transportation and in view of the aforesaid, international trade will merely survive at regional levels.

The intention behind the foregoing arguments is not by any means to discourage the development and expansion of the other modes of transport. In fact, it is necessary to emphasize here that adequate infrastructural development of surface transportation systems plays a determinant and decisive role in sea transportation development since the goods carried by sea from foreign lands are not only consumed in the port area but are supposed to be moved to the hinterland where the bulk of the consumers are to be found. Similarly, the goods intended for sea transportation have to be brought to the port area by the instrumentality of surface transport. Also, "through transport" operations can only be effectively carried out when surface infrastructural developments have not been neglected.

Our intention then - in view of these arguments - is to put an accent on the part sea transport plays in the distribution of goods as a servant to international trade, and the corresponding role it plays within the framework of the economic development of the nation.

I - 3 OTHER ECONOMIC ADVANTAGES OF THE SEA.

Maritime Safety Administration, as we will see below does not only cover sea transportation but also those activities - fishing, off-shore activities - carried out on, or in the sea.

a) The fishing industry, within the framework of a coastal country's policy in developing agriculture and animal breeding, is of great importance to national economy. Since the nature of this study does not allow us to expatiate on the economic advantages of fisheries development, it is worthwhile to point out here that for centuries a considerable part of the populations of coastal countries have entirely depended on fishing for their living. This said, it is to be noted here that on the one hand,
the fishing industry uses vessels which have to be constructed (*) in conformity with safety regulations laid down by the Maritime Safety Administration. On the other hand, this industry employs workers to carry out various functions on board the fishing vessels. By virtue of the fact that these workers are exposed to risks similar to those of seamen (ocean-going vessels) they are considered seamen and the onus of determining the prerequisites for their recruitment and training (**), status, conditions of work, salaries and social benefits, lies with the Maritime Administration of the Country. Though many fishing vessels might not go beyond fifty nautical miles off the shore, the situation of the labour force on board fishing vessels, as we have stated above, is not different from that of the crew of a cargo vessel. The risks and dangers faced are almost the same. Conditions of work (watchkeeping) are the same. The safety regulations governing the two industries should therefore emanate from the same administration or body.

B) The status of off-shore operations is similar to that of the fishing industry. Much as the off-shore industry is concerned with mining—exploration, development and production of oil and gas—it is inextricably related to maritime transportation in that the drilling units (mobile and fixed), the service vessels, and the crew working on board are all regulated by national maritime laws and international maritime laws and conventions since the standards of safety to be observed on board and the risk of marine pollution are not different from those on board sea-going vessels.

c) Sea transportation, the fishing industry, and off-shore activities have been discussed and highlighted in this section with the intention of putting an accent on the key posts these activities occupy in the struggle towards the development and expansion of national economy and the subsequent immense contribution of the sea towards this goal. In

(*) This topic will be discussed more lengthily in Chapter III.

(**) We are not referring to professional training here, but to the training necessary to comply with safety regulations and to operate safety equipments.
this perspective, it will not be inconsequent to add here the role played by clean and hospitable beaches in fostering tourism in a coastal state. It is to be noted here that it is only through an effective enforcement of safety and pollution prevention regulations by the Maritime Safety Administration, that the cleanliness of these beaches can be maintained and ensured.

I - 4 PROBLEM OF UNEMPLOYMENT.

There is need here while discussing the importance of the sea, to examine the whole domain from the standpoint of employment. In a world where increasing inexorable unemployment has fatal repercussions not only on the economic but also on the political stability of a nation, it is of interest to note that the maritime sector when well organised, reduces to a very great extent the unemployment rate. The existence and expansion of many service production industries is directly linked to the maritime maturity of the nation. We are thinking here of ship agents, brokers, forwarding agents, marine insurance companies, stevedoring companies, Port Authorities, Ship building and ship repair companies, which employ a reasonable section of the population.

I - 5 CONCLUSION.

It is necessary to reiterate here, by way of conclusion that the predominant role the sea - through the various economic activities it provides and encourages - plays in the economic development of a nation cannot be overemphasized. It is of invaluable advantage to any nation after becoming completely aware of this importance, to put up the machinery through which:

a) The sea will be given the protection it deserves.

b) The usage of the sea will be regulated with regard to the different activities it encourages, consideration being taken of its international nature and the possibility of conflicts of law.
c) The assurance of safety of human life (crew and/or passengers), vessel and equipment, and cargo will be made possible through an efficient system of organisation and control.

This machinery is the Maritime Administration which should be created and directly controlled by the Government.
PART 11

MARITIME ADMINISTRATION
DEFINITIONS, CLARIFICATIONS AND SITUATION.

II - 1
The Maritime Administration is a governmental organisation whose duties and responsibilities are defined and attributed by the National Merchant Shipping Legislation. Depending on the nature of this legislation, the conception and provision of these duties and responsibilities may have all, or some of the following objectives:

a) To promote marine transportation and inter-related fields within the framework of the nation’s global policy with regard to economic development and expansion.

b) To attend to the development and operation of a safe and efficient marine transportation system that contributes to the achievement of governmental objectives with regard to international safety standards, and to operate specific elements of the system.

c) To develop and maintain a merchant marine which, in addition to meeting the nation’s commercial trade requirements, is capable of maintaining the nation’s prestige abroad on the one hand, and meeting her defense requirements on the other hand. Such defense requirements will include the provision of logistic support to the military services during national emergencies, transporting military goods, personnel and material.

To all intents and purposes, the responsibilities, activities, and size of the Maritime Administration will depend on the economic and political potentialities of the nation. Let us take a close look at a few groups of national Maritime Administrations:
(i) The United States' Maritime Administration, for example, administers programmes to aid in the development, promotion, and operation of the United States' Merchant Marine and its constituent elements, and is charged with a major role in the promotion and development of federal policies and goals in connection with U.S. ports. In brief, the central role of this organisation is the administration and control of the U.S. Merchant Marine subsidy programme which provides for construction and operating differential subsidies to the U.S. Merchant Marine. As a component of the Department of Commerce, this Administration has responsibility for the promotion and development of waterborne transportation for U.S. domestic and foreign commerce, together with specific detailed statutory authorizations involving port operation and development programmes. The safety aspects of shipping - drawing up of and enforcement of laws, regulations and standards pertaining to marine safety, port safety and related areas, navigational aids, SAR (Search and Rescue) operations, pollution control and prevention etc - are handled by another organisation, the U.S. Coast Guard.

In Canada, the situation is not very different from that prevailing in the States especially with regard to the Coast Guard and its activities. But there is this major difference: while the United States has a Maritime Administration and a Coast Guard, Canada has just a Coast Guard which is developed to carry out the two major functions of a typical Maritime Administration, i.e. marine transport safety surveillance and promotion of national maritime transport.

(ii) Maritime Administrations in Western Europe are mostly safety-orientated. Their main activities consist mainly of the following:

a) Advisory functions to the government with regard to the drawing up of the global national maritime safety laws and regulations. Such laws will cover ship construction, navigation, and navigational aids, training of seafarers and manning, pollution prevention and control etc.
b) Physical enforcement of above-mentioned regulations through controls, inspections, and surveys.

c) Research geared towards amelioration of present safety standards. In some of these countries, a greater part of this research is carried out conjointly with Classification Societies. In others, the two organisations liaise together, each within its own field of competence and specialty for the improvement of marine safety. It is to be observed that most European and American countries of developed market economy appear to have surpassed the stage where the government has to control directly, so to speak, the commercial aspects of shipping. This appearance is a complete illusion since in many cases the public or para-public administrations - Chambers of Commerce for example, in-charge of the "financial promotion" of national maritime transport - might be situated within the organisational structure of other public administrations not directly linked to transportation.

(iii) In Developing Countries, and in most young maritime nations the Maritime Administration is charged with functions which are twofold:

a) In the first place, such an administration will carry out functions through which a merchant marine fleet will be created, developed, and expanded. Such a fleet will depend to a great extent on the Maritime Administration for the developmental subsidies necessary to guide up to maturity an infant industry taking part in a game where the competitors are mostly experts. The Maritime Administration will have a certain degree of control over the internal and external policies of the companies operating the fleets.

b) Secondly, the Maritime Administration will carry out the traditional functions of a Maritime Safety Administration, functions similar to those effectuated by the Maritime Administrations of Western European countries. By and large, these functions are limited here to the preparation of the maritime Code, and the physical
control inspections, and surveys of ships (port and coastal state controls).

Though opinions might differ greatly on the definition of the Maritime Administration, it is necessary to note that in most of the developed countries of Western Europe and North America, the Maritime Administration originally had the twofold functions mentioned above. It is only after a considerable degree of growth and expansion of the merchant marines of these countries had been ensured that other governmental agencies were created and functional breakdowns of the responsibilities of the corresponding maritime administrations were made possible. The advantages of such a system are many because when the activities of the maritime administration are developed to a stage where conflict may arise between economic and safety considerations - and in such a case safety is likely to be sacrificed for economic reasons - a system of separation and re-assignment of responsibilities is advocated. (x)

II - 2 SITUATION.

If a clear and a universally accepted definition of the Maritime Administration has not been easy to maintain, it is mainly due to the diversities in the activities of the governmental departments from which this administration emanates. Shipping is inextricably linked to trade. Some countries - the United States for example - will place the Maritime Administration within the organisational structure of the Department (Ministry) of Commerce and Trade. The functions of the Maritime Administration here are doomed, so to speak, to be directly related to those of the mother Department. On the other hand, most countries will situate the Maritime Administration either under the direct control of the Ministry of Transport, or, as is the case with France, under the direct supervision of the Ministry of the Sea ("Ministère de la Mer").

A structure like the French will favour diversity and concentration of activities while eliminating friction (between different governmental

(x) This will be developed in Chapter III-3.3.
departments) resulting from conflicts of interest. In addition, many areas of the sea will be covered and regulated without discrimination due to the fact that while some of the activities are income-earning orientated, thus a sort of assets to the national treasury, others will mainly be a sort of expenditure, and are considered a liability to the national treasury. It is to be noted here nevertheless that whichever governmental department is responsible for the organisation and supervision of the Maritime Administration, it should be borne in mind that the activities of this administration will always transcend the recognised limit of those of the Department, and as such, room should be made for close cooperation with those Departments performing cognate activities. The Departments likely to be involved here are the Ministries of Transport, of the Sea, Commerce and Trade, Agriculture (fisheries), Mines and Energy (off-shore activities) and the Environment (Pollution Prevention).

Finally, mention should be made here of the fact that in many countries, the Maritime Administration is given other designations which, prima facie, seem incompatible with the foregoing definitions and activities. In most young maritime nations, the designation of "Merchant Shipping Department" is very common. In Western European Countries and in most countries of developed market economy, the designation "Maritime Directorate" is used. In many other nations, a combination of different appellations is necessary to cover the whole range of the activities of the Maritime Administration. This is the case of countries (which have Coast Guards whose duties include inter alia the physical enforcement of maritime safety regulations) like the United States, Canada, and Sweden. In some very young maritime nations (those without an ocean-going fleet), the Port Authority is charged with the traditional functions of a Maritime Administration, functions which are more often than not, limited to safety controls and pollution prevention schemes around the port area. A service within the organisational structure of the Port Authority will be in charge of the commercial aspects of shipping.

Whatever its designation then, the Maritime Administration should be looked at from two different angles:
a) From the angle of a national maritime policy-making organisation with the main objective of building up, developing, expanding and strengthening the country's merchant marine.

b) From the angle of a Maritime Safety Administration with the main objective of effectively and efficiently carrying out those functions through which marine safety is provided and maintained at an internationally accepted level.

A divorce between these two integral parts making each of them an independent body, will only become imperative after a considerable growth and expansion of the national merchant marine has been registered. It is at this stage that a certain degree of friction will exist between the two parts, friction which will result in conflicts with long term negative effects on national economy. This friction will be expatiated on in a later chapter.

II - 3 REVIEW OF MAIN ACTIVITIES AND ATTRIBUTABLE FUNCTIONS.

The definition of the activities and responsibilities of the Maritime Administration as seen in Section I stems from the full awareness of the paramount importance of the sea with regard to national economic expansion. The attribution of functions to this Administration and the extent to which some of these functions have to be carried out must take account of national priorities and availability of organizational and functional prerequisites. Such prerequisites will include inter alia:

- Adherence to the different international organisations responsible for regulating the various related domains. This adherence will permit participation in the drafting of related international regulations and conventions on which most national laws regulating this field will be based. It should be mentioned here that by virtue of their situation within the organisational structure of the United Nations Organisation (UNO), these international organisations are provided with the necessary indispensable tools (technical know-how) for the performance of their functions.
- The processing and development of the various resources (human and natural) necessary for the carrying out of defined functions.

As earlier mentioned in II-2, the functions of the Maritime Administration are twofold:

- Those that deal with the developmental aspect of the Merchant Marine, and
- Those that deal with Marine Safety and related areas.

II - 3.1 MERCHANT MARINE DEVELOPMENT.

The decision to invest in shipping must take into consideration the gains (x) to derive from such a venture. Up till World War II, international Shipping was controlled almost exclusively by a few traditional maritime nations; but since then many developing countries have been struggling successfully to build and expand their merchant fleets. This awareness of developing countries of the importance of shipping has increased substantially and their desire and drive to participate in a venture once monopolised has grown apace. Though the aspirations of these countries in their collective aim to expand their national fleets have recently been linked with the activities of the United Nations Conference on Trade and Development (UNCTAD), the bulk of the work geared towards obviating the different tangential constraints acting against their participation in shipping remains with their Maritime Administrations. This work has been condensed under three main headings: Policy making, Implementation and Enforcement, and Cooperation.

a) POLICY MAKING

A merchant marine fleet can only be built, developed and expanded under a set of laid down laws. These laws might either appear in the National Code of Commerce or considering their technical nature - this depending

(x) Nationalistic reasons which will have a long term beneficial effect on national economy are to be considered as gains here.
mostly on the maritime maturity level of the nation - in the National Maritime Code. Though the making of laws is traditionally the realm of lawyers, the Maritime Administration being more conversant with maritime affairs, is responsible for drafting the technical contents or, in certain cases, in guiding these lawyers with a clear lay out of the areas to be covered. These areas will include amongst others:

(i) - Creation of shipping companies and status - government owned, private, foreign participation; prerequisites.
- The ship; Master and crew - nationality; carriage and delivery of goods; Liabilities and extent - Ship building and repairs.
- Port construction and development.
- Status and activities of para-maritime companies - Forwarding agents, ship agents, brokers, stevedoring companies, marine insurance companies, shiplanders, transport operators.
- Organisation of maritime transport and shipping policies.
- Creation of ad hoc agencies for certain technical matters - shippers' councils - status and functions.

(ii) Bilateral and multilateral cooperations.
- Foreign partners for cooperation - assessment of trade with these countries; Joint ventures - assessment of benefits resulting from such a venture, transfer of technology etc.

B) IMPLEMENTATION AND ENFORCEMENT.

The regulation by law of any area is only complete and effective when the practicability of the laid down laws has been tested and ensured through physical enforcement. More often than not, the body that prepares the laws is not involved in the enforcement scheme. With regard to the commercial aspect of maritime transport, the enforcement of the laws governing those aspects directly related to trade is partly relegated to shippers' councils. The activities of these councils will include amongst others freight rate negotiations with maritime Conferences
and - prior to the entry into force of the UNCTAD Code of Conduct for liner Conferences - the assurance that national shipping Companies carry a substantial amount of cargo generated by the country's foreign trade.

c) **COOPERATION.**

Before the inception of UNCTAD, many Developing Countries had already begun a joint struggle for participation in world shipping. But there is no doubt that since 1964, UNCTAD has contributed significantly to the awareness of these countries of the importance of this area of investment and the various problems to be encountered. For the past half a century, the activities of the Maritime Administration of Developing Countries have been based on breaking through the almost watertight barrier behind which many developed market economy countries monopolised shipping and its different components including maritime transport auxiliaries - marine insurance, brokerage, transit, agents etc., whose activities are indispensable for the smooth carriage of goods by sea.

In most recent years, the UNCTAD Code of Conduct for Liner Conferences, Participation of Developing Countries in the carriage of bulk cargo, and Open Registries, have primed the activities of Maritime Administrations in both Developing Countries and Developed Market-Economy Countries.

1) **CODE OF CONDUCT FOR LINER CONFERENCES.**

After consistently and persistently expressing dissatisfaction with Liner Conferences for ignoring their specific needs and for maintaining discriminatory freight rates unfavourable to their exports and by extension to their foreign trade, Developing Countries were "rewarded" in 1974 when UNCTAD formulated a Code for Liner Conferences which has now entered into force. The part of the Code which received the greatest amount of attention is the cargo sharing scheme according to which trading nations are entitled to participate in the ocean transportation of the goods generated by their foreign trade in a proportion compatible with the total trade in question. Specifically, 80% of the trade is informally allotted to the two trading nations, each receiving 40%, and
the remaining 20% goes to cross traders. Since the Code is now in force, the onus of developing an efficient policy through which it will be efficaciously enforced, lies with the Maritime Administrations of these countries. This policy should be developed in such a way as to reduce certain inherent negative effects of the full application of the Code. Such negative effects will include:

- Consideration by some economists of the full application of the Code as an impediment to international trade where the carrier loses his freedom in international carriage and where consumers of shipping services will have fewer choices in the international distribution of their products.

- Inability of Developing Countries to supply sufficient tonnage to carry the allotted 40%, such a situation gradually resulting in increased bilaterism in liner shipping with accompanying rises in voyage costs.

- Considering the import/export ratio in Developing Countries, some economists are very positive in the assertion that even if these countries succeed in filling their own vessels on both journeys through application of the Code, they must rely on Conference services for the residual inward trades and constraints on the participation of third flag carriers are certain to cause problems. In addition, a chronic shortage of back haul cargo will force up the Conference freight rates and may completely upset any benefits derived from the expansion of their respective merchant fleets.

2) PARTICIPATION IN BULK CARGO TRANSPORTATION.

Transportation of dry bulk - raw materials, farm products and certain industrial intermediates such as forest products, accounts for a rapidly growing proportion of world shipping. Two-thirds of all goods, oil excepted, loaded in ports of Developing Countries consists of bulk cargo.

Up till date, the carriage of bulk cargo has been carried out by vessels from developed market-economy countries. Maritime Administrations in
Developing Countries, recognising the need and right to participate in this trade, have had many ad hoc meetings which have resulted in presenting a joint plea to UNCTAD to study the possibility of a realistic and a pragmatic participation in the carriage of those goods generated by their foreign trade. After a three-dimensional study by an ad hoc group of experts, only recommendations unfortunately were made. These recommendations, addressed mostly to developed market-economy countries, appeal to these countries to relax, so to speak, their firm control of the bulk cargo transportation market. On the other hand, it is entirely left on the Maritime Administrations of Developing Countries to develop policies and mechanisms geared towards the implementation of the above mentioned recommendations (through issuing of laws compatible with these recommendations and according to their various specific needs and priorities), and also towards the expansion of their merchant marines in order to meet the subsequent demand in tonnage and management prerequisites for such participation.

3) FLAGS OF CONVENIENCE.

While views differ on open registries or flags of convenience as commonly called, the general consensus is that the disadvantages outweigh the advantages. Generally speaking, merchant marines under open registry flags adversely affect the competitiveness of other countries especially in bulk transportation. Most organisations based in developed market-economy countries will try to confute this reasoning, arguing sophisticatedly that phasing out open registries will result in a considerable increase in ocean transportation costs especially of raw materials and other bulk cargo, and that such a situation will distort today's market by decreasing the competitiveness of material from distant sources. These arguments are mainly a veil to confound those struggling to phase out these flags behind which shipowners of developed market-economy countries hide to solve their problems of labour costs and others, and this, to the detriment of Developing Countries. The Maritime Administrations of the developing world have the responsibility not only to continue with this struggle but also to unite their forces and again put forth a mechanism through which success will be ensured. It is to be noted that
the existence of these flags will always be a great obstacle preventing Developing Countries from effectively participating in the carriage of bulk cargo.

II - 3.2 ENSURANCE OF MARINE SAFETY.

While the commercial aspect of the activities of the Maritime Administra-
tion is directly linked to the activities of the United Nations Con-
ference on Trade and Development (UNCTAD), the Marine Safety aspect of
these functions is, in a similar way, directly linked with the activities
of the International Maritime Organisation (IMO), which, since its in-
ception in 1959, has facilitated cooperation among governments on tech-
nical and related matters affecting shipping, especially in the promotion
of safety of life at sea and the prevention of marine pollution from
ships.

In SECTION I, we saw the determinant role the sea plays - through trans-
portation, fisheries, mining, etc. - in the economic development of a
nation, and the need not only to give the sea the protection it deserves,
but also to put up a mechanism through which the numerous safety hazards
involved will either be completely obviated, or at least be reduced to
a considerable extent. The control of such a mechanism is entrusted in
the hands of the Maritime Administration which might - depending on the
degree of the country’s involvement in maritime transport and related
matters and her subsequent maritime maturity - be relegated to a more
specialised body which will report directly to her. Such a body is
usually given the designation of Maritime Safety Administration. The
functions and activities of this section of the Maritime Administration
will include inter alia:

- Ship Registration and Attendant matters.
- Surveys, Inspections, and Certification of ships.
- General superintendence and Coordination.
- Preparation of Maritime Code and Legislation.
- Enforcement of Legislation.
- Implementation of International Conventions.
- Examination and Certification of seafarers.
- Crew matters.

Since SECTION III of this study is reserved for the Maritime Safety Administration, it will not be inappropriate here if we limit, as is the case above, our discussions (on the activities of the Maritime Administration with regard to marine safety) to a mere listing of the functions to be carried out.

II - 4 DEVELOPING COUNTRIES - ON PRESENT SITUATION AND SHORTCOMINGS.

In the Introduction, we cursorily discussed the fast growth of fleets of Developing Countries, but which, unfortunately, are still considered undertonnaged. It is appropriate here, while expatiating on this subject to note that during the 1960s, a number of researchers concluded that countries with chronic shortages of foreign currencies may consider investing in merchant shipping as a means of improving the position of their balance of payments. It was rightfully considered that a national flag line can have a significant, moderating influence on the rate-making policies of shipping conferences, although, as other economists pointed out, economic considerations were not the only driving forces for the creation and maintenance of a national flag line. Military and political objectives have been given priority by many countries of developed market-economy.

Again as pointed out in the Introduction, organisation and management are gaining more grounds in the evaluation of the importance of the different factors of production. If, as earlier said, most Developing Countries are still far behind as regards developing, expanding, and modernising their global maritime infrastructure, the blame goes more to the organisation/management component of the economic factors of production than to capital. It has to be recognised that this flaw or shortcoming is not only that of the private companies involved in sea transportation. In fact, it stems from the very body in whose hands is entrusted the responsibility of creating, maintaining, developing, and expanding a national merchant fleet - the Maritime Administration. It is this body - being the right hand of the government and representing
her in this domain - that builds up a merchant fleet after ensuring the development of an infrastructure within which the fleet will expand. Such an infrastructure will include at its different stages of development, the following:

- Port construction, equipment and development,
- Staffing and training of personnel,
- Preparation of a legislation governing the different related and inter-related domains.

II - 4.1 FLEET BUILDING.

The reasons behind investing in shipping in Developing Countries are mostly economic. Different assessments of foreign trade have to be a precondition for determining tonnage to be exploited. Fluctuations of the freight market for various economic reasons are short term forces likely to obligate governments to prescribe laying up, or disposing of excess tonnage to national shipping companies. The ill effects of over-tonnage can be more detrimental to a shipping company than those of under-tonnage. The "BLACK STAR LINE" of Ghana suffered from this for a number of years and it is just of recent that it disposed of an amount of excess tonnage in response to market and managerial imperatives.

Many shipping companies in Developing Countries came into being through joint ventures with foreign investors. The very nature of this sort of contract demands deep perusal and consideration of clauses likely to have long term negative effects on the running of the companies. Sierra Leone for example, has fallen victim of hasty joint ventures and presently she has to depend on foreign vessels for the carriage of her external trade.

Though of a relatively small size, the fleet of Developing Countries is comprised of vessels not older than ten years. In spite of this age, the bulk of this fleet is not equipped as it were, in conformity with the pro-
visions of international conventions on safety and pollution prevention. As a matter of fact, statistics on Port State Control in the Port of Rotterdam, the largest European port, show that during the last three years, vessels flying the flags of Developing Countries calling in this port come second after the Greek flag in deficiencies. This shows either:

a) A lot of laxity on the part of the Maritime Administrations of these countries on the enforcement of the requirements of international conventions in force on vessels flying their flags,

b) Inability of these Administrations to implement these conventions (i.e. absorb the provisions in their respective municipal legislations) and subsequently develop a scheme of enforcement, or

c) Complete lack of knowledge of the existence, or entry into force of these conventions and the obligation they have as representatives of flag state (even if the state is not party to the conventions) to enforce the provisions on vessels flying their national flags. (⋆)

II - 4.2 PORTS - CONSTRUCTION, EQUIPMENT AND EXPANSION.

The maritime consciousness of a nation and the decision to invest in shipping should be justified by the availability of ports to receive seagoing vessels. The construction and expansion of ports is a very capital-intensive venture. National policies on economic development should take into consideration certain criteria in the construction, equipment and expansion of national ports. Such criteria will include inter alia:

a) Location with respect to major world markets.

b) Accessibility to inland trade areas.

c) Natural or man-made harbour which will determine the cost of construction and extension works.

d) Amount of traffic to be handled and types of vessels expected to use it.

(⋆) The international nature of shipping obliges vessels to call in many foreign ports. The reception of a vessel in a port is subject to compliance of the vessel with the safety regulations of the port state. Whether a state is party or not to an international convention in force,
Most of the ports in Developing Countries were constructed during the colonial days. Technological developments in ship building and cargo handling equipments have obliged the Maritime Administrations of Developing Countries to effectuate heavy extension works of modernisation. Yet it is to be noticed that most ports in this area of the world are noted for bottlenecks and congestion. In most recent years, it was very common for vessels to wait for two months before loading or unloading in the Port of Lagos in Nigeria. Bottlenecks in ports could easily be avoided through the use of Secondary ports provided a reasonable infrastructure is available for handling operations and conveying of unloaded goods to the hinterland.

In Countries of developed market-economy, ports are owned and operated by town municipalities. In most Developing Countries, this is almost impossible since the necessary schemes through which municipalities earn independent incomes (taxation) are not put forth and controlled in the right way. The onus of providing the country with efficient ports which should meet the requirements of the nation's foreign trade therefore lies once more on the Maritime Administration.

II - 4.3 LABOUR FORCE.

1) PERSONNEL

The development of human resources is a priority the importance of which cannot be over-emphasized. The technicality and diversity of activities presented by the maritime domain have rendered more difficult the availability of trained and qualified personnel in Developing Countries. Although labour abounds in this part of the world, the disparity between "crude" and "processed" labour makes the difference. While it might take vessels flying her flag have to comply with the requirements of the Convention when visiting the port of another State party to the Convention.
a couple of months to train all-round ratings, it will take at least five years to train officers and masters.

On the other hand, it should be noted that the performance of sea-going personnel depends to a very large extent on the management of the overall shipping operations by shore-based personnel. The personnel of Maritime Administrations, by the very nature of their activities, are considered marine personnel. While sea-going personnel can undergo professional training before becoming operational, the personnel of Maritime Administrations more often than not depend on experience to perform their duties.

While in countries of developed market-economy, it is easy to "lay up" some personnel from their sea-going career and exploit their experience for the performance of functions in their Maritime Administrations, most Developing Countries are still new in the maritime field relatively speaking, to do same. Even if these Countries had enough sea-going personnel to "lay up" some, these would not have enough experience to permit them to become immediately operational in their Maritime Administrations if they were to readily relinquish their sea-going career.

The repercussions of this lack of knowledgeable personnel on maritime affairs especially in their Maritime Administrations has been felt very deeply by Developing Countries. In the past years, these countries have had to rely on the services of expatriate contract personnel for the preparation of their respective maritime legislations, and the performance of certain technical duties like ship surveying and technical visits and controls. The results have not been very satisfying. On the one hand, the legislations prepared have very often been void of "local colour". On the other hand, the services of expatriates have always cost a fortune to the countries employing them.
2) TRAINING INSTITUTIONS.

Many years ago, the need for national maritime training institutions was recognised, and if only few Developing Countries opened such institutions, it was due to the very inherent difficulties to be encountered in opening a new school. These difficulties included in the short run inavailability of:

- Funds to build and run the institutions.
- Qualified nationals to serve as instructors since imported teachers might be very expensive.
- Funds to equip the institutions, account being taken of the technical nature of the courses to be offered.

It should be noted here that some of the Developing Countries which succeeded in overcoming these constraints, faced in the long run the problem of procuring sea-going jobs for many nationals who had successfully completed their courses, since the size of their merchant fleets did not permit them to employ seamen every year. The Philippines have been victim of this for a number of years, and the only immediate solution has been to export sea-going personnel to both Developing Countries and countries of developed market-economy under working conditions the national government could not directly control.

During the last two decades, Developing Countries have become more conscious of the need to unite their forces in order to fight the different tangential impediments encountered in the maritime domain. One of the facets of this unity has been the formation of groups of "homogeneous" nations with common interests. It is in this perspective that West and Central African States united to create the "Ministerial Conference of West and Central African States on Maritime Transport". The achievements of this organisation will include the opening of two Maritime Academies in the sub-region of West and Central Africa by regionalising two national nautical Colleges - the "Ghana Nautical College" in Accra, Ghana, and the "Ecole Nationale de la Marine Marchande" in Abidjan, Ivory Coast. Considering the linguistic situation of the States in this sub-region, the Academy in Ghana will train English-Speaking nationals from member states
while the one in the Ivory Coast will train French-Speaking nationals.

It is of interest to mention here in passing that the past achievements of the Ministerial Conference should act as a spur to prod the Organisation into exploring new avenues likely to promote the development of the merchant marines of member states. These avenues might include the following:

- Considering that the struggle for the participation of Developing Countries in the carriage of bulk cargo has not been happily ended, studies geared towards the creation of a joint company by member states or a group of member states on the carriage of bulk cargo could be carried out at the level of the Secretariat of the Conference.

- As regards the promotion and improvement of marine safety, studies on the possibility of:
  - Opening two or three interlinked Vessel Traffic Services (VTS) along the West Coast of Africa considering the increasing traffic in this area,
  - Unifying the various procedures and equipment used by Countries in the sub-region on Port State Control and probably prepare a Memorandum of Understanding in emulation of the Paris Memorandum of Understanding used by fourteen Western European Countries on Port State Control.

might yield fruitful results.

II - 4.4 LEGISLATION.

The very nature of merchant shipping demands that all the related activities involved be carried out under set laws and regulations. Depending on the policies and regime of a country, these laws are grouped in either a Maritime Code or a Merchant Shipping Act.
Basically, the main sources of these laws are long established practices laid down by tradition considering that merchant shipping can be traced right back to the middle ages. These national practices have been collected at the level of international fora, examined, screened, and made into international maritime law which in turn, has served as the source of international conventions which have now become the source of national maritime legislations. Long established maritime nations like the United Kingdom, the United States, U.S.S.R, Norway and France to name just a few, have thus contributed immensely to the establishment of International Maritime Law.

It is to be noted that the process described above continues today in a more modern way. This explains why:

- Some maritime related fields not regulated by international laws are regulated by certain national legislations.

- Certain maritime related areas are regulated by law, the provisions of which are more stringent in some national maritime legislations than they are in the international conventions from which they are supposed to draw their source.

During the colonial period, "metropolitan countries" transferred word for word their national maritime legislations to the now Developing Countries. After independence, most Developing Countries not only maintained these laws which were becoming obsolete but, when the occasion presented itself, borrowed more. In most cases, these inherited legislations are not conducive to the development of a national merchant fleet and the formulation of appropriate shipping policies.

The Developing Countries which had completely broken links with the former metropolitan countries, either used patches of regulations picked up from here and there or, and this was very frequent, simply let the buyers and sellers of maritime transport services make their own laws, or apply their respective national legislations.
The chaos that resulted from such a state of affairs was indescribable and corruption flourished. There was a call for concern and many Developing Countries began the hard struggle of establishing a national maritime legislation. In the absence of appropriate tools (human resources and technical know-how) for the drawing up of such legislations, expatriates were called on again for help. The legislations which were made were, in a way, an outdated version of the respective national legislations of the expatriates, lacked the reflection of local conditions and would require their services again for effective enforcement. Such flaws, coupled with other inherent local constraints, militated against the effective implementation and enforcement of international maritime conventions. It is thus not a surprise to discover that the maritime legislations of the coastal states of Africa for example, are inextricably linked to the national maritime legislations of the former "Metropolitan Countries" of these nations.

Other Developing Countries tend to use ad hoc legislations to meet their immediate needs. In such cases, the Maritime Administrations, shipowners, shippers, and others involved in shipping and international trade, are faced with rules and regulations which are sometimes overlapping and incomplete. The complexity of the resulting legal system in many cases, impaired the rapid development of the shipping and trade of these countries.

During the last ten years, and with the help of the International Maritime Organisation (IMO), many Developing Countries have been trying either to update their national maritime legislations, or simply to draw up new ones which will not only be compatible with related International Conventions in force, but will also reflect their respective local conditions or national economic philosophies (*). The task has not been easy. In addition to the existing constraint of inavailability

(*) In 1978, a joint group of experts from IMO, UNCTAD and ILO (the International Labour Organisation) prepared for the use of Developing Countries (Asian block), Guidelines for the drawing up of national maritime legislations.
of qualified nationals well versed in Maritime Law and Affairs, there has also been the problem of qualified nationals for enforcement. As we earlier said, the finality of laws is effective enforcement. Not only should the enforcement body know exactly what it is doing, but also, those bound by the law should be able to understand through training what they are asked to do or not to do.

The contents of a Merchant Shipping Legislation will be treated in SECTION III to avoid duplication. It is necessary nevertheless, to reiterate here by way of conclusion the two main procedures for the updating of a national maritime legislation.

a) Depending on the nature of the existing legislation, the first procedure will consist of giving existing legislation a good perusal and getting rid of:

* Those provisions which do not reflect local conditions or defend national interests without hurting, so to speak, international interests.

* Those provisions which have been superseded by the provisions of International Conventions in force.

* Those provisions which will be rendered obsolete by the requirements of international instruments not yet in force but likely to be so in the very near future (i.e. if the Administration is in sympathy with the requirements). The gap created by this withdrawal will be filled with the corresponding related provisions which should be compatible with International Conventions in force.

b) If present national legislation is a jumble or patches of foreign national legislations where many difficulties will be encountered in sifting outdated provisions from those to be maintained, it will be a good idea to start from scratch. The headlines of such a legislation will be given in the next section.

It is to be noted that in both procedures, a sort of foresight should be shown by the law makers. Considering the time the provisions legis-
lating a particular area of the economy take before being promulgated into law, the provisions of International Conventions not yet in force but likely to be so in a couple of years should be carefully examined and, depending on the contents, be included in the municipal legislation being prepared. Although very often the provisions of International Conventions are only included in the municipal legislation when the said Convention has been ratified, it should be borne in mind that whether a Convention in force has been ratified or not by a particular country, ships flying the flag of that Country are forced by the international nature of shipping to comply with the provisions of that Convention.

II - 4.5 FISHING INDUSTRY AND OFF-SHORE ACTIVITIES.

The various operations involved in "Fisheries" and "Off-Shore Activities" present enormous hazards to human lives and to the marine environment. Considering the situation of these two areas within the organisational structures of other Ministerial Departments, these activities are hardly ever legislated safety-wise by the Maritime Administrations of Developing Countries.

II - 4.5.1 FISHING INDUSTRY

In many countries, fishing has been transformed from a primitive occupation to a highly developed industry employing complex machinery. Considering the already existing hazards in this industry - those resulting from the use of the fishing vessel, and human error which cannot be completely stamped out - such a transformation must be corroborated by the introduction and expansion of safety measures similar to those applied in other major industries.

At different international fora, deliberations on safety in the fishing industry have resulted in the issuance of Recommendations, Guide-lines Codes, and a Convention to legislate:
* The working conditions of fishermen - skippers and crew.
* Construction standards and equipment of fishing vessels, builders, and responsibilities of owners.

These international legislations will include:

- The Torremolinos International Convention for the Safety of Fishing Vessels, 1977, applicable to fishing vessels of 24 metres long and above.

The contents of the above-mentioned instruments will be looked at in SECTION III.

Although at a much slower pace, fishing in Developing Countries has also had its share of transformation. But unfortunately, this transformation has not been closely followed up by the introduction of the corresponding safety measures necessary to reduce the occurrence of accidents which, in addition to their direct detrimental effects, adversely affect the economics of the industry as a whole. In many Developing Countries, more importance has always been given to the commercial economic aspects of fishing than to the safety aspects. Accidents, even those involving the loss of more than thirty lives, have always been looked at as an Act of God, and it is only of recent that the possibility of reducing them through the establishment of safety standards has been considered with optimism.

The fishing industry, in view of its activities, is directly controlled by either the Ministeries in charge of Agriculture or Animal Breeding and Industries. In most Developing Countries, the Maritime Administration is not considered directly related to this industry. In the circumstances, the safety of fishermen (or the crew of fishing vessels) has never been
legislated in conformity with international standards. The frequent loss of trawlers together with their entire crews has forced of recent many Governments of Developing Countries to assign to their Maritime Administrations, the responsibility of ensuring that sufficient safety standards are maintained in the Fishing Industries. These standards can only be reached and maintained when appropriate legislations are prepared in the light of related existing international instruments. The enforcement of these legislations will oblige owners to build and equip their trawlers with not only commercial considerations in mind but also with safety considerations for the crew to man the vessels. It is to be noted that presently about 70% of the crews of fishing vessels in some Developing Countries have never received any training whatsoever on the use of safety equipments or on the maintenance of global safety. About 60% of this same crew, shockingly enough, do not even know how to swim!

II - 4.5.2 OFF-SHORE ACTIVITIES.

The day petroleum oil will lose the appellation of "black gold" is still very far off. Even with the discovery of solar energy, oil still occupies its place of main source of energy.

The petroleum crisis of the late 70s, coupled with other national economic development imperatives, intensified the exploration of petroleum outside the limits of national land frontiers. In the last two decades, the exploration and exploitation of submarine petroleum oil have gained a lot of importance with the construction of sophisticated specialised installations and machinery.

Considering the numerous hazards involved in the operation of these installations, many governments have considered it their duty to prescribe stringent safety regulations through the issuing of intensified legislations to govern off-shore activities. Most of these regulations are based on the provisions of the IMO Mobile and Drilling Units (MODUS) Code.
Off-shore activities involve the construction and operation of Mobile and Fixed Installations, Supply Vessels, and Diving Vessels. With regard to their different functions, the operation of these installations present a threat to the marine environment and to the lives of the crew working on board; this of course is in addition to the threat of pollution presented by the exploitation of petroleum from the seabed. The provisions of the MODU Code - these will be treated more deeply in SECTION III - though covering the whole spectrum, are considered not stringent enough by some Maritime Administrations which lay down additional laws in respect to the development of their off-shore activities.

While in most countries of developed market-economy the Maritime Administration legislates the safety aspects of off-shore activities, some countries, considering the bulk of work in this area, relegate these functions to a more specialised body which will liaise together with the Maritime Administration with regard to safety matters, but will report to the Ministry in charge of Energy development. This is the case with Canada which has the "CANADA OIL AND GAS LANDS ADMINISTRATION" as a separate public Organisation from the "CANADIAN COAST GUARD". In this case, the attributions of such an administration will transcend to a certain extend, those of the traditional Maritime Safety Administration.

It is of importance to note here the difference in status of the installations put up and operated in off-shore activities and their subsequent regulation by different Maritime Administrations or governments:

* Fixed installations, whether of foreign origin or ownership, are ruled by Coastal State Regulations.

* Mobile Units, on the other hand, are governed by Flag State Regulations and special Coastal State Regulations.

Many Developing Countries have had petroleum explorers and exploiters working off their shore (seabed of internal waters, territorial waters, or Exclusive Economic Zone) for many years. Unfortunately, it is only of recent that some governments in this part of the world are, considering
the accidents occurring in this area and involving the loss of many lives (most of them nationals), looking forward to taking effective measures geared towards legislating safety at national level in this area. The task has been very difficult for various reasons:

* Through the habit of making their own laws for a long time, the explorers and exploiters will claim to know more than the Maritime Administrations and enforcement of municipal laws will be rendered difficult.

* The Maritime Administrations lack personnel with required technical know-how who will survey, inspect and control periodically the installations.

* The necessary tools (equipment) for surveys and inspections are not available.

The repercussions of these shortcomings will certainly resound on the legislations governing the area. Either the legislations are too weak and simple, thereby falling short of the basic minimum requirements demanded by international regulations, or they are in a way a carbon copy of the international regulations; and since the Maritime Administrations lack the necessary tools for enforcement, it will be difficult to make sure that they are being complied with. The only reasonable and pragmatic alternative remains the training of nationals which, fortunately, has been rendered possible by the International Maritime Organisation when she opened in 1983 the World Maritime University (W.M.U.).

It should of course be noted here that before this University came into existence, those Developing Countries which had recognised the need to train technical personnel (for the promotion and maintenance of safety at sea) sent nationals - through special "cooperative agreements" - to appropriate training institutions mostly run by developed market-economy countries with which they had "special links". It is to be emphasized here that in these institutions, a particular accent is put on national practices (i.e., the practices of the countries running the institutions) rather than on international ones. The main difference therefore between these institutions and the World Maritime University is that by virtue of the fact that the latter has no nationality, so to speak, her standards
or global philosophy are bound to be a synthetic analysis of the various philosophies prevailing in all the countries which have felt the need to establish and maintain safety standards in the domain of sea transportation and related areas. This difference, in a way, is therefore that which exists between national and international practices.

Throughout our discussions on the Fishing Industry and Off-Shore Activities, one observation has been salient: the fact that these two industries for a long time have been forgotten by Developing Countries and consequently have not been legislated safety-wise. It is my humble opinion that with the advent of the new United Nations Law of the Sea Convention, coastal Developing Countries, stimulated and spurred by the share of the sea apportioned them and the resources therein contained, will become more conscious of the responsibility and obligation they have towards the entire maritime world to ensure that all activities performed in this area are carried out under recognised safety regulations.

II - 5 CONCLUSION

In the foregoing SECTION, we have tried to present the Maritime Administration as the right hand of any government in matters relating to the sea - merchant shipping development, regulation of safety standards etc. In discussing the activities of this Administration as a policy-making and a law-enforcement public organisation, we have specified that the functions are twofold, those that deal with the commercial aspect of shipping - merchant fleet development and the general promotion of maritime transport, and those that deal exclusively with safety maintenance.

We have deliberately merely glanced over or, in fact discussed in patches those activities which are solely concerned with the safety of navigation and related matters. These activities will now be looked at more closely in the following section.
PART III

MARITIME SAFETY ADMINISTRATION.

III - 1 INTRODUCTION: DEFINITIONS AND GENERALITIES.

The Maritime Safety Administration is:

- that part of the Maritime Administration that deals with safety matters, or

- depending on the maritime maturity of the nation, a public organisation charged with the duties of providing safety at sea through the development of various schemes and parameters through which safety standards - for the design, construction, and operation of sea-going vessels or any fixed and mobile installations likely to be exposed to the different perils of the sea or navigable waters - will be ensured.

As earlier mentioned in II-1, in countries of developed market-economy the Maritime Safety Administration exists as a separate public organisation, from the one in charge of the development of the merchant marine. In some of these countries, this organisation is given the designation of:

- "Maritime Directorate",
- "Maritime Safety Administration", and
- "Maritime Administration".

In others, it is called the "Coast Guard". The traditional functions will be literally the same, although some countries, depending on their respective maritime philosophies, have transcended this limit to include functions which are usually attributed to different public organisations. This is the case with the United States' "Coast Guard" which carries arms and is sometimes involved in construction works such as bridges over interior navigable waters, or in the effectuation of functions usually assigned to the customs.
In most Developing Countries, especially those along the West Coast of Africa, the Maritime Safety Administration exists as a department, section, or service of the Maritime Administration. Very often here, the functions of the Maritime Safety Administration are confused with those of the merchant marine developmental section of the Maritime Administration. As a result, these functions are carried out ostensibly for safety maintenance but really for the promotion of national maritime transport (*). It is possible, at first consideration, to understand that at this early stage of their development, these countries will be actuated by economic reasons in their strive to maintain safety standards at sea since the "raison d'être" of establishing a merchant fleet and a Maritime Administration is to earn foreign currency necessary for fostering their economic development. Also, irrespective of the various prevailing constraints in the organisation of this administration, most Developing Countries have considered the Maritime Safety Administration as being economically viable only in the long run since in an economy where borrowed funds for investment are expected to yield positive results in the short run so as to provide more funds for re-investment, it is rare for priority to be given to sectors for investments considered a liability to the public treasury. Although the foregoing might sound sophistical, it is true nevertheless that in many countries of developed market-economy, the expansion of the Maritime Safety Administration has been made possible by the rapid expansion of the merchant marine.

III - 2 PRE-REQUISITES.

Considering that the Maritime Safety Administration is either a section of, or an emanation of the Maritime Administration, the pre-requisites for the establishment of a Maritime Safety Administration and the ensurance of the effective carrying out of the duties and responsibilities entrusted on her, are similar to those of the establishment of the Maritime Administration. With regard to Developing Countries, these will include inter alia:

(*) It is of course possible to argue here, and with conviction that economic reasons are the end results of the ensurance of Safety in the Maritime field.
(i) MEMBERSHIP OF THE INTERNATIONAL MARITIME ORGANISATION (IMO) AND PARTICIPATION IN THE EVOLUTION OF HER STANDARDS.

The International Maritime Organisation (IMO), a specialised agency of the United Nations, has been confided with the specific functions of the promotion of safety in shipping and efficiency of navigation, the prevention of marine pollution, the facilitation of maritime transport, the execution of technical assistance programmes, and the treating of legal matters relating to shipping. This work is carried out by experts through extensive studies which result in the drawing up of international Conventions prescribing minimum standards to be observed for the maintenance of safety in the different activities carried out on, or around the sea, and for the prevention of marine pollution. Membership is open to all nations, members of the United Nations Organisation. It is necessary to note that all the major maritime nations are members of this Organisation.

Like most inter-governmental organisations, IMO is above all a forum, an institution which facilitates and enables individual states to consult and to negotiate with each other on issues of common interests and concern. The end results of this Organisation's activities thus reflects no more than the joint and general will of the participating States.

Adherence to this Organisation and participation in the various sessions of her Sub-Committees, Committees, and Conferences will ensure the following:

a) Since the safety standards provided by the Conventions are not the "highest conceivable" but the "highest practicable", standards prevailing in some Developing Countries will also be considered. The views of these countries and their limitations (resources, equipment) will then be made known during the various sessions preliminary to the drawing up and the adoption of the conventions.

b) In the case of non-participation, Developing Countries might find themselves in a position where they are obliged to accept set standards the implementation of which will entail total dependence on external sources which they might only afford at a very high cost. Their presence then will oblige the ad hoc experts to look for alternatives to "sophisticated" standards which might be very expensive. In such
cases, the possibility of using indigenous resources, skills and systems prevailing in Developing Countries will be looked into for possible alternatives.

c) On top of acquiring additional knowledge and experience through formal and informal discussions and consultations, representatives of governments of Developing Countries will establish personal contacts with their colleagues from other countries and this will lead to better understanding and cooperation.

d) The needs of Developing Countries as regards technical assistance, the attendant funding assistance, and specific demands for aid will not only be made known but also recognised, sympathised with, and appreciated by Developed market-economy Countries.

(ii) TRAINED TECHNICAL PERSONNEL.

The staff of the Maritime Safety Administration are mostly technical personnel, who have had long years of training and experience. Surveyors, inspectors, and examiners are not only safety laws enforcement staff, but are supposed to have a solid academic background in the scientific field and sea-going experience. The training of personnel to meet these requirements is vital for the carrying out of the functions of ship surveying, inspection, and control.

It should also be noted that the drawing up of national legislation for the design and construction of vessels, or the comprehension of similar requirements (to be found in relevant international conventions) before implementation can only be done by trained staff well versed in the technicalities of the selected subjects. The inavailability of such personnel has obliged many Developing Countries to rely solely on the services of personnel from Classification Societies. If the competence of the personnel of these Societies cannot be questioned, it is necessary nevertheless to note that in certain cases they will be interested parties (when the vessel to be surveyed has been classed by them) and as a result, certain deficiencies might deliberately not be reported.
It is important here to note that within the framework of her technical assistance programme, the International Maritime Organisation has been instrumental in the organisation of short training courses for the technical personnel of Maritime Safety Administrations in Developing Countries, and presently, these Countries are benefitting from the Organisation's second world wide achievement (after the SOLAS Convention) - the opening of the "World Maritime University". It is hoped that within the next ten years, most maritime Developing Countries must have succeeded (through training their technical personnel in this University) in filling the gap left by the inavailability of technical personnel in their Maritime Safety Administrations.

III - 3 NATURE OF FUNCTIONS.

In the short run, the nature of the activities of the Maritime Safety Administration is threefold: Regulatory, Enforcement and Coordinating. In the long run, the Developmental aspect of these functions will be imperative, although it has to be stressed that this fourth nature will depend at large on the efficiency exercised in performing the first three.

III - 3.1 REGULATORY.

III - 3.1.1 Preparation of Safety Regulations (Merchant Shipping Act).

In discussing the Maritime Administration, we relegated to this SECTION the contents of a National Merchant Shipping Act. We will therefore mention here the various areas to be included in a Merchant Shipping Act instead of limiting ourselves to that part that will treat exclusively Safety matters.

Like any other national law, a Shipping Act will make provision for the appointment of a body to whom will be entrusted the duties of interpretation, enforcement, and the preparation of subsidiary laws or enabling acts necessary for further explanations or clarifications. The contents of the Act will include the following:
1) Ship Registration and Mortgages.

- Ownership and application for Registration; procedures for registration; Registration record and particulars to be entered; Surveys and measurements; markings.

- Certificate of registration and waivers; provisional certificates; name of vessel, etc.

- Change of ownership or master; registration of alterations, or changes of ownership; transfers and transmissions; voluntary and forced transfers; prohibition of transfers.

- Mortgages; status; rights and discharge; bankruptcy; transfer of mortgages.

- National character of flag - Nationality and flag; unlawful assumption of national flag; concealment of character, or assumption of foreign character; penalties - flag violation, etc.

2) Masters, Officers, Seamen and Apprentices.

- Manning Certificated Officers - Grades; Certificates of competency; forms of Certificates; Examinations; Loss of Certificates; suspension of Certificates; Certificates by other governments; Power to make regulations for examinations.

- Seamen and Apprentice - Classification and duties of Shipping masters; Fees; Assistance for apprenticeship, provisions, and contract; Seamen's employment offices; Disputes; Illness and death, etc.

- Passenger vessels - Regulations for carriage of passengers, etc.
3) Safety.

- Definitions; Surveys, inspections, controls.

- Safety and Loadline Conventions.

- Construction of ships - Approval of plans, etc.

- Inspections, and surveys for safety; passenger vessels and various surveys; Cargo ship construction survey; Life-saving and Fire-fighting appliances; Reports.

- Issue of Safety Certificates; production of Certificates while proceeding to sea; Non-convention ships.

- General safety precautions and Responsibilities; qualification of crew; Distress signals; obligation to assist in distress; Reporting of Accidents.

- Prevention of Collisions; Assistance in case of collisions; inspections for enforcing collisions regulations.

- Loadlines and loading; Submersion of load lines; powers to make regulations and compliance with regulations; Renewal and/or cancellation of Certificates; periodic surveys; inspection of foreign ships.

- Carriage of grain and powers to make regulations.

- Dangerous Goods; Definitions and power to make regulations.

- Unseaworthy ships; obligation of owners to crew with respect to seaworthiness; Detention of unseaworthy ships; liability for costs; Unreasonable detention.

- Miscellaneous; power to make regulations for the Protection of Longshoremen powers to exempt.
4) Wrecks, Salvage and Casualty Investigations.

- Powers to appoint receivers of wrecks; fees and expenses of receiver; Duties and powers of receiver; immunity and obstruction of receiver; Owner's right to wreck; power to sell unclaimed Wreck; discharge of receiver; Removal of wreck.

- Salvage; Amount of salvage; costs; valuation of property; Detention of Salvage property and disposal of detained property - Limitation of time.

- Shipping Casualties, Inquiries and Investigations; Preliminary inquiries and formal investigations; Power of court of investigation to inquire into charges; Power of Government (Maritime Administration) to direct inquiry into charges of incompetency; Power to arrest witnesses and enter ships; Different reports of courts to Government - Power of court to censure master, mate or engineer, or detain or suspend certificates; Power of Government as regards such detentions, etc.

5) Limitation and Division of Liability.

- Limitation of liability; Definitions, variations and tonnage rules; foreign ship's measurement; owner's liability; extension of liability; Dock and harbour owners; Release of ship with security.

- Division of liability - joint and several liability; right of liability; extended meaning of owners.

6) Penalties and Procedures.

- Offences and penalties; procedure and jurisdiction; Dispositions regarding evidence when witnesses cannot be produced; Power to detain foreign ship that has caused damage; Power to enforce detention of ships; Notice to Consular representative of proceeding taken in respect of foreign ship; Application of fines; Service of Documents.
7) Pollution, Prevention and Contingency Planning.

- Obligation to clean; Cleaning up by specialised persons and responsibility of polluter.

- Oil exploration/exploitation companies and obligation to establish Contingency Plans; Inspection of such Plans.

8) Para-Maritime Activities.

- Supporting Activities - Definition of domain of activities and competence; responsibility and limitation, etc.

9) Off-Shore Activities.

- Power of Government to make regulations; Installations governed by national regulations; Regulations for installations governed by foreign flags.

- Pollution prevention and contingency plans, etc.

10) Supplemental.

- Protection of persons acting under national legislation; Powers of persons authorized to investigate, etc.; Exemption of public ships; Powers to exempt; Powers to make subsidiary rules and regulations; provisions of such rules and regulations; Powers to constitute committees to advise on rules, regulations and scales of fees.

- Transitional Provisions, etc. etc.

It is to be remarked that a Merchant Shipping Act, as an umbrella maritime law, by its very nature cannot legislate fully the different areas in
shipping. It therefore should make allowance for complementary regulations to be promulgated to govern the related areas. Such regulations or law instruments are commonly called "Enabling Acts". Considering the vastness of the maritime domain, provision for their existence will on the one hand, prevent the compilation of all related regulations in one document. On the other hand, this will reduce considerably the time it takes such regulations to be promulgated into law, and finally, will permit the Maritime Safety Administration to keep pace at national level with the various amendments of international instruments. A Merchant Shipping Act is therefore a primary legislation under which various rules and regulations (subsidiary legislations) will be promulgated. With regard to safety maintenance, the following rules and regulations have to be prepared by the Maritime Safety Administration in the form of "Enabling Acts".

- Rules for the Registration of ships
- Regulations for preventing Collisions at Sea
- Rules for the use of Distress Signals
- Life-Saving appliances Regulations
- Fire Appliances Rules
- Cargo Ship construction and survey Regulations
- Coastal cargo ship Safety Certificates Rules
- Crew Accommodation Rules
- Passenger ship Construction Regulations
- Radio installation Regulations
- Regulations for the carriage of grain
- Pilot ladders and hoists Regulations
- Tonnage Regulations
- Official log-books Regulations
- Navigational Warnings Regulations
- Navigational Equipment Regulations
- Anchor and Chain cable Rules
- M"sters Regulations
- Rules for the Carriage of Deck cargo
- Rules for the Carriage of Dangerous Goods
- Rules on Apprenticeship to Sea Service
- Medical Scales Regulations
Loadline Rules
Regulations for the Certification of Skippers and Second Hands of Fishing Boats
Regulations for the Certification of Marine Engineers
Regulations for the Certification of Deck Officers
Manning Regulations
Pollution Prevention Regulations, etc.

These regulations have to be "shaped" to portray national character and the maritime maturity or level of development of the nation. In most countries of developed market-economy, the scope of such regulations will be wider, consideration being taken of availability of resources for development, equipment, and for the enforcement of laws.

III - 3.1.2 Implementation of International Conventions.

At this stage of the study, it is necessary to know exactly what a Convention is. A Convention then is merely an agreement, enforceable in law, between persons or parties, or between two or more states for the regulation of matters affecting all of them. There exists three main types of Conventions in the maritime field:

(i) The first type consists of treaties which are law-making or which codify existing law. The purpose of such instruments is to supplement existing international law by clarifying certain issues or by restating, consolidating, and codifying legal rules which might already be applicable, for instance in the form of customary law. With regard to this study, the most eminent example of such a Convention is the new Law of the Sea Convention. It is part law-making by setting out new principles relating to the status and the use of the oceans), and in part, of a codifying or consolidating nature (by setting out formally what may have been hitherto customary law or by re-writing and superseding existing conventional law).

(ii) The second type consists of those Conventions which set out certain standards which are to be applied by all states parties thereto. What is in the foreground here is the joint and parallel application of
standards by all states concerned with a view to improving international cooperation and relations, and not necessarily the creation of mutual rights and obligations. In most cases the standards set by the Convention are minimum standards, but giving states liberty to set higher standards in their respective municipal legislations, particularly and with regard to shipping, in respect to ships flying their respective flags. Most of IMO's technical conventions - the SOLASs, 1966 LOAD LINES, MARPOL 73/78, SCTW, etc. - belong to this category of conventions.

(iii) In the third category fall those conventions which aim at bringing about a harmonization of existing and divergent national laws. They are either related to the mutual rights and obligations amongst states or they may be of a more "private law" character and deal with the relationship among individuals. The goal to be achieved here is the identity of various national laws rather than a common international standard. In this group will fall most of IMO's "legal" conventions, and the following:

- The 1969 International Convention on Civil Liability for Oil Pollution Damage.
- The 1978 Hamburg Rules (UN).

The implementation of a Convention is the acceptance of that Convention and the inclusion or incorporation of its provisions into related national legislation. This involves two main stages: Ratification or adherence, and Physical inclusion or assimilation into municipal legislation.
1) RATIFICATION OR ADHERANCE.

Accepting a Convention is signing it, acceding to it (if the instrument is already in force), or adhering to it. This process is called ratification. It is through one of these three processes that a Country becomes party to a particular Convention. This first stage necessitates a lot of preparatory work on the part of the Maritime Safety Administration. A three-dimensional analysis has to be made on the impact of the provisions of the Convention on the following:

- National Maritime Legislation
- National fleet
- Supporting activities of Maritime transport (para-maritime sector)
- Maritime and Economic development.

Such a study will permit the Maritime Safety Administration to appreciate the pre-requisites for effective and efficient enforcement of the Convention. These pre-requisites will include among others, the identification of the following:

a) Technical requirements
b) Administrative requirements - more resources or not.
c) Organisational requirements.

Consultation of the following private and public bodies will be necessary at this stage:

* Governmental administrations whose lines of activities might include many or certain aspects of maritime transportation or the sea in general.
* Shipowners and Agents, and crew members.
* Ports Authority.
* Lighthouses organisation, and similar para-public and private Organisations.
These consultations, in addition to informing those concerned of the existence of the Convention and the likelihood of its provisions becoming part of national law, will permit above mentioned interested parties to start foreseeing the various constraints likely to prevent them from meeting the requirements of the Convention, and the possibilities of obviating these constraints.

2) PHYSICAL INCLUSION INTO NATIONAL LEGISLATION.

The second stage is the physical inclusion or the transformation of the provisions of the Convention into the municipal legislation. The method used here will depend largely on the legal constitution of the Country concerned. Two main methods of implementation are currently used by many countries:

- In the first method, reference is made in the municipal legislation or a subsidiary law on the whole contents of the Convention becoming part of national maritime legislation. Those directly concerned are informed and in certain cases the Convention is multiplied and copies are distributed. In the case where the Convention makes room for regulations to be made by the Administration (following national needs) to complete certain sections, these references will be made in these subsidiary legislations. It is to be remarked that most Conventions are usually followed by recommendations, which due perhaps to their high standards or lack of a unanimous agreement on their adoption, are not mandatory. Some Administrations, in view of their maritime development, might include - by making reference to specific recommendations - some of these recommendations in their national legislations. Also, certain requirements which are neither included in the provisions of the Convention nor in the recommendations but which are judged necessary considering national maritime maturity, will be included in the subsidiary legislation.
- In the second case, the Maritime Safety Administration incorporates the provisions of the Convention into the national legislation. In very few cases does this incorporation entail the copying word for word or a complete assimilation of the contents of the Convention. In fact, this incorporation is a sort of interpretation, explanation or clarification of the provisions of the Convention. In certain cases, following the nature of the provisions, detailed references are made. This second method has proved more appropriate than the first inasmuch as the interpreted form is more comprehensible and thereby more accessible to the users than the real provisions of the Convention. It also permits the inclusion of "local colour" in the legislation and the subsequent use of indigenous resources as alternatives without rendering national legislation incompatible with the international Convention. With regard to recommendations or other complementary provisions which the Administration judges necessary as a completion of the provisions of the Convention, or in the advent of the need for more stringent regulations for national flag vessels, the process is the same as earlier described but with the sole difference that the provisions of the Convention, the recommendations and additional stringent regulations are blended together to make a more coherent and harmonious subsidiary legislation.

Developing Countries which find this second option onerous because of lack of qualified personnel, will find a closer alternative in the system where detailed references are made to particular or all the provisions of a Convention. In this case useful Resolutions or Recommendations will have to be picked out and included in the subsidiary legislation as mandatory requirements. It should be remembered that whenever references are made to the provisions of a Convention, a copy of the section referred to and in the language of the national legislation must go along with the subsidiary legislation.

There is need to reiterate here that the process of accepting an International Instrument is always twofold. Ratification of a Convention is thus not an end in itself. The complementary procedure of implementation is very necessary as a completion of the process of acceptance. Many Developing Countries
unfortunately have the false conception that the mere ratification of an international convention obliges national flag vessels to comply with its provisions.

3) INTERNATIONAL SAFETY CONVENTIONS.

After discussing the contents of a Merchant Shipping Act and the different procedures for the implementation of international Conventions, it behoves us here to have a closer look at some of the international Conventions on safety adopted under the auspices of the International Maritime Organisation, and for which she exercises depositary functions. We will only be concerned here with the following Safety Conventions, with emphasis on SOLAS '74:

* The 1972 International Regulations for the Prevention of Collisions at Sea (COLREG).
* The Mobile Off-Shore Drilling Units Code (MODU CODE) - Guide-lines.
* The International Convention for the Prevention of Pollution - 1973

A) SOLAS '74 AND THE PROTOCOL OF '78.

The first International Convention on the Safety of Life at Sea (SOLAS) was given birth to in 1914 by the Titanic disaster of 1912. From this date, three more SOLASs have appeared before SOLAS '74 and Protocol '78 - in the following years: 1929, 1948 and 1960. With the appearance (entry into force) of a new SOLAS, the provisions of the previous one are superseded.
The 1974 SOLAS CONVENTION consists of thirteen Articles, an Annex of eight chapters, five Resolutions, and Recommendations applicable to Nuclear Ships, and an Appendix presenting the different types of Safety Certificates. It should be remarked immediately here that the above-mentioned Resolutions and Recommendations were absorbed in the provisions of the 1981 first set of amendments of SOLAS '74 which entered into force in September 1984, SOLAS '74 having entered into force in 1980.

With regard to the Articles of the Convention, the following are of great importance to Maritime Safety Administrations during the implementation of the Convention:

- Article VI relating to the supersession or denouncement of the provisions of prior treaties or conventions by the adoption of new related Conventions.

- Article VIII relating to amendments. Administrations should therefore make provisions for this in related national legislations.

- Article X relating to the entry into force of the Convention. Administrations should be aware of the fact that the enforcement of the provisions of a Convention (after incorporation into national legislation) will be more effective if the Convention is already in force. Although the ratification of a Convention is not actually a pre-requisite for incorporating some of its provisions into national legislation, it should be noted that one ratification takes the Convention one step towards entry into force.

With regard to the Annex, the following topics are treated in the different chapters:

CHAPT.I  - General Provisions

CHAPT.II-1- Construction.-Sub-division and Stability, Machinery and Electrical Installations

CHAPT.II-2- Construction - Fire Protection, Fire Detection and Fire Extinction

CHAPT.III - Life Saving Appliances

CHAPT.IV - Radiotelegraphy and Radiotelephony
CHAPT.V - Safety of Navigation

CHAPT.VI - Carriage of Grain

CHAPT.VII - Carriage of Dangerous Goods

CHAPT.VIII - Nuclear Ships

RESUME AND GUIDE-LINES FOR IMPLEMENTATION.

CHAPTER I - General Provisions.

This Chapter consists of regulations on Application; Definitions; Equivalents; Surveys of Passenger Ships; Surveys of Life Saving Appliances etc. on Cargo Ships; Surveys of Radio Installations, Hull, Machinery etc. on Cargo Ships; Issue and Duration of Certificates; Forms of Certificates; Control of Certificates, and Casualty Investigations.

With regard to Port State Control, this chapter is of vital importance, and should be incorporated in the subsidiary national legislation on Safety. It should be remarked however that this chapter was amended by the SOLAS Protocol of 1978 which entered into force in 1981.

CHAPTER II-1 - Construction: Sub-division, and Stability, Machinery and Electrical Installations

is divided into three parts: A, B and C, treating respectively Generalities, Sub-division and Stability, and Machinery and Electrical Installations. The first set of Amendments to SOLAS '74 affected Part C, dividing it into three parts: Machinery Installations, Electrical Installations, and Additional Requirements for periodically unattended Machinery Spaces.

The technical details contained in this Chapter, especially in Part B, might pose problems to Administrations during incorporation. Nevertheless, simplification might be reached by simply making reference to certain Regulations while incorporating others in the preparation of related legislation. In addition, the provisions of this Chapter are extensively covered by Regulations set out by the International Association of Classification Societies which keep a steady surveillance on the construction of sea-going vessels.
It should be noted that the bulk of this Chapter was affected by the 1981 Amendments.

**CHAPTER II-2 - Construction: Fire Protection, Detection and Extinction.**

This section is a very important part of the SOLAS Convention inasmuch as fire has presented a great hazard to vessels especially passenger ships for a long time. In each of the proceeding SOLAS Conventions substantial changes were made with the strengthening of some requirements. Also, fire safety requirements were introduced (by the SOLAS '60) for cargo ships.

The Chapter is made up of six parts which treat:

- Generalities
- Fire Safety measures for Passenger Ships carrying more than 36 Passengers
- Fire Safety measures for Passenger Ships carrying less than 36 Passengers
- Fire Safety measures for Cargo Ships
- Fire Safety measures for Tankers, and
- Fire Safety measures for existing Passenger Ships.

The Chapter was also affected by the first set of Amendments, reducing the sections from six to four, the Regulations from 85 to 63, but with more clarifications. Since these Amendments are already in force, Administrations are advised to implement them rather than those of the Convention.

The concept of new and existing ships appears both in SOLAS '74 and in the first set of Amendments, and should not be confused. In the Convention, a new ship is one whose keel was laid on, or after May 25th 1980. In the Amendments, it is one whose keel was laid on, or after September 1st 1984. Existing ships in the Convention are divided into three groups:

- The keel is laid on, or after May 26th 1965 but before May 25th 1980 (i.e., one constructed under SOLAS '60).
The keel is laid on, or after November 19th 1952, but before May 26th 1965 (i.e., one built under SOLAS '48).

The keel was laid before November 19th 1952 (built under SOLAS '14).

An existing ship in the Amendments will be one whose keel was laid before September 1st 1984. In the control of related Ship Certificates, Administrations should take note of these dates.

Since the general rules of Classification Societies do not usually include detailed regulations on Fire Safety, there is the need for Administrations implementing SOLAS '74 to prepare the necessary national regulations governing fire safety. The best way of implementing the provisions of this Chapter (and probably of the whole Convention) especially for Developing Countries would be to make detailed references to the requirements and subsequent Amendments. Such references would mean of course that the Convention text must be included in the regulations in the same language.

CHAPTER III – Life Saving Appliances.

This Chapter is divided into three parts: Generalities, applicable to both Passenger and Cargo Ships, Passenger Ships only, and Cargo Ships only. Light amendments (Regulations 1, 27, 30 and 38) were made in the first set of Amendments but a complete revised version of the Chapter was adopted by the Maritime Safety Committee of IMO. These Amendments will enter into force on July 1st 1986.

The provisions of this chapter apply only to new ships. Existing ships (including those ships being built before SOLAS '60 came into force) could then comply with the related provisions of SOLAS '60.

The importance of this chapter cannot be over-emphasized since in the advent of a serious accident on board a vessel, the only means of escape will be the help of available life saving equipment. It is to be noted that many Administrations have inadvertently undermined the importance of this chapter and as a result have not efficiently enforced compliance with its provisions on their national flag vessels. In fact, in the Annual Report on
the implementation of the Paris Memorandum of Understanding on Port State Control, it is reported that between July 1st 1982 and June 30th 1983, statistics show that most of the deficiencies discovered during control were on life saving appliances. Two thousand four hundred and eighty (2480) cases of deficiencies in life saving appliances were found, this representing almost 30% of total deficiencies.

Life Saving Appliances are not covered by the rules of Classification Societies and the onus of providing adequate rules and implementing international related instruments will fall on the Administration. Administrations especially in Developing Countries will be advised here to consider the incorporation in the related subsidiary national legislation of the revised version of this chapter even before its provisions enter into force (July 1986).

CHAPTER IV — Radiotelegraphy and Radiotelephony.

This Chapter is divided into four different parts dealing with Applications and Definitions, Watches, Technical Requirements and Radio Logs. It was also affected by the first set of Amendments, but further amendments were deemed necessary and made accordingly. These will come into force on July 1st 1986.

CHAPTER V — Safety of Navigation.

This Chapter consists of one section with provisions on Dangerous Messages, Meteorological Services, Ice Patrol Services, Routeing, Signalling Lamps, Shipborne navigational Equipment, Aids to Navigation, Search and Rescue Life Saving Signals, Pilot Ladders and Hoists, Use of Automatic Pilot, Nautical Publications and International Code of Signals etc. etc. These provisions were affected not only by the 1981 Amendments but also by the Protocol of '78, which made provisions for one mandatory radar for all ships of 1600 gross tons and above but less than 10000 gross tons, and two mandatory radars for all ships above 10000 gross tons. Some of the provisions in this chapter will be discussed in a later chapter.
CHAPTER VI - Carriage of Grain.

It consists of two parts, one on General Provisions and the other on the Calculation of assumed heeling moments. It was also affected by the first set of Amendments which replaced Regulation 1 on Application, and amended the second Section.


The Chapter contains only one part with provisions on Classification, Packing, Marking and Labelling of Dangerous Goods, Relating Documents, Storage Requirements and the Carriage of Explosives in Passenger Ships. These provisions are of a very general nature and Contracting Governments are asked to issue detailed instructions for the Safe Carriage of Dangerous Goods.

On the other hand mention should be made of the International Maritime Dangerous Goods Code (IMDG CODE) adopted by IMO which contains detailed requirements for the safe transport of Dangerous Goods by sea. This Code unfortunately is not part of the SOLAS '74 Convention, but in view of its contents, Administrations should consider (in fact many Administrations have already done so) including its provisions - by making detailed or specific references to them - in the Subsidiary legislation dealing with Dangerous Goods.

For those Administrations which feel the need of more stringent requirements, consultation of the following IMO ad hoc publications will be of help:

* MSC/Circular 299 of 12.2.81 on Safe Transport, Handling and Storage of Dangerous Substances in Port Areas
* Emergency procedures for ships carrying Dangerous Goods
* Medical First Aid Guide for use in Accidents involving Dangerous Goods
* IMO/ILO Guidelines for training in the packing of cargo in freight containers
* Recommendations on the Safe use of pesticides in ships.
CHAPTER VII - 2. Carriage of Liquid Chemicals and Liquefied Gases in Bulk.

Chapter VII does not make any provisions for the carriage of liquefied chemicals or gases in bulk. Requirements for the carriage of these goods are contained in the following IMO Codes:


* The 1975 Code for the Construction and Equipment of Ships carrying Liquefied Gases in Bulk ("The Gas Carrier Code") applicable to ships for which the building contract was placed after October 31st 1976.

* The 1976 Code for existing ships carrying liquefied gases in bulk applicable to ships which are delivered on or before October 31st 1976.

It is to be noted here for the sake of Administrations that in the second set of Amendments to SOLAS '74, most of the provisions governing Dangerous Goods have been revised and harmonised. These Amendments provide for three sections:

* Carriage of Dangerous Goods in Packaged Form or in Solid Form in Bulk.

* Construction and equipment of ships carrying dangerous liquid chemicals in bulk, and

* Construction and equipment of ships carrying liquefied gases in bulk.

Revised versions of both the Bulk Chemical Code and the Gas Carrier Code are introduced in the last two sections and these Codes will henceforth be known as "The International Bulk Chemical Code" and "The International Gas Carrier Code".

While waiting for these Amendments to enter into force (July 1986), Administrations - parties to SOLAS '74 should take the necessary measures for implementation. Also, since existing gas codes carriers and chemical tankers are not within the scope of the two Codes, the responsibility of legislating safety measures will fall on the various Administrations.
CHAPTER VIII - Nuclear Ships

This Chapter consists of one section with twelve regulations relating to Radiation safety, Operating manual, Surveys, Certificates, Control and Casualties with regard to safety maintenance on board nuclear ships.

PROTOCOL to the 1974 SOLAS Convention.

In 1978 two instruments - the Protocol to the MARPOL '73 Convention and the Protocol to the SOLAS '74 Convention - were adopted by the International Conference on Tanker Safety and Pollution Prevention (TSPP). New requirements appeared in three main sections:

1) Definition of New Ship.

New tankers were either tankers whose building contract was made after June 1979, tankers whose keels were laid after January 1st 1980, or tankers which were delivered after June 1st 1982.

2) Inspections and Certifications.

With regard to inspections and certifications, changes were made in the following:

- Administrations were urged to institute mandatory annual surveys or unscheduled inspections in addition to the periodical surveys of SOLAS '74, and are obliged to guarantee the completeness and the efficiency of the inspections.

- In the advent of defects and deficiencies the inspecting authority must ensure that corrective action is taken.

- As regards Safety equipment certificates, the two-year period survey required by SOLAS '74 was brought down to an annual survey for tankers of ten years and above.
- An intermediate Cargo Ship Safety Construction Certificate was required for tankers of ten years or more. The maximum period of validity of Cargo Ship Safety Construction Certificate would be five years. This was not provided for in SOLAS '74. Ship Safety Construction Certificate survey requirements are extended to include cargo pumping, piping, and venting arrangements.

- Redefinition of the obligation to maintain ships and their equipments in a satisfactory condition and adoption of more explicit requirements for reporting accidents and deficiencies and action to be taken by Administration.

3) Equipment.

- Inert gas system (IGS) for protection of cargo tanks.

While SOLAS '74 limited the IGS to new oil tankers over 100,000 dwt and new combination carriers over 50,000 dwt, the Protocol made it mandatory to all new tankers over 20,000 dwt and all existing crude oil carriers over 20,000 dwt, and all existing product carriers over 40,000 dwt (*), all existing tankers of 20,000 dwt and above fitted with high capacity (60 cubic meters per hour and above) washing machines, and all tankers where a crude oil washing is fitted.

- Steering Gear.

Provision for special requirements relating to control communication and local operation of Steering Gear for new and existing tankers of 10,000 dwt and above and testing of steering gear at stipulated intervals.

(*) Provision for exemption of carriers between 20,000 and 40,000 dwt if retrofitting is judged not reasonable and practicable by Administration.
- Radar and Collision Avoidance.

* All ships between 1600 and 10,000 grt must have a radar while all ships of 10,000 grt and above will have two radars, each capable of operating independently of the other.

* IMO was asked to develop before July 1st, 1979 performance standards for collision avoidance aids.
B) THE INTERNATIONAL CONVENTION ON LOADLINES.

The safe carrying capacity of a ship is indicated by lines marked on its sides the position of which is determined by the watertight integrity and geometric properties of the ship. These lines are called Load Lines. In 1966, an International Convention—a revision and updated version of a similar Convention adopted in 1930—was adopted on Load Lines applicable to all ships engaged in international voyages with the exception of ships of war, ships solely engaged in fishing, pleasure yachts not engaged in trade and ships solely navigating the Great Lakes of North America and the St. Lawrence River.


The Convention entered into force in 1968, and has been amended three times (1971, 1975 and 1979). None of these Amendments apparently is in force.

The main objective of the Convention is to ensure structural strength and stability of ships by establishing minimum freeboards. In other words, ships falling under the scope of the Convention shall have adequate reserve buoyancy to remain afloat under the different weather conditions to be encountered at sea.

Administrations, parties to this Convention, are expected to implement the Convention by the promulgation of Regulations and Rules (in the appropriate part of their national maritime legislations) covering the Regulations of the Convention. As international conventions on safety usually give the minimum practicable requirements, many Administrations have provided, in their national regulations on loadlines, for more requirements than the Convention demands. Such complementary requirements usually govern only their national flag vessels.
Most Developing Countries relegate to Classification Societies, the functions of determining the correct freeboard of national flag vessels, and the related inspections and surveys. It should be noted that there are no technical scientific principles for determining the correct freeboard of a vessel. In fact, in most cases the freeboard of a ship is determined by comparing the geometrical particulars of the ship with those of a standard ship of the same length. Nevertheless, a complete and proper assessment of assigned freeboard must include a thorough appraisal of hull strength and stability. Classification Societies will therefore be more qualified for these functions in the advent of inavailability of qualified surveyors.

C) THE COLLISION RULES.

The Convention on the International Regulations for preventing Collisions at Sea (COLREG) adopted in 1972 is a revised edition of the 1960 Collision Regulations which were annexed to the final Act of the 1960 SOLAS Conference. This revision was called for by the various changes registered in the sizes and characteristics of modern vessels, particularly tankers. In 1979, on the demand of many states contracting parties (France, The Netherlands, the German Democratic Republic) certain amendments were made, particularly to Rule 10. Further Amendments are still under consideration since more states have expressed dissatisfaction with regard to some of the Rules. The Convention came into force in 1977 and the Amendments in 1983.

The Convention consists of five parts dealing with:

* Application of Rules and responsibility to obey them, and Definitions
* Steering and sailing
* Technical details on lights and shapes
* Sound and Light Signals, and
* Exemptions,

and four Annexes treating inter alia positioning and technical details of lights and shapes, navigation lights for the ensurance of uniform colour
intensities, additional signals for fishing vessels fishing in close proximity, standardisation of signals, technical details of sound signals appliances, and Distress Signals.

The main objective of this Convention is the ensurance of safe navigation. In other words, the rules are meant to regulate the behaviour of vessels at sea - consideration being taken of bad weather resulting in reduction in visibility - and the need to prevent collisions.

The extent to which Administrations implement this convention and the additional requirements they may include in related national regulations will depend largely on the traffic on the waters over which they have sovereign rights and exercise some duties in return. For instance, vessel-traffic management requirements around the Suez and Panama canals, and in the English Channel will be very stringent considering the heavy traffic. With regard to normal implementation for a coastal state party to the Convention, it should be mentioned that in most cases Port Authorities (Developing Countries), Coast Guards (North America), Maritime Administrations and para-public Organisations (OECD countries) are in charge of the placement of acoustic and luminous signals necessary to prevent collisions or groundings, and the determination of sea-lanes especially where heavy traffic is expected.

D) THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS.

Whatever advancements are made in automation and inanimate control, the human factor is likely to remain of prime importance and the personal element will continue to play its specially vital role in life at sea. Human error has been the main cause of major accidents at sea. If on the one hand, it is impossible to control or prevent natural human errors (fallibility of human nature), it is possible on the other hand to prevent through training the occurrence of those errors which result from lack of knowledge or inadequate training.
One of the Resolutions taken during the 1960 SOLAS International Conference "called upon Governments to take all practicable steps to ensure that the education and training of seafarers in the use of aids to navigation, ship's equipment and devices, was kept satisfactorily up to date". The IMO and the International Labour Organisations (ILO) were requested to liaise together to achieve this end. Pursuant to this recommendation, IMO and ILO established a joint Committee on Training which met in 1964 and prepared the "Document for Guidance 1964" which provided guide-lines on the training of masters, officers and seamen in the use and operation of aids to navigation, life saving appliances, devices for the prevention, detection and extinction of fire, etc.

This document underwent two amendments (1975 and 1977), but the need to strengthen and improve standards was still felt. A decision was taken to convene an ad hoc Conference which met in 1978 and adopted the International Convention on Standards of Training Certification and Watch Keeping for Seafarers 1978, from a draft Convention earlier prepared (1971) by the Sub-Committee on Standards of Training and Watch Keeping. This was the first time global minimum professional standards for seafarers were established since the custom had been for individual governments to establish national standards on training without any obligation for harmony and of course irrespective of the international nature of shipping.

The 1978 STCW Convention as it is commonly called, consists of seventeen articles, an Annex of six chapters of twenty-five Regulations, and twenty-three Resolutions. The regulations of the Annex deal with the following:

* General Provisions
* Master-Deck Department
* Engine Department
* Radio Department - Radio Watch Keeping and Maintenance
* Special requirements for tankers, and
* Proficiency in survival craft.

The Convention entered into force in April 1984 and presently has about thirty-three signatories.
The main objective of the Convention is to set out or prescribe minimum international Standards which Countries are obliged to meet or even exceed. Many renowned scholars have asserted (and rightfully too) that the hidden objective of the Convention "is to strike a balance between the demands of the industrialized maritime powers and the ability or willingness of the Developing World to meet them". It would have thus been aberrant to adopt standards which would be too high to be met by some nations, or too low to endanger safety at sea. This explains why in established maritime countries, standards are averagely higher than those stipulated in the Convention.

It is to be pointed out, and still in the line of diversities, that the presence at the Conference of many delegations and the subsequent or expected divergence of opinion strongly militated against the exhaustive treatment of certain key subjects. For example, the depth of study needed to qualify as officer or mate is not explicitly specified in the Convention. Paragraph 3 of the Appendix to Regulation III/2 says: "Every candidate shall possess theoretical knowledge in the following subjects...", without specifying the depth of such knowledge although it is implicitly understood that the "knowledge" should be such as to satisfy the Administration. Such shortcomings or weaknesses of the Convention were recognised by the Delegations but considered relatively minor when compared with the objectives and achievements of the Convention. It has been agreed nevertheless that comprehensive training programmes in the form of Recommendations will soon be published by IMO, particularly for the guidance of Developing Countries.

Closely related to the problem of training of seafarers is that of the manning of vessels which is keeping pace with recent technological developments in the construction and automation of vessels.

The implementation of the STCW Convention is very important, particularly to Developing Countries, since this Convention is generally regarded as the second most important (after SOLAS) international treaty ever adopted as far as maritime safety is concerned. Most Developing Countries as earlier said, are presently training their sea-going personnel in either national appropriate institutions or regional maritime academies. In both cases it will be easy to implement the Convention while specifying the various disciplines to be
taught. With regard to Certification, implementation, will be easier at regional or sub-regional levels. The preparation of an appropriate national legislation (in the form of an "Enabling Act" as earlier suggested) on Training and related subjects like "manning" will be a pre-requisite to this implementation. Those Developing Countries which depend largely on foreign aid through which their nationals are trained abroad in institutions owned by friendly developed market-economy countries, have to make sure such training is in conformity with the provisions of the Convention. Provisions will have to be made in the related national legislation on the recognition of out-going Certificates issued by above-mentioned institutions.

E) THE 1977 TORREMOLINOS INTERNATIONAL CONVENTION FOR THE SAFETY OF FISHING VESSELS.

As earlier mentioned in Section II-4.5.1, the various dangers and perils associated with the sea do not discriminate between cargo vessels and fishing vessels. They strike with impunity and without compunction whoever gives them the occasion to do so. Statistics will show that the number of fishing vessels and their crews lost at sea largely surpasses that of cargo vessels. Between January 29th and February 4th 1968, i.e. in the space of eight days, three UK Fishing Vessels with a total of fifty-six men were lost at sea!

The problem of safety of fishing vessels became a major international concern in 1962 when the International Labour Organisation, ILO (Committee on Conditions of work in the Fishing Industry) convened a meeting to study certain aspects of working conditions of fishermen. The outcome of this meeting was the Recommendation to create a practical International Code dealing with navigational, operational and occupational aspects of safety of Fishing Vessels. The Food and Agricultural Organisation (FAO) together with ILO and IMO were urged to liaise together each within her field of specialty in the establishment of such a Code. With IMO treating safety of life, Vessels and equipment at sea, FAO treating fisheries in general, and ILO in charge of labour in the fishing industries, a draft Code of two parts, A and B, was established. Part A was to deal with Skippers and Crew and Part B with Fishing Vessels
builders and owners. A final text of Part A was adopted by these three organisations in 1968. In 1974, another tripartite meeting was held to study the possibility of amendments of Part A in order to harmonize it with Part B which covers Safety and Health requirements with respect to the construction and equipment of Fishing Vessels. It was recommended also that the three Organisations should continue to cooperate with a view to establishing voluntary Guidelines for the design, construction, and equipment of Vessels of less than twenty four (24) metres in length since Part B of the Code only dealt with vessels of twenty four (24) metres in the length and above.

In 1977, and pursuant to a decision taken by the Council of IMO in 1976, a Conference was held in Torremolinos, Spain, and the "International Convention for the Safety of Fishing Vessels" was adopted.

In 1979, the "Guidelines" which IMO, ILO and FAO had been asked to prepare in 1974, were approved by the three Organisations.

The Torremolinos Convention for the Safety of Fishing Vessels which is not yet in force consists of:

* Articles of the Convention
* An Annex of ten chapters with a total of 154 Regulations
* Two Appendices on Certificates and Specification
* Four Attachments on:
  - Summary of Survival Craft and Rescue Boat Equipment
  - Recommendations by the Conference
  - Resolutions by the Conference
  - Understanding of the Conference.

In a brief run down, the chapters treat General provisions; Construction, Watertight Integrity and Equipment; Stability and Associated Seaworthiness; Machinery and Electrical Installations and Periodically Unattended Machinery Spaces; Fire Protection, Fire Detection, Fire Extinction and Fire Fighting; Protection of Crew; Life-Saving Appliances; Emergency Procedures, Musters and Drills; Radiotelegraphy and Radiotelephony; and Shipborne navigational equipment.
The main objective of the Convention as earlier stated is to provide minimum international standards for the Safety of Fishing Vessels of 24 metres in length or above. The main objective of the "Voluntary Guidelines" is to provide a generally applicable code of safe practice for the design, construction and equipment of fishing vessels below 24 metres in length.

Although the Torremolinos Convention is not yet in force, there is the need for Developing Countries to implement the provisions of the Guidelines, and those of the Convention, and consider ratifying it. It is only through such implementation that the Maritime Safety Administration can effectively ensure the safety of national fishing vessels and the crews.

It is of importance here to emphasize on the following surveys stipulated by the Convention:

(i) Initial Survey before the vessel is put into service, or before a Certificate is issued for the first time. This survey includes structure, stability, machinery, materials, electrical installations, radio installations, life-saving appliances, fire detecting and extinguishing systems, and navigational equipment.

(ii) Periodical Surveys

- Every four (4) years with respect to structure and machinery
- Every second year with regard to equipment related to watertight integrity and stability and equipment related to machinery, fire protection, protection of crew, life-saving appliances and navigational equipment
- Every year with respect to radio installations and radio direction-finder.

With regard to Developing Countries, frequent periodical unannounced controls should be made to ensure the availability of life-saving appliances.
SUMMARY OF CONTENTS OF PART "A" OF CODE OF SAFETY FOR FISHERMEN AND FISHING VESSELS - SAFETY AND HEALTH PRACTICE FOR SKIPPERS AND CREWS.

This Code consists of eleven chapters and six Appendices. The chapters deal with the following:

- General Provisions - Definitions; Responsibilities; Purpose and scope.
- Navigation - Navigational equipment and aids to navigation; Safety of navigation; Weather and danger information; Signals; Radiotelephone procedures.
- Safety of the Vessel - Anchors; Cables and chains; Freeing porto; Opening and closing appliances; Stability.
- Safety on Deck - Gangways, stairways, ladders etc.; Deck lighting; Precautions against falling overboard; Ropes and lines.
- Safety in fishing operations - Trawling; Purse seining; Danish seining; Long line fishing; Tuna pole and line fishing; Fish and Ice handling.
- Safety in Machinery spaces and of mechanical equipment.
- Special safety precautions - Eye protection; Protective clothing and equipment; Painting; Dangerous work; Live and Fish oil boilers.
- Life-Saving Appliances - Life boats; Emergency man over board/rescue craft; Life rafts and life-jackets; Emergency procedures and musters.
- Fire precautions and fire-fighting - Smoking; Fire prevention and precautions; Fire fighting.
- Shipboard facilities for personnel, Safety organisation and Conditions for Employment - Sanitation; Lighting and ventilation; First aid; Safety and Health organisation; Conditions for employment.
- Abandoning vessel, Survival and Rescue - Abandoning vessel; Survival when adrift; Precautions against sharks and other biting fish; Landing and survival ashore; Survival in polar regions.

The Appendices are on: - Information required in Danger Messages (Reg 3 of Chapter V of SOLAS '73).
- Radio Telephone procedures.
- Recommendations for skippers of Fishing Vessels etc. on ensuring Vessel's Endurance in Conditions of Ice Formation.
- Recommended Contents of Fishing Vessels.
- Artificial respiration, and
- Information on Hypothermia.

F) CODE FOR THE CONSTRUCTION AND EQUIPMENT OF MOBILE OFF-SHORE DRILLING UNITS (MODU CODE).

The MODU Code makes provisions for an international standard for mobile offshore drilling units of new construction. Its application will facilitate international movement and operation of these units and ensure them and the personnel working on board a high level of safety.

The MODU Code consists of 14 chapters treating inter alia: Construction, Strength and materials; Sub-division, stability and freeboard; Machinery Installations for all types of units; Electrical installations for all types of units; Machinery and Electrical installations in hazardous areas for all types of units; Machinery and Electrical installations for self-propelled units; Periodically unattended machinery spaces for all types of units; Fire Safety; Life-saving Appliances and Equipment; Radiocommunication installations; Lifting devices; Helicopter facilities; and Operating Requirements.

Administrations implementing this Code should be aware of the fact that it does not prohibit the use of existing units if their design, construction, and equipment are not in compliance with the requirements of the Code. Administrations should be guided, when confronted with existing units, by the operating history of the units and the local environmental conditions. Nevertheless, such units must comply with the safety requirements which the Administrations of the coastal state consider necessary for the intended operation and for the safety of the units and the personnel on board.
In the drafting of a national legislation to govern off-shore activities Administrations should also be aware that their legislation can only govern to a certain extent foreign flag platforms and that fixed installations should be governed by their legislations. As earlier said, depending on the policies of the country, the need might be felt to create another Administration which could deal exclusively with off-shore activities. In such a case, the borderline between such an Administration and the Maritime Safety Administration should be made clear and areas where the two Administrations have to cooperate should be well defined.

Coastal Developing Countries, especially those along the West Coast of Africa, should start making plans towards the acquisition of local expertise necessary for the various technical controls and surveys. In most of these Countries, Shipping is controlled by the Ministry of Transport and off-shore activities by the Ministry of Mines and Power. Close cooperation between these two Departments can at least create in the short run, a board or Committee of experts from the two Ministries who will take care of the safety aspects in the off-shore industry. It is only when experts from the two Ministries meet that a comprehensive legislation relating to the safe practices in exploration and drilling for submarine petroleum resources can be drawn up without friction or misunderstanding. Cooperation between neighbouring Countries could also be advocated inasmuch as the petroleum explorers and exploiters are more often than not, foreign companies which will like to keep safety standards at a minimum.

National Regulations governing this sector should include inter alia the following broad headings:

* Introductory provisions - Definitions, exemptions, scope etc.
* Reconnaissance vessels and aircrafts
* Drilling Platforms
* Emergencies
* Drilling
* Fire Prevention
* Telecommunication
* Transportation systems
* Protection of workers
* Diving Operations

G) INTERNATIONAL CONVENTION ON MARITIME SEARCH AND RESCUE 1979.

One of the oldest traditions of the sea is the obligation or duty to render assistance to persons in distress. This tradition has survived through time and the duty of assistance has been made mention of by many international conventions. The "1910 Convention for the Clarification of Certain Rules of Law relating to Assistance and Salvage at Sea" says in its Article II:
"Every master is bound, so far as he can do so without serious danger to his vessel, her crew and her passengers, to render assistance to everybody, even though an enemy, found at sea in danger of being lost". Again in the '74 SOLAS Convention, Regulation 15 of Chapter V on Safety of Navigation takes up this point in the following words:

"a) Each contracting Government undertakes to ensure that any necessary arrangements are made for coast watching and for the rescue of persons in distress at sea round its coasts..."

Despite this outcry for assistance and the various efforts put forth by different governments to render assistance at sea, many weaknesses have been recognised. As a matter of fact, coordination and control are of prime importance when rendering assistance at sea. Unfortunately individual countries have different systems and national organisational plans have been developed along different lines. These differences give rise to many difficulties in joint search and rescue operations.

In 1970 IMO published the Merchant Ship Search and Rescue Manual designed as a guide to seafarers called upon to conduct SAR operations during emergencies at sea. Previously in 1979, the IMO Search and Rescue Manual had been adopted. This manual consisted of Guidelines for Governments wishing to establish or expand their Search and Rescue Organisations, and for those who would be directly involved in the provision of search and rescue services.
While these two manuals were being prepared, IMO recognising the need to introduce an international search and rescue policy, convened a meeting of experts to prepare a draft convention. This was adopted in April 1979 by a Diplomatic Conference held in Hamburg and the 1979 Search and Rescue Convention came into being. The preamble of this Convention states that the main aim of the Convention is to establish a "plan responsive to the needs of maritime traffic for the rescue of persons in distress at sea."

The SAR Convention consists of Articles of the Conference, an Annex of five Chapters and eight Resolutions. The Annex deals with:

* Organisation - arrangements for provision and coordination of services and facilities, establishment of rescue coordination centres, designation of rescue units and facilities, and equipment of rescue units.

* Cooperation between states with aeronautical services.

* Preparatory measures - information requirements, operating plans or instructions, preparedness of rescue units.

* Operating procedures:
  - Information concerning emergencies
  - Emergency phases, procedures for rescue coordination centres and sub-centres during emergency phases
  - Coordination when two or more parties are involved, termination and suspension of search and rescue operations, on-scene coordination of search and rescue activities, designation of on-scene commander and his responsibilities, designation of coordinator surface search and his responsibilities, initial action, search areas, search patterns, search successful and search unsuccessful.

The objectives of the SAR Convention will include:

- The standardisation of procedures to the maximum possible extent.
- The facilitation of direct contact between SAR services of different States
- The assurance of efficient cooperation between surface and air units participating in search and rescue operations
The provision of guidance for the development of SAR service, where needed.

There are two outstanding features in the Convention. In the first place, it combines both air and sea in the services. In the second place, it relies for its effectiveness on the cooperation between neighbouring states.

The effective implementation of this Convention will be best done at regional level depending on the situation of the countries involved. This has been the case in many regional areas where the countries involved have established regional arrangements which have so far operated successfully. With regard to the West Coast of Africa, the Countries in this region (especially those within the Gulf of Benin) by the instrumentality of the Ministerial Conference of West and Central African States on Maritime Transport, could work together and cooperate with one another towards the establishment of rescue coordination centres and sub-centres.

The SAR Convention is not yet in force since only 13 States have ratified it. Before it enters into force, it has to be ratified by 15 States.

H) INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION '73 AND PROTOCOL OF '78.

Strictly speaking, the 1973 Marine Pollution Prevention Convention and its Protocol of 1978 both considered as one instrument, is not a Safety Convention. Nevertheless, this Convention is inextricably linked to other Safety Conventions in that:

* Its main objective is the protection of the marine environment.

* Pollution of the sea by oil becomes a major obstacle to the carrying out of some major activities in the sea - fishing for example.

* It is a threat to most marine living resources (oil, dangerous substances

* It reduces to a great extent safety. Most navigational aids will be blackened by oil in the case of heavy pollution and will not perform their function well.
Most birds whose source of nutrition comes from the sea not only die of starvation but are stifled to death immediately they get in contact with the oil.

It is therefore necessary here to give a brief run down of MARPOL '73/'78.

In 1954, the International Convention for the Prevention of Pollution of the Seas by Oil was adopted. Despite two major amendments to this Convention (1962 and 1969), the shortcomings could not be erased as expected. The Convention and the 1962 Amendments reposed on the philosophy that oil could be discharged if the vessel was proceeding en route and outside the prohibited zone of fifty miles, but at a rate not exceeding sixty litres per mile travelled, and that the total quantity of oil discharged during a ballast voyage may not exceed 1/15,000 of the total cargo carrying capacity of the vessel. Neither the Convention nor the two amendments provided for pollution resulting from the discharge of noxious substances from ships. Instead of having a third Amendment, it was decided after long deliberations to adopt a new Convention in which the shortcomings of the 1954 Oil Convention would be rectified. The International Convention on the Prevention of Pollution from Ships was accordingly adopted in 1973.

The MARPOL '73 Convention consists of Articles, two Protocols dealing with reports on incidents involving harmful substances, and arbitrations and five Annexes containing:

* Regulations for the Prevention of Pollution by Oil
* Regulations for the Control of Pollution by Noxious Liquid Substances
* Regulations for the Prevention of Pollution by Harmful Substances carried by Sea in Packaged Forms, Freight Containers, Portable Tanks or Road and Rail Tank Wagons
* Regulations for the Prevention of Pollution by Sewage from Ships
* Regulations for the Prevention of Pollution by Garbage from Ships;

and an Attachment of 26 Resolutions.
Annexes I and II are mandatory, whereas Annexes III, IV and V are optional.

The requirements for entry into force were ratification by fifteen (15) states with not less than 50% of world gross tonnage of merchant shipping. Up to 1977, many states were reluctant in ratifying the Convention because of certain flaws and shortcomings, especially with regard to reception facilities and the discharge requirements for chemical tankers. To remedy these loopholes, the International Conference on Tanker Safety and Pollution Prevention (TSPP) was held in 1978 and two Protocols (one on Safety and the other on Pollution prevention) were adopted. While the Protocol of the SOLAS '74 Convention was treated as a separate instrument from the parent Convention, the '78 Protocol to the MARPOL '73 Convention incorporated and merged with the parent Convention and the two are henceforth considered as one instrument, hence the appellation of MARPOL '73/'78. In view of the major changes introduced by the '78 MARPOL Protocol, the decision to defer the implementation of Annex II for three years after the date of entry into force of the Protocol, was taken. Since MARPOL '73/'78 came into force in October 1983, the implementation of Annex II will take effect from October 1986.

Some of the changes brought in by the Protocol of '78 will include inter alia with regard to Annex I:

* Segregated Ballast Tankers (SBT) which are now required on all new tankers of 20,000 dwt and above, and their protective location (cf: MARPOL '73 - new oil tankers of 70.000 dwt and above) (*).

* Crude Oil Washing (COW) for all new crude oil tankers of 20,000 dwt and above. The cargo itself, instead of water, is used in washing the tanks. This process is more effective and solves the problem of operational pollution resulting from using water in cleaning tanks and discharging the water mixed with oil. It also helps to get more cargo out of the cargo tanks. COW is accepted as an alternative to SBT on existing tankers while remaining an additional requirement on new tankers.

(*) SBTs are tanks which are reserved exclusively for the carriage of ballast water. They have separate pumping and piping arrangements and since cargo is never loaded in these tanks, there is no mixture of oil and water resulting from ballasting cargo tanks. The risk of operational pollution is therefore decreased. The Protective Location of SBTs requires that SBTs must be arranged in such locations as to provide protection of cargo tanks against rupture in the event of grounding or collision.
* Dedicated Clean Ballast Tanks (CBT) as another alternative for existing crude oil tankers or product carriers but only for a period of two to four years after entry into force of MARPOL '73/'78. This process consists of dedicating certain cargo tanks for the carriage of ballast water and is relatively cheaper than the SBT since it utilises existing pumps and pipes. But the risk of operational pollution is not discarded since cargo pumps and pipes will be used for ballast water.

During the last ten years, the Marine Pollution Prevention Convention has played a decisive role in the design and construction of tankers. In addition this Convention has revised, updated and strengthened the requirements of the 1954 Oil Pollution Convention. These improvements can be recapitulated as follows:

- The discharge of all types of oil (from crude to products) except petrochemicals treated in Annex II is prohibited except under well defined Load on Top (LOT) Conditions.
- Discharge of any kind (operational) must be done outside special areas - Baltic Sea, Black Sea, Mediterranean Sea, Red Sea, Middle Eastern Gulf Areas.
- Total quantity of permissible oil discharged is 1/15,000 of carrying capacity of existing tankers and 1/30,000 of carrying capacity of new tankers.
- Tankers must have a continuous oil discharge monitoring and control system and a set of slop tanks, except under certified exemptions.
- Pipelines for discharging authorised effluent except in specific cases, must lead to the open deck or to the ship's side above the water line for visual observance of effluence.
- The introduction of the concepts of SBT, COW and CBT.
- Detailed Oil Record Book and an International Certificate of Marine Pollution.
- The retention for consumption on board or disposal to shore-based Re- ception Facilities of oil residues which cannot be discharged in compliance with related requirements.
Since MARPOL '73/'78 has far-reaching effects with respect to implementation, IMO has prepared a number of guidelines to help Administrations in the process of implementation. These will include:

* Guidelines on ensuring the Provision and maintenance of Adequate Reception facilities in ports.
* Recommendations on International Performance Specifications for Oily-Water Separating Equipment and Oil Content Meters.
* Guidelines for the approval of Oil discharge monitoring and control systems.
* Various Documents on Authoritative interpretation of the provisions of Annex I of MARPOL '73/'78.

These documents will be of immense help to Administrations for the implementation of the MARPOL '73/'78 Convention.

III - 3.1.3. RECAPITULATION OF SURVEY AND CERTIFICATION REQUIREMENTS.

There is need here, by way of conclusion, to recapitulate the Survey and Certification requirements of most of the Safety Conventions we have just briefly discussed since flag states have the responsibility to ensure that ships flying their flags are constructed, equipped and maintained to comply with the Standards laid down by the Conventions. The SOLAS, LOADLINES and MARPOL Conventions provide for the following surveys:

- Initial survey before issuing a certificate for the first time.
- Periodical survey at intervals not exceeding five years for construction, two years for safety equipment, and one year for radio installations.
- Intermediate survey to be effectuated at least once between periodical surveys, and
- Annual survey.
Satisfactory completion of initial and periodical surveys warrants the issue of the following Certificates:

a) **SOLAS '74 and Protocol '78**
   - Passenger ship safety Certificate for a period of twelve months
   - Cargo ship safety Construction Certificate for a period not exceeding five years
   - Cargo ship safety Equipment Certificate for a period of two years
   - Cargo ship safety Radiotelegraphy (or Radiotelephony) Certificate for a period of twelve months.

b) **LOADLINES Convention**
   - International Load Lines Certificate for a period not exceeding five years.

c) **MARPOL '73/78**
   - International Oil Pollution Prevention Certificate (IOPP Certificate) for a period not exceeding five years (Annex I)
   - International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk for a period not exceeding five years (Annex II)
   - International Sewage Pollution Prevention Certificate for a period not exceeding five years (Annex IV).

The following table will recapitulate these survey procedures:
### Recapitulative Table of Survey Requirements in Conformity with Provisions of Safety Conventions

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<th>Conventions</th>
<th>Years 1</th>
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NOTES:
1) Intermediate Surveys for tankers of 10 years of age and more.
2) The Protocols do not specify any allowed period within which surveys should be carried out.
3) Unscheduled inspections could be carried out in the place of mandatory annual surveys.

($) Instruments not yet in force.

KEY:
P = Periodical survey (Certificate is renewed)
I = Intermediate survey
A = Annual survey or inspection

→ Date on or before which periodical survey is to be held.

Period within which survey is to be held.

→ Date until which extension of survey is allowed.

← Date on which survey is due.

After each of these surveys has been satisfactorily carried out, the appropriate Certificate is delivered in conformity with the requirements of the different Conventions or Codes.

The existing discrepancy between these survey systems and the periods they are supposed to be carried out has given Administrations many difficulties in effectuating them. In answer to a general plea by Administrations for a harmonised system, the IMO (the Maritime Safety Committee) is presently working on a system which, when finalised, will be similar to the following table with regard to the SOLAS, MARPOL and LOAD LINE Conventions.

This harmonised system will simplify the survey requirements since all the surveys will take place between the same range of time and reduce the burden on the Administration (or her representative) while giving shipowners sufficient time to have their vessels available for inspections.
1) LOAD LINE

2) SOLAS
   - PASSENGER
   - SAFETY CONSTRUCTION ($)
   - RADIO
   - SAFETY EQUIPMENT

3) MARPOL

($) This does not include inspection of outside of ship's bottom and related items. As a matter of fact, at least two of such inspections are necessary within Certificate's period of validity with no more than 36 months between them.

KEY: P = Periodical; I = Intermediate; A = Annual; R = Renewal of Certificates.
Alt.1 and Alt.2 = 1st or 2nd Alternative i.e., if alternative one applies first, alternative two can only apply the following year, and vice versa.

The effective implementation of Safety Conventions especially with regard to SOLAS '74 and Protocol of '78, LOADLINES, and MARPOL '73/'78, will warrant concerted action from Governments (Maritime Safety Administrations) and Industry (Shipbuilders, shipowners, manufacturers and Classification Societies). These two bodies have to study, understand and appreciate the technical and administrative implications of the Conventions.

The Industry has to:

* Develop and manufacture equipment complying with Convention requirements and related guidelines and specifications developed by IMO.
* Arrange for construction or conversion of ships and installations of equipment to comply with the requirements of the Conventions.

* Develop procedures for the operation of ships to meet the requirements of the Conventions.

* Train personnel on board and familiarise them with the functions and operations of newly developed and manufactured equipment on life-saving, and fire-fighting appliances, and pollution prevention etc.

Governments have to:

* Take necessary legislative procedures to ratify and implement the Conventions.

* Establish systems of surveys and certification of ships.

* Develop an administrative structure through which the maintenance of records of ships flying the national flag will be ensured, on the one hand, and through which on the other hand, consistent coordination will be maintained between her work and that of the Industry.

* Develop systems and procedures for the enforcement of Convention provisions especially with regard to:

  - Inspection of vessels in ports and terminals.
  - Detection of unlawful discharges of oil and establishment of penalties to be imposed.
  - Investigation of casualties and submission to IMO of reports on causes of accidents and the need perhaps to make amendments on Convention provisions, etc.
III - 3.2. ENFORCEMENT.

No rule, regulation or law can be effectively kept unless provision for enforcement has been made. Similarly, no law enforcement mechanism can be effectively carried out unless a special body sufficiently knowledgeable in the legal aspects and implications of the law has been officially appointed and entrusted with the functions of enforcement. With regard to marine safety, the Maritime Safety Administration Division of the Maritime Administration is usually entrusted with the responsibility of enforcing the safety regulations of the Merchant Shipping Act.

At the international level, the effectiveness of a Convention will therefore depend to a considerable extent on the way in which it is enforced by the States entrusted with its implementation. Basically, each government is responsible for ensuring that ships which fly her flag conform to the requirements of international treaties which she has ratified, for the international maritime Community, though capable of producing international laws and regulations is not developed enough to put forth a machinery through which it can systematically enforce decisions having international validity. Thus, in the absence of such an international machinery for effective enforcement, it becomes an obligation to sovereign maritime States to develop municipal legal systems through which the laws which constitute the regime of merchant shipping will be enforced.

The nature of the functions of the Maritime Safety Administration with regard to enforcement is twofold:

- those functions which entail the completion of National Merchant Shipping Act by the preparation of regulations whenever the need arises, and
- those functions which deal with operational matters entailing the physical performance of precise duties.

III - 3.2.1. COMPLETION OF MERCHANT SHIPPING ACT.

In the preceding chapter, the nature of a typical Merchant Shipping Act was discussed and there is need to reiterate here that this Act is a sort of
umbrella legislation under which subsidiary legislations in the form of "enabling acts" will be promulgated to legislate the numerous aspects of safety in particular and shipping in general. These duties of the Maritime Safety Administration considered a sort of enforcement of the law on herself, constitute some of the main functions of this Administration and will include:

a) Registration of ships and related functions.

The registration of a ship is used as evidence of the right to fly the flag of a state as well as the right of ownership and of mortgages. It is only through this process that a ship acquires a nationality. A registered ship or share therein can be made security for a loan or other valuable consideration. Registration also provides an excellent means of identification especially in court matters or actions.

Prior to registry a vessel must undergo tonnage measurement by a Government measuring Surveyor or an appointed Classification Society in order to ascertain its gross and register tonnage (*). Depending on the related provisions in the national regulation, certain vessels might be exempted from registration.

In many Countries, there is no penalty for failure to effect registry. However, in practice it becomes essential to do so because of the advantages. For example, an unregistered vessel loses flag state protection, transfer of ownership will be difficult, and she will have a lot of problems getting underwriters for her hull or the cargo she is carrying.

Closely linked to registration is the discharge of statutory functions relating to attendant matters such as mortgages, transfer of ownership, etc.

The matter of registration does flow from international law. The 1982 Law of the Sea Convention says in its Article 91:

(*) The terms "gross" and "register" tonnage refer not to weight, but to capacity, one ton being considered equal to 100 cubic feet. "Gross tonnage" is a measure of the internal volume of all enclosed spaces in the ship. "Register (net) tonnage" is the residual tonnage after various allowances (for propelling power, crew spaces, navigation spaces, etc.) have been deducted from the gross tonnage.
"Every state shall fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag..."

Articles 92 and 94 respectively on "Status of Ships" and "Duties of the Flag State" go to consolidate the provisions of Article 91 and to lay out the duties and responsibility of the flag state with regard to ships flying her flag. This obligation by international law to register ships and give them nationalities is taken over by the Merchant Shipping Act, and the onus of preparing appropriate national regulations under which ships will be registered and the physical registration of ships in compliance with these regulations falls on the Maritime Safety Administration.

b) Registration of seamen and Regulations governing their employment.

In most Developing Countries, seamen do not belong to a Union. Ratings are picked here and there for recruitment and their remuneration neither reflects the risks being run while performing their duties, nor the conditions under which they are obliged to work (retention on board whether on duty or not). It is therefore the duty of the Maritime Safety Administration in Developing Countries considering,

* The risks to which seamen are exposed

* The need for their safety, and

* The fact that in deciding to go to sea they are not merely doing a temporal piece of work but have chosen a profession, a career,

to put forth a machinery through which seamen will be registered, controlled, and given the necessary benefits demanded by the very inherent nature of their work. This machinery will entail the issuing of appropriate regulations which will include among others:

* Conditions of registration - Documents to be produced, minimum age for registration, etc.
* Keeping of updated record of all effective (operational) national sea-
men, Rotation Rosters following demands from employers, etc.

Closely related to the registration of seamen are the duties or functions
relating to Crew matters, Discipline, personal safety, health, wages and wel-
fare, etc. which the Maritime Safety Administration has to legislate and then
enforce.

III - 3.2.2. FUNCTIONS RELATING TO OPERATIONAL MATTERS.

This aspect of the duties of the Maritime Safety Administration consists of
the performance of those functions which ensure the maintenance of safety
standards. These functions will include:

* The inspection and survey of ships to ensure that they are operated and
  maintained in a seaworthy condition, and the issuance of appropriate
  inspection and survey certificates.

* The conduction of examinations leading to, and the issuance of appro-
  priate Certificates of competency and/or proficiency to all categories
  of sea-going personnel (masters, mates, engineers, able-bodied seamen,
  life-boatmen, etc.) serving in merchant ships.

* The holding of inquiries / investigations into shipping casualties.

* Marine Pollution Prevention and Control.

* Sea-lane traffic control, and the establishment and maintenance of
  navigational aids.

* Port and Coastal State Controls.

A) SURVEYS AND INSPECTIONS OF SHIPS.

All the Safety Conventions that make provisions for the construction and
equipment of vessels (passenger, cargo, fishing, off-shore units) also provide
for mandatory surveys to ensure compliance with the Convention requirements
and the ability of hull, machinery etc., and equipment to render the vessel
seaworthy. These surveys will include, as earlier stated, initial surveys,
periodical surveys, intermediate surveys, annual surveys, and unscheduled surveys. As provided for by the Conventions, these surveys must be carried out by officers of the Administration, that is surveyors of the Maritime Safety Administration.

(i) **INITIAL SURVEYS.**

Initial surveys will include a thorough examination of a ship and its equipment in conformity with the provisions of the related Convention (SOLAS '74 and Protocol of '78, MARPOL '73/78, LOAD LINE, TORREMOLINOS, and MODU CODE), before the relevant certificates, as required by the related Convention, are given. In general terms, the initial survey will consist of:

- Examination of plans, specifications, and any other technical documentation to ensure compliance with relevant requirements of the related Convention or Code.

- Confirmation of the presence on board of required certificates, books, manuals, and other documents as specified by the provisions of the related Convention or Code.

- Survey of the condition of the ship and its equipment to make sure their constructions and installations conform with the approved plans, specifications and other technical documents. The construction and workmanship of the vessel must in all respects be satisfactory.

(ii) **MANDATORY ANNUAL SURVEYS.**

Generally, these surveys, meant to permit Administrations to ensure that the condition of the ship and its equipment are being maintained in accordance with the provisions of the related Safety Convention or Code, should consist of:

- A certificate examination and a visual examination (to a sufficient extent) of the ship and its equipment, and of certain tests to confirm that their condition is being properly maintained.
- A visual examination to ensure that no unapproved changes or modifications have been made to ship structure or equipment.

(iii) **INTERMEDIATE SURVEYS.**

These surveys are to be conducted at least once during the period of validity of the certificates required by the different safety and pollution prevention Conventions. In cases where only one intermediate survey is required, this should be done when the certificates' period of validity is half-way gone.

Broadly speaking, intermediate surveys consist of a thorough examination, extensive enough to enable the Administration to ensure, with regard to:

* **SOLAS '74 and Protocol of '78:** the good condition of hull, machinery and equipment of tankers of ten years old and above; that life-saving appliances and other equipment of tankers of ten years old and over, are in good condition.

* **MARPOL '73/78:** that the equipment and associated pumping and piping systems, including oil discharge monitoring and control systems, crude oil washing systems, oily-water separating equipment and oil filtering systems are in good working order and comply with the applicable requirements of the Convention.

(iv) **PERIODICAL SURVEYS.**

In almost all the safety conventions (with the exception of the TORREMOLINOS CONVENTION) the period between periodical surveys is set at five years. (The Torremolinos Convention requires four years). These surveys consist of a thorough and complete examination of the ship together with the relevant tests (as specified by the conventions). This examination in a way is similar to that performed during the initial survey of the vessel with the exception however that there are no plans examination. At the completion of periodical surveys the relevant certificates (as specified by the different Conventions) are renewed for another period of five years.
In many Countries especially Developing Countries - and considering the technical nature of these activities - surveys are entrusted to recognised Classification Societies which are equipped with more expertise with regard to such technical matters. Although these Societies have contributed invaluably to the maintenance of safety at sea, Administrations should think twice before entrusting to them all the survey- which she is supposed to carry out. The following considerations have to be given deeper thought:

(i) Since the construction of a ship is usually done under the surveillance of an appointed Classification Society and since the initial survey of the ship is in a way the inspection of the joint work of the builders and the Classification Society, it will look completely aberrant to have the Classification Society inspect its own work, and expect it to disapprove of certain aspects by reporting defects or non-compliance with regulations in force. There is therefore the possibility of having some deficiencies overlooked and unjustified Certificates of compliance issued.

(ii) Since the decision to carry out unscheduled surveys is taken by the Administration, surveyors of Classification Societies might not be available - considering the relatively short time between the decision to inspect and the actual inspection - when they are needed.

(iii) When Classification Societies are entrusted with all the surveys the Administration is expected to carry out, the cost of such services will be higher than if surveyors from Classification Societies were assisting surveyors from the Maritime Safety Administration.

Despite these disadvantages, it has been noticed that even if a Maritime Administration is so developed that the Maritime Safety Administration can boast of large resources, a certain amount of expertise from "outside" (and which will be very expensive if completely employed by the Administration) will be needed to perform some technical evaluations related to ship safety. In these cases, the services of a Classification Society should be sought for under precise written agreements. In no case should the Classification Society be allowed to dictate or prescribe the provisions of such an agreement simply because of the indispensable nature of the services to be bought.
The Administration should not therefore rely completely and blindly on the Classification Society. The staffing of the Maritime Safety Administration with technical personnel (surveyors and inspectors) is therefore a sine qua non for the avoidance of such dependence since in addition to these surveys, there are also inter-related functions connected with the drawing up of technical national regulations which Classification Societies, whatever the case, should not be asked to perform.

The contract between the Government and a Classification Society should consider the following provisions:

* Compulsory reports to be submitted to appointed government officials (that is the Maritime Safety Administration) after every survey operation. Such reports should be accompanied by objective comments from the Classification Society and also possible remedying action. After the Maritime Safety Administration has taken the action necessitated by the reports, these reports should be filed for future use or reference.

* No secrecy as far as defects are concerned are to be shown by the Classification Society. Without completely exonerating the Administration of the responsibility she has towards the maritime community as a whole with regard to the maintenance of agreed safety standards on vessels flying her flag, the Classification Society will be given some responsibility which when not kept or exercised (reporting of deficiencies) will act negatively on its international character as a renown Classification Society.

* Free copies of Classification Society Classification rules to be given to the Maritime Safety Administration.

Finally, it is to be mentioned that a government should maintain some consistency in the choice of Classification Societies. Jumping from one society to another might result in conflicts between Classification Societies, and such conflicts might repercuss negatively on the work done.

By and large, when the atmosphere within which Governments co-operate with Classification Societies is devoid of strain, mistrust and misunderstanding, the work achieved - not only with regard to surveys but also in the development
of new standards through research - will contribute immensely to the ensurance of safety in shipping and related areas. A good example of such cooperation will be that existing between the Norwegian Maritime Directorate and "Det Norske Veritas", the Norwegian Classification Society.

The following are some of the areas which a government might seek assistance from Classification Societies:

* Plan approvals and surveys related to the 1966 Load line Convention.
* Tonnage Measurement.
* Plan approvals and surveys related to SOLAS '74.
* Plan approvals and surveys related to MARPOL '73/78.
* Plan approvals and surveys related to IMO Codes and Guidelines.

B) CONDUCTION OF EXAMINATIONS AND THE ISSUANCE OF APPROPRIATE CERTIFICATES

The 1978 Convention on Standards of Training, Certification and Watch Keeping of Seafarers (STCW) have made provisions for the following requirements:

* REGULATION II/2: "Every master and chief mate of a sea-going ship of... ...shall hold an appropriate Certificate." (Regulations III/3 on the chief engineer officer and IV/1 on the radio officer have similar requirements).

* REGULATION III/2, § 2d): "Every candidate for certification shall... ...have passed an appropriate examination to the satisfaction of the Administration".

An Administration is therefore responsible for ensuring that the crews of vessels flying her flag hold the appropriate certificates required for the vessel they are manning. These certificates have to be delivered after the necessary examinations (as required by the Convention and other national regulations) have been conducted to test the qualification, and ensure the competence
of the crew. The conduction of these examinations is one of the main attribut-
ions of the Maritime Safety Administration.

According to her system of training sea-going personnel, each Administration
will have a particular system of examinations for testing. Some Administrations
conduct examinations after every three months, others after every six months.
With certain systems, examinations are only conducted once a year, that is at
the end of the academic year. Generally, the frequency in conducting examinations
will depend on the number of candidates to be examined at each session.

Most Coastal Developing Countries do not have national institutions for the
training of sea-going personnel. They are thus obliged, so to speak, to train
this personnel abroad, and this, depending on the opportunities offered them
by foreign friendly countries. This training abroad leaves the Administration
with a variety of Certificates which she has to recognise and homologate. Other
Developing Countries jointly training nationals in regional institutions will
either elect a commission of examiners from member states for the examination
of candidates and the deliverance of related certificates, or delegate these
functions to the administration of the institutions. In certain cases where an
institution is associated with a foreign similar institution, examiners from
abroad might be asked to conduct out-going examinations. In doing this, the
problem of partiality - which might vitiate the quality of the examinations
conducted and the Certificates issued - will be reduced.

By and large, whatever the prevailing training in Developing Countries is,
the problem of examining sea-going personnel, issuing them appropriate certifi-
cates, recognising and homologating foreign certificates which are in conform-
ity with the provisions of the STCW Convention, must be looked into carefully
and organised. It should be remarked here in passing that the Convention (Regul-
ation I/2) insists in the certificates being issued in the official language
or languages of the issuing Administration, and in the case where the language
used is not English, a translation into English of the text of the Certificate
must be included.
C) HOLDING OF INVESTIGATIONS INTO SHIPPING CASUALTIES.

Despite the numerous standards the maritime community as a whole has developed to avoid accidents at sea, many serious casualties still occur either through human error or through the failure or malfunctioning of any of the many devices (equipments) used in navigation. This failure might be attributed either to a mishandling or misuse (by the crew) of the device, or to an inherent defect, pure and simple. Such accidents usually result in the loss of life, the ship and her cargo.

As a measure of improving safety (avoidance of future similar occurrences) the maritime community demands that all Administrations investigate into the causes of such casualties. This investigation is also one of the main functions of the Maritime Safety Administration.

However, in many developed market-economy countries where the Maritime Safety Administration has developed to the extent of owning and operating a fleet of a considerable size for its various activities, conflicts have arisen and partiality has been suspected in the investigation of casualties where one of her vessels was involved. Many accusations of bias have therefore been levied on some Maritime Safety Administrations (during the performance of Casualty Investigations) because of their vested interests or the previously determined positions they have had to defend.

It has thus been thought wise to re-assign the functions of casualty investigations to a special competent public organisation. The work of the Maritime Safety Administration then would simply be that of coordinating the activities and taking action on the various reports and suggestions received. We will therefore examine Casualty Investigation more thoroughly in III-3.3 where the functions of the Maritime Safety Administration will be limited to coordination, study of reports and proposals, and their possible implementation.
D) SEA-LANE TRAFFIC CONTROLS AND ESTABLISHMENT AND MAINTENANCE OF

NAVIGATIONAL AIDS.

Regulation 14 of Chapter V on Safety of Navigation of the SOLAS '74 Convention says:

"The Contracting Governments shall undertake to arrange for the establishment and maintenance of such aids to navigation including radio beacons and electronic aids as in their opinion the volume of traffic justifies, and the degree of risk requires, and to arrange for information relating to these aids to be made available to all concerned".

The establishment of aids to navigation, artificial seamarks external to the vessel and so placed as to warn the navigators of natural dangers and also to assist him in the determination of the position of the vessel, began in the very early days of shipping. With the introduction and development of electronic aids, "aids to navigation" have ceased to be considered as always being external to the vessel.

An Administration party to the SOLAS '74 Convention is therefore responsible for the safety of navigation within the area where she exercises sovereign rights, as well as in port approaches, and has to provide and install aids to navigation in order to ensure prevention of accidents and particularly of their possible consequences on pollution. Basically, this assurance of safety will necessitate:

* The implementation of routeing measures.
* The provision of visual aids (luminous and/or acoustical) and of radionavigation systems.

The development and putting into effect of such safety assurance and enhancement systems will entail a lot of research through which the social costs of marine
accidents will be highlighted when juxtaposed with the cost of providing navigational aids.

The responsibilities which befall an Administration with regard to the provision of navigational aids are entrusted to the Maritime Safety Administration for implementation. The general situation prevailing in coastal states presents many disparities inasmuch as the extent of involvement of the Maritime Safety Administration in the establishment and maintenance of navigational aids will depend on many variables amongst which could be mentioned:

* Size of coastline.
* Accessibility to ports and existing natural hazards.
* Size and development of the Maritime Safety Administration (a translation of the maritime maturity and development of the Administration).

Most countries of developed market-economy like Sweden, Canada, the USA, France, the UK and the USSR etc. have carried out extensive research geared towards the elaboration of objective methods for the analysis of the efficiency of aids to navigation systems.

In most Developing Countries, the Maritime Safety Administration is not sufficiently equipped; in addition, the budget of this Administration does not permit her to get actively involved in the provision and maintenance of navigational aids. As a result, these functions are often carried out "in protest" by the respective Port Authorities, since they can at least recover some of their expenditure from port charges.

Vessel Traffic Services, a more sophisticated type of shore-based navigational aids, are particularly appropriate in the approaches and access channels of a port in areas having one or more of the following characteristics:

* High traffic density.
* Traffic with noxious or dangerous cargoes.
* Navigational difficulties.
* Narrow channels.
* Environmental sensitivity
Since the Maritime Safety Administration more often than not exercises functions of coordination with regard to Vessel Traffic Management, this subject will be given a more intensive examination in III-3.3.

With regard to sea lanes designation in the territorial waters, and pursuant to Article 22 of the 1982 Law of the Sea Convention, the Maritime Safety Administration is responsible wherever needed for indicating on charts sea lanes and traffic separation schemes, and for giving such indications due publicity. In so doing, account must be taken of:

a) Related Recommendations made by IMO.
b) Any channels customarily used for international navigation.
c) The special characteristics of particular ships and channels.
d) The density of traffic.

E) MARINE POLLUTION PREVENTION AND CONTROL.

For two obvious reasons, safety of international shipping with regard to the grave dangers of pollution from shipborne substances particularly oil, is now in the limelight of international shipping concerns:

1) During the last two and a half decades, ships plying the oceans have undergone a dramatic change in both size and number. In 1959 for instance, the oceans were sailed by about 36,000 ships (of about 100 grt or more) with a total of about 125 million grt. Today, the oceans count more than 70,000 ships (i.e., double the number in 1959) totalling more than 400 million grt (more than thrice the 1959 figures).

Coupled with this increase in size, tonnage and number, is the quantity of oil now being transported by sea. Twenty-five years ago, about 250 million tons of oil were being transported. Today, this quantity ranges between 1.700 millions to 2.000 million tons of oil representing an almost vertical increase, graphically speaking, of more than 700%.
2) The fact that ships today are so much larger than they were one quarter of a century ago means that the consequences of accidents (especially those involving crude oil tankers) will be potentially much greater. The Torrey Canyon incident of 1967 and the Amoco Cadiz incident of 1978 will certainly not belie this. Experience, as will be substantiated by the figures in the table below, shows that tanker disasters (Actual and Constructive Total Losses) (*) can have serious negative effects on the environment and marine life, damaging such important resources as fisheries and tourism for long periods.


<table>
<thead>
<tr>
<th>RANK</th>
<th>CAUSES OF LOSS</th>
<th>NUMBER OF LOSSES</th>
<th>QUANTITY OF OIL SPILLED (IN TONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>FIRES AND EXPLOSIONS</td>
<td>84</td>
<td>247.000</td>
</tr>
<tr>
<td></td>
<td>(Engine rooms, cargo tanks,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>others)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2)</td>
<td>STRANDINGS/GROUNDINGS</td>
<td>48</td>
<td>478.000</td>
</tr>
<tr>
<td>3)</td>
<td>STRUCTURAL FAILURES</td>
<td>36</td>
<td>507.000</td>
</tr>
<tr>
<td>4)</td>
<td>ENGINE ROOM FAILURES</td>
<td>22</td>
<td>263.000</td>
</tr>
<tr>
<td></td>
<td>(Floodings, Engine Trouble)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5)</td>
<td>COLLISIONS AND RAMMINGS</td>
<td>30</td>
<td>282.000</td>
</tr>
</tbody>
</table>

|     | TOTALS                          | 220              | 1,777.000                         |


(*) Actual Total Losses are those losses in which the vessel involved sank or was destroyed and not recoverable. Constructive Total Losses are those losses where the vessel was recovered but found to be so badly damaged as to be beyond economical repair.
It is important to note here as a reminder that pollution of the seas does not only occur during or after tanker accidents. There is of course operational pollution resulting from:

* The deliberate discharge into the sea of oily residues (wastes) from the process of tank cleaning after cargo has been discharged and before reloading (*) new cargo.
* Pollution resulting from the use of cargo tanks for ballast water (**).
* Pollution resulting from the discharge of oily wastes from machinery spaces (bilge oil and sludge).

In view of the aforesaid, many Governments (before the adoption of the MARPOL '73/78 Convention) realising the shortcomings of the OILPOL 54/69 Convention with regard to the prevention and control of pollution, had begun the preparation

(*) This was before the introduction of COW (Crude Oil Washing) by the MARPOL '73/78 Convention, a tank cleaning process which consists of using crude oil (in high pressure jets) for the washing of tanks which had earlier contained crude oil. Operational pollution is eliminated through COW since the oil used for washing is recollected and used.

(**) Under the OILPOL '54/69 Convention, ballast water (to make up for the cargo discharged and to give the vessel stability) had to be taken into empty cargo tanks. The MARPOL '73 Convention made provisions for SBT (Segregated Ballast Tanks) and was limited to new tankers of 70,000 dwt and above. The MARPOL Protocol of '78 extended this requirement to include all new crude oil tankers of 20,000 dwt and above, and all new product carriers of 30,000 dwt and above. The CBT (Clean Ballast Tanks) concept was also introduced as a temporal alternative to SBT and COW. This concept consists of dedicating certain cargo tanks for ballast water for tankers above 40,000 dwt. Two years after the entry into force of MARPOL '73/78, i.e. October 2nd 1985, this requirement will cease to apply for tankers above 70,000 dwt; and four years after the same date, i.e. October 2nd 1987, for tankers between 40,000 and 70,000 dwt. For existing product carriers above 40,000 dwt, CBT will continue to apply. The CBT concept is therefore only a temporal alternative of SBT and COW for crude oil carriers. It is to be noted that with the CBT concept, cargo pipes and pumps are used for ballast water.
and promulgation of more stringent regulations to protect their coasts from oil pollution, and their marine resources against the nefarious effects of pollution. With the entry into force of the MARPOL '73/78 Convention (October 2nd 1983) Maritime Safety Administrations have had to work hard to harmonise existing related national legislations with the requirements of the Convention. Through this implementation process, Contracting Governments have had to discuss with "Industry" and Shipowners not only expedient measures for short term implementation but also pragmatic measures which will not have long term negative effects on national shipping, national economy, and the protection of the marine environment.

Presently, Maritime Safety Administrations in Developed market-economy Countries are engaged in the struggle of ensuring that:

* Different and appropriate schemes are developed in national ports for the avoidance of pollution. The ensurance of pollution prevention here is often relegated to the respective Port Authorities. (This depends mainly on the status of national ports).

* All national ports handling oil or other liquid substances considered pollutants are provided with adequate reception facilities to meet the needs of oil tankers using them.

* All oil exploration and exploitation companies (off-shore activities) operating in national waters, and all importers of crude oil and dangerous goods classified under pollutants, have put up an approved Contingency plan for the cleaning up process if an accident of pollution should occur.

(i) RECESSION FACILITIES.

When the MARPOL '73/78 Convention introduced the CBT concept, discharge into the sea of oily ballast water could only be done under strict conditions and at certain rates. The designation of "Special Areas" where discharge was totally prohibited rendered acute the problem of oily ballast and oil residues (after tank cleaning without COW) which tankers had to dispose of before reloading their cargo. The sole practicable solution remained the provision of shore-based tanks or reception facilities where the oily wastes after tank washing and Load
on Top (LOT) (*) procedures will be discharged and probably retreated. It was therefore an obligation on Governments (Article VIII of OILPOL '54/69 and Regulation 12 of Annex I of MARPOL '73/78) to make provisions for the availability of adequate reception facilities in the different national ports and terminals that handled oil for the reception of the residues.

(ii) CONTINGENCY PLANS.

As earlier said, accidental pollution can have far-reaching disastrous effects on the marine environment. Administrations of oil exporting and importing countries, coastal states situated near pollution sensitive areas or tanker routes, have to deploy their energies to put up contingency plans for the combating of pollution in the advent of a tanker disaster or the blow up of a well (off-shore drilling).

The work of the Maritime Safety Administration here will consist of:

* Ensuring the availability of approved contingency plans.
* Ensuring the availability of adequate equipment (booms, skimmers etc.) as is demanded by the potentiality of pollution threat (amount of oil handled, sizes and tonnage of tankers frequenting area, etc.).
* Establishing regional Contingency plans with neighbouring states, or arranging the coordination of the contributions expected from contingency plans organised outside the limits of national territory.

(*) "The Load on Top" procedure is operated as follows: After the discharge of the cargo (oil), departure ballast is taken in approximately one-third of cargo tanks. (This ballast is considered dirty.) During the ballast voyage the departure ballast is decanted, a process that takes about three days depending on weather conditions. While the decanting procedure is going on, about one-third of cargo tanks are washed with sea water and the dirty water is transferred to slop tanks for retention. Arrival ballast is put in these tanks. The departure ballast is discharged into the sea after the oily mixture on the top layer has been transferred to slop tanks for retention. In the slop tanks, the oil is separated from the water which is discharged into the sea while the oily mixture is retained on board. Arrival ballast is then discharged at the cargo oil loading port.
Almost 75% of Developing Countries are not completely aware of the aftermath of an oil spill! About ten years ago, most of these countries had no national regulations on the protection of the marine environment, the prevention of marine pollution, and the combatting of marine pollution. This fact is substantiated by the negligible number of ratifications international instruments dealing with the protection of the marine environment have received from Developing Countries. It is thus to be noticed that most Maritime Safety Administrations in the developing world are not actively and directly involved in pollution prevention and combatting.

Nevertheless, of recent, the ill-effects of marine pollution have begun to be noticed in port areas due to unauthorized discharges from vessels, and those Developing Countries directly concerned have reacted positively through the preparation of appropriate related regulations and the development of various control schemes. Such reactions could never have materialised without the aid of the International Maritime Organisation within the framework of her technical assistance to Developing Countries.

It should be reiterated here that in the establishment of the various schemes (laws and policy) for pollution prevention and abatement, the following have to be taken note of:

- Pollution prevention and fighting does not begin after the occurrence of an incident involving an oil spill, but right at the beginning of the construction of a sea-going vessel (design, construction etc.).

- Since in view of the various perils of the sea accidents cannot be foreseen, there is the urgent need to put up adequate contingency plans which will operate without delay as soon as there is an oil spill.

- Since the sea is not stagnant, pollution, wherever it occurs, is of an international nature. There is therefore the need to co-operate at regional or subregional levels in the fighting of pollution (cleaning up operations). This cooperation has to be promoted and effectuated in such a way as to bring together all those concerned for planning in order to prevent friction and conflicts of interest.
The following table will summarise the different types of pollution with the corresponding measures for prevention and/or abatement:

<table>
<thead>
<tr>
<th>POLLUTION PREVENTION AND ABATEMENT</th>
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<tbody>
<tr>
<td>OPERATIONAL POLLUTION</td>
</tr>
<tr>
<td>CONSTRUCTION AND EQUIPMENT</td>
</tr>
<tr>
<td>- SBT</td>
</tr>
<tr>
<td>- CBT</td>
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<tr>
<td>- COW</td>
</tr>
<tr>
<td>- SEPARATOR</td>
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<tr>
<td>- MONITOR</td>
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<tr>
<td>DISCHARGE CONTROL</td>
</tr>
<tr>
<td>- Discharge criteria</td>
</tr>
<tr>
<td>- Designation of Special Areas</td>
</tr>
<tr>
<td>- Reception facilities</td>
</tr>
<tr>
<td>PREVENTION</td>
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<tr>
<td>- Construction and Equipment</td>
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<tr>
<td>- Navigation</td>
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<tr>
<td>- Cargo handling</td>
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<tr>
<td>- Crew Training</td>
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<tr>
<td>LIMITATION OF OIL SOIL</td>
</tr>
<tr>
<td>- Damage Stability</td>
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<tr>
<td>- Protective Location of SBT</td>
</tr>
<tr>
<td>ACCIDENTAL POLLUTION</td>
</tr>
<tr>
<td>COMBATTING POLLUTION</td>
</tr>
<tr>
<td>- Regional Arrangements</td>
</tr>
<tr>
<td>- Anti-pollution Manual</td>
</tr>
<tr>
<td>- Right of intervention by Coastal State</td>
</tr>
</tbody>
</table>

F) SEARCH AND RESCUE OPERATIONS (SAR).

In spite of the numerous safety requirements provided for by national and international legislations, ships at sea still find themselves in great trouble and need help from ashore. This is provided through search and rescue operations which are initiated, organised and co-ordinated by the Maritime Safety Administration, this pursuant to the provisions of Regulation 15 of Chapter V (Safety of Navigation) of the 1974 SOLAS Convention which states:

"a) Each Contracting Government undertakes to ensure that any necessary arrangements are made for coast watching and for the rescue of persons in distress at sea round its coasts. These arrangements should include the establishment, operation and maintenance of such maritime safety
facilities as are deemed practicable and necessary having regard to the density of the sea-going traffic and the navigational dangers and should, so far as possible, afford adequate means of locating and rescuing such persons.

b) Each Contracting Government undertakes to make available information concerning its existing rescue facilities and the plans for changes therein, if any."

It is therefore an obligation to Contracting States of this Convention to provide rescue services to vessels in distress at sea as soon as distress messages are received.

Search and Rescue operations are most efficiently carried out when jointly organised by the Maritime Safety Administration, and the Navy (Armed Forces or Defense Department). In such an organisation, and depending on the internal policy of the state providing the services, the Navy (Armed Forces) will provide appropriate aircrafts (faster than sea-going vessels) for the picking up of persons in life boats while the Maritime Safety Administration is equipped with appropriate vessels and life-boats for search operations and for the reception of rescued unjured persons picked up by the aircrafts. A formal plan is usually set up beforehand and one of these Administrations (usually the Maritime Safety Administration) is appointed co-ordinator. Responses to distress calls have to be given without delay; in fact, experience has shown that many sea-going vessels including fishing vessels can sink between five and sixty minutes after sending out a distress call.

Search and Rescue operations are more organised in developed market-economy countries than they are in the developing world. This is mainly due to the heavy equipments which these services demand. In these countries, on top of the services provided through the joint organisation by the Maritime Safety Administration and the Navy (Armed Forces), voluntary organisations mostly made up of fishermen and owners of pleasure boats assist very often in SAR operations. The pre-requisites for such assistance are usually determined by the State concerned but are based generally on equipment of vessels used (means of communication - radio; life saving appliances etc.). Any expenses incurred
or loss suffered by the voluntary services are compensated for by the joint Maritime Safety Administration / Navy SAR Organisation fund (if provision is made for the existence of such a fund) or directly by the public treasury, the source from which these two "Administrations" draw their expenses.

Developing Countries can efficiently organise Search and Rescue Services at regional or sub-regional levels considering the heavy expenses needed for equipment. With regard to the West Coast of Africa, such services can be established through the instrumentality of the Ministerial Conference of West and Central African States on Maritime Transport.

It should be reminded here that Search and Rescue services can only be provided by a public organisation considering the heavy expenses needed for equipment, and the fact that the services rendered are not supposed to be requited.

*  

G) PORT AND COASTAL STATE CONTROLS.

Port and Coastal State Controls are carried out by the Maritime Safety Administration to ensure compliance with the requirements of international Conventions and the maintenance of adequate safety standards through which the ship (her crew, passengers and cargo) while at sea will not be exposed to additional perils other than those resulting from an "Act of God". These controls are essential in that:

* they check the obligation flag states have with regard to enforcing safety standards on national flag vessels;
* they are complementary to, and complete the work of flag state as regards surveys and inspections.

As a matter of fact, many vessels engaged in cross-trading hardly ever call in any of the ports of the state under whose flag they are registered. If the flag state is not vigilant and responsible enough to delegate surveyors in foreign ports or a Classification Society to perform the necessary surveys required by international safety and pollution prevention Conventions, unreliable shipowners, for economic reasons, might neglect the seaworthiness of the vessels thereby rendering them sub-standard and jeopardizing as it were, the
lives of the crew, passengers, and other vessels, crews and passengers plying the oceans. The end result of these controls is therefore the elimination of sub-standard vessels considered a threat to human life and to the marine environment.

Coastal State controls are usually carried out when there is reason to believe that a vessel sailing in waters over which the coastal state exercises sovereign rights (territorial sea and Exclusive Economic Zone) has violated, or is violating some of her regulations. More often than not, such violations will consist of the discharge of oil or oily ballast water into the sea. In such cases, the Maritime Safety Administration, pursuant to the provisions of Article 220 of the 1982 Law of the Sea Convention, may detain the vessel and institute the necessary proceedings in accordance with related municipal regulations. The same procedure applies when incidents of violations involving pollution occur during off-shore operations.

Port State Controls are usually carried out when a foreign flag vessel calls in one of the ports of the coastal state. Such controls will consist of checking the validity of Certificates, and deficiencies likely to render the vessel un-seaworthy. These Certificates are those delivered after the different surveys (initial, annual, intermediate and periodical) required by the Conventions and as outlined in III-3.1.3 on "Survey and Certification Requirements" have been satisfactorily carried out. The requirements of Port State Controls are laid out by the different Safety and Pollution Prevention Conventions.

(i) SOLAS '74 and PROTOCOL of '78.

The requirements for the control of ships under this Convention are provided by Regulation 19 of Chapter I on General Provisions. Under this Regulation then:

* Controls are to be limited to the ensurance of the authenticity and the validity of the following Safety Certificates:
- Passenger ship Safety Certificate
- Cargo ship Safety Construction Certificate
- Cargo ship Safety Equipment Certificate
- Cargo ship Safety Radiotelegraphy Certificate
- Cargo ship Safety Radiotelephony Certificate
- Exemption Certificate
- Nuclear Passenger ship Safety Certificate
- Nuclear Cargo ship Safety Certificate

* Certificates shall be accepted if authentic and valid unless there are clear grounds to believe that the condition of the vessel or its equipment are inconsistent with specifications on Certificates. In such a case, Certificates are to be considered as not being valid and the necessary steps towards the detention of the vessel for the repairs of deficiencies to be effectuated should be taken by the surveyors of the Maritime Safety Administration.

Generally, the detention of a vessel considered sub-standard will depend on the severity of deficiencies discovered. If, for example, the hull, the machinery, life saving appliances, radio and fire-fighting equipments are considered below standard for one or more of the following reasons:

- Substantial deterioration due to poor maintenance
- Non-compliance of equipments or arrangements with relevant specifications of the Convention
- Complete absence of equipments as required by the Convention,

the vessel falls within the category of sub-standard vessels and detention for repairs becomes imperative. Nevertheless, the seriousness of a deficiency is a subjective consideration and only the surveyor carrying out the inspection, guided by his professional experience, competence and judgement is capable of deciding on detention or simply ask the captain to have deficiencies repaired or rectified within a particular period. In exercising such a judgment, due consideration should be given to the circumstances of the intended voyage and the risk of danger likely to be reserved (by deficiencies) to crew, passengers or cargo.
* If the decision to detain the vessel is taken, the Maritime Safety Administration should make sure that the following requirements are fulfilled:

- Inform in writing the consul, or in his absence the nearest representative of the state whose flag the ship is flying of the circumstances of the intervention.

- Notify the Authorities responsible for the issue of the Certificates.

- Notify the International Maritime Organisation (IMO) of the facts concerning the intervention.

* On the other hand, if the vessel is found to be sub-standard but no action is taken, the Authorities of the next port of call shall be duly notified together with the parties already mentioned above.

* Maritime Safety Administrations should be well aware of the fact that ships unduly detained or delayed for deficiencies they do not present, will be liable to compensation from the port state.

(ii) MARPOL '73/78 CONVENTION.

The requirements for the inspection of ships and detection of violations under this Convention are laid down by Articles 4, 5 and 6 of the Conference and developed by "Guide-lines for the Control of ships under MARPOL '73/78" prepared by the International Maritime Organisation. These Guide-lines consist of six Chapters dealing with the following:

1) Introduction - Definitions of factors which render a vessel a pollution risk, etc.


3) Guidance on the gathering of evidence of violation of the discharge provisions prescribed or stipulated in Annex I of MARPOL '73/78.
4) Guidance on in-port inspections of Crude Oil Washing (COW) operations.

5) Guidance on control measures of ships of non-parties to MARPOL '73/78.

6) Guidance on the dissemination of information obtained through Port State Control operations.

Five appendices are included and consist of detailed guidance for the attention of officials charged with the performance of above mentioned controls.

Generally, the control procedures under Annex I of MARPOL '73/78 will not be very different from those under the SOLAS Convention. Certificates have to be inspected, and a more extensive control is only necessary:

- When the validity of the Certificate is questionable, or when it simply does not exist.

- At the request of, or on the basis of information provided by another party (Maritime Safety Administration or Authority of last port of call, Fishermen, Pleasure boats or yacht owners, Crew of another vessels, etc.).

- On the basis of information provided by a member or members of crew, a Professional body, an Association, a Trade Union, or any other interested party.

When Port State Control under this Convention is being carried out on a tanker, certain installations and operations may have to be inspected. Such operations will include tank cleaning through COW. It is to be noted that the different pollution prevention equipment a ship is supposed to have in order to comply with the requirements of the MARPOL '73/78 Convention will depend largely on the year of build of the vessel and its size, and Maritime Safety Administrations should be aware of the fact that while certain vessels (tankers) will be constructed with Segregated Ballast Tanks, others will only have Dedicated Clean Ballast Tanks.

With regard to action taken when Certificates are not valid or when the vessel presents deficiencies, the procedure is similar to that followed during similar situations under the SOLAS Convention. Nevertheless, the following additional requirements should be noted:
- If the decision is taken to send a sub-standard vessel to a ship yard under the jurisdiction of the Port State, measures should be taken to continue exercising appropriate Port State Control.

- If, on the other hand, the repair yard is under the jurisdiction of another state (other than the flag State) party to the Convention, all the facts relating to the deficiencies should be communicated to the competent Authorities (Maritime Safety Administration) of that State.

- Received information on contraventions with regard to unauthorized discharge should be adequately verified before serious action is taken against the vessel, and before informing flag state. Such verification will help assess the extent of the contravention, providing at the same time concrete facts to substantiate the action taken.

(iii) LOAD LINES '66/69 CONVENTION.

The requirements of Port State Control under this Convention are provided by Article 21 of the Convention. Such a control will not only be limited to ensuring the presence on board of a valid International Load Line Certificate, but in addition, the inspector of the Administration should ensure that:

- The ship is not loaded beyond the limits allowed by the Certificate.
- The position of the load line of the ship corresponds with the Certificate.
- No material alterations have been made (in the hull or superstructures of the ship) and necessitating the assignment of an increased freeboard.

Where there is a valid International Load Line Exemption Certificate on board, the control will be limited to ensuring that the stipulations of this Certificate are complied with.

On the other hand, where neither a valid International Load Line Certificate nor the Exemption Certificate are present on board, and where the absence of, or the invalidity of these Certificates (together with the condition of the vessel) might present a major danger to crew and passengers if the vessel proceeds to sea, action shall be taken to detain the vessel. The procedure of informing competent Authorities of flag state shall be similar to that under the SOLAS Convention.
(iv) MODU CODE AND TORREMOLINOS CONVENTION.

With regard to Codes and Conventions not in force and regulating vessels not engaged in international voyages, Port State Control will be based on requirements of related national regulations. Such controls will still be based on the inspection of the Safety Certificates such units should hold. Concerning the TORREMOLINOS International Convention, this Certificate is the "International Fishing Vessel Certificate".

These units more often than not will be subject to Coastal State Control with the exception of fixed installations (off-shore activities) which are governed by Coastal State Regulations.
III - 3.3 COORDINATION AND SUPERVISION OF ACTIVITIES GEARED TOWARDS THE MAINTENANCE OF MARINE SAFETY.

The third and last aspect of the functions of the Maritime Safety Administration is that of coordination and surveillance of maritime safety activities carried out by other public, para-public or private organisations. These activities can be classed in three main categories:

1) Functions or activities which the Maritime Safety Administration has relegated to another organisation.
2) Functions or activities which demand a lot of investment on equipment.
3) Functions or activities which the Maritime Safety Administration cannot perform any longer because of conflicting nature.

(i) RELEGATED FUNCTIONS.

If the Maritime Safety Administration is in charge of the ensurance of global safety in the maritime domain through the various functions earlier discussed, there is need here to mention that in certain areas within this domain, the functions geared towards the maintenance of safety are relegated to different bodies. Some of these areas will include safety maintenance in port areas, "fishing" industry, and off-shore activities.

With regard to port areas, it should be mentioned that the legal status of ports within a particular country (government owned, owned by the town municipality, or mixed) and the development of the various port infrastructures might be carried out without the direct surveillance of the Safety Administration. Since ports are constructed not only to receive sea-going vessels but also to handle and store before delivering goods, some of which present a lot of hazards, appropriate laws, following the situation and vulnerability of the ports, have to be made to govern the different activities carried out. These activities will include:

* The construction of storage areas (warehouses)
* Construction of mobile handling equipment
* Container terminals and segregation, etc.
* Pollution Prevention schemes (port area) and availability of reception facilities where needed.

The safety laws that govern the above-mentioned areas are usually promulgated by the various Port Authorities in the form of "By-Laws". The function of the Maritime Safety Administration here will be to coordinate the effective carrying out of these functions, and when necessary, to inspect their efficient operation.

With regard to the fishing industry and off-shore activities, the decision to delegate safety maintenance functions to another Administration (public or para-public) will depend mainly on the level of development of these activities. Certain Administrations have found it necessary to create a different public administration in charge of safety and pollution prevention problems in off-shore activities while in the fishing industries, commissions comprising experts from the Maritime Safety Administration and the Ministry of Animal Breeding and Industries are created for the same purposes. In both cases, the Maritime Safety Administration will, through advisory services and surveillance, ensure that the policies of the different organisations in connexion with safety maintenance are acceptable and viable.

(ii) FUNCTIONS DEMANDING A LOT OF INVESTMENT ON EQUIPMENT.

In most Countries of developed market-economy, the Maritime Safety Administration is a large Administration employing hundreds of people and operating sophisticated equipment for the carrying out of the functions entrusted on her. In other Countries, this Administration is either of a very small or of an averagely medium size. The funds this second group will have at its disposal for development and equipment will be correspondingly small. As a result, the Maritime Safety Administration has to rely on other organisations, public or para-public, for effectively carrying out some of the functions entrusted on her.

Such organisations because of their quasi-commercial status, will supply equipment and services in the following areas:
* Search and Rescue operations (Navy (armed Forces), Port Authorities, etc.)
* Supply and installation of aids to Navigation and the creation of Vessel Traffic Services (Port Authorities, Aids and Waterways Authority)
* Hydrographic Surveying and the issuing of nautical charts.

In all these cases, the duties of the Maritime Safety Administration will be centred on surveillance, control, and coordination.

(iii) FUNCTIONS WITH INHERENT CONFLICTUAL NATURE.

In many Countries (mostly those of developed market economy) the Maritime Safety Administration is so large that they control and operate a fleet of considerable tonnage for exercising their various functions. This is the case with the Canadian Coast Guard, the United States Coast Guard and a few Western European Maritime Safety Administrations.

Because of this large fleet, it has been considered appropriate to relegate some of the traditional functions of the Maritime Safety Administration to other specialised ad hoc organisations in view of the conflict of interest which might arise in the performance of these functions. "Maritime or Casualty Investigation" is a typical example of such functions. Here for instance, many incidents have occurred at sea involving two vessels, one of which is owned by the Maritime Safety Administration. The investigation of such an occurrence is likely to be bias and prejudiced if carried out by the personnel of the Maritime Safety Administration.

Since in III-3.2.2 we only cursorily glanced over some of the activities discussed above, we will re-examine a few here with a particular accent on their technical nature. These will be:

- Aids to Navigation and Vessel Traffic Management, and
- Maritime Casualty Investigation.
III - 3.3.1. NAVIGATIONAL AIDS AND VESSEL TRAFFIC MANAGEMENT.

When someone stands on the shore and looks out into the sea, it is rather difficult to understand why, with so much sea space in which ships can manoeuvre, expensive and highly advanced equipments and systems are required for directing ships into ports. A closer examination of the sea will show that the smoothness of the surface of the sea will not necessarily entail a level bottom. Some areas are therefore deeper than others and a ship has to be "guided" by external aids in order to avoid groundings. The factors which contribute to marine accidents such as groundings and collisions range from human error, bad weather, to lack of equipment or malfunctioning of such equipment. Experience has shown that as a vessel nears land, the probability of these accidents increases, and it becomes vitally important for the safety of the vessel and the protection of the environment that appropriate systems of Aids to Navigation and Vessel Traffic Management be developed and implemented.

III - 3.3.1.1 AIDS TO NAVIGATION.

Aids to Navigation can be vulgarly defined as visual, acoustical or radio devices which:

* Assist the captain and his crew to move a vessel safely and easily from one point to another.

* Warn them of major dangers or obstructions.

* Advise them of the location of the best or preferred route.

These devices are either shipborne or external to the vessel - shore-based or placed on the surface of the sea - and will include:

- Navigational charts
- Compass
- Log
- Lead (or echo-sounder)
- Sextant
- Chromometer
- Beacons
- Radio Receivers
- Radar
- Lighthouses or Stations
- Buoys
- Vessel Traffic Services etc.
- Station referenced systems.

Aids to Navigation are either lateral or cardinal.

Lateral aids may be in the form of either buoys or fixed aids. They indicate the location of hazards and of the safest or deepest water by indicating the side on which they are to be passed. Their correct interpretation requires a knowledge of the direction of buoyage commonly known as the "upstream direction", which is the direction taken by a vessel when proceeding from the sea towards the head waters of a river into a harbour or with the flood tide. When a vessel is proceeding in the upstream direction, starboard hand aids must be kept to starboard (i.e. right) and port hand aids must be kept to the port (i.e. left).

Cardinal aids may be in the form of either buoys or fixed aids, and indicate the location of hazards and of the safest or deepest water by reference to the cardinal points of the compass. There are four cardinal marks - North, East, South and West, which are positioned so that the safest or deepest water is to be found to the named side of the mark (e.g., to the north of a north cardinal mark).

**FIXED AND MOBILE AIDS TO NAVIGATION.**

As earlier seen above, aids to navigation external to the vessel, are either fixed or mobile. Fixed aids are mostly light stations or lighthouses which are fixed structures equipped with a light and located at prominent sites to assist the mariner in fixing his position. They are erected near shorelines or built-up man-made piers in, or near waterways. The main characteristics of these aids are construed for identification purposes. They therefore con-
sist of the light colour and flash characteristics by night and the colour and shape of the structure by day (day mark). Other fixed aids will include:

* Starboard day beacons
* Port day beacons
* Junction day beacons.

Mobile aids present characteristics similar to those of the fixed aids but with the main difference that they are anchored and are given the generic name of "BUOYS". The following types of buoys, each having a different function, are commonly used as aids:

(i) **Lateral Buoys** - which indicate the side on which they may be safely passed.

* Port Hand Buoy
* Starboard Hand Buoy
* Port Bifurcation Buoy
* Starboard Bifurcation Buoy
* Fairway Buoy

(ii) **Cardinal Buoys** - which indicate the location of the safest or deepest water by reference to the cardinal points of the compass.

* North Cardinal Buoy
* East Cardinal Buoy
* South Cardinal Buoy
* West Cardinal Buoy.

(iii) **Special Buoys.**

Generally, these buoys are used to convey to the mariner a variety of information which, while important to him, is not primarily intended to assist in the navigation of his vessel. The shapes of such buoys have no significance, or rather, is not linked with the message it is supposed to convey. Such buoys will include:

* Anchorage Buoy
* Cautionary Buoy
* Ocean Data Acquisition System (O.D.A.S.) Buoy
* Mooring Buoy
* Diving Buoy
* Keepout Buoy
* Control Buoy
* Information Buoy
* Swimming Buoy

Originally, the functioning of aids to navigation was based exclusively on visual observations but later on, acoustical devices were found viable and accordingly added. Such aids are operated in a way as to be seen or heard by the mariner with probably help from his binoculars or his telescope. As regards acoustic aids, no additional equipment (receivers) was needed.

The 20th Century saw the introduction of a new type of aids using the properties of electromagnetic waves in the radio frequency bands. The reception, measurement and interpretation of these emissions necessitated the installation of especially designed receiving equipment on board the vessel. Such equipment is the shipboard extension of the relevant shore-based aid of which it remains essentially an integral part.

The establishment and maintenance of Aids to Navigation, as well as hydrographic surveying and the issuing of charts and other nautical publications, is usually considered the responsibility of the National Maritime Safety Administration. But very often these activities are delegated to other national public or para-public Administrations.

III - 3.3.1.2 VESSEL TRAFFIC MANAGEMENT.

In the early 50's, a sort of "port radar system" was introduced in Western Europe with the main function of guiding ships into ports. With the subsequent firm establishment of their values as shipping aids, these radar systems have now been sophisticatedly computerised and are commonly known as:

- Marine Traffic Control,
- Vessel Traffic Service, or
- Vessel Traffic Management.

They have the following main functions:

* The organisation of the movement of ships in order to guarantee an efficient, smooth, unobstructed traffic flow through the entire port area at all times, and

* The organisation of the movement of ships in special areas (channels, straits) where navigation might be rendered difficult, or which present one of the following characteristics:
  - High traffic density
  - Traffic with noxious or dangerous goods
  - Navigational difficulties
  - Narrow channels
  - Environmental sensitivity.

A Vessel Traffic Service may range from single information messages to extensive organisation of the traffic involving national or regional schemes.

Considering the involvement of different parties during the activities involved in Vessel Traffic Management (Shipowners, Masters, Pilots, Port Authority Management), it is to be emphasized that the organisation of vessel movements is done through advice, guidance, control, and management from the Vessel Traffic Service Authority to the captain of the vessel in the port approaches or area, or in one of the special areas mentioned above. The Vessel Traffic Service Authority may be one of the following:

* Port Authority
* A governmental Administration
* A Pilotage Organisation, or
* A Combination of any of the above authorities.
Despite the diversities in opinion as to the powers of a Vessel Traffic Management, the Maritime Safety Administration through the Port Authority Management remains the sole Authority with sufficient overall interest and responsibility to decide what the most desirable Vessel Traffic System should be. These interests and responsibilities will be guided by the following expectations from a Vessel Traffic System:

* that it acts as one more aid to ensure the efficient, safe and smooth movement of ships in and out of port areas,

* that in very busy ports, it should also be an aid to prevent dangerous concentrations of ship movements in a particular port area,

* that it can demand a change in behaviour of individual vessels participating in the total traffic,

* that in case of an accident, it can assist in unconditional traffic control in the interest of calamity containment,

* that it can faithfully relate the main facts behind a major incident involving grounding, collision or pollution.

The Port Authority as a representative of the national Maritime Safety Administration, has responsibilities which override the singular responsibilities of the other parties involved in Vessel Traffic Management. Such responsibilities will involve:

* Commercial activities with regard to the port's economy,

* Maritime safety in general,

* Operational efficiency in order to be attractive to shipping,

* Environmental safety (with regard to pollution prevention) to protect the population living in the immediate vicinity of the port.

It is to be noted that within the Port Authority Organisation, a special section which should be directly controlled by the Maritime Safety Administration has to manage directly the Vessel Traffic Service. In other words, the Commercial and Safety responsibilities will be attributed to different "Organisations" within the Port Authority.
In many cases, the commercial organisation of ports has a regional status while safety organisation will always have a national character, hence the need to entrust the management of a Vessel Traffic Service in the hands of an organisation which will be directly supervised by the Maritime Safety Administration. Such an entrustment will be in answer to the main objectives behind Vessel Traffic Service organisation, primarily designed to improve safety and efficiency of traffic and the protection of the marine environment. Such primary objectives will include:

* Assistance to navigation in appropriate areas
* Regulation of movements to facilitate an efficient traffic flow
* Handling of data relating to ships involved
* Coordination of actions in case of accidents
* Support of allied activities

The importance attached to Vessel Traffic Service organisation has been substantiated by the amount of literature on the subject, most of which is in the form of Guidelines for organisation. Such literature comes from three main International Organisations:

- The International Maritime Organisation (IMO)
- The International Association of Institutes of Navigation, and
- The International Association of Lighthouse Authorities (I.A.L.A.).

III - 3.3.2. CASUALTY INVESTIGATION.

Marine Casualty Investigation is the process of inquiring into, and the collection of facts relating to a marine occurrence. These occurrences will include:

- Incidents on board a vessel resulting in serious injury or death
- Groundings and Collisions which might result in serious damage to the vessel, loss of life (or complete loss of crew and vessel)
- Incidents involving pollution of the sea from ship accidents or oil rig blow-outs.
The occurrence of a sinister at sea will involve many interests, most of the time conflicting with one another, and it has been rather difficult to determine what line a Casualty Investigation should follow. The above-mentioned interests will include those of:

- The Maritime Safety Administration (representing the local Administration and population),
- The Party (or Parties) directly involved in the accident (shipowners and Insurance Companies, etc.).

In many Countries, Casualty Investigation is considered penal in nature. The main purpose of investigating marine casualties in such countries is to impose penalties which might range from suspension of Certificates (Master and Officers) to payment of heavy fines and imprisonment. Such preliminary inquiries are usually carried out under strict rules of secrecy, and the civil liability aspects of the incident are not considered. Another investigation to this end will have to be carried out by appointed surveyors representing the interested parties. It is only when a second inquiry is deemed necessary that the process will be made public with a subsequent Court hearing and judgement.

In other Countries, Casualty Investigation is safety orientated, with the primary purpose of improving safety of lives and property in marine transportation. These investigations are characterised by the following:

1) The investigation system is totally independent of any disciplinary process.

2) The investigating authority does not determine or apportion blame or recommend any type of disciplinary action.

3) The investigating Authority is not prohibited from making objective findings of fact which might lead to the deduction or conclusion that a fault likely to entail disciplinary action was committed, even if such facts give rise to the deduction or conclusion of possible civil liability.
The philosophy behind this group of Countries is in line with the provisions of International Safety Conventions (LOADLINES '66 - Article 23, and SOLAS '74 - Regulation 21) which have both regulated Casualty Investigation in the following manner:

"Each Administration undertakes to conduct an investigation of any Casualty occurring to ships for which it is responsible and which are subject to the provisions of the present Convention when it judges that such an investigation may assist in determining what changes in the Convention might be desirable..."

(paragraph one of Article 23 of LOADLINES '66, and of Regulation 21 of SOLAS '74)

In addition, the following Resolutions of the above-mentioned Conventions have thrown additional light on Casualty Investigation procedures:

- LOADLINES '66
  * RES. A 147 (Nov. 26th 1968): Reports on accidents involving significant spillages of oil.
  * RES. A 173 (Nov. 28th 1968): Participation in official Inquiries into Marine Casualties.

- SOLAS '74
  * RES. A 322 (Nov. 12th 1975): The Conduct of Investigations into Casualties.

It is to be noted that the obligation the above-mentioned Conventions provide for participating states to investigate and report to the Organisation (exercising depositary functions for the Conventions, i.e. IMO) is conditional upon their sole judgement as to whether or not an investigation may assist in bringing about changes to these Conventions.
A third group of Countries will consider Casualty Investigation from a completely different angle. Here, investigation is considered of an administrative nature, and is conducted to determine the circumstances in which the Casualty occurred, to reveal its causes and consequences, and to determine those persons to be held responsible. These investigations are conducted by the harbour-master.

By and large, the extent to which a casualty investigation is carried out, and the main objective behind such an investigation, are determined by the related provisions in the different municipal legislations. Nevertheless, the following recapitulative observations can be made:

* The objectives of Casualty Investigation systems will vary from strictly penal systems to systems solely orientated towards safety. Many variations exist between these two systems.

* The investigation processes as well as the reports and their use are directly affected by the nature of the objectives pursued, i.e. whether for strictly safety purposes, or whether disciplinary or civil considerations are taken into account.

* Most Countries will tend to have two types of inquiries: Preliminary Investigations and Formal Investigations or Hearings, and, depending on the number of investigations, some countries will place emphasis on the former and others on the latter. It is necessary here to give a brief run-down of these two types of inquiries.

(i) **PRELIMINARY INVESTIGATION.**

In the advent of a marine occurrence, an investigator is appointed by the responsible officer (representing the Minister of Transport) of the Administration. This investigator has the right to go on board vessels or enter any premises, to inspect any part thereof, to compel testimony (this differs following Administrations), and to enforce the production of documents.
During the inquiries, the witnesses are interviewed privately, and in camera or with a tape recorder (*). Under certain national laws, the witnesses can be assisted by a lawyer to advise them of their rights.

After the successful conduction of this investigation a report is made. Such a report should contain all or most of the following information:

- A brief outline of the circumstances in which the casualty occurred, including the date, the place, and the outcome.
- Information about the Ships involved - Type and size of Ship(s); Port(s) of registry; Type of propulsion; Place of built and year; Navigational aids; Nature of cargo carried, etc.
- List of witnesses - Name, age, nationality, occupation and qualifications.
- Account of the circumstances leading to the casualty.
- Comments on the evidence together with relevant extracts
- Conclusions as to cause or most probable cause of casualty.
- List of exhibits - Copies of documents may be substituted for originals. Most Administrations will demand that these should be duly certified.
- Recommendations which should not be part of the report but simply attached to it.

In most cases, the facts contained in this report are considered facts observed by the investigator, hence the need to include recommendations only as an attachment. Neither the report nor the recommendations are made public. As provided for by the related national regulations, these reports are either sent directly to the Minister or to his statutory representative for exploitation.

(*) The use of these two equipments is not common with all Administrations. In certain cases, the witnesses, when confronted with them, tend to withhold useful but probably compromising information.
(ii) **FORMAL INVESTIGATION.**

Formal Investigations become imperative when the incident to be inquired into has caused major casualties. The order to carry out this investigation usually comes from the Minister of Transport. In a nutshell, incidents with the following characteristics will warrant a formal investigation:

a) Incidents which cause a considerable degree of concern because of the loss of many lives etc.

b) Incidents where the causes cannot be determined by a Preliminary Inquiry, and

c) Incidents where special safety lessons or practices should be brought to the attention of the industry.

Formal Investigations are carried out by a Commissioner (usually a judge) who has the following powers in most Administrations:

a) Powers to suspend or revoke officers' Certificates or to criticise the conduct of a party, or to propose disciplinary measures.

b) Powers to assess costs against a party - officers, pilots, shipowners etc.

This commissioner heads a commission counsel which in certain countries is appointed by the Minister of Justice. In others, this responsibility befalls the Ministry of Transport. This commission usually consists of four to six members.

After the investigation and hearing, the commissioner prepares a full report for the intention of the Minister or his statutory representative. This report, in many Countries, will include:

- The findings of the commission.
- The causes of and the contributory factors to the casualty.
- Decision of commissioner relating to proposals with regard to disciplinary measures which might include the suspension or revocation of an officer's or engineer's Certificate, or of a pilot's licence.

- List of Recommendations on action to be taken in order to promote safety of life and property at sea. This action might either be geared towards the strengthening of existing legislation (both at national and international levels) or the need to expand related existing legislation to include areas which hitherto had not been considered.

Although Formal Investigations usually require long hearings which are often very costly to all those involved, they help nevertheless to clarify many obscure areas to be observed after a casualty. These areas will include the following:

- The fact that the process of Formal Investigation is used extensively, although indirectly, to help resolve civil liability issues for some of the parties involved.

- Very often, the proceedings, because of their wide-ranging nature, are used as an extensive discovery process since the parties involved usually present their evidence in the most favourable light for their private interests.

III - 4. CONCLUSION.

In the foregoing section, we have started from a given base from where we have run to the north, east, south and west (inter-linking as it were these different points) in an endeavour to explore the whole range of the activities of a typical Maritime Safety Administration, first in an utopic situation where the NEEDS of the various countries involved in her organisation will be completely similar, and secondly, in a more realistic and pragmatic situation where these NEEDS are not only a decisive factor in determining what face or structure are suitable for this Administration, but are also, to a very large extent, dependent on the "local colour" of, or the prevailing conditions in the various countries to be considered.
In so doing, we have examined the various situations prevailing in countries of developed-market economy, not necessarily because such situations are the best and should be copied, but mainly to compare different philosophies or ways of looking at the same thing.

The examination of such situations has thus been instrumental to an objective appreciation of the mixture of the different available resources for organisation. These situations, though not serving as the perfect example, should nevertheless orientate coastal Developing Countries towards the main prerequisites for effectively organising a Maritime Safety Administration, and the use of indigenous resources as alternatives to "sophistication" which their apparently meagre financial resources cannot meet.

In discussing the various Safety Conventions our main aim has not been to give a résumé of these instruments, but to:

* Highlight their importance and far-reaching effects
* Discuss the various possible procedures Maritime Safety Administrations in Developing Countries could or perhaps should use for effective implementation. These procedures, though similar to those prevailing in countries of developed-market economy, will be different when indigenous resources are employed.

With regard to organisation, it should be mentioned that it is rather difficult to prescribe a particular organigramme for a Maritime Safety Administration since many variables and parameters have to be taken into consideration. Such will include:

- Political structure of country
- Financial potential of country
- Maritime maturity of country, and
- Structure of mother Ministry.
Generally speaking, the organisation or structure of a Maritime Safety Administration will depend largely on the different posts to be created; these in turn will depend on the extent of the functions which this Administration has been asked to carry out.

In Parts one and two, we had laid down respectively the foundation stone for the subsequent establishment of a Maritime Safety Administration, and the framework within which such an Administration will flourishly expand and develop. It behoves us here then, and by way of conclusion, to give a recapitulative reiteration of the atmosphere within which the Maritime Safety Administration should be effectively organised in Developing Countries so as to give a positive response or feed back to the objectives behind her creation.

The raison d'ètre of this Administration must always spring from the contribution to national growth - economic expansion and development - that is expected from the various activities carried out on or in the sea or in/on interior navigable waters. Such activities will include:

* sea transportation
* fisheries
* off-shore activities.

In organising this Administration, the relevant pre-requisites - equipment and the development of human resources - must be critically appreciated, taking into consideration local conditions.

The training of personnel in the sector of marine transportation as a whole will be more beneficial to the nation if undertaken by the Government since it stands in a better position to:

- Assess global national needs and to plan for and ensure the availability of such man-power both in quantity and quality.
- Harness such man-power and use it appropriately to maximum national advantage (Shipping Companies and the Maritime Administration)
- Monitor international developments affecting existing or future marine personnel.
- Fight international pressures regarding this domain in general and seafarers in particular.

The end result of this responsibility is that the Government will find itself in a position where it can control the personnel in the whole maritime domain, and following national needs, can transfer personnel from a public administration to a para-public one, and vice versa. Such transfers will enable the gap left in the Maritime Safety Administrations of most Developing Countries by the inavailability of trained technical personnel (inspectors, surveyors etc.) to be filled.

Finally, mention should be made of the role, as we have seen throughout this study, the "Industry" can play in fostering the development of the Maritime Safety Administration through the following contributions:

* Developmental funds
* Services of technical personnel
* Assistance with regard to the use of equipment
* Funding of feasibility studies etc.
IV - THE CAMEROON MERCHANT SHIPPING DEPARTMENT.

IV - 1 SITUATION.

The CAMEROON MERCHANT SHIPPING DEPARTMENT is one of the four technical Departments of the Ministry of Transport. It is the national Administration in whose hands is entrusted the dual function of promoting (through initiating, developing and implementing the various related parameters) maritime transport and developing the merchant fleet and related areas, and the global ensurance of Marine Safety including the prevention of Marine Pollution. Since 1960 when she was created, this Administration has passed through three major stages: 1960 - 1976, 1976 - 1979, and 1979 to the present day.

IV - 1.1 PHASE ONE 1960 - 1976.

In 1960, by Decree No 60/69 of the 22nd of March 1960, a MERCHANT SHIPPING SERVICE was created within the organisational structure of the then DIRECTORATE OF PORTS AND NAVIGABLE WATERS, situated in turn within the organisational structure of the DEPARTMENT OF PUBLIC WORKS AND TRANSPORT constituting one of the five Departments of the "Ministry of Transport, Public Works and Mines". This Service was charged with the overall functions of administrating ocean and river transport in CAMEROON with the following specific functions:

* Regulation of ocean and river transport
* Ship Registration
* Fisheries
* Ship Safety Control.

The efficiency with which these functions were physically carried out is rather doubtful since, on the one hand the organisation of the SERVICE did not reflect the objectives behind its creation, while on the other hand, the staff employed was neither conversant with the functions to be carried out, nor was it knowledgeable enough to initiate lines of action
through which these functions would be efficiently carried out. Nevertheless, Ship Registers were opened mostly for fishing vessels and small pleasure crafts. If the registration of these vessels gave no palpable and reliable information about the vessels, it represented at least a source of income even if relatively negligible.

In 1962, by Decree No 62/DF/276, a reorganisation of the SERVICE was made, with surprisingly major changes in neither the structural organisation nor in the attributions. Earlier this same year, the "Ordonnance No 62/DF/30" had given birth to the Merchant Shipping Code which was going to be a carbon copy so to say, of the then French Merchant Shipping Code.

In 1970, Presidential Decree No 70/DG/273 reorganising the Government gave birth to a new Ministry in charge exclusively of Transport. The Department of Transport, one of the five Departments of this Ministry, was to control henceforth the activities of the Merchant Shipping Service. The Ministry of Transport was reorganised by the 1972 Constitution but the Merchant Shipping Service was not affected. Nevertheless, the creation (in the Ministry) of new responsibility posts and the subsequent appointment of senior administrators (who would initiate strategies to prod the expansion of the activities of the Ministry within the global machinery of national economic development) repercussed positively on the attributions of the MERCHANT SHIPPING SERVICE.

These repercussions physically materialised the following year when, through Decree No 73/299, the functions of the SERVICE were marginally expanded. Through this Decree, the SERVICE was in charge of:

- The implementation of the provisions of the "MERCHANT SHIPPING CODE" 
- The determination of the legal and administrative status of sea-going and fishing vessels engaged in ocean and interior waters' transport (i.e., Registration and related matters).
- Ocean navigation and Port and Coastal State Controls
- Marine Labour force; Disciplinary regime; Training of seafarers
- Safety maintenance within the fishing industry.

In 1976, a major change took place. This consisted of a reorganisation, through Decree No 76/161, of the SERVICE into a DEPARTMENT. The activities of this new DEPARTMENT would henceforth be managed, coordinated and controlled not by a Chief of Service, but by a Director. The major changes resulting from this reorganisation were of a twofold nature:

IV - 1.2.1 ATTRIBUTIONS AND RESPONSIBILITIES.

It is to be noted from the previous responsibilities of this Administration that the main reason behind her creation was to provide the Country with a Maritime Safety Administration. The 1976 Decree opened new avenues for the Administration in that the bulk of the new attributions was geared towards the conception and development of appropriate strategies for the promotion of the maritime sector within the framework of national economic development. The new attributions will include inter alia:

- The implementation of national policies with regard to river and ocean transport.
- The organisation of river and ocean transport together with related matters.
- The preparation and negotiation of international agreements (bilateral and multilateral) relating to the promotion and development of national river and ocean transport.
- The liaising together with International Organisations (organs or specialised agencies of the United Nations Organisation) for the promotion of national ocean and river transport, and Safety maintenance. Such Organisations will include:
  * The International Maritime Organisation (IMO)
  * The United Nations Conference on Trade and Development (UNCTAD)
  * The International Labour Organisation.
IV - 1.2.2 OPERATIONAL ORGANISATION.

During the first three years that followed the transformation of the SERVICE into a DEPARTMENT, this Administration turned over a new leaf, so to speak.

- The global running of the Administration was completely reorganised with a particular accent being put on the following key posts:

  * Filing system and preservation of records - documentation.
  * Sensitizing the personnel of the responsibilities attributed to them and the functions they are expected to carry out, and instilling in them a sense of responsibility and professional consciousness.
  * The acquisition of certain vital equipments without which the basic functions of the DEPARTMENT would be difficult to perform.

- The planning and the definition of a line of action with regard to the present and projected activities of the Administration in emulation of the national five-year plan of development and economic expansion.

- The assessment of the present and future needs of the Administration with regard to the development of human resources necessary to discharge the responsibilities of the Administration as required by the related laws and regulations.

- The opening of contacts with International Organisations whose activities are related to those of the Administration.

- The subscription to many international and foreign national periodicals and magazines (dealing with maritime transport and related matters) through which the personnel of the DEPARTMENT will get acquainted with related modern developments and various national practices, etc.
IV - 1.3 THIRD PHASE: FROM 1979 TO PRESENT DAY.

The creation of a national shipping lines (CAMEROON SHIPPING LINES) in 1975 and of a Shippers' Council (CAMEROON NATIONAL SHIPPERS' COUNCIL) in the same year, had acted as a spur to the foregoing expansion (or at least determination to realise an expansion) of the MERCHANT SHIPPING DEPARTMENT for the following reasons:

- Since the Ministry of Transport had been entrusted with the functions of supervising, controlling, coordinating and administrating the overall activities of the various national para-public organisations involved with transport, the onus of discharging these functions with regard to sea transportation falls on the DEPARTMENT since it is the technical Department of this Ministry in connexion with Maritime Transport. But this "discharge" necessitated expertise and technical know-how.

- A reorganisation of the DEPARTMENT with special emphasis on equipment and development of national expertise became a sine qua non for effectuating efficiently the entrusted functions.

Presently, the various decrees re-organising the MERCHANT SHIPPING DEPARTMENT have laid out the activities of this Administration as follows:

* The Implementation and enforcement of the MERCHANT SHIPPING CODE.
* Registration of sea-going vessels, fishing vessels and pleasure crafts.
* The control of the various equipments and installations serving as Aids to Navigation.
* The carrying out of port and coastal state controls.
* The Prevention, Control and Combatting of marine pollution.
* The coordination of global safety issues and the maintenance of close working relationship with the International Maritime Organisation.
* The assessment of national needs as regards seamen and the training and Certification of seafarers.
* The equipment, provision and coordination of Search and Rescue Operations.
* The carrying out of inquiries into marine casualties (Casualty Investigation)

* The Organisation and Promotion of Maritime Transport.

* The control, monitoring and coordination of the activities of:
  - The CAMEROON SHIPPING LINES
  - The NATIONAL SHIPPERS' COUNCIL
  - The NATIONAL STEVEDORING COMPANY
  - The NATIONAL PORTS AUTHORITY
  - The NATIONAL CONTAINER EXPLOITATION AND FORWARDING COMPANY.

* The preparation of international agreements geared towards the promotion of national maritime transport or the development of the national merchant fleet:
  - Cooperation agreements with foreign partners
  - Agreements involving joint ventures between the Government (represented by a group of national para-public organisations) and foreign investors.

* The maintenance of close links with the United Nations Conference on Trade and Development (UNCTAD) for the promotion and development of global maritime infrastructure.

* The maintenance of close links with the Secretariat of the Ministerial Conference of West and Central African States on Maritime Transport.

On the other hand, the DEPARTMENT is now operating under the following organigramme:
Footnotes: The merchant marine development activities are carried out by the STUDIES AND DOCUMENTATION SERVICE while the Safety activities are the responsibility of the NAVIGATION and SAFETY SERVICES. The Maritime Districts are mostly in charge of registration of vessels and seamen and might exercise "port and coastal State controls" on pleasure boats and fishing vessels.

This third phase of the expansion of the MERCHANT SHIPPING DEPARTMENT is geared towards the realisation of two main objectives:

- The completion of the work begun in the 2nd phase on organisation, and
- The development of human resources to meet the demand of the DEPARTMENT and of our constantly growing fleet in personnel.
IV - 1.3.1 ORGANISATION.

It is to be noted on the one hand that the organisation of any administration is dependent on, and should be compatible with the functions entrusted on the administration by law. On the other hand, technical Departments more often than not are responsible for the initiation and generation of the activities which the law should entrust on them since the Parliament, responsible for the promulgation of laws cannot be sufficiently versed in the intricacies involved in the operations relating to the various domains which serve as pillars for the development and expansion of national economy.

The basis of this "initiation" and "generation" will mainly be the prevalent conditions or practices in other countries and the related international community as a whole. The consideration of such practices for national use must take account of inherent constraints which might render difficult their "importation" and application (incompatibility with available national resources).

The completion of the activities initiated in phase two with regard to organisation has therefore been based on analysing the various activities which the DEPARTMENT, taking into account:

* The various funds available for expansion,
* The possibilities of, and the sources for the acquisition of future additional funds for expansion,
* The level of development of the maritime sector and the expectations of suppliers and consumers of maritime transport with regard to regulating the sector,

is supposed, or is able to perform both as a merchant marine development administration and a Maritime Safety Administration.

Such analyses actually did permit the discovery of lack of harmony between the requirements of the related function - attribution laws and the expectations of suppliers and consumers of maritime transport. Various steps were thus undertaken to readjust the organisation of the DEPARTMENT (through the issue of new laws or decrees of re-organisation) although many tangent-
ial forces acting negatively on such changes and centring around the inavailability of the resources that preconditioned the reorganisation could not be discarded in the very short run.

IV - 1.3.2 DEVELOPMENT OF HUMAN RESOURCES.

After realising that in a Developing Country such as ours the training of maritime personnel (both sea-going and shore-based) should be handled, coordinated and harnessed by the Government, the DEPARTMENT put up since 1980, a training coordination scheme through which trained personnel availability will not act as an impediment to the future expansion of our young fleet in particular and the development of our maritime sector and related areas in general. This training scheme has been focused in the short run on the satisfaction of the needs of the DEPARTMENT and those of our national shipping lines - CAMSHIP.

IV - 2 COMMENTARIES, PROPOSALS AND RECOMMENDATIONS.

I would like to mention here that as a civil servant, I am bound by national laws and patriotism, both of which prevent me, on the one hand from discussing openly information considered confidential with regard to national economic development strategies and, on the other hand, from criticising subversively or nihilistically certain national practices which might be universally considered, depending on the angle from which they are examined, as not being conducive to national economic development.

Nevertheless, for the sake of this paper, we will cast a critical look on the organisation and functioning of the CAMEROON MERCHANT SHIPPING DEPART- MENT, and examine closely those areas presenting shortcomings.

IV - 2.1 GENERATION OF ACTIVITIES THROUGH PROSPECTION.

Though a man is not responsible for his conception and subsequent delivery into a particular Society, he is to a certain extent responsible for the turn his life takes. Similarly, an organisation or an administration
might not be "personally" responsible for their creation, but will play a determinant role in future successes or failures, both considered the finality or ultimate outcome of the various efforts and strategies put forth to attain set objectives-

The responsibilities of a child increase as he grows older. In a similar way, not only will the responsibilities of an organisation/administration increase as she grows bigger but also the reverse is true: an administration will grow bigger through an increase in the responsibilities entrusted on her. Such increase in responsibilities usually springs from her through full prospection of the domain she is asked to take care of.

Since 1976, though the major factor which has impeded the fast expansion of the CAMEROON MERCHANT SHIPPING DEPARTMENT has been insufficiency of developmental funds, it is to be remarked that the DEPARTMENT has not been very active in developing appropriate strategies through which an exhaustive list of all the activities of the DEPARTMENT (as a Maritime Administration) would be prepared and presented to the National Assembly for validation and recognition. It is to be noticed for example that it is only of recent (in fact through the 1983 re-organisation Decree) that the different activities relating to marine pollution prevention were officially attributed to the DEPARTMENT as part of her functions. Up till date safety maintenance within the off-shore domain is still not officially recognised as falling within her field of competence.

In view of the time it takes for reorganisation - with extension of or increase in activities - to mature (consideration being taken of the different bodies that have to study the re-organisation before the National Assembly promulgates it into law) a lot of foresight has to be shown at the preparatory stage. Such foresight will therefore permit an exhaustive evaluation, and even if the funds available in the short run are not sufficient to sustain an exhaustive organigramme, such an organigramme could be left pending for future implementation. It should be noted here that it is easier to ask for more funds from the Government for equipment and development of human resources when such equipment etc. becomes a pre-requisite to the effective implementation of an approved re-organisation.
IV - 2.2 PRESENT INTERNAL ORGANISATION.

The activities entrusted on an "Administration" can only be effectively carried out when the Administration is divided into sections (Divisions, Services, Bureaux etc.), each of which is attributed a particular activity. The number of Divisions etc. will therefore depend on the global functions of the Administration and the extent to which these functions are to be carried out.

The CAMEROON MERCHANT SHIPPING DEPARTMENT is presently divided into four main services namely:

- Studies and Documentation
- Navigation
- Maritime and River Safety
- Administration and Finance.

Each of these Services is further divided into "Bureaux".

When critically examined, the technical services (which portray immediately the two main functions of the DEPARTMENT - promotion and expansion of the merchant marine and the maintenance of safety at sea) will present some organisational shortcomings, especially with the "Safety" and "Navigation" Services.

IV - 2.2.1 MARITIME SAFETY MAINTENANCE.

- NAVIGATION SERVICE AND OBSERVATIONS.

The present organigramme provides this Service with three "Bureaux":

- Navigation "Bureau",
- Seafarers "Bureau", and
- Examination and Certification "Bureau".
The activities of these "bureaux" range from "departure controls" or inspections of vessels; administration of seafarers - working conditions, registration, and supply to shipowners or fishing companies; the examination and certification of seafarers; the homologation of professional certificates; to the administration of wrecks.

Also, since seamen in CAMEROON do not belong to a particular "Union", this Service is very involved in settling disputes between shipowners (including fishing companies) and the seamen.

**OBSERVATIONS.**

Even before examining the attributions of the "Maritime Safety Service", it can be noticed that the attributions of the "Navigation Service" are mostly geared towards the maintenance of safety at sea. This, especially if we look at the DEPARTMENT in the light of a typical Maritime Administration with a twofold function - Safety and economic/developmental activities. Putting these two Services at the same footing will obviously result in inherent friction and conflicts of competence (directly or indirectly), the outcome of which might be translated by inefficiency in the carrying out of certain functions or specific assignments. Such conflicts and friction will include:

- the traditional conflict deriving from putting two unequal items at the same level and subsequent duplication e.g. safety of navigation.

- Inability to reserve the right follow up to particular major problems.

- Rightful coordination and harmonisation of the activities of the two Services will only be effectively done at the level of the Director who has many other very important functions to carry out.

**SAFETY SERVICE.**

This "Service", in spite of the numerous functions it has to perform as a Maritime Safety Administration, comprises only two "Bureaux":
- Navigation Safety Bureau, and
- the Navigation and Search and Rescue Bureau.

It is true nevertheless that despite such an organigramme which does not portray as it were the different functions to be performed, this Administration succeeds to a large extent in carrying out the different attributed functions. But this is not without a negative outcome:

- In the first place the above situation will force the personnel of the Department to be used in a desultory manner, i.e. irrespective of the Service to which they belong and follow-up might always be difficult.

- Secondly, the bulk of the work in this Service will be physically done by the Director with a lot of strain taking into consideration his managerial and other commitments.

It is to be noticed that pollution prevention is supposed to be handled by this "Service" but nothing in the present organigramme reflects provisions for the carrying out of such activities. Finally, there is the need to mention that an Administration such as this DEPARTMENT must have a Legislation Development Service in view of the various international law instruments which she has to consider and on which related national legislation is to be based. This, unfortunately does not exist, a situation which has highly militated against the drawing up a coherent and comprehensive National Merchant Shipping Code which will reflect national character.

In view of the aforesaid, there is the need to study the possibility of merging the Navigation Service into the "Safety Service" and raising this service to the rank of Sub-Directorate. This Sub-Directorate will be re-sectioned into three or four services which will cover the whole range or at least most of the activities of a typical Maritime Safety Administration. The creation of the following Services (in broad terms) under this Sub-Directorate could be considered:

- Policy and Safety Legislation Development
- Safety of Navigation and Related Areas - Pollution prevention and Combatting
Safety maintenance - Controls, Inspections and surveys with regard to marine transportation, fisheries and off-shore activities.

Mention should be made here of the external services (MARITIME DISTRICTS) of the DEPARTMENT which are situated in DOUALA, KRIBI, LIMBE and GAROUA. The main activities of these Districts consist of the registration of all vessels - fishing boats, sea-going vessels, pleasure boats; the performance of port and coastal State controls; and the registration of seamen. A certain amount of friction seems to exist in the carrying out of controls especially in DOUALA where the "Safety Service" is more involved than the Maritime District. It is also rather difficult to determine, following the prevailing practices, whether Maritime Districts are supposed to report directly to the DEPARTMENT, or whether they are dependent on the "Safety Service" or the "Navigation Service". Traditionally (that is in view of the functions they perform) these "Districts" should report directly to the SECTION in charge of "Maritime and Interior Waters Safety".

In view of the aforesaid, a tentative re-organisation of the DEPARTMENT will have the following organigramme for the SAFETY BRANCH:
The activities of the BRANCH will be re-attributed to these Services in the following broad way:

1) **POLICY AND SAFETY LEGISLATION DEVELOPMENT SERVICE**

- Updating of Merchant Shipping Code and the Preparation of Subsidiary Legislations or "Enabling Acts".
  
  * Study and consideration of various International Conventions relating to safety in the Marine domain, and the Prevention of Marine Pollution.
  * Proposals for ratification and pre-requisites for implementation.
  * Development of additional regulations demanded by and consistent with our local situation.
  * Liaising together with Port Authority in the preparation of "By-Laws" for Port Safety and related areas - etc.

2) **NAVIGATION SERVICE**

- Implementation and Enforcement of requirements of Merchant Shipping Code with regard to:
  
  * Training and Certification of Seafarers
  * Pollution Prevention and Combatting
  * Registration of seamen
  * Crew matters
  * Administration of wrecks

3) **SAFETY MAINTENANCE (TECHNICAL SERVICE)**

- Technical activities related to construction and surveys (sea-going vessels, fishing vessels, off-shore units).
- Relationship with Classification Societies.
* Casualty Investigations
* Administration of Navigational Aids, etc.

4) MARITIME UNITS

* Registration of vessels; sea-going vessels, fishing vessels etc., and related matters.
* Port State Control
* Coastal State Control.

IV - 2.2.2 MERCHANT MARINE DEVELOPMENT BRANCH

- STUDIES AND DOCUMENTATION SERVICE

Within the DEPARTMENT, only one Service is in charge of all the activities geared towards the promotion of maritime transport. This is the "STUDY" Service which comprises three "Bureaux" - Statistics, Documentation, and Economic and Legal Studies. It is to be noted that the "Documentation Bureau" though under this Service, is more involved in safety matters than it is with economic matters.

The activities of this BRANCH are supposed to be carried out conjointly with the CAMEROON NATIONAL SHIPPERS' COUNCIL (C.N.C.C.). In practice, it is to be noted that the bulk of these activities has been carried out by CNCC for the following main reasons:

- This Organisation has the status of a para-public administration, and the problem of availability of funds for internal development or organisation and the carrying out of specific projects is not as acute as that of the MERCHANT SHIPPING DEPARTMENT.

- In view of the above mentioned item, the necessary human resources can be developed (when the need arises) in appropriate specialised institutions.
- Adequate equipment and facilities permit the activities to be carried out more efficaciously than in the DEPARTMENT.

- Fringe benefits which abound here act as an incentive, and prod the personnel to be more duty conscious, expansive and initiating.

In view of the aforesaid, there is the likelihood of C.N.C.C. taking over, in the very near future, all the activities aimed at developing and expanding the merchant fleet. In this case, the DEPARTMENT will only be considered as a Maritime Safety Administration. From the financial point of view, this might be an attractive solution. But looked at from a global economic point of view, the viability of this solution is questionable for the following main reasons:

* The status of C.N.C.C. prevents this Organisation from assuming the functions of a policy-making administration.

* The preparation and global enforcement of the Merchant Shipping Act or Code cannot be effectively done by this Organisation.

* At the international level, this Organisation might be considered incompetent to represent the nation since it is not directly a branch of the Ministry of Transport.

* Though cooperation with the Ministry of Transport might be smooth, this Corporation will neither be able, nor be allowed to defend certain commercial strategies at the level of the Ministry of Finance or the Presidency.

* Finally, the Administration will have to contribute substantially to the budget of this Corporation or be billed for certain services.

The only practicable solution will be a clear definition of, and limitation of functions. In addition, appropriate schemes through which the above-mentioned functions will be efficiently carried out at the level of the DEPARTMENT have to be developed. Such schemes will include amongst others:

* Acquisition and development of the necessary resources for carrying out the functions. Help from interested corporations might be made a right.
* Use of various incentives to prod the personnel of the DEPARTMENT into becoming more conscious of their duties.

* Development of various strategies through which the personnel will neither be under-employed, left unexploited, nor turned into a square peg in a round hole.

* Creation of a favourable atmosphere in which personnel from the two Services will work and cooperate without constraints.

IV - 3 DEVELOPMENT OF HUMAN RESOURCES.

The training of personnel in a technical administration can only be profitable and considered an asset when the following conditions are fulfilled or adequately provided for:

- The training is compatible with the functions to be carried out.

- The trained personnel has to be remunerated (including fringe benefits) following the training they have received and the responsibilities they are given.

- The basis for responsibility should be competence which, in normal circumstances, should be the physical exteriorisation of the training received and the Certificate obtained.

- Personnel has to be trained to be used. The size of an administration and plans for future expansion should be determining factors for the number of people to train and when to train them.

As earlier said in IV-1.3.2, the MERCHANT SHIPPING DEPARTMENT developed since 1980, a training scheme for the satisfaction of her needs (and those of CAMSHIP) in personnel. Before appreciating (positively or negatively) this effort, let us take a close look at the type of technical personnel needed in this DEPARTMENT.

- As a merchant marine development Administration, the following type of staff is needed:

  * Personnel with law and economic background including Maritime Law and management; Accounts and Statistics; etc.
As a Safety Administration:

* Inspectors, surveyors and administrators in general maritime affairs.

For the last four years many nationals have been trained to carry out the functions of the Merchant marine development branch whereas most of the functions of the Marine Safety branch have not been appreciated at their true value and as such the appropriate personnel has not been trained.

It should be emphasized here that the activities of a ship inspector or surveyor are so technical that a scientific background and adequate knowledge of ship technology are pre-requisites par excellence for those wishing to carry out such functions without tears or strain. These pre-requisites are fulfilled through appropriate academic training and a sea-going career. For a young Maritime Safety Administration, such personnel cannot be readily available in the short run. But also, they can only be available in the long run if appropriately planned for.

Now that the DEPARTMENT is in charge of the co-ordinatory functions of training sea-going personnel for CAMSHIP, the possibility of employing some of this personnel (after further training in ship surveying) could be looked into very carefully. Such a scheme will entail appropriate arrangements with CAMSHIP whereby some sea-going personnel (Captains, Engine room Officers, Radio Officers) who have exercised their sea-going career for a considerable length of time, could be transferred to the DEPARTMENT.

The problem of salaries (which will be relatively lower in the DEPARTMENT) and amenities (which this personnel will most probably lose while working with the DEPARTMENT) will be difficult to solve in the very short run. In the long run, the personnel will not have to complain since provision must have been made for such changes before they are trained with Government funds.

IV - 4 CONCLUSION.

In order to avoid duplication in this part, our discussions here have been limited to specific key subjects which again have been discussed without
depth. This is simply because on the one hand, most of the functions of the Maritime Administration have been detailly outlined in the foregoing sections. On the other hand, it is to be noticed that the efforts which have been deployed during the last few years to develop and expand the CAMEROON MERCHANT SHIPPING DEPARTMENT have been tremendous.

The suggestions we have dared to make here are mostly orientated towards the involvement of the senior staff of the DEPARTMENT in the expansion and development work of this Administration. Also, the importance of training personnel cannot be over-emphasized. But it should be borne in mind that effective output of trained personnel can only be ensured if:

* Training is consistent with functions to be carried out.
* Trained personnel is utilised accordingly.
* Steps are taken to give personnel adequate satisfaction, the absence of which will reduce sense of concentration, initiative and professional consciousness. The personal problems of staff, though not the direct responsibility of the Management, should not always be looked at clinically since very often they will repercuss negatively on its output.

V GENERAL CONCLUSION.

During this study, while outlaying the various conditions under which the Maritime Safety Administration will expand smoothly, we have refrained from making a list of recommendations which in many cases might have good results in Country A but negative results in Country B. It has been necessary, nevertheless, to emphasize on the appreciation of the functions to be carried out and the need to train personnel accordingly.

Another point to be accentuated here is constant cooperation between Developing Countries in both the organisation and development of their Maritime Safety Administrations. This cooperation has already been begun in many related fields by various régions and subregions and the results have been fruitful.
Mention should also be made of the fact that in many countries, the organisation of public administrations is a political issue, and the Maritime Safety Administration whether as a branch of the Maritime Administration or a separate Administration, is bound to be affected by prevailing local conditions.

In this respect, it is appropriate to mention that considering the present situation of Developing Countries, it will be more profitable for the Maritime Safety Administration to exist as a branch of the Maritime Administration since she will be closer to the users of maritime transport and related areas, a proximity which will have a positive effect on her future expansion.
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