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WORLD MARITIME UNIVERSITY
Malmö, Sweden

**AN INVESTIGATION INTO
THE SYSTEM OF MANAGING MARITIME
SAFETY AND MARINE ENVIRONMENT
PROTECTION IN THE UNITED REPUBLIC OF
TANZANIA**

By

MUSSA H. MANDIA
United Republic of Tanzania

A dissertation submitted to the World Maritime University in partial
fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE

in

**MARITIME EDUCATION AND TRAINING
(Nautical)**

2000

Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

..... (Signature)

..... (Date)

Supervised by:

Captain Jan Horck
Lecturer
World Maritime University

Assessor:

Professor Fernando Pardo
Associate Professor
World Maritime University

Co-assessor:

Professor Rui Raposo
Director of Maritime Transport
Instituto Maritimo e Portuairo at Lisbon

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ABSTRACT

Title of Dissertation: **An Investigation into the System of Managing Maritime Safety and Marine Environment Protection in the United Republic of Tanzania**

Degree: **MSc**

This dissertation is a study of the current state of affairs and the impact of new developments in managing maritime safety and marine environment protection.

Over the last few years the United Republic of Tanzania has seen many changes taking place in the maritime industry despite the tragic accident of the MV Bukoba in 1996.

As a result of trade liberalisation, shipping companies have been established ranging from operators, managers to dock yards for the construction of boats for passengers/ cargo and fishing.

The already existing organisations like Tanzania Harbours Authority and Tanzania Railways Corporation are embarking on the improvement of their infrastructure including ports in order to attract more shipping business. Another new development that is going unnoticed is the development of offshore industry in the wake of the discovery of offshore gas and an ongoing exploration of oil along the coast of Tanzania.

Chapter 1 is therefore an introduction that briefly discusses the importance of a competent Maritime Safety Administration and gives its definition.

Chapter 2 examines the current system of managing maritime safety and marine environment protection. The Government and its executive agencies' role are discussed.

Chapter 3 analyses the impact of offshore oil industry development on the management of maritime safety and marine environment protection. The need for updating legislative instruments to cope with such developments is also discussed.

Chapter 4 discusses the implementation of international maritime legislation and the important international maritime conventions for implementation are highlighted for immediate attention.

Chapter 5 describes modes of Maritime Administrations as they exist in some developed countries.

The concluding chapters are summarising the result of the investigation by giving recommendations based on findings.

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LIST OF ABBREVIATIONS

AMSA	Australian Maritime Safety Authority
ATC	Australian Transport Council
BP	British Petroleum
CAC	Commonwealth Authorities and Companies
COLREG	International Regulations for Prevention of Collision at Sea 1972
CSC	Chief Safety Officer
DWT	Deadweight Tonnes
EEZ	Exclusive Economic Zone
EU	European Union
GRT	Gross Registered Tonnes
IALA	International Association of Lighthouse Authority
IAMSAR	International Aeronautical and Maritime Search and Rescue
ICAO	International Civil Aviation Organisation
IMO	International Maritime Organisation
IPIECA	International Petroleum Industry Environmental Conservation
ISM	International Safety Management Code
MARPOL	International Convention for the Prevention of Pollution from
MCA	Maritime and Coastguard Agency
MNOAT	Merchant Navy Officers' Association of Tanzania
MRC	Ministerial Restructuring Committee
MA	Maritime Administration
MSA	Maritime Safety Administration
MV	Motor Vessel
NEMC	National Environment Management Council
NMD	Norwegian Maritime Directorate
NMSC	National Maritime Safety Committee
OH&S	Occupational Health and Safety

PIC	Presidential Implementation Committee
PS	Permanent Secretary
PSA	“Model Production Sharing Agreement”
SAR	Search and Rescue
SBM	Single Buoy Mooring
SOLAS	Safety of Life at Sea
SPM	Single Point Mooring
STCW	International Convention on Standards of Training Certification and Watchkeeping for Seafarers
THA	Tanzania Harbours Authority
TPDC	Tanzania Petroleum Development Corporation
TRC	Tanzania Railways Corporation
UK	United Kingdom
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
USA	United States
VLCCs	Very Large Crude Carriers
ZPC	Zanzibar Ports Corporation

CHAPTER ONE

Introduction

It is almost impossible to talk about management of maritime safety and marine environment protection without associating it with maritime administration or rather maritime safety administration. Therefore the purpose of this chapter is to give an outline of the principle functions of a Maritime Safety Administration (MSA) as opposed to a Maritime Administration (MA). The chapter also highlights a few of the problems that have existed and still do exist in Tanzania's maritime industry. The author hopes that readers may be able to understand the basic differences between MSA and MA by having a quick reference, and hence be able to appreciate the various arguments that are to be presented later on in the text.

1.1 Maritime Safety Administration and its importance

The role of a MSA organisation within the framework of national overall maritime activities is to provide the government with the machinery, which would enable it to satisfactorily and efficiently undertake those functions, which are embodied within the national maritime laws.

These functions can generally be divided into two parts such as: the implementation of the requirements of international safety conventions, and national rules and regulations.

The primary functions of a MSA in a country also have to be both developmental and regulatory. The developmental functions, which contribute directly to maritime development, can take the form of participation in the process of formulating the policy of the government and deciding upon the activities to be undertaken in connection with such developments. These functions are essential contributions to the overall economic policy decisions to be taken by the government after careful consideration in the Economic and Planning Ministry/ies while the regulatory functions are expected to ensure safety of life, ships and property, and marine environment protection. The government should, in relation with the MSA, carry out the various maritime activities through all its specialised subdivisions, agencies and co-ordinated semi-governmental/ individual bodies.

1.2 Treaty Obligations

All developed maritime countries and the majority of the developing countries are parties to a range of IMO conventions. To a varying degree they may also be party to ILO maritime conventions. However, their adherence to the consequential obligations is less uniform.

A maritime administration which wishes to maintain international recognition of its capabilities must be strictly in a position to guarantee the effective enforcement of treaty standards on ships flying its flag and provide essential navigation services.

1.3 Safety Standards - International Standard Making

Standards developed in the various international organisations have been agreed as minimum standards. Many developed maritime countries had higher standards than others did in the past. When new regulations from IMO were formulated over the last twenty six years, i.e. between late seventies and early eighties, most of these countries have taken the opportunity to allow international minimum standards to catch up with

their own. In the case of ILO, maritime standards are mainly developed by a tripartite process involving: ship owners, seafarer organisations, and governments.

Despite resource constraints every progressive maritime administration maintains its level of representation at IMO in order to ensure and sustain the benefits of common international standards.

1.4 Safety Standards - National Standards Making

Maritime administrative arrangements in various countries reflect the particular national constitutional, political and other social systems as in the administration as a whole. The variations in the arrangements between countries are not important in themselves, but rather their impact on the effective standard setting and implementation, and on efficient resource utilisation.

Most developed maritime countries have a process of scrutinising proposed legislation for essentiality and for side effects. Consultation varies widely between the formalised process of proposed rule-making and less formal consultation with industry at various stages. Similarly, practise varies widely in providing representation to the full spectrum covering government, industry, and labour often seen in the delegations of traditional maritime countries.

1.5 Conflicting Controls (Politics and Economics)

There can be a conflict between the search for economics and effective risk management in Maritime Safety Administrations unless clear aims and statements of levels of service exist.

In real life the risks are both operational and political. Some administrations modify their control arrangements to meet economic pressures rather than acting to achieve balanced management of safety and risk. The “Herald of Free Enterprise” marks the exception when public awareness was focused on maritime accident in a sustained fashion and this case highlight lacuna in administration as well as operator

incompetence. In Tanzania this can easily be compared with the case of the sinking of MV Bukoba under TRC, the collision between MT Uhuru and MV Mtwara under Zanzibar Shipping Corporation and Tanzania Coastal Shipping Line respectively. These led to loss of lives and property, not to mention others of similar phenomena.

The quality of ship operation, ship management, maritime administration and other related activities like marine insurance have a tendency of being closely linked through their common source of recruitment from among national maritime personnel. Declining crew sizes and related career uncertainties are likely to affect all these areas of the industry. As an example, the TRC Marine Division (and now the Marine Services Company Limited) has for many years been suffering from shortage of qualified personnel. The problem could have stemmed from two different sources i.e. an internal one, where the management treated seafarers like locomotive drivers or bus drivers by denying them both traditional and professional rights. On the other hand since the Government did not have a competent maritime administration which is still the case today, there has been no attempt to intervene and have a permanent solution to the problem. Expatriates were once employed from overseas and paid dearly. The same happened for the Tanzania Harbours Authority in the case of Harbour Pilots.

However it is important to mention that, no obvious solutions can be identified and it is an area which needs continuous and careful review especially in this era of trade liberalisation where competition seem to be rampant.

Nevertheless every MSA, as the controllers of safety at sea and marine environment protection, should secure a sufficient number of staff as specialists, and ensure their training in regulatory skills, which shall in turn ensure the quality of service.

It is in the author's opinion that in the absence of a MSA there should at least be a National Maritime Safety Committee, which should look at all, problems in the industry and evaluate their political and economic impact. The Committee should be co-ordinated by the parent Ministry, whether it is independent or joint, by administration(s), ship owners, and labour union such as the Tanzania Seaman Union,

the Merchant Navy Officers' Association (MNOAT) and the National Research Institute(s) under various funding agreements for tangible national benefits.

1.6 Use of Agents

All Maritime Safety Administrations around the world do use agents to undertake certain functions. The obvious example is that of Classification societies, but other examples extend to groups such as the Tanzania Bureau of Standards (for material testing), and private companies like SGS (Societe Generale' Surveillance), Inchcape, Balcom etc. who are used for cargo surveillance. Practice may differ from agents acting for and certifying on behalf of administrations, to acting for and reporting to administrations who then issue the certificates. Unless the arrangements are clearly established they can be confusing to the parties and to industry, and capable of misinterpretation.

Apart from the economic impact of an agent's decision being reversed at a later stage for some valid reason, the uncertainty can cloud the issue of responsibility and liability. Therefore, every MSA using agents to undertake certain maritime safety functions should legally establish a relationship with those agents from the point of view of responsibility and liability, and retain sufficient in-house competence to intelligently audit the agents' activity and to take corrective action.

1.7 Relationship with Classification Societies

In most maritime countries, three distinct levels of relationship exist between the MSA and the classification societies. In German and USA for example, there are formal legal links with their own national societies and with other societies not having a comparable role. In Norway and the United Kingdom, the national society has primacy but not to the extent of excluding other societies; and in Australia, the MSA deals with foreign societies. All these countries draw, or would draw, a distinction, in considering recognition to act on their behalf, between the IACS members with worldwide operations and other societies with purely national roles.

The distinction is based on their superior capability in research and analysis to support their field operations and their capacity to serve the administration's ships wherever they trade, together with a degree of mutual confidence established.

The relationship between the MSA and classification societies can be controversial especially where the MSA is willing to exercise its control responsibility effectively while the assigned classification proves to be either more relaxed or performing inadequately. Therefore, every MSA should audit classification societies and anybody else for quality assurance and safety at sea from three main points:

- management and rule making in the society;
- internal quality assurance process; and
- the product expected from the Classification Society or any private organisation

1.8 Operational Standards

Maintaining acceptable operational standards is more complex than achieving standards for hardware. There is a fine balance between education and motivation, training, policing and investigation, correction and sanctions for failure to maintain standards. Useful, but by no means comprehensive documentation exists from sources including IMO and individual administrations of progressive maritime countries.

However, there can be little argument that ship operating standards affecting the interaction with other ships, any port, coastal and ocean environments are primarily ones for administrations to determine in view of the public interest issues they arise. On the other hand, it is not unreasonable for administrations to press the responsibility for industrial safety on their own ships firmly onto operators, seafarers, and the insurance industry, while accepting that this does not take place in a vacuum.

1.9 Crew Competence

It is not uncommon to see foreigners on some of the Tanzania registered vessels taking command in the name of expatriates. Some of the so-called expatriates, are the ones who have invariably been involved in accidents in broad daylight.

The most traditional maritime administrations however, are still facing this problem. This problem which is also familiar to countries like Canada and Australia with significant migrant intakes, is the evaluation of foreign education, training, qualifications and ability.

It is very difficult to evaluate some of these factors within the unfamiliar systems even when problems of document translation are overcome. The need for close co-operation between operators and any MSA can not be over-emphasised. With random or changing recruitment sources the problem will remain.

1.10 Marine Accident Investigation

The separation of accidents investigation from direct safety administration is recognised as an important element in avoiding a conflict of interest or at best the appearance of conflict. Sometimes the conflicting aims of education and prevention on the one hand and the need for disciplinary action are well recognised. Conflicts of interest within an administration are also recognised. Therefore, an accident investigation system within the MSA still remains in some countries, primarily

because of cost-effectiveness and rapidity. Currently, it is a common practice in Tanzania for the Government to assign experts to do investigation in case of a mishap. However in the author's opinion this is not a subject for discussion, at least for the moment when even the establishment of a MSA itself is still foggy.

CHAPTER 2

Maritime Safety and Marine Environment Protection in the United Republic of Tanzania

In this chapter the author looks at role(s), functions and organisation structure of the Ministry of communications and transport, and its administrative relationship with various relevant government agencies in managing maritime safety and marine environment protection in Tanzania. Since the purpose is to review the effectiveness of the system in use, the author wishes to use this particular chapter in analysing the roles and functions as stipulated.

Much of the information in here is based on personal interviews with officials of relevant organisations, reflection of various documents and Acts in use, backed up by the author's twenty-three years experience at operational and medium management level in maritime services in the country.

2.1 The Ministry of Communications and Transport and its role

In order to have a better understanding, management of maritime safety and marine environment protection should be divided into four parts;

- policy making,
- regulating,
- services and,
- enforcement

Let us therefore look at the structure of the Ministry and how it effects its duties and responsibilities as a policy maker.

A Minister who is also a Member of Parliament leads the Ministry of Communications and Transport. He (the Minister) is appointed by the President of the United Republic of Tanzania to take his position as a ministerial political head.

Immediately under the Minister is the “Permanent Secretary”(PS) to the Ministry. The Permanent Secretary is normally the person who runs the day to day activities. He is not supposed to be a politician but a pure professional civil servant.

Next to the Permanent Secretary are heads of divisions who are generally titled as “Directors” unless otherwise stated. The directors are purely professional people in their respective divisions and supposedly their subordinate staff. Under the directors are sectional heads.

In a recent restructuring study carried out by the Ministerial Restructuring Committee (MRC), it was sought to make some changes with a view to improve efficiency. To reflect results from the study, the Ministry recommended restructuring and establishing three new executive agencies, which were then approved by the Presidential Implementation Committee (PIC). See Appendix 1. The Ministry is therefore made up of three divisions and three units as follows:

- The Transport and Communications Division,
- Policy and Planning Division,
- Administrative and Personnel Division,
- Government Aircraft Unit,
- Accounts Unit, and
- Internal Audit Unit

The dotted boxes in the diagram indicate the new “Executive Agencies” of which three are completely new, that is: Road and Traffic Authority, the Communication

Commission and the Marine Safety Authority. The other agencies in dotted boxes have been existing as directorates and have now been upgraded to full agencies. All the above agencies are now in existence except the Marine Safety Authority.

It is in the Ministry recommendations that, Executive Agencies are semi-autonomous publicly accountable organisations managed by Chief Executives at arms-length from the Government. And that they remain part of the government having discrete business units with clear responsibilities and business boundaries.

It is also recommended that, Agencies should receive all the delegations of power and authority over their resources necessary to meet their responsibilities. They become more and more self sufficient in managerial and, in some cases, financial terms. Some agencies should be able to generate all their income from charging fees and trading. Others will remain dependent on Government subventions, and there will be a spectrum of combinations in between.

2.2 Vision and Mission of the Ministry

Following the restructuring exercise was a new set of “Vision and Mission”. The vision statement was given as:

“The vision of the Ministry of Communications and Transport is to have an overall responsibility for the integrated development, effective and efficient operations of the two sub sectors of transport and communications”.

(National Transport Policy. 1999).

In view of the above statement the Ministry will be charged with:

- Reviewing and updating policies and regulations to facilitate the smooth and efficient development, management and operations of the sub-sectors.
- Producing strategies and plans for the integrated development of all sub-sectors of road transport, railways, airport and air transport operations, and maritime transport

- Monitoring and evaluating operations and financial performance of the sub-sectors, institutions and the overall sector of transport and communications to ensure maximum efficiency and for maximum benefits from the investments.

The mission statement was given in form of objectives as:

- To provide efficient and effective domestic and international transport services.
- To maximise foreign and local revenue generation in transport sector.
- To minimise transport operational environmental hazards.

2.3 Functions of the Ministry

In line with the given “vision and mission” statements the restructuring committee came up with a list of functions for the Ministry as to:

- Initiate and co-ordinate policies, objectives and strategies on surface, marine, air transport, posts and telecommunications.
- Oversee and co-ordinate performance standards.
- Monitor and evaluate overall sector of transport and communication operational performance.
- Develop, approve and evaluate performance contracts.
- Produce policy on the process of restructuring, divestiture, commercialisation and privatisation of parastatals in the transport and communication sector.
- Initiate and co-ordinate regulatory framework.

2.4 Transport and Communications division (Maritime Section)

For the purpose of this dissertation it is considered ideal to concentrate on the Transport and Communications Division under which the marine section is located. The purpose of the Transport and Communications Division is “to provide effective oversight in developing, monitoring, evaluating and co-ordinating transport and communication services”.

The specific activities for the marine section are therefore given as follows:

- *“Formulating policy on ports and shipping operations.*
- *Adopting and implementing international maritime convention and the related instruments.*
- *Compiling the sub-sectoral data.*
- *Liassing with national and international organisations responsible for maritime transport.*
- *Develop, approve and evaluate performance of contracts.*
- *Investigating marine casualties (accidents).*
- *Initiate regulatory and legal framework.*
- *Ensuring that training institutions abide with the specialised and technical training as per ratified conventions and standards.*
- *To receive reports and recommendations from probes on Maritime casualties and oversee their implementation”.*

(National Transport Policy. 1999)

In the list above already there exists a conflict of interest where the Ministry is to carry out casualty investigations (or accidents), initiate regulatory and legal framework, and at the same time be the body to approve. The Ministry should only be approving what has been initiated by a Maritime Safety Administration. On the other hand how can the Ministry be doing casualty investigation and at the same time be on the receiving end of reports?

The author is of the opinion that, the move taken by the Ministry to embark on a restructuring exercise is a clear indication of the recognition for the need to improve the Transport sector in every respect. It is also considered to be a positive move in the Ministry of Communications and Transport where for many years there has never been a clear and consistent policy to be followed. This is conceived as one of the main draw back in the management of maritime safety and marine environment protection.

FIG. 1



Port of Dar-es-Salaam

Source: Tanzania Harbours Authority

2.5 Management in Coastal waters

The Tanzania Harbours Authority is a service agency under the Ministry of Communications and Transport, apart from running ports activities such as handling of ships and their cargo, pilotage, maintenance of navigation aids etc. It is also delegated

through the Senior Harbour Master's Office under clause 312 of the Merchant Shipping Act to take the role of General Superintendence in managing maritime safety and marine environment protection in ports and coastal waters.

Limitations and deficiency in its delegated powers are to be mentioned at a later stage.

2.6 Management around the Zanzibar Islands

The ports around the Zanzibar Islands should ideally be under the jurisdiction of the Tanzania Harbours Authority, however for reasons not known to the writer, the management of maritime safety and marine environment protection around those islands falls under the Zanzibar Ports Corporation. The Zanzibar Ports Corporation is also a service agency under the Ministry of Communications and Transport of the Revolutionary Government of Zanzibar.

The ambiguity as well as limitations shall also be discussed at a later stage.

2.7 Management in Inland waterways

Management of maritime safety and marine environment protection in inland waterways has for quite some time been left to Tanzania Railways Corporation (TRC) Marine Division. However with recent upgrading of the Division to an autonomous company (Marine Services Company Ltd) for economic reasons, the TRC has now been relieved of this obligation.

The Marine Services Company operates vessels on three big lakes in the East African Region namely, Lake Victoria, Tanganyika, and Nyasa (see Appendix 5).

The three lakes are shared with other neighbouring countries having their own vessels operating between their ports as well as into Tanzania's ports.

One may now realise that in the absence of a Maritime Safety Administration it is this particular small section of the Ministry, which shall be canvassing all the duties, and

responsibilities of a fully-fledged Maritime Safety Administration as indicated by its list of activities as cited above.

Recalling the four main parts in managing maritime safety and marine environment protection i.e. policy making, regulating, services and, enforcement. It should be clear that in the existing set up, there is bound to be a conflict of interest and at times confusion in the part of those who have to undertake the role of Maritime Safety Administration.

2.8 The Need for a Maritime Safety Administration

Having seen what the Ministry is doing it is now considered necessary to expand on the general explanation given under section 1.0.

According to a former Professor in Maritime Safety and Marine Environment Protection at the World Maritime University the following should be the objectives of a Maritime Administration:

1. The object of a Maritime Administration Organisation within the framework of a country's overall maritime activities is to provide the Government with the machinery which would enable it to satisfactorily and efficiently undertake those functions which are embodied within the country's Merchant Shipping Legislation (i.e., National Maritime Laws). These functions would include the implementation of the requirements of International Maritime Conventions, and National Rules and Regulations framed under the Authority of the Merchant Shipping Act.
2. In pursuing its activities in the development of the maritime field. Need to have an efficient administrative machinery to advise them on the adoption and implementation of the National Legislation and other Regulations, required for developing and operating the maritime programme of their country, and for discharging the obligations of the Government under International Conventions which may be applicable.

3. This machinery can best be provided through an well-organised Maritime Administration. Such an Administration will also be responsible, under the general direction of the Ministry responsible for Transport, for providing and organising the appropriate facilities for the Survey and Certification of ships. And the training, examination and certification of ship masters, engineers and other maritime personnel. As a whole, the areas affected within the ambit of Maritime Administration activities are: the Ownership, Registration, Management, Operations, and upkeep and maintenance of National Shipping Fleets, and other related maritime activities such as shipbuilding, ship-repairing, dry-docking, port operations and maritime training.

4. The operational aspects of a Maritime Administration within the context of Safety of Life at Sea, take the form of:
 - General Superintendence and Co-ordination
 - Registration of ships and related functions
 - Surveys, inspections and certification of ships
 - Port State control of foreign ships
 - Inspections and detention of unseaworthy / unsafe ships
 - The conducting of Examinations leading to, and the issuance of the appropriate Certificates of Competency and / or Proficiency to various seafaring personnel
 - Manning of ships
 - Conducting inquiries / investigations into shipping casualties
 - Dealing with matters pertaining to prevention / control / combat of marine pollution
 - Crew matters
 - Registration of seaman
 - Wrecks
 - The adoption and implementation of International Maritime Conventions
 - Advice to Government on maritime matters”.

Vanchiswar, P.S. (1996). (pp. 7-8)

2.9 Potential causes of inefficiency

In the context of the above objects it should now be even clearer that no efficiency could be achieved without the establishment of a Maritime Safety Administration.

In the author's opinion the following facts may be cited as potential causes of inefficiency in the management of maritime safety and marine environment protection in Tanzania, these are:

- By the Ministry undergoing several structural changes such as, merging or separating it from the Ministry of Works, there has been a tendency of paying more attention to road / rail transport safety. This is due to the being more aware of accidents in those sectors than in the marine sector.
- On the same token, this has caused lack of a sound policy in managing maritime safety and marine environment protection, hence lack of guidance for those vested with the responsibility of looking after maritime affairs.
- In the absence of a sound maritime policy, changes in personnel have also contributed in an inconsistency in the system of managing maritime affairs.
- Lack of maritime professionals in the division responsible for maritime affairs has contributed even further in the Ministry's failure to accomplish its obligations competently and confidently.

It is in the author's opinion that subject to the above reasons, the Ministry of Communications and Transport has had no choice but to assign or delegate its duties to individuals and its "service agencies". In as far as managing maritime safety and marine environment protection the following are typical examples of delegation of duties that contribute to potential inefficiency:

1. Contracting private companies to undertake annual surveys.

2. Casualty investigation / and or inquiries are done by summoning experts from various Government institutions rather than having a designated department.
3. Maritime Professional Examinations are prepared and conducted at the Maritime Institute and inviolated by professionals appointed by the Minister, (in the name of board of Examiners) and who have their own other duties as assigned by their respective employers.
4. Port State Control “if any” is conducted in ad hoc by THA using the Harbour Master’s office personnel in various ports.
5. The Minister had to delegate his powers for General Superintendence and Co-ordination to Senior Harbour Master in the port of Dar-es-Salaam by making him the Merchant Shipping Superintendent.
6. The receiver of “Wrecks” is in the Treasury (Customs) department under the Ministry of Finance instead of Maritime Safety Administration.
7. The Manning of ships i.e. signing on and off is handled by the Ministry instead of a Maritime Safety Administration.
8. Registration of ships is done by two Authorities having equal powers of registration but with different operating standards i.e. Ministry of Communication and Transport under the United Republic of Tanzania and a similar Ministry under the Revolutionary Government of Zanzibar. This has caused unique problems where some ship-owners had the opportunity to dodge the law by seeking leniency from one side of the registration authorities.
9. Dealing with matters pertaining to prevention / control / combat of marine pollution is done separately by THA and TRC by formulating their own Rules.
10. Supervision of Shipbuilding, Docking and Repair of ships has not been properly addressed. With “Trade Liberalisation” the country has seen a number of private companies emerging with the interest of either importing or building small passenger /and or cargo vessels for use in inland or coastal waters (see section 2.10(5)). The safety integrity of such vessels shall remain a nightmare for as long as there is no close supervision by an appropriate Government Agency.

11. Following the above initiation by private companies, the question that follows is the competency of those manning such vessels and even worse those managing such companies in sensitive positions such as “Marine Superintendents.
12. Use of professional bodies for advisory purposes such as the Merchant Navy Officers’ Association of Tanzania (MNOAT).

2.10 New developments (yet another challenge to the Administration)

Under this section the author seeks to note and quote some relevant information from recent newspapers (retrieved from the Internet), that call for even more improvement in the management of maritime safety and marine environment protection in Tanzania.

2.10.1 “Dar es Salaam Harbour Opens Modern Terminal for speed boats”

“Dar-es-Salaam Harbour has opened a modern terminal for sea boats bound for Zanzibar that has significantly speeded up boarding and disembarkation of passengers. A senior public relations officer at the port of Dar-es-Salaam, told *The East African* that the construction of the modern passenger terminal was part of a multi-million shilling port rehabilitation project commenced in December 1998.

The Dar-es-Salaam port rehabilitation project, worth T.Shs 19.2 billion (\$ 24 million), was financed by the Tanzania Harbours Authority (THA) and the Netherlands government.

With a draft of 10.7 metres and 140-metre wide channel, access to the port has been greatly boosted by the provision of new navigation aids and lightening of the entrance channel. The port can now service ships around the clock, loading or offloading general loose cargoes, containers and grains.

The rehabilitation of the port has enabled vessels larger than 40,000 dwt (fourth generation vessels) to enter the port. The first large ship to berth in Dar port was the 64,000-tonne *MV Liberty Sun* on April 4. It offloaded 10,000 tonnes of rice and maize within 24 hours instead of the usual three days.

The dredging has already reduced waiting time for ships entering or leaving the port by reducing the transit time and permitting movements at most states of the tide and at night. Previously, ships could only enter the port during the day.

All these improvements lead to lower shipping costs for the overall trade arising from reduced waiting time for ships in port and increased ship load,”

(The East African. 2000, May 1).

2.10.2 “Mtwara Port Will ‘ Open Up’ Southern Africa”

“ The planed expansion modernisation of Mtwara port is expected to help four landlocked countries transport their bulk cargoes.

Mozambique, Malawi, Zimbabwe and Zambia will be the main beneficiaries as Tanzania opens up this mineral rich-area.

The move follows an initiative by Tanzania and Malawi to set up the Mtwara Development Corridor that aims at unlocking the wealth of Tanzania’s south and providing landlocked Malawi a shorter and more direct route to the Indian Ocean via Mtwara port.

With the expansion and modernisation, the port will provide facilities for international cruise ships that sail the Indian Ocean. Such ships call at Cape Town, Port Elizabeth, Durban, Maputo, Dar-es-Salaam, Zanzibar and Mombasa. They will be able to bring visitors to southern Tanzania tourist attractions, while cargo ships will load and offload cargo for countries in southern Africa.

The Lindi port and Mafia Island harbour in southern Tanzania have also been upgraded to boost business in the south. The Government of Denmark has pledged to donate Tsh. 200 million (\$ 250,000) for the Mafia Island wharf expansion and modernisation programme, due to begin this year.

Mtwara port is a natural harbour, one of the major ports managed by THA, is being developed within the framework of the Southern Africa Development Community.”

(The East African. 2000, April 21).

2.10.3 “New Ferry for Ruvuma River due Next”

“The Tanzania and Mozambique Friendship Association (Tamofa) will buy a new ferry to ease transportation problems between southern Tanzania and northern Mozambique.

The ferry is a prelude to the promised Friendship Bridge, to be built jointly by the two countries to provide a permanent link between them. Currently, there is no bridge across the wide Ruvuma; travel is by canoes and other small boats.

The German-made pontoon meets the Safety of Life at Sea (SOLAS) standards and will ferry both people and cargo only during the day.

The pontoon would run at a speed of 15 knots and be equipped with life and rescue boat facilities. It will have capacity two trucks and four land Rovers, passengers and their cargo.

(The East African. 2000, April 21).

2.10.4 “Delayed Transport Deal Holds Up Lake’s Tourist Cruises”

“The MV Victoria, which stopped sailing between Mwanza and Port Bell last November due to high operational costs, cannot resume services by June 16 due to delay by Tanzania Railways Corporation (TRC) to finalise a transport deal with Transafrica Touring Company.

Transafrica officials claim that there many tourists waiting for the ship to make guided expeditions to the Ngamba chimpanzee island, boat wildlife, exotic bird and nature expeditions to the Ssesse islands. The MV Victoria can carry 1200 passengers and up to 300 tonnes of cargo. She was built in 1960 and is the largest passenger ship owned and operated by TRC.

The islands are some of Uganda’s little known tourist destinations.”

(The East African. 2000, April 17).

2.10.5 “Firm to Open Ship Building Plant in Dar”

“A PRIVATE Dar-es-Salaam maritime firm will soon start manufacturing small fishing vessels, fishing barges, small ferries and small trawlers made to international

specifications. The Dar shipyard would also undertake repairs of ships and other steel vessels plying the Indian Ocean coastline of Tanzania.

The boats will comply with rules and regulations for the construction of vessels as laid down by the Tanzania's Ministry of Communication and Transport.

Small ferries to be constructed will have a capacity of 100 passengers and cruising speed of 29 knots.

It is expected that introduction of the locally made marine vessels will increase their availability, improve the safety of the seagoing population and ease transportation in Tanzania's coastal and inland waterways.

TanBoat is the second company to engage in boat making in Tanzania, the first being the Mwanza-based Songoro Maritime Transport Boatyard, started operations in 1998. (The East African. 2000, April 14).

2.10.6 “Tanzania Waters Unsafe Four Years After Bukoba”

“Four years after Tanzania witnessed its worst marine disaster near the port of Mwanza in Lake Victoria, when the MV Bukoba capsized in 1996 killing 800 people, the country still lacks effective and well co-ordinated search and rescue services.

Marine and aviation experts say most of the victims would not have died if Tanzania had had a well co-ordinated search and rescue service in place on the lake.

The marine experts say even after the Bukoba tragedy in May 1996, Tanzania had not done anything significant to monitor marine distress and prepare a comprehensive rescue plan.

The aeronautical SAR manual of the International Civil Aviation Organisation (ICAO) has been merged with the IMO SAR manual and are now one consolidated manual, commonly referred to as the International Aeronautical and Maritime SAR Manual (IAMSAR).

“Before, it was assumed that the search and rescue operations would automatically be carried out by Marine Police, the Navy and the Port and Ferry services, but it dawned on us that we were wrong when we faced the major Lake Victoria marine accident of

May 21, 1996,” “When the MV Bukoba capsized and sank, killing nearly 800 passengers, we realised the dangers associated with marine navigation and the need to regulate maritime services.”

The government has since been in the preparation of a National Search and Rescue (SAR) Plan and a National SAR Manual (Maritime and Aeronautical).”

(The East African. 2000, May 1).

2.10.7 Impact of the above developments on management of maritime safety and marine environment protection

All the above items with exception to item number five have positive impact to the economy of the country and therefore to the social well being of the population. However if we are to analyse one by one the most likely conclusion will be an increase in maritime operations both on coastal waters and in inland waterways with the following end results:

- more ships will be calling the ports
- more passengers and cargo will be carried per year

With point number five lacks of a Search and Rescue Organisation, we may conclude that the Administration is not really prepared to face any catastrophe.

One thing is obvious that increased traffic means increased risk of all other dangers associated with maritime adventures. We are therefore looking at more risk to safety of people and property and from oil pollution from ships.

The outcry from experts in the industry is a sign of dissatisfaction, increasing public awareness and a demand for improved safety standards in the management of maritime safety and marine environment protection.

In this chapter the author has attempted to analyse the role of the Ministry of Communications and Transport in managing maritime safety and marine environment protection in Tanzania as it is today.

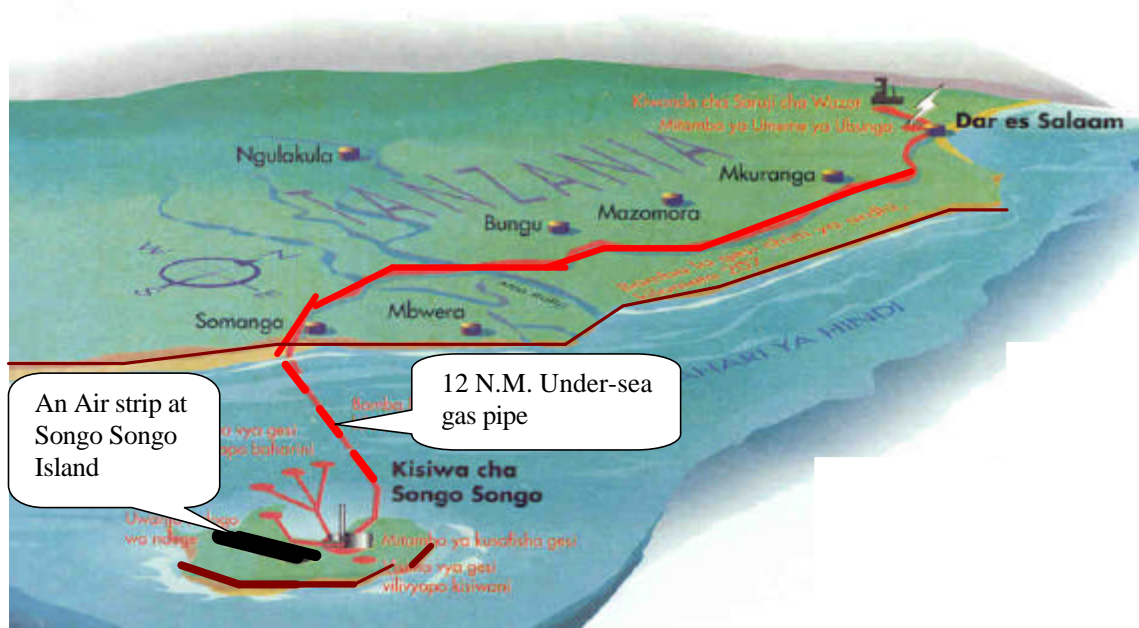
It has been clear under various sections that there are potential causes of inefficiency that need to be addressed. New developments such as shipbuilding; ship management and operation by private companies; and the manning of such vessels calls for a more organised system. The need for harmonisation and improvement of safety standards in inland waterways can not be over-emphasised.

CHAPTER THREE

The Oil industry and the discovery of Offshore Gas

In this chapter the author discusses the ongoing exploration of offshore oil, the discovery of offshore gas in Tanzania, and its impact on the management of maritime safety and marine environment protection.

FIG. 2



Tanzania's first offshore gas supply pipe

Source: Tanzania Petroleum Development Corporation

It is said that the search for oil and gas to satisfy the world's growing energy demand has increasingly moved offshore. This trend, plus widely publicised accounts of

several blowouts and spills resulting from drilling and producing activities, has given rise to public concern about the impact on the offshore environment.

Drilling offshore is normally more difficult and significantly more expensive than drilling onshore. But the potential reward is also greater. There is a better chance of finding large fields of significant production in the undrilled offshore basins than in the mature, well-drilled onshore producing areas. It is stated that:

“In 1979 offshore areas accounted for an estimated 13 million barrels daily, or about 20% of the world-wide crude oil production of approximately 63 million barrels daily”

(Exxon Corporation. 1980, p. 2.)

During the research period in December 1999 the author visited the TPDC offices “Exploration Department” and had the opportunity to discuss with the Chief Geophysicist.

This chapter is therefore made up of a combination of information from interviews, professional textbooks, Internet texts and relevant Acts etc.

3.1 Oil and gas exploration in Tanzania

Tanzania’s Upstream Profile, with its oil seeps, seismic and other data, shows strong hydrocarbon potential. However, only 23 wild exploration wells have been drilled in a 222,000 sq. km area, and therefore Tanzania can be classified as underexplored.

Oil exploration in Tanzania started way back in 1952 when the British Petroleum (BP) and Shell companies were awarded a concession covering the onshore coastal basins and the islands of Zanzibar, Pemba and Mafia.

The second exploration phase coincided with the formation of the Tanzania Petroleum Development Corporation (TPDC) in 1969 when Agip were awarded a concession covering a similar onshore areas to that held by BP but which also included the continental shelf to a water depth of 200 metres. From 1973 to 1982 Agip were joined

by Amoco and drilled three onshore and 3 offshore wells resulting in the discovery of the Songo Songo and Mnazi Bay gas fields.

The government expects that the realisation of the Songo Songo gas-to-electricity project will attract more companies to acquire acreages for exploration.

It should however be recalled from the previous chapter that despite having 48 years of oil exploration, Tanzania is yet to have an established Maritime Safety Administration. However a former World Maritime University Professor has it all:

“In developed countries the structures and the roles of the Maritime Administrations have been the results of circumstantial evolution and not necessarily planned from the beginning. Therefore, there are likely to be areas deserving improvement and/or strengthening.

On the other hand, developing maritime countries, particularly those which are in the early stages of development, can be said to have the advantage of creating pre-planned structures and functional approaches, provided that all concerned have proper understanding of the objectives, criteria and functions.”

(Vanchiswar P. S. Rev.1996, p. X)

In the light of the above said facts, it is the author’s intention through this chapter to examine the various legal provisions and their practicability in connection to the management of offshore safety and marine environment protection. The processes involved in oil exploration are also described in order to appreciate their implication. It is considered that, this approach would allow the writer to establish areas of concern for the Ministry of Communications and Transport, responsible for maritime safety and marine environment protection. It should also be a basis for even better policies and clear line of action between the different Ministries and their relevant agencies on how each of them should effectively and efficiently be involved in the offshore industry.

3.2 The Tanzania Petroleum Act

While the Ministry of Communications and Transport through its Merchant Shipping Act, generally regulates the management of maritime safety and marine environment protection, the Ministry for Water Energy and Minerals regulates the Oil Industry. Petroleum exploration and development in Tanzania is governed by the Petroleum (Exploration and production) Act 1980. These Act vests title to petroleum deposits within Tanzania in the State, and are designed to create a favourable legal environment for exploration by oil companies.

The National Energy objectives are set out as:

- *“Exploitation and utilisation of the country’s abundant indigenous resources such as hydroelectricity, coal and natural gas.*
- *Reduction of dependency on imported petroleum products.*
- *Stemming of woodfuel depletion and use of woodfuel in a sustainable and ecologically sound manner.*
- *Development of indigenous manpower capacity in the development of the energy sector.”*

(Govt. of Tanzania Oil Industrial Sector. 1999)

The Petroleum Act therefore expressly permits the Government to enter into a petroleum agreement under which an oil company may be granted exclusive rights to explore for and produce petroleum. Tanzania Petroleum Development Corporation (TPDC) is granted the licences under the Act with the Government and TPDC entering into agreement with the oil companies.

The Act also provides for the exploration, appraisal, development and production periods.

With regard to the management of offshore safety and marine environment protection the Act remains extremely silent, however, a special supplement namely the Petroleum

(Conservation) Act, 1981, provides under its Part II, number 5 sub-sections (g) to (j) that:

The Minister may make regulations generally for the better carrying out of the purposes and provisions of this Act, and may in those regulations-

(g) Regulate the description and construction of vehicles and vessels to be used in the conveyance of petroleum by road rail, sea or inland water;

(h) Prohibit or restrict the carriage of goods and passengers in a vehicle or vessel carrying petroleum;

(i) Prescribe the quantity of petroleum, which may be conveyed at one time or in one vehicle or vessel;

(j) Prescribe the precautions to be observed in the conveyance of petroleum by road, rail, sea or inland water, the manner of packing and the mode and time of transit and in the loading and unloading of vehicles and vessels used in such conveyance.

According to the TPDC Chief Geophysicist, it is not until just recently (1999) that TPDC working with the National Environment Management Council (NEMC) has completed a draft on “Drilling Regulations”. The draft has been submitted to the Ministry of Energy Water and Natural Resources for approval, with a view to adopting the Norwegian system.

It is however in the author’s opinion that along with the Drilling Regulations in the making, the Petroleum Act is also lacking some important provisions for better management of offshore safety and marine environment protection.

For example: the Act should differentiate between installations and vessels. As installations are included load-bearing structures with equipment used for shallow drilling, exploration drilling, recovery and pipeline transportation, as well as structures with equipment directly assisting in the activity. The Act should also be applying to the offshore loading of petroleum, but not for the transportation itself as this ought to be covered under the Merchant Shipping Act.

“As vessels are included, supply, auxiliary, and diving vessels, vessels used in connection with emergency preparedness, service, construction, pipelaying, seismic investigations and helicopters etc. The Act should address the functions that the above vessels have in the activities”.

(Vinnem J.E & Hope B. 1986, p.33).

Nevertheless, it is in the author’s opinion that, the adoption of the Norwegian Regulations in the oil industry, should be in parallel with other related industrial regulations. The Merchant Shipping Act and the Labour Law(s) for which Occupational Health Regulations should be reviewed with the assistance of the International Labour Organisation are some of the instruments to be looked into.

3.3 Survey of potential oil and gas fields

Among other things that were discussed was the issue of offshore safety and marine environment protection, ranging from:

- survey of potential oil and gas fields,
- commissioning and decommissioning of oil and gas rigs,
- safety of offshore personnel and equipment and
- marine environment protection

Since the Government of Tanzania does not have the capacity to undertake oil exploration, it was said that, the Government’s objective is to negotiate terms with the oil industry which are fair and balanced, bearing in mind the usual risks associated with exploration. To achieve this objective Tanzania uses what is called “Model Production Sharing Agreement” (PSA) which serves as the basic document for negotiations between foreign oil companies and the Government and TPDC.

The (PSA) agreement is said to be setting out in detail the terms under which exploration and production can take place by using internationally competitive terms,

it also allows for the negotiation of important issues such as Area, Work Program and economic terms etc.

It was further narrated that, on average one well is explored in every two years. Seismic surveys (a non-marine life destructive survey method) are done by a hired ship (drill-ship), whose inspection is done by surveyors from the Port Authority (THA), through the initiation of a TPDC officer and without any standing instructions from the Marine section in the Ministry of Communications and Transport.

3.3.1 The survey process

The oil and gas survey would involve the following process:

The spudding (initial drilling into the seabed in order to place risers to the surface) of a well by the drilling rig or ship, there follows a period of analysis to establish whether hydrocarbons are present and whether the development is likely to be profitable. It is likely that appraisal wells will be drilled in order to gain more information about the potential of the reservoirs. If the findings remain promising then production tests are made under conditions as near as possible to those, which would exist if the well were in actual production. It is then that a final assessment can be made, followed by an announcement of a commercial find, its potential production rate and potential reserves. Commercial development can then begin - but it may have taken two or more years to reach this stage.

By the time the decision has been made that the production will be viable, work will already be advanced on planning what kind of production facilities will be required. Decisions will, for example, have to be made concerning the type and size of installation, the facilities needed, the materials of construction; indeed, whether more than one platform is required. If there will be two or more platforms, it will have to be decided whether they should be permanently bridged.

(Barret B, Howells R & Hindley B. 1987, p. 22)

In relation to the above process, it is difficult for the author to speculate how much the PSA agreement does cover involved safety issues in detail, as there was no specimen provided. It was however mentioned, that all safety and marine environment protection matters are resting in the hands of the oil exploration companies (being the licensee). Nevertheless, the (PSA) agreement was said to be prepared with the supervision of the TPDC only expert (a professional Explorationist) since 1977.

3.4 Safety of offshore personnel and equipment

According to the TPDC official only 5 % of the workers in the offshore industry constitute for indigenous Tanzanian employees otherwise the majority of them would remain on call. This is taken as a means for transferring drilling skills to the Tanzanian employees.

When the installation is complete and technical problems overcome, to enable the operation of the installation and the transportation of the petroleum products from the installation to shore, there still remains a problem to be considered: namely, the workforce or human resources.

In Tanzania where foreign companies from different countries, and employees of different nationality are involved with a small proportion of indigenous employees, the offshore workforce is likely to be an ever-changing population: even on the installation itself.

Whatever the employment relationships, persons work offshore at least 12 hours a day, often for 14 consecutive days before they are relieved. Thus the equipment can not stand-alone: because people are placed onto and into the structure of the installation, the needs of the 'crew' must be considered at the design stage and built into the operational system.

It was noted that the Exploration Company has the responsibility to make sure that, the role and the needs of the crew are evaluated, as must the systems adopted which will

ensure their safety within the overall plan. The administrative systems must ensure that the parts are knitted together. The quality of management must be considered and only appropriate personnel appointed, and that supervision must be adequate. The level of skill and training of all personnel must be of high quality and all must be able to work as a team, both during normal operations and in emergencies.

It was also learnt however, that in the history of exploration in Tanzania there has been only one serious accident in the offshore industry, which happened in 1976, when a whole rig was blown out at the Songo Songo gas fields. Luckily there were no casualty, and the reason was established to be a failure of the “Blow-out preventer” on land.

The author also learnt that Lloyd’s surveyors are contracted to look after the safety viability of equipment at the commissioning stage.

In ensuring that structures and equipment are capable of carrying out works for which they were designed, and under the conditions in which they were expected to operate, there should be responsible bodies. Such bodies are as follows: designers, contractors, the certifying authorities and the government of the state involved e.g. Lloyds, TPDC, BP and Shell and the United Republic of Tanzania.

Despite lack of a comprehensive set of Drill Regulations, safety matters are said to be taken care of by a TPDC Petroleum Engineer who is the “Chief Safety and Environment Officer” (CSC). Detrimentially the Ministry of Communications and Transport is not in any way involved for regular inspections of the survey ship and competency of its personnel on board.

It was also established that in the event of a major accident in the offshore industry there is no “Contingent Plan” at National level for the evacuation of personnel. Indeed

it remains to be assumed that the Production Sharing Agreement would provide for such an important requirement as a pre-requisite.

As per Vinnem & Hope, the ideal Criteria for acceptance of the design to be used should have been as follows:

“The platform design should be such that a design accidental event does not impose a threat to personnel outside the immediate vicinity of the accident. This requirement may be considered satisfied if the following three criteria are met:

- *at least one escape way from central positions, which may be subjected to an accident, shall normally be available for at least one during a design accident event*
- *shelter areas shall be intact during a design accidental event until safe evacuation is possible*
- *depending on platform type, function and location, the main support structure should maintain its load- carrying capacity for a specified time, when exposed to the design accidental event*

In addition, areas, such as the well head areas, where a continuous manual intervention is required in order to prevent escalation of, or to reduce the damage from, an accidental event, should be located such that easy and effective access is possible during an emergency.”

(Vinnem J.E & Hope B. 1986, p. 42).

3.5 Marine environment protection

It has been indicated in the beginning of this chapter that, the Government expects the realisation of the Songo Songo gas-to-electricity project to attract more companies to acquire acreages for exploration”.

The author is of the opinion that the impact of such a phenomenon as it may be conceived is a possible pollution of the marine environment due to possible increase

of marine activities on the continental shelf of the United Republic of Tanzania. These activities are likely to include an increase of:

- offshore rigs with associated environmental hazards,
- shallow drilling,
- exploration drilling,
- recovery and pipeline transportation,
- offshore loading of petroleum products and
- vessels for supply and service to the rigs

3.6 Offshore installations and the aquaculture

Along with navigation is the oldest use of the sea i.e. fishing. As a source of animal protein fish is said to provide 20 % of the total world supply for human consumption. Other two important features are that from nature fish are bound to move from one place to another and interrelate without recognition of borders. However it is also a fact of life that the life circle of different marine life depends on the consumption of one species by the other depending on their hierarchy. Therefore any interference in the life circle of one species would cause absurd results on another.

Apart from the obvious consumption by human beings, pollution of the marine environment is another threat to marine life. Oil and other marine pollutants such as those from offshore installations have devastating effect on fish population.

(Gavouneli M. 1995, p. 37)

3.7 Drilling equipment

Offshore mobile drilling rigs may include; barges, jackups, drill ships and semi-submersibles, these are fabricated at coastal or inland shipyards, not necessarily in the region of exploratory drilling.

“Drilling does involve discharges of drilling fluids that may not be favourable to marine lives, however in addition to that, water drainage from the deck of the rig may contain drilling fluids, oil and small quantities of industrial chemicals used aboard the rig. Sanitary wastes are usually discharged at sea after treatment.”

(Preston, W. 1999).

3.8 Transport of Men and Material to Working Place

Vessel or aircraft may accomplish the transport of materials and men to the rig. This is signified by the provision of an airstrip at Songo Songo Island. The use of ship(s) to an Island can not be denied. As a result of increased vessel traffic, drainage of oil and sanitary wastes may increase. Coastal ports may be expanded, and navigation channels constructed or deepened for the transportation of oil platforms or other equipment from shipyard(s) to the exploratory drilling.

FIG. 3

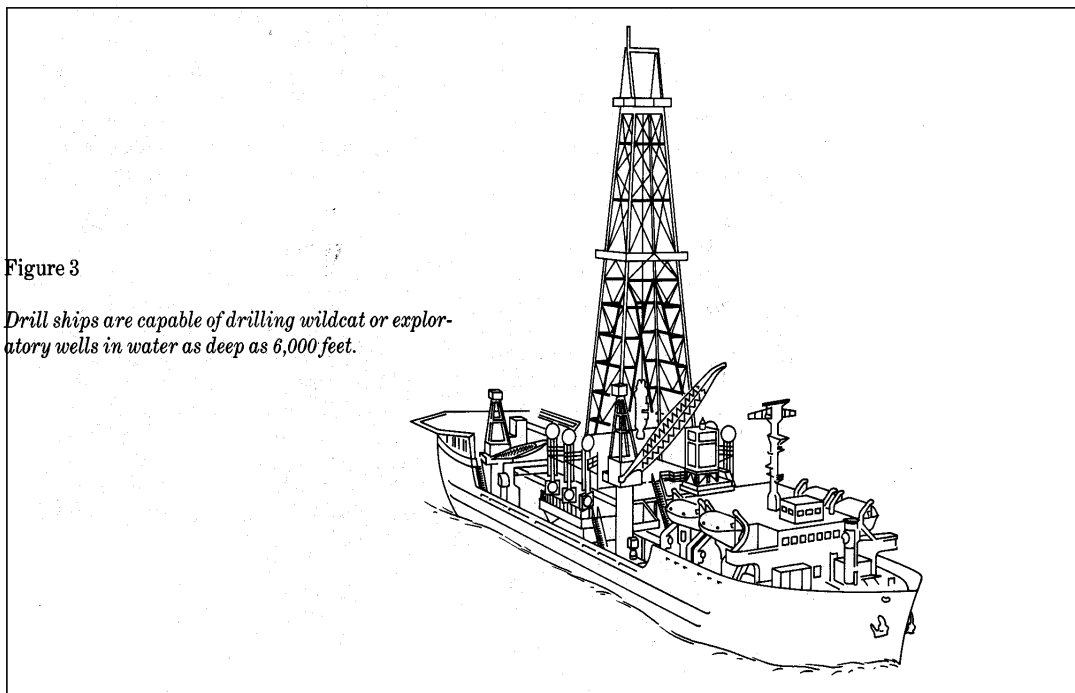


Figure 3

Drill ships are capable of drilling wildcat or exploratory wells in water as deep as 6,000 feet.

Drill Ship

Source: Exxon Corporation (1980)

However with the establishment of a shipyard in Da-er-Salaam (as seen under section 2.10(5)) fabrication of some of the above mentioned drilling equipment may not be far from reality. Under present conditions all of these facilities are either towed or move under their own power to the site of the exploratory drilling and anchored at multiple mooring points. Boesch and Rabalais have stated that:

“Because of the probability of discovery of economically viable resources is low for any exploratory well, there is typically a sparse distribution and brief duration of operational discharges during exploration. In many cases this may be all that occurs.

If highly pressured gas or oil strata are drilled, the possibility of a blowout exists (e.g. Songo Songo gas fields in 1976), but redundant blowout preventers make this a remote possibility.”

(Boesch D.F and Rabalais N. 1987, p.150).

The above statement by the experts can not be rejected as it is already supported by at least one blowout.

3.9 Transportation of Oil and Gas from Offshore Drills

On successful completion of the survey and construction of a permanent fixed installation, the petroleum products need to be transported to the shore. This usually involves pipelines buried in the seafloor, unless proved to be uneconomic.

According to TPDC, the Songo Songo gas pipe covers 232 km out of which 25 km (about 12 nautical miles) are crossing coastal waters (buried in the seafloor) from the Songo Songo Island to the mainland.

On different scenario, storage of the product offshore and onloading onto tankers or barges may be used. All transport methods involve some risk of accidental spills;

however, pipelines generally have a relatively safer record than vessel transport, particularly if offshore transfer to vessels is involved.

According to the International Petroleum Industry Environmental Conservation Association (IPIECA), the petroleum industry's principal channel of communication with the United Nations Environment Programme (UNEP), in a 1991 report identified vessel operations and tanker accidents as contributing 45% of the uncontrolled release of petroleum into the marine environment. International data indicates that worldwide, in the period between 1974-1989, there were 774 accidents involving oil spills greater than 7 tonnes. This equates to an average of 50 incidents per annum.

The likely size of an oil spill is related to the type of incident that is responsible. For instance, for spills of less than 7 tonnes, loading and discharging are responsible for nearly 80% of incidents, but for spills of over 700 tonnes loading and discharging are responsible for only 9%. However, loading and discharge is responsible for 70.7% of all recorded maritime oil spills.

The majority of spills occur at the time of loading, discharging or bunkering and the responsibility for spills of this type is generally attributable to equipment failure, the human factor or the conditions prevailing at the time.

A study by Exxon Corporation reports that, as the world's need for energy grows the search for oil and gas is turning increasingly to offshore areas. The opportunities are great, as are the costs, challenges and risks of working in waters sometimes turbulent and often hundreds or thousands of meters deep. However there is good reason to believe that the industry will find important deposits of oil and gas as it ventures farther offshore and into deeper and deeper water.

(Exxon Corporation. 1980, p. 20).

What has been discussed so far in this chapter, suggest that the oil industry is rather a complex one in that, several Ministries have to co-ordinate and collaborate for the

industry to perform safely and efficiently. While the industry is pacing its way up it is in the author's opinion that, unless good governance is provided by the Government of the United Republic of Tanzania, the risks involved are beyond imagination both from the safety point of view as well as marine environment protection.

CHAPTER FOUR

Implementation of National and International Legislation

The chapter is used to discuss the implementation of relevant international legislative instruments as reflected by domestic laws in the management of maritime safety and marine environment protection in Tanzania. To achieve this the author discusses in detail how different maritime centres in the country are managed, who manages them and by what mandate. Basically this chapter covers the core of this dissertation.

4.1 Implementation of relevant international conventions

It should be recognised from the onset that whatever rules and / or regulations a State may wish to adopt, such rules and regulations are bound to as much as practicable be a reflection of international laws. To this end one may realise the importance of having a knowledge of the “International Law of the Sea” (UNCLOS) which is the umbrella of all other maritime conventions as adopted by the international community.

In most if not all-maritime conventions, there are three very important expressions which are often used and the author wishes to make them clear to the reader before going any further. These are:

- Flag State - a State whose nationality a particular vessel has,
- Coastal State - is the State one of whose maritime zones a particular vessel is located, and
- A Port State is the State in one whose ports a particular vessel is located.

To date Tanzania is party to a limited number of conventions such as, IMO Convention 1948, International Convention on Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW 1978), the International Load Line Convention and for more information the reader should consult Appendix 2 on “Status of Conventions”.

The Government of the United Republic of Tanzania became a member of the International Maritime Organisation (IMO) in 1974, and has participated in a number of conferences such as under:

1. The International Conference on Marine Pollution, 1973, which adopted the International Convention for the Prevention of Pollution from Ships, (MARPOL 73) which was later amended in 1978.
2. The International Conference on Safety of Life at Sea, 1974, which adopted the International Convention on Safety of Life at Sea 1974 (SOLAS 1974), just to mention a few.

Nevertheless Government officials have been nominated to attend various seminars prepared by the IMO such as:

- The African Regional Seminar on “Maritime Safety Administration” (Abidjan, 1979);
- The African Regional Seminar on “Tanker Safety, Pollution Prevention” (Nairobi, 1981); and
- The IMO/UNDP/USSR Global Seminar on “The Main Functions of Maritime Safety Administration in the light of IMO Conventions” (Odessa 1983).

Notwithstanding the above, a number of IMO missions under its Technical Assistance Programme have been sent to Tanzania. To provide consultancy on, “Maritime Legislation (1976), Maritime Training (1982), Maritime Administration (1982), Marine Pollution (1982), and of most recent is 1996 when as a result of the sinking of

MV Bukoba, a mission was sent to provide consultancy on the establishment of a Maritime Safety Authority.

Various relevant Articles under the International Law of the Sea Convention are provided to facilitate management of maritime safety and protection of the marine environment within territorial waters. However Article 94 in particular stipulates the various responsibilities in executing Port State Control. On the other hand it is the responsibility of flag states to ensure that ships flying their flags always comply with the provisions of the Convention, it may sometimes be difficult for flag states to exercise full and continuous control over these ships. In order to supplement these functions of flag states, MARPOL, SOLAS and LOAD LINE Conventions provide for certain procedures for the control of ships to be exercised by Port States.

At this juncture the importance of the aforesaid conventions can not be over-emphasised, taking into account the fact that Tanzania is party to the “Memorandum of Understanding on Port State Control for the Indian Ocean Region” under whose “Section 2 the same are captioned as “Relevant Instruments”.

4.2 Role of Tanzania Harbours Authority

As we have seen earlier on, the management of maritime safety and marine environment protection in Tanzania’s coastal waters is managed by the Tanzania Harbours Authority (THA), it is therefore considered to be paramount that we should know how it works, and from where does it have its mandate.

Tanzania Harbours Authority was established in 1977 under the provisions of the Tanzania Harbours Authority Act. The Act established the Harbours Authority as a body corporate and the provisions of section 6 of that Act, the functions of the Authority are given as:

- (a) to operate a co-ordinated system of harbours;

- (b) to provide facilities related to harbours and provide harbours services ancillary thereto;
- (c) to develop, improve, maintain, operate and regulate harbours;
- (d) with the approval of the Minister, to construct and operate new harbours;
- (e) or construct, operate and maintain beacons and other navigational aids;
- (f) to carry on the business of stevedore, warfinger or lighterman;
- (g) to act as warehouseman and to store goods, whether or not the goods have been, or are to be, handled as cargo or carried by the Authority;
- (h) to consign goods on behalf of other persons to any place either within or outside the United Republic;
- (i) with the approval of the Minister, to act as carriers of goods or passengers by land or sea;
- (J) to provide amenities or facilities, which the Authority considers necessary or desirable for persons making use of the services or the facilities, provided by the Authority.

The Authority is also authorised, subject to approval by the Minister, to:

- (a) construct any wharf, pier, landing stage, road, bridge, building or any other works required for the purposes of the Authority;
- (b) clean, deepen, improve or alter any harbour or the approaches to any harbour;
- (c) provide and use, within harbours and elsewhere, ships for:
 - (i) the towage, protection or salvage of life or property;
 - (ii) the carriage of goods and passengers;
- (d) appoint and license pilots and regulate their activities;
- (e) control the erection and use of wharves in any harbours or the approaches of any harbour;

- (f) operate trains and road transport for the purposes of the Authority;
- (g) carry on any business including land development necessary or desirable to be carried on for the purposes of the Authority and so act as agent for any services of the Government in the provision of any agreed functions;
- (h) acquire, construct, manufacture, maintain or repair water-works or electric generating plants or any other works, plant or apparatus necessary or desirable for the supply or transmission of water or electric energy for the purposes of the Authority
- (i) determine, impose and levy rates, fares, charges, dues or fees for any service provided by the Authority or for the use by any person of the facilities provided by the Authority or for the grant to any person of a licence, permit or certificate;
- (j) prohibit, control and regulate:
 - (a) The use by any person of the services or the facilities provided by the authority, or
 - (b) The presence of any person, ship, vehicle or goods within any harbour or any premises occupied by the Authority for the purposes of the Authority.

The above part mentions only a few provisions. However section 6 (3) of the Act also provides that, no harbour shall be constructed by the Authority unless, prior to the construction, a report of the proposed undertaking with advantages and disadvantages of any alternative undertaking, has been made by the Board to the Minister with the approval of the President signified. Section 6 (5) provides further that “In the exercise of the powers conferred on the Authority, under this section to construct or improve any harbour.

The Authority may construct or execute any works necessary on land vested in the Authority, or on land placed at its disposal by the Government, for the purposes of the Authority. Or in the case of land not so vested in or placed at the disposal of the

Authority, only with the agreement of the owner of the land on which the works are to be constructed or executed. And where any land is required by the Authority for the purposes of the Authority, the Authority shall make representation to the President, who may proceed to acquire the land in accordance with the provisions of any written law to the acquisition of land for public purposes.

4.2.1 The THA mandate

In accordance with the shipping Act section 312 the Senior Harbour Master's Office in Dar-es Salaam Port is appointed by the Minister responsible for Communications and Transport along with other duties to take charge of all general Merchant Shipping Superintendence. Although following the capsizing and sinking of MV Bukoba the Government resolved to the use of private surveyors for conventional surveys, the Senior Harbour Master's office has not legally been repealed of its responsibility. Before the MV Bukoba disaster the Senior Harbour Master's office was to undertake the following on behalf of the Ministry:

- registration of ships,
- the signing of articles of agreement,
- surveys of ships for tonnage measurement,
- Certification for seaworthiness etc.

The Merchant Shipping Act 1967- section 312.

For other types of surveys, particularly those involving "Classed Vessels" the Ministry depends solely on either non-exclusive surveyors of classification societies or their agents as there are no local representative offices in the country for any of the recognised Classification Societies. The following is a list of Classification Societies recognised by the Ministry of Communications and Transport:

- Lloyds Register of Shipping,
- American Bureau of Shipping,
- Bureau Veritas,
- Det Norske Veritas,

- Nippon Kaiji Kyokai, and
- Germanischer Lloyd.

4.2.2 Surveys and Inspection of Ships

The Ministry has just acquired one graduate in Maritime Safety and Marine Environment Protection (1999 Class), from the World Maritime University. Otherwise there has been no one to make a follow up on any surveys being done by the Senior Harbour Master's office, private surveyors or the Classification Societies' agents. For this reason there has been no proper record keeping of the various surveys being done. It is believed that the situation should now improve at least in record keeping as one person is not sufficient to perform all the duties required.

According to Prof. Wiswall a visiting lecturer at the World Maritime University.

The purpose of casualty investigation is remedial. Hence to avoid repetition of the same, there should be publications of investigation reports for public access. This idea is also evidenced by the availability of such reports from some Maritime Safety Administrations e.g. Australian Maritime Safety Authority, the UK Maritime and Coast Guard Agency, the USA Coast Guard and many others.

For classified vessels, both class and conventional surveys shall continue to be carried out by the various classification societies. As for non-classified and non-convention ships the Ministry is now using private surveyors on contract bases.

During the research holiday (December 1999). The author learnt from the department responsible in the Ministry that because of the natural distribution of maritime activities in the country the "Survey regions" were divided into four i.e. Coastal region, Lake Victoria region, Lake Tanganyika region, and Lake Nyasa region (see map). Each of these regions was contracted to one private Surveyor with a view to improving safety. However a few vessels were visited at random during the same period and were found not to have deviation cards on the bridge, neither could the Ship Masters produce valid navigation charts.

4.2.3 Risk of Marine Pollution from Tankers

The port of Dar-es Salaam has provisions for a single buoy mooring (SBM) which can handle tankers up to 120,000 DWT. The SPM is only for receiving crude oil for Tanzania and Zambia oil refineries. On average Tankers of up to 70,000 DWT regularly call at the Dar-es Salaam for delivery of crude oil at the SPM.

In addition to the SBM, the port of Dar-es-Salaam also has an oil jet namely “Kurasini Oil Jetty” (KOJ) for oil product tankers. The jetty is normally used for small tankers carrying refined products. Other ports along the coast of Tanzania with similar facilities for small tankers are Tanga, Zanzibar, Pemba, and Mtwara. Coastal tankers for domestic supply of refined products mainly use these ports.

Apart from oil tankers calling Tanzania’s ports, the western Indian Ocean is a major transit route for different types of ship including huge tankers carrying crude oil from the Arabian Gulf. Because of their size i.e. are too big to pass through the Suez Canal, therefore they have to reach Europe and other parts of the world through the Cape of Good Hope. With the extension of the Exclusive Economic Zone there are chances that such ships may be passing within the territorial waters of the United Republic of Tanzania.

Tanzania is one of the countries constituting the East African Region as per Regional Sea Programme by the United Nations Environmental Programme. The other countries are Comoro, Kenya, Madagascar, Mozambique, Seychelles and Somalia.

There are two principal crude oil trading patterns in the region. The first one is from the Middle East area and supplies refineries in Somalia, Kenya, Tanzania, Mozambique and Madagascar with a total of 6,550,000 tonnes of crude oil annually. The second pattern involves the supply of crude oil by Very Large Crude Carriers (VLCCs) to the European, North and South American markets, and by medium size tankers to other refineries in Africa, Europe, and America. This can be termed as the

transit route. The total volume of oil passing through the region is estimated to be approximately 475 million tonnes.

(Kapiteni, M.M. 1983).

Taking into consideration the amount of oil moved around the region, one would easily appreciate the risk of pollution that could be caused by one of the following ways:

- accidental spills,
- ballast discharges from tankers,
- deliberate discharge of oil bilge from engine rooms,
- discharge of fuel and cargo-tank wash water etc.

4.2.4 Risk of Marine Pollution from ships in port & at Anchor

Other source of pollution is from the discharge of bilges by ships in port and at anchor while on transit within the coast.

Part XI (*Pollution*) Clause 309 of the Merchant Shipping Act, provides for the prevention of oil pollution from ships, however from personal experience the author has practically witnessed huge amounts of oil spill believed to be from bilge discharge within the port inner anchorage area.

It is claimed that the number of ships calling at our ports and cost involved does not justify provision of reception facilities.

4.2.5 Pollution control and monitoring

We may at this point recollect from the preceding paragraphs that THA has the obligation to control and monitor oil pollution within her ports in the strength of its Act of establishment.

However the very Act defines limits of port areas which are far below those specified by the “Territorial Sea and Exclusive Economic Zone Act, 1989” Part II section 7. As established by the Parliament of the United Republic of Tanzania.

The situation as it is today leaves a vacuum in many respects as we are going to see soon in the following two sections of this chapter.

The following data is a cargo forecast based on THA Corporate Strategic Plan 1996/97- 2000/01:

“(I) Dar es Salaam Port

- a) *To maintain 95% of the local markets share, equivalent to 375,000 MT.*
- b) *To handle the following tonnage per annum for transit customers:*
 - Zambia: 220,000 MT. of metal exports*
630,000 MT. of petroleum imports “
30,000 MT. of fertiliser imports
 - Malawi: 500 TEU of tobacco*
100,000 MT. of petroleum imports “
40,000 MT. of fertiliser inputs
40,000 MT. general cargo imports
 - Uganda 70,000 MT. of coffee exports*
45,000 MT. of petroleum imports “
80,000 MT. of general cargo imports
 - Rwanda 30,000 MT. of petroleum imports “*
70,000 MT. general cargo imports
10,000 MT. of coffee exports
 - Congo 15,000 MT. of copper and zinc exports*
100,000 MT. of copper/cobalt slabs
120,000 MT. of manganese ore
70,000 MT. of general cargo imports
 - Burundi 100,000 MT. of general cargo imports.*
40,000 MT. of petroleum imports. “
35,000 MT. of coffee exports.”

(THA Corporate Strategic Plan. 1996/97- 2000/01, pp 5-6).

The above figures (with “’”) suggest that at least a total of 845,000 metric tonnes of petroleum products are to be handled through the port of Dar-es-Salaam as transit cargo for our landlocked neighbours. Tanzania’s share of imported petroleum products is not included in this summary. It should however be between 50,000 to 60,000 metric tonnes making a total of about 900,000 metric tonnes per annum.

This should justify the need for port reception facilities.

4.2.6 Coastal Charts and Navigation Aids

Tanzania Harbours Authority maintains a hydrographic office service within the port of Dar-es-Salaam, which is run by one staff member (a Hydrographer). He is responsible for effecting any changes in navigational charts within the ports and along the Tanzania coast. He then have to advise the Admiralty Hydrographic Office in the United Kingdom in order to include such changes in Notices to Mariners and in new chart publications.

4.2.7 Fishing Vessels in the Merchant Shipping Act

Talking to one of the officials in the Ministry of Communications and Transport it appeared, that the issue of registration and manning of fishing vessels has been a matter for discussion as to which Ministry should these vessels belong to. The reason for this is that the Ministry of Energy and Natural Resources regulates fishing activities.

However in the author's opinion, this should not be an issue. The Merchant Shipping Act PART II sub-sections 3, and 7 to 8, provides that, all vessels over 25 tons net register (unless exempted), must be surveyed and certified by an authorised officer from the Ministry of Transport and Communications. On the other hand the Ministry of Energy and Natural Resources, is supposed to be charged with the responsibility of controlling the number and type of fishing vessels.

It should therefore be procedural for an operator to apply for a fishing license from the Ministry of Energy and Natural Resources, subject to having his or her vessel and crews passed by the Ministry of Communications and Transport.

4.3 Maritime Safety and Marine Environment Protection in Zanzibar ports

It may be recalled from chapter two of this dissertation that Tanzania was born by the Union of Tanganyika and the Zanzibar Islands (Unguja and Pemba) in 1964. The Constitution of the United Republic of Tanzania stipulates on page 141, what are Union matters under its "FIRST SCHEDULE (Referred to in Article 4)-Union Matters". Included in the list among other items are: Defence and Security, Police, Immigration, Service in the Government of the United Republic, Harbours, matters relating to air transport, posts and telecommunications, Mineral oil resources, including oil and natural gas, Civil aviation, Research and Meteorology.

It is in the author's opinion that in the context of the above list, Zanzibar ports should be part and parcel of the Tanzania Harbours Authority, however for reasons not clear to the author the ports in Zanzibar are managed by a separate body i.e. Zanzibar Ports Corporation (ZPC). This has been established by the House of Representatives of the Revolutionary Government of Zanzibar and under the Zanzibar Ports Corporation Act, 1997.

Although there are some similarities between the THA Act and ZPC Act a lot more remains to be desired. As an example, THA maintains under Subsidiary Legislation (*supplement No.37*)- The Tanzania Harbours Regulations, 1991 that are to facilitate marine environment protection from oil pollution from ships within THA harbour limits. Such rules should virtually be applicable to Zanzibar ports under "Union matters", but they may not be supplement to Act of establishment of the Zanzibar Ports Corporation.

Instead of what we have seen the Zanzibar Ports Corporation maintains what is known as "The Laws of Zanzibar" PORTS (*PRINCIPAL LEGISLATION*) of 1947.

The maritime administration in Zanzibar is under the department of port and marine transport, which is one of the departments of the Ministry of transport and Communication of Zanzibar. The port and marine transport department are headed by the director who is responsible for all maritime affairs and all port activities except for cargo handling which is under the Zanzibar Wharfage Corporation. According to the director for the department of port and marine transport, the main functions of the department are:

- Registration of ships and native vessels (wooden vessels).
- Survey and certification of native vessels.
- Construction work (development of port).
- Administration.
- Radio communication.

- To service navigation aids and updating charts, and
- Search and Rescue”.

According to Abdullah, in Zanzibar, due to lack of well-trained surveyor, only native vessels (Wooden built) that are operating between Zanzibar and Tanzania mainland are surveyed and certified. Unfortunately there are no regulations regarding the same. According to the Harbour Master, he is carrying out surveys of seaworthiness of vessels merely by using his experience.

(Abdullah, J. 1996, p.19).

It is in the author’s opinion that while ships registered in Zanzibar and those registered in Dar-es-Salaam are carrying the same Tanzania flag, they are in essence registered by two different authorities having different legal regimes. The author considers it a threat to maritime safety and marine environment protection, where the integrity of the whole process of survey and registration remain as questionable as cited above.

4.4 Role of the Marine Services Company Limited

In this area, the author would like to share his personal experience having served in Inland waterway for at least ten years from a junior navigation officer to Ship Master and finally as a Senior Marine Operations / Technical Manager at the Headquarters in Dar-es-Salaam.

4.4.1 Division of Inland waterways Safety and marine environment protection management

The Management of Inland waterways in Tanzania is divided into two parts:

The three major lakes namely, Lake Victoria to the North (shared with two other states Kenya and Uganda), Lake Nyasa to the South (shared with Malawi and Mozambique), and Lake Tanganyika to the West (which is also shared with other three states Burundi, Republic of Congo and Zambia).

Each of these states operates own vessels ranging from small fishing crafts of less than 25 m. long to medium size (approximately between 600 GRT to 1500 GRT) passenger, cargo or passenger and cargo vessels. And each of these states has own set of rules and regulations in as far as operating standards are concerned. Management of safety and marine environment on the Tanzania side in these three lakes has been falling under the jurisdiction of Tanzania Railways Corporation (Marine Division) since the collapse of the East African Community in 1977. As of 1998, the TRC marine division has been upgraded to an autonomous authority under the name of Marine Services Company Limited.

The second part of inland waterways is that in small lakes and navigable rivers, local government authorities manage these.

Like the Tanzania Harbours Corporation, the Tanzania Railways Corporation was also established in 1977 as a Corporation under the “Tanzania Railways Corporation Act”, as a result of collapse of the East African Community.

We should therefore be interested to know its powers and functions of which we may be able to deduce its effectiveness in accomplishing the objectives of Maritime Safety and Marine Environment Protection in Inland waters. These functions and powers are provided under Part IV sub-section 14 (sub-sub-section 1) of the respective Act as under:

- (a) “to goods and passengers by rail, road and inland water ways within the United Republic;
- (b) to provide within the United Republic ports and facilities for traffic by inland water ways;
- (c) to provide and use upon the inland waterways within and contiguous to the United Republic vessels-
 - (i) For the towage, protection or salvage of life and property;
 - (ii) For the carriage of goods and passengers;

(d) to store goods within the United Republic, whether or not such goods have been, or are to be, carried by the Corporation;

(e) to consign on behalf of other persons from any place within the United Republic to any other place whether within the United Republic or elsewhere.”

“(g) to prohibit, control or regulate-

(i) The use of any person the services performed, or the facilities provided, by the Corporation; or

(ii) The presence of any person, vessel, vehicle or goods within any inland waterways port or any premises occupied by the Corporation for the purposes of the Corporation”.

The list above highlights only those sections that are relevant for purpose of this dissertation.

Another interesting part is that of “Accidents” under Part VII section 57 of which the general implication is that accidents involving loss of life or serious injury to person or property; or involves collision between trains or between vessels of which one is a train or vessel must be reported.

Section 58.-

(1) The Minister or the Board may order such inquiry into any accident that occurs in any transport service of the Corporation, or in any inland waterways port, as the Minister or the Board may think fit.

(2) In the case of an accident of the kind referred to in section 57 the Board shall submit to the Minister and the Attorney-General a report on such accident setting out inter alia the probable cause of such accident and the steps, if any, which have been taken, it has directed shall be taken, with a view to avoiding a repetition thereof.”

Part VIII covers “SPECIAL PROVISIONS RELATING TO PORTS IN INLAND WATERWAYS” where sub-section 63. Provides that, “The Master of any vessel arriving in an inland waterways port shall, if required, produce to any authorised employee-

- (a) a register of the vessel and its papers;
- (b) a list of the crew;
- (c) a list of the passengers, if any, showing particulars of their sex and occupation;
- (d) a list showing the deaths, if any, which have occurred during the voyage;
- (e) a list showing the stowaways, if any, on the vessel, and shall also supply such other information in relation to the vessel, passengers, and cargo thereof, as such employee may require.

4.4.2 Dramatic increase in number of vessels on lake Victoria

The collapse of the East African Community had adverse effects to the inland waterways transport particularly on Lake Victoria region in different dimensions ranging from political, social as well as economical. The United Republic of Tanzania occupies more than 50% of Lake Area, followed by Uganda and finally Kenya. After the collapse of the Community some vessels were held in Kenya where they could not be used, as it was uneconomic. On the other hand the vessels were extremely vital to complement Tanzania's integrated transport (economic) infrastructure.

The urgent need for transportation of passenger, cargo, and fuel products in the lake regional headquarters could not be compromised. Therefore Tanzania was compelled to enter into negotiation with Kenya in order to retrieve three vessels i.e. a 750 passenger ferry (MV Victoria), wagon ferry (MV Umoja approximately 1500 GRT) and a tanker ship (MV Nyangumi approximately 400 GRT). While in the process of negotiation with Kenya and because of scepticism, the Government decided to enter into contract with the Belgium Government for the construction of a floating dock, two passenger vessels MV Bukoba and Butiama, and a tug MT Ukerewe, at Mwanza port. Several other small vessels were built after this. As of now TRC is having 9 vessels on Lake Victoria alone.

As a result of the above episode, a few years later Uganda also entered into contract with the Belgium Government for the construction of three wagon ferries of the MV Umoja size namely MV Pamba, MV Kaawa, and MV Kabalega. This caused a considerable increase in the number of vessels in Lake Victoria and therefore with a lack of proper pollution control regulation and enforcement it adds up to a higher potential risk of oil pollution due to:

- collision,
- allision,
- grounding,
- foundering,
- discharge of bilges, and even
- sewage from ships (not withstanding domestic sewage and industrial affluent)

Notwithstanding the above facts, the long term effect of pollution may be easily reflected by current figures on fishing activities on Lake Victoria picking Mwanza region as an example. “Statistics of the fish export performance from the Mwanza Regional Fisheries office reveal that six fish processing plants in the region exported shipments, worth T.Shs. 2,136,370 million US dollars (1.7 /-) last January. About 80% of the total population in Mwanza depend on the fishing industry as their source of livelihood in one way or another, according to a businessman based in the lake side town.

Four out of five residents of Mwanza make their living either directly or indirectly through fishing. If the industry is negatively affected, the economy of the whole region tumbles.”

(The Guardian. 2000, May 17).

Should the above figures be correct as quoted from a Tanzania local newspaper? It should be possible to imagine how much harm can pollution cause not only to the Mwanza residents but also, to the whole community leaving around Lake Victoria and eventually those leaving along River Nile which originates from the very lake.

4.4.3 Pollution control from ships in Inland waterways

In as far as control and regulating vessels other than TRC vessels is concerned, TRC powers are only limited to its own port areas leaving a vacuum for areas outside the port limits.

From the list of TRC roles and functions as given in its Act, it is clear that the Act seem to be reasonably providing for the safety of people and property but it does not provide for pollution control and marine environment protection. Unlike its counterpart (THA), TRC does not have subsidiary regulations to facilitate control of marine oil pollution from ships.

Although there are several shortcomings from the legislative point of view the author would like to discuss the same in chapter four when dealing with legislation.

4.4.4 Survey and Certification of ships in inland waterways

Survey and Certification for Seaworthiness of conventional vessels on the lakes has been carried out by the Senior Harbour Master’s office in Dar-es-Salaam. By assigning one of his officers or visiting the respective vessel himself. Up until the MV Bukoba disaster when the Government resolved to the use of private surveyors.

On the other hand inspection, survey, certification and registration of small vessels, for fishing and native vessels such as dhows (a traditional Arabian sailing passenger and cargo vessel) has been carried out by unqualified personnel in the name of “authorised

officers” as provided by the Merchant Shipping Act”. Personnel from TRC are carrying this out.

It is doubtful whether there are any appropriate regulations for determining safety standards of such vessels should there be a qualified authorised officer to do the survey before the issue of “seaworthiness certificate”.

4.4.5 Inland waterways Charts and Aids to Navigation

The Charts used on Lake Victoria vessels are Admiralty Charts (Fathom charts); those prepared by Her Majesty’s Hydrographer of the Navy in 1959.

The fact that TRC maintains no Hydrographic office neither does it make use of the THA Hydrographic services, there has been no improvement on the charts since the last Survey of the lake in 1959. The same applies to charts used on Lake Nyasa. As for lake Tanganyika the situation is even worse since there are no proper charts to be used other than the Berthmetric drawings prepared by colonial masters in the era of Belgian Congo. In view of the above reasons it is obvious that new dangers to surface navigation are not indicated, once again causing concern for safety and marine environment protection.

The buoyage system on Lake Victoria is not reliable, light beacons are mostly out of order if not all. On the part of Lake Nyasa and Tanganyika there are completely no light beacons on the Tanzania side. This poses a danger to navigation at night and therefore more risk to the safety of people, property and environment.

4.4.6 Radio Communication in inland waterways

Communication on board inland waterway vessels is not harmonised. TRC vessels operate on own channels, which is also used by railway stations and district railway traffic controllers. Other Tanzania private owned vessels do have their own channels for communication with their respective owners. On the other hand vessels from neighbouring countries have a similar communication set up. In case of any distress communication is likely to be one of the major drawbacks.

This would somehow conclude our observations in management of maritime safety and marine environment protection in inland waterways.

4.5 Maritime safety and marine environment protection in small lakes and rivers

As said earlier on the administration and management of vessels (mostly ferries) is under the jurisdiction of local Government bodies, as such neither the THA nor the TRC are involved with such vessels.

The Merchant Shipping Act therefore does not provide for vessels in small lakes and rivers instead it is the 1961 (Principal Legislation of Tanganyika) “Ferries- Chapter 173 of the Laws (Revised).

4.6 Role of the Navy and Marine Police Forces (“Law Enforcing Bodies”)

The United Republic of Tanzania signed and ratified the United Nations Convention on the Law of the Sea (UNCLOS 1982) in 1998 (, hardly two years ago. However before this ratification was incorporated into the national legislation by the “Territorial Sea and Exclusive Economic Zone Act, 1989.” worded in its preamble as under:

“An Act to establish the territorial sea and to establish an exclusive economic zone, of the United Republic adjacent to the territorial sea, and in the exercise of the sovereign rights of the United Republic to make provisions for the exploration and exploitation, conservation and management of the resources of the sea and for matters connected with those purposes”.

The Law enforcing bodies as cited above are defined among others under section 13 and empowered within the context of this Act under sections 14 to 15 as follows:

- (13) For the purpose of this Act, the following persons are designated authorised offices:
- (a) Fisheries officers of the Government Ministries responsible for fisheries;
 - (b) Members of the Defence Forces;

- (c) Members of the Police Forces;
- (d) Officer of the Customs and Sales Tax Department;
- (e) Kikosi Maalum cha Kuzuia Magendo, otherwise commonly known as “KMKM”; (literally meaning a special anti-corruption marines)
- (f) Any other person approved by the Minister.

Powers of authorised officers

(14) (1) an authorised officer may, in performing his duties, exercise all the powers conferred on him by this Act in respect of:

- (a) A government vessel or structure that is at sea or in port; or
- (b) A vessel or foreign structure that he reasonably suspects of being used in connection with fishing or any other activity carried on in contravention of this Act or the regulations.

(2) In the performance of his duties under this section, an authorised officer may:

- (a) Reasonably call any person to assist him;
- (b) Use such forces as are reasonably necessary;
- (c) Require any person to do anything that appears reasonably necessary for the purpose of facilitating the performance of those duties;
- (d) Order that any vessel be stopped;
- (e) Board any vessel;
- (f) Search or examine any vessel or structure or any fish equipment or thing on board thereof;
- (g) Require any person on board a vessel or structure to produce any document or thing relating to the vessel or structure or the persons on board thereof.

(3) An authorised officer who has reasonable grounds to suspect that an offence has been committed under this Act or the regulations by any person, including any person on board a vessel or structure, may, without warrant or other process:

- (a) Seize the vessel or structure together with any fish, fishing gear or other equipment suspected of being used in the commission of the offence; or
- (b) Detain the person he suspects”.

The Territorial Sea and Exclusive Economic Zone Act (1989).

The list above is not exhaustive as it goes on to section 15 sub-section 5 before it touches on section 16 talking about Exemption from liability and on it continues with other essential parts within the context of this Act. The author sought to give an indication in the direction of the law in as far as the “Law Enforcing Bodies” are concerned in the execution of their powers.

In analysing the content of the Act it is the authors opinion that important areas are well covered. However experience has proved that the bodies so vested with such very important responsibility do not have the necessary gadgets and equipment to facilitate their day to day operations. For example a visit to the Marine Police Headquarters in the Port of Dar-es Salaam showed that there is an acute shortage countrywide of patrol boats. Neither are there enough helicopters to be used for search and rescue purposes in case need arises as manifested during the MV Bukoba disaster.

The author once resided as Chairman of the Merchant Navy Officers Association of Tanzania (MNOAT), wishes to quote a statement given by a senior commander of the Naval Forces at a seminar on Maritime Safety in commemoration of the IMO’S 50TH Anniversary held in Zanzibar on 21 September 1998. The commander said:

“ There has been a lot of illegal fishing (by use of dynamites) along our coast. The Navy has been doing a tremendous good job to arrest the situation within its limited capacity. However there is a lot more to be desired in terms of facilities and good plans to enable the forces to do a better job”.

4.7 Effect on the fishing industry

As per a study made by a Swedish expert Dr Armin Linquist under the initiative of Sida, about 95 % of the global catch lies within the EEZs, i.e. within an area of 200 nautical miles from the coast. The distance covers in most cases the extension of the continental shelf, i.e. the 200 m-depth line. It is said that in the Indian Ocean the continental shelf is entirely within the EEZs.

Despite little information about fishing vessels in the Indian Ocean high seas, it is however estimated that there are over 24000 fishing vessels at a distance beyond 200 nautical miles.

(Linquist, A. 1997, p. 5).

Although the study shows that the concentration of such vessels is beyond the EEZ, there is no doubt this is an alarming number which can neither be monitored nor managed without a competent and well organised system should there be any breach of law.

It is therefore the author's observation that shortage of equipment as indicated above and an outcry for better plans is an indication of weakness in the system in use. It is therefore clear that while the nation is haunted by poverty the need for co-ordination and better planning amongst various authorities should be at the peak of the agenda.

CHAPTER FIVE

Maritime Administration Models

In this chapter the author describes selected models of Maritime Administrations as reflected in their respective Corporate Plans, in order to appreciate some organisational set up and management systems which may be practicable in Tanzania.

The selected three different Administrations are the Australian Maritime Safety Authority (AMSA), Maritime and Coast Guard Agency (MCA, of the United Kingdom), and the Norwegian Maritime Directorate.

5.1 The Australian Maritime Safety Authority (AMSA)

The following description is according to the Corporate Plan (1999/2000 to 2001/2002) as provided by the Australian Maritime Safety Authority.

5.1.1 Corporate Governance

The Board and senior managers discharge their duties within the framework of the Australian Maritime Safety Authority Act 1990 and the Commonwealth Authorities and Companies (CAC) Act 1997.

The Minister for Transport and Regional Services represents the Commonwealth interests with the Authority.

The principles of the Authority's governance arrangements are:

- The Minister exercises strategic control consistent with his statutory function and his responsibilities within the Parliament.
- The Board oversees the development of operational strategies and ensures that the Authority's activities are conducted so as to accommodate the relevant interests of the Authority and its stakeholders.
- Senior managers and staff maintain the highest standard of integrity, accountability and responsibility in the exercise of their duties and their dealings with stakeholders.
- Effective system of internal and external audits to review performance.

5.1.2 Role of the Australian Maritime Safety Authority

AMSA's relationship to the Commonwealth is that of statutory authority whose role is:

- prevent and combat ship-sourced pollution in the marine environment;
- provide for high standards of maritime safety;
- provide infrastructure to support the safety of navigation in Australian waters;
- provide a search and rescue service to the maritime and aviation sectors;
- provide, on request, services to the maritime industry on commercial basis; and
- Provide, on request, services of maritime nature on a commercial basis to the Commonwealth, a State, and the Territories.

5.1.3 AMSA's Operational Environment

The review of the Australian Maritime Safety Act 1990, undertaken in 1997 in response to the Report of the National Competition Policy Review Committee, indicates that industry associations consider that AMSA enforces the requirements of international conventions rigorously and that it applies its Port State Control (PSC) procedures objectively.

AMSA has participated in the review of the Australian Maritime Safety Authority Act 1990 and the Shipping Registration Act 1981. A review of other legislation relevant

to the maritime industry, in particular the Navigation Act 1912, will be undertaken and may result in changes that affect AMSA's operations.

AMSA also participates on the National Maritime Safety Committee in the development of consistent maritime legislation and regulation.

5.1.4 Safety Radio Services

Safety radio services are provided principally for the vessels covered by the Safety of Life at Sea (SOLAS) Convention but may also be used by smaller vessels that carry appropriate radio equipment. While some rationalisation of the service is now possible Australian Transport Council (ATC) has agreed that, in the interests of smaller craft, AMSA should maintain existing levels of service until a suitable longer-term replacement is implemented or until 2005, whichever is earlier.

5.1.5 National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances.

AMSA, as a managing agency of the above-mentioned National Plan, has a direct interest in the current review of the Plan being conducted under the auspices of the ATC's Marine and Ports Group. AMSA is a member of the steering committee overseeing the review and is providing secretariat support.

5.1.6 Government Policy

The Government has clear policy objectives that dictate the general nature of transport, particularly the need for Australia to continue improvement in transport efficiency.

Introduction of the International Safety Management (ISM) Code, a review of the International Convention of Standards of Training, Certification and Watchkeeping for Seafarers 1978 (STCW) resulted in changes to requirements for training and certification of ship's crew. A new Annex to the MARPOL 73/78 Convention to control air pollution from ships designed to reduce nitrogen oxide emissions from new engines by 30%. These initiatives are the result of international activities undertaken within the International Maritime Organisation (IMO).

AMSA is introducing these initiatives with the corporation of all areas of the maritime industry, government agencies and other interested bodies, through the extensive consultative mechanism that has been established. They, combined with continued diligence by AMSA in respect of its Port State Control activities, have enhanced the protection of seafarers and for the marine environment. Developments in electronic navigation and communication systems offer opportunities to further increase navigation safety.

5.1.7 Search and Rescue

As a signatory to the International Civil Aviation Convention 1944, the International Safety of Life at Sea Convention 1974 and the International Search and Rescue Convention 1979, AMSA is responsible for search and rescue over a vast area made up of the East Indian, South west Pacific and Southern oceans. The internationally agreed Australian Search and Rescue Region covers 47 km² which represents over one-ninth of the earth's surface.

The effectiveness of Australian Search and Rescue (Aus SAR) relies on the successful co-ordination of a wide range of Federal, State and Territory agencies including the defence and police forces as well as industry and volunteer rescue groups.

Australia's National Search and Rescue Plan derives from international and domestic agreements between authorities sharing a common interest. In practice, the search and rescue role is undertaken within the spirit of co-operation between the relevant authorities, and procedures exist for the transfer of an incident between authorities when it is beyond the capability of local resources. As some incidents occur at a great distance from the Australian coastline, this sometimes involves the utilisation of long range assets available from the Australian Defence Forces.

Technological development in communications, navigation and surveillance is increasingly changing the way search and rescue is undertaken. These technologies

include satellite communications, global navigation satellite systems, the satellite-aided search and rescue system, encoded distress beacons, ground based wide area surveillance systems, and space-based wide area surveillance system.

5.1.8 Australian offshore industry

This is an area that falls under the Ministry of Energy. However AMSA remains partly involved as the sole Government Agency responsible for Safety and Protection of the Marine Environment.

The Australian offshore industry falls under four national legislative instruments namely:

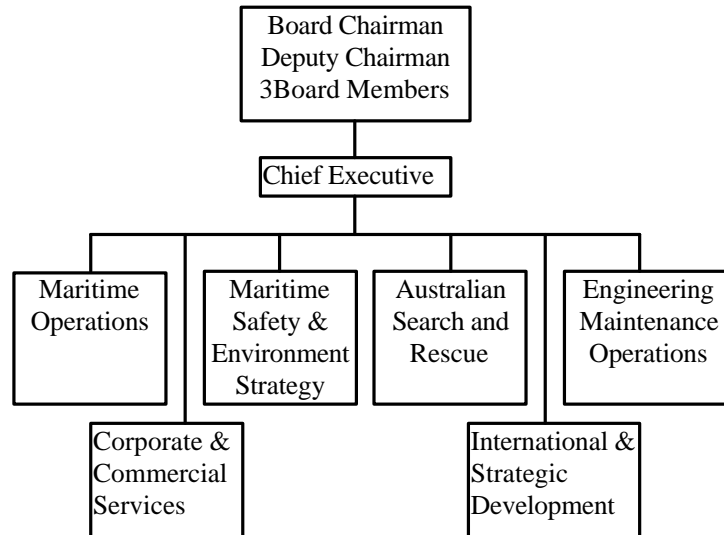
- Navigation Act 1912,
- Petroleum (Submerged Lands) Act 1967,
- Sea and Submerged Lands Act 1973, and
- Petroleum (Submerged Lands) Amendment Act 1980.

Although most of the work in this area such as “Hull and Machinery Survey” has been delegated to Classification Societies, AMSA takes care of safety equipment and is still the overall overseer for safety and protection of the marine environment

5.1.9 Financial Capability

The Australian Maritime Safety Authority is a largely self-funded government agency. From a financial perspective, AMSA mainly depends on the various levies that are associated with shipping activities in and around Australian ports. However,

FIG. 4



AMSA’s CORPORATE STRUCTURE Source: Australian Maritime Safety Authority.

there continues to be significant uncertainty surrounding the international economic outlook for the Australia’s export industries. AMSA’s levies are predominantly affected by the shipping activities associated with the bulk commodity export trade. The establishment of AMSA as a statutory authority was undertaken to ensure that the organisation’s focus remains firmly on safety and marine environment protection from ship based pollution.

5.2 The UK Maritime and Coastguard Agency

The following information is according to the “Business Plan 2000-2001 and Forward Look” as provided by the Maritime and Coastguard Agency in the United Kingdom.

The Maritime and Coastguard Agency (MCA) was established in 1998 by merging the Maritime Safety Agency (MSA) and the Coastguard Agency (Coastguard), with a view

to improving efficiency in the managing of maritime safety and marine environment protection within the territorial waters of the United Kingdom.

The MCA is an executive agency of the Department of Environment and Transport Regions whose new role as an inward investment agency is to facilitate the growth of the shipping industry whilst maintaining a quality flag.

The MCA is responsible for:

- developing, promoting and enforcing high standards of marine safety
- minimising loss of life amongst seafarers and coastal users
- responding to maritime emergencies 24 hours a day
- minimising the risk of pollution of the marine environment from ships and where pollution occurs, minimising the impact on UK interests.

5.2.1 Operating Environment

Since the establishment of the MCA in April 1998, significant changes have taken place. In August 1999, the Government announced a new fiscal regime, which proposed a tonnage, based corporation tax for the shipping industry. A boost to seafarer training and a new role for the MCA as an inward investment agency whereby the organisation has to persuade more ship owners to flag on the UK Register.

MCA's primary customers are those whose lives may be put at risk through accidents at sea or on the shore, those who use the sea and shores for commerce or for recreation, particularly;

- those who might be put at risk by the operation of, pollution from UK ships anywhere, or of any ship in UK waters, or

-those in the UK whose property, livelihood or other interests might be damaged by ships.

In this regard the MCA provides the following services to its customers on daily basis:

- provides a 24 hour contact point service for an immediate response about its work,
- increases its presence on the coast where Coastguard and other operational staff work together, and to this end MCA has trained Sector Managers to provide inspections of fishing vessels,
- provides a better service for those who wish to register their vessels with the UK.

5.2.2 The UK's Government Shipping Policy

The Government's shipping policy, as set out in the Transport White Paper (CM 3950) is based on a long-term vision of the importance of UK shipping to the nation. The policy is said to have four broad aims relating to shipping; to facilitate shipping as an efficient and environmentally friendly means of carrying out trade; to foster the growth of an efficient UK-owned merchant fleet; to promote the employment and training of UK seafarers in order to keep open a wide range of job opportunities for young people and to maintain the supply of skills and experience vital to the economy; and to encourage UK ship registration, so as to increase ship owners identification with the UK, to improve regulatory control of shipping using UK ports and waters and to maintain the availability of assets and personnel that may be needed in time of war.

In support of these broad aims, the Government published the paper "British Shipping: Charting A New Course" in December 1998 and this paper identified 33 inter-related action points designed to develop the UK's maritime skills, secure British seafaring employment, enhance the UK's attractiveness to shipping enterprises and gain safety and environmental benefits. The Government attaches the greatest importance to shipping being safe and non-polluting and offering crew's reasonable working conditions, and requires the MCA to pursue these objectives.

5.2.3 Role of the Maritime and Coastguard Agency

In the endeavour to accomplish the government policy and work within its maritime strategy, the Agency plans to maintain a 24 hour availability for those vessels wishing to register with the UK and have made its registration procedures simpler whilst maintaining standards. It is envisaged that in this way the Agency will work towards becoming a true inward investment agency for the Red Ensign and retain a quality UK flag whilst attracting more ships to register to it.

In view of the aforesaid the MCA has the following role to play:

- Surveys and inspection of UK and foreign ships to ensure safety standards
- Taking part in International Maritime Organisation and EU maritime activities
- Take relevant follow-up action following Marine accident investigation branch reports
- Advise the Government and prepares new maritime legislation
- Monitor training, examination and certification of seafarers and establishes sea manning levels
- Provide central register of UK merchant ships and fishing vessels

Maintain highest standards in marine search and rescue, and actions against pollution of British waters from shipping.

5.2.4 The UK's offshore industry

The UK's offshore industry is governed by eight legislative instruments, which are mentioned below:

- Petroleum (Production) Act 1934.
- Radioactive Substances Act 1960.
- Continental Shelf Act 1964.
- Mineral Workings (Offshore Installations) Act 1971.
- Petroleum and Submarine Pipelines Act 1975.
- Health and Safety at Work, etc Act 1974

- Oil and Gas (Enterprise) Act 1982, and
- The Petroleum Act 1987.

As per “Safety in the Offshore Petroleum Industry” by Brenda Barret, Richard Howells and Brian Hindley.

The legislation listed above constitute the real framework on which offshore oil and gas developments were regulated then by the Department of Energy and Transport. However in the year 1988, due to a heavy loss of life and complete destruction of the Piper Alpha offshore installation, a public inquiry was set-up under the chairmanship of Lord Cullen, who came up with 106 recommendations on the 12th Nov. 1990 of which the major ones are:

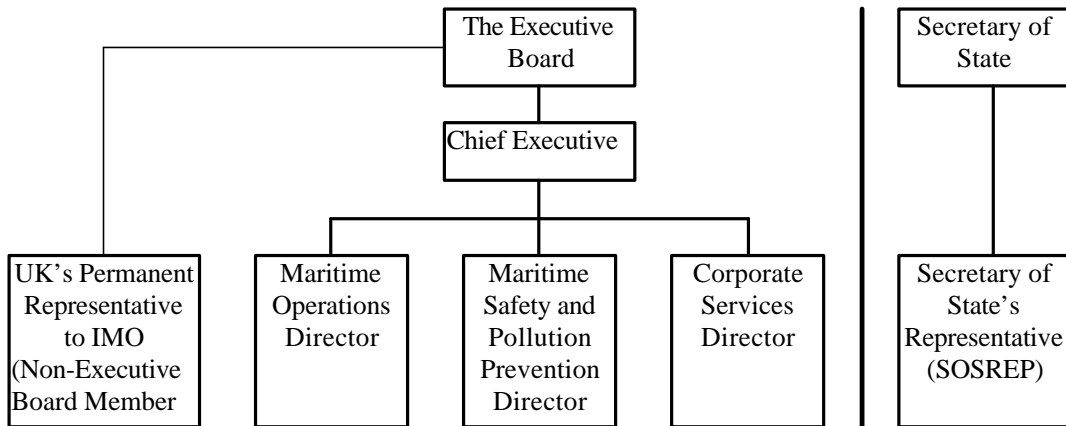
1. the introduction of a “safety case” requirement for the management of offshore industry and
2. to progressively replace the hitherto perspective legislation with goal setting objectives supported with non-mandatory guidance.

Notably, the UK Government accepted the conclusions and recommendations in their entirety. And the Health and Safety Commission/Executive (HSC/E) offshore division was entrusted to develop regulations, which require safety cases for all offshore installations, and in respect of all activities, carried out in UK territorial waters and its continental shelf. Consequently, offshore safety functions were taken from Department of Energy and Transport on 1st. April 1991.

5.2.5 Funding of the MCA

In as far as financial capability is concerned the MCA depends mainly on levies charged in and around ports from its Port State Control activities, fees paid for service rendered to various customers including the registration of ships.

FIG. 5



MCA's ORGANISATION STRUCTURE

Source: Maritime and Coast Guard

Agency

5.3 The Norwegian Maritime Directorate

The Norwegian Maritime Directorate is an executive agency under the Ministry of Transport of the Government of Norway.

The Agency is mandated by its Act of establishment to take charge of the control of maritime safety and marine environment protection. The following are some domestic legislative instruments in place:

- Royal Decree of 5 April 1963 authorising Maritime Directorate to issue regulations (Now wholly or largely superseded by new framework legislation: Act No.11 of 22 March 1985 on petroleum activities),
- Royal Decree of 31st May 1963 asserting Norwegian sovereignty over Norwegian continental shelf for purposes of exploration and exploitation of natural deposits,
- Act No. 12 of 21 June 1963 permitting exploitation under licence,
- Royal Decree of 8 December 1972 providing legal framework for offshore operations,

- Royal Decree of 3 October 1975 relating to safe practices in exploration and drilling,
- Royal Decree of 9 July 1976 relating to safe Practices for production etc,
- Act No. 4 of 4 February, 1977 relating to worker protection and working environment Act of 22 March 1985 no. 11 relating to petroleum activities,
- Royal Decree of 13 September 1985 relating to Worker Protection and Working Environment Act, and
- The Norwegian Penal Code.

Along with all the above mentioned instruments Norway is a signatory of the Paris Memorandum of Understanding whose objectives are:

1. To co-ordinate and harmonise the efforts of the maritime authorities in relation to Port State Control,
2. To assist in securing the compliance of ships with international standards regarding:
 - Safety of Life at Sea
 - Prevention of Pollution of the Marine Environment, and
 - Working and living conditions on board

In line with the above mentioned objectives the Norwegian Maritime Directorate is committed to the implementation of the Paris MoU for which each Authority is obliged to:

- Give effect to the provisions of the MoU.
- Maintain an effective system of Port State Control to ensure that, without discrimination as to flag, foreign vessels visiting their ports comply with the relevant standards.
- Inspect 25% of estimated number of vessels entering the port of its state, and
- Consult, co-operate and exchange information with Member States.

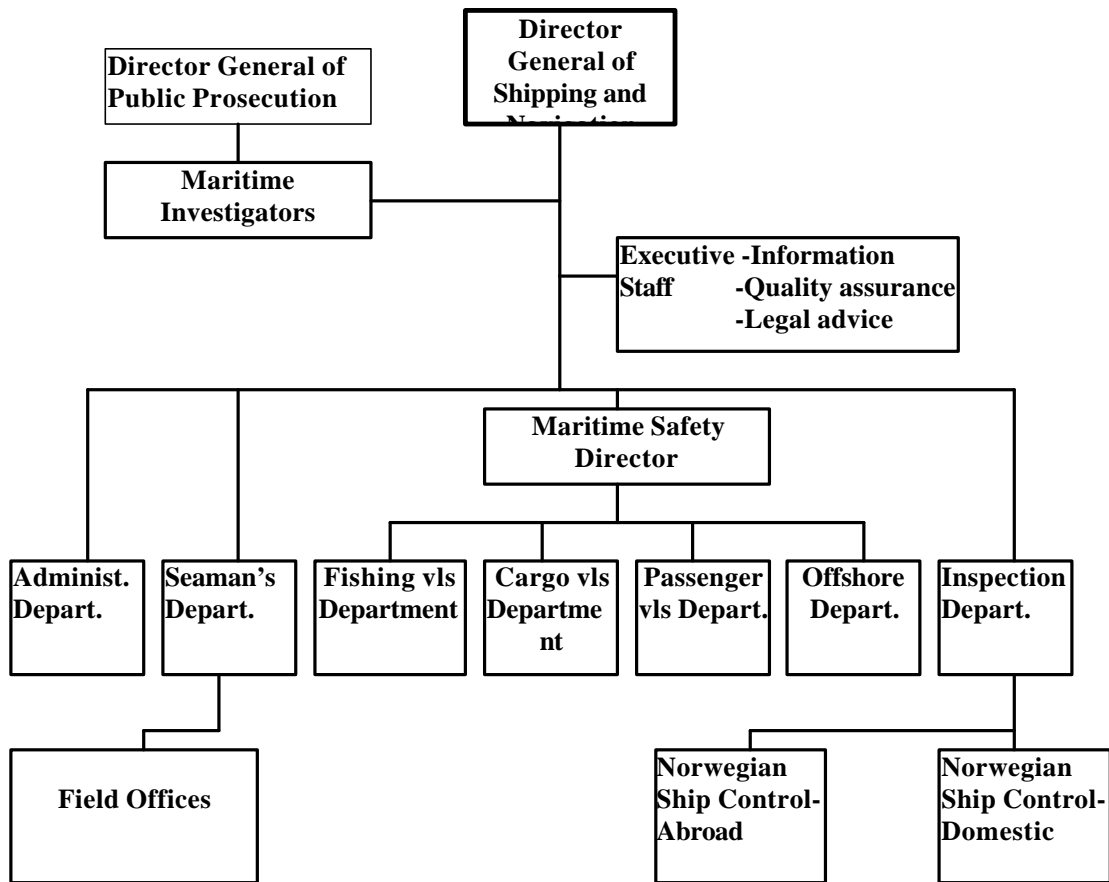
5.3.1 Operating Environment

The Norwegian Maritime Directorate (NMD) is in many ways very similar to the Maritime and Coastguard Agency of the UK in its way of operating, and since the latter has just been described the author sees no reason to repeat a similar description.

It is however considered worthy mentioning that, although much of the work in the offshore industry is delegated to Classification Societies the Norwegian Maritime Directorate maintains a specialised Offshore Department within its establishment in order to verify work carried out by delegated bodies.

Notwithstanding fishing vessels are known to be more vulnerable in their nature of operation, and they are in most cases the least regulated in terms of registration, personnel training, and certification. In view of the preceding fact all the three Administrations AMSA, MCA and NMD maintain specialised sections or departments in order to keep a close watch on their safety performance.

FIG. 6



NORWEGIAN MARITIME DIRECTORATE

Source: Norwegian Maritime Administration

CHAPTER SIX

Conclusion and recommendations

Having made an investigation and identified the various shortfalls in the system of managing maritime safety and of the marine environment protection, the author wishes to draw conclusions as under.

- Those very important international maritime conventions such as SOLAS, Collision Prevention Regulations 1972, MARPOL 73/78 and many others are not ratified, and the Collision Prevention Regulations are for 1960.
- The offshore industry ranging from fishing to gas and oil exploration is likely to grow deeper into Tanzania's territorial waters.
- The Merchant Shipping Act lacks necessary provisions to cope with current developments.
- harmonisation of safety standards is lacking in inland waterways
- The Marine section in the Ministry of Communications and Transport lacks technical personnel
- the object of establishing a competent maritime safety administration should be given priority in the continuous quest for safer ships and cleaner oceans

However on the offshore oil and gas industry, it has been noted with great interest that the Tanzania Petroleum Development Corporation is already in the process of formulating rules and regulations similar to those applied by the Norwegian oil

industry. However from the nature of the industry being international, optimum advantage of such regulations may not be realised without a parallel review of other national maritime legislative instruments.

The study has also indicated a general increase of maritime activities in most maritime centres in the country. As a result of trade liberalisation, privatisation and encouragement of foreign investment in maritime transport, private boat construction and shipping companies have been established and more are likely to be established.

The implication of this trend is as follows:

- First is a positive impact by allowing for competition amongst investors and therefore relatively cheaper and improved services to the general public,
- The second impact is a threat for human safety and marine. This calls for verified competency coupled with improved set of traffic rules for not only those who handle the vessels but also those who own and manage them,
- In the context of the preceding point, increased cheaper and better marine transportation implies that, relatively more passengers should be expected to travel at any given period. In this, sensitisation of the general public to minimise pollution from garbage is a necessity where its effect to marine life is a nightmare.

On the other hand fishing vessels have proved to be more vulnerable in both aspects of safety and marine pollution respectively. The use of dynamite fishing has become pathetic and loss of property and life is on the high side. This rises questions on the construction standards of fishing vessels, regulations for registration and even quality of training for the professional fisherman. This situation also calls for the need to initiate an informal training for the non-professional fishermen.

Lack of equipment, co-ordination and co-operation amongst different Government Agencies has also been observed to be another source of inefficiency. This call for a

concerted effort amongst parent Ministries, their respective Agencies and stakeholders in charting out the best solution to the problem.

The study has also shown that Navigation Aids in inland waterways such as Buoyage systems, Charts, Communication facilities etc. are outdated. The lack of hydrographic services has been noted, while the need for regional harmonisation remains transparent.

Notwithstanding the above facts, the establishment of a competent maritime administration becomes even more important in the light of the Memorandum of Understanding on Port State Control (PSC) for the Indian Ocean Region of which Tanzania is a party.

6.1 Recommendation

It is noted that a lot of work has been done by both national and international experts in the past and recommendations given which may or may not be the same as under, but nevertheless worthy commending. However in view of the above conclusive observations it is therefore recommended that:

1. As an interim measure a National Maritime Safety Committee (MSC), be formed under the chairmanship of the Permanent Secretary of the Ministry of Communications and Transport and comprising of representatives from relevant organisations including stakeholders. The Committee shall be responsible for co-ordination and mobilisation of law enforcement agencies, examining changes in the industry, and subsequently reviewing rules and regulations as may be deemed necessary. The Committee may continue with its role as an advisory body after the establishment of a Maritime Safety Authority.

2. Provide basic necessary equipment, and make maximum use of the Navy and Marine Police in Search and Rescue operations, and in the combat of pollution within the territorial waters.
3. The Government speeds up the establishment of a competent Maritime Safety Administration within its existing capacity taking into consideration of the following;
 - Funding: by setting up Levy, Fee for service and Budget appropriation
 - Staffing and Training with a focus on Maritime experience and qualifications such as: Naval architecture, First Class Marine Engineers, Master Mariners, Environmental Science, Occupational Health and Safety (OH&S), Maritime Law, Education and Training and Auditing personnel with sufficient background etc.
4. The Safety of Life at Sea Convention (SOLAS), and Collision Regulations Convention 1972 (COLREG) be ratified. As for MARPOL 73/78 it is recommended that the Government initiates a fund generating scheme from transit oil cargo (on the basis of a Coastal State giving privilege to the geographically disadvantaged States- as per UNCLOS) for the development of “Port Reception facilities”.
5. As a matter of urgency the Merchant shipping Act be revised to allow for the introduction of the International Safety Management Code (ISM) and also to reflect on new developments in;
 - offshore oil and gas industry,
 - vessel construction standards, and
 - pollution from terminals, boat / dock yards.
6. Encourage sensitisation by media in order to improve the general public’s awareness in maritime safety and marine environment protection.

7. Review the Inland Water Transport in order to include Lake Nyasa Services. and
8. Initiate harmonisation of maritime safety standards with all neighbouring States.
9. IALA maritime buoyage system should with immediate effect be adopted on all lakes.

It should be recognised that the above recommendations need immediate action, and that the list is not exhaustive in the endeavour to achieve safer ships and cleaner oceans. It is therefore assumed that any other recommendations as may be given in various mission reports will still be given attention according to their order of priority.

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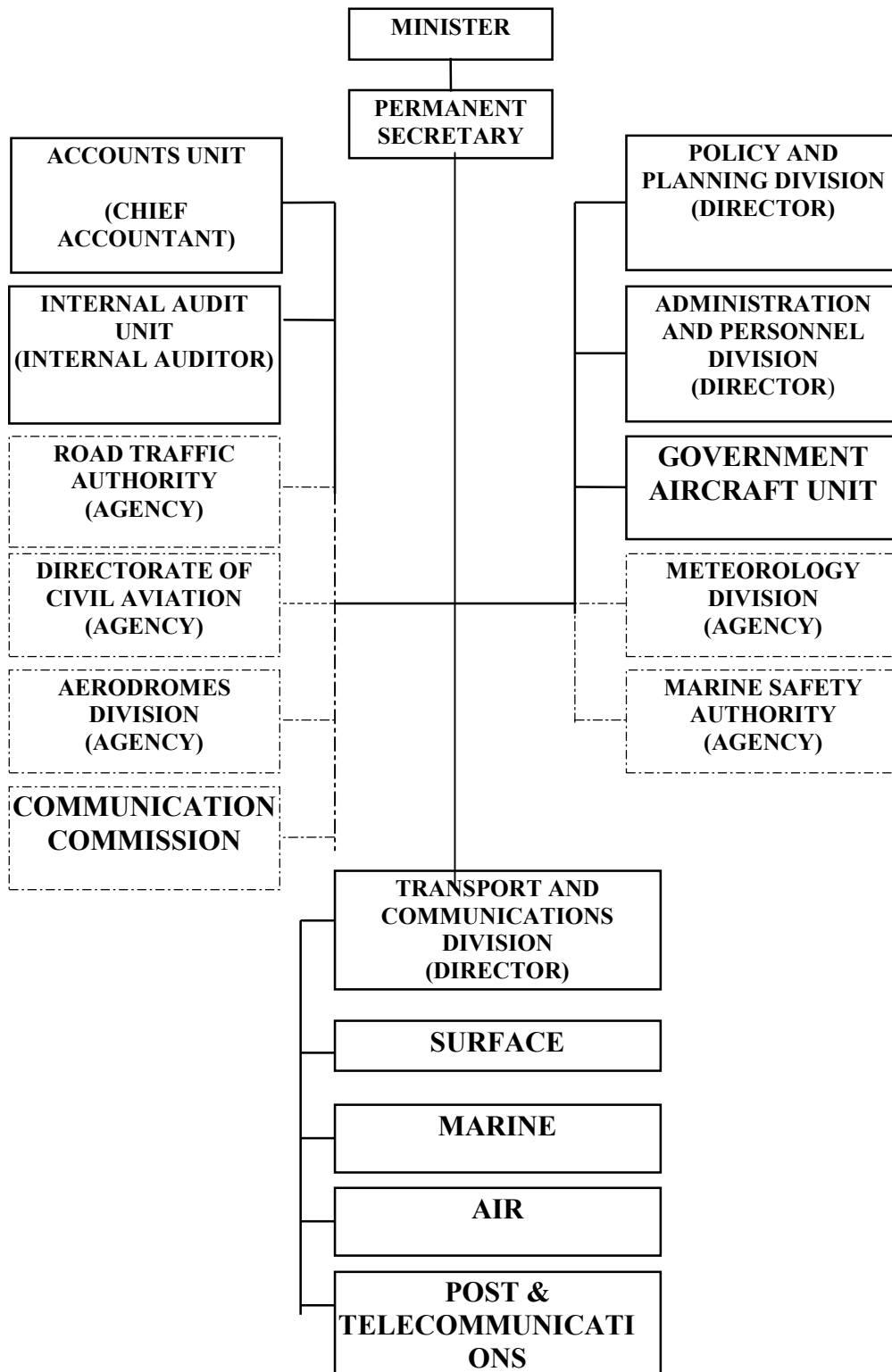
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APPENDIX 1
P.I.C. Approved detailed organisation structure
Ministry of Communications and Transport



Source: The Ministry of Communications and Transport

THE MERCHANT SHIPPING ACT, 1967

ARRANGEMENT OF CLAUSES

PART I

PRELIMINARY

Clause

1. Short title and commencement.
2. Interpretation.

PART II

REGISTERING AND LICENSING

Registering Ships

3. Qualification for owning Tanzanian ships and compulsory registration of ships so owned.
4. Unregistered ships unless exempt from registration not recognized as Tanzanian ships.
5. Exemption from registry.
6. Registrars of Tanzanian ships.

Procedure for Tanzanian Registry

7. Register Book.
8. Survey and measurement of ship.
9. Marking of ship.
10. Application for registry.
11. Declaration of ownership on registry.
12. Evidence on first registry.
13. Entry of particulars in Register Book.
14. Documents to be retained by registrar.
15. Port of registry.

Certificate of Registry

16. Certificate of registry.
17. Use of certificate.
18. Penalty for use of improper certificate.

APPENDIX 3b

No. 43

Merchant Shipping

1967

THE UNITED REPUBLIC OF TANZANIA



No. 43 of 1967

I ASSENT

J. K. NYERERE,
President

27TH NOVEMBER, 1967

**An Act to make provision for the Control, Regulation and Orderly
Development of Merchant Shipping**

[1ST DECEMBER, 1967]

ENACTED by the Parliament of the United Republic of Tanzania.

PART I

PRELIMINARY

1. This Act may be cited as the Merchant Shipping Act, 1967, and shall come into operation on the 1st December, 1967.

Short title,
commence-
ment and
application

2.—(1) In this Act, except where the context otherwise requires—
“apprentice” means an apprentice to the sea service;

Interpretation

“coasting ship” means a ship employed solely in the coasting trade;

“coasting trade” means the carriage of goods or passengers on a sea voyage solely from any place on the coast of the United Republic to any other place or places on the coast of the United Republic or to other places on the coast of Eastern Africa between the limits of Mogadiscio in the north and Ibo in the south;

“collision regulations” means the International Regulations for Preventing Collisions at Sea, 1960, together with such revisions thereto or substitutions therefor as the Minister may, by order in the *Gazette*, declare to be in effect;

“consular officer” means a consular officer of the United Republic and such other officers as are recognized as consular officers by the Government of the United Republic;

“contravention” includes, in relation to any provision, failure to comply with that provision and “contravene”, with its grammatical variations, shall be construed accordingly;

APPENDIX 3c

No. 43

Merchant Shipping

1967

(2) This Act shall not apply to the regulation of inland water transport.

PART II

REGISTERING AND LICENSING

Registering Ships

Qualification for owning Tanzanian ships and compulsory registration of ships so owned

3.—(1) A ship shall be deemed to be a Tanzanian ship if, and only if, it is owned wholly by persons qualified to be owners of a Tanzanian ship, namely—

- (a) a person who is resident in the United Republic;
- (b) a body corporate, incorporated under and subject to the laws of the United Republic and having its principal place of business in the United Republic;
- (c) the Government of the United Republic.

(2) Every ship of 25 tons net register tonnage or over that is so owned by persons qualified to be owners of Tanzanian ships shall unless exempted be registered as a Tanzanian ship, but no obligation shall arise under this subsection to register a Government service ship.

Unregistered ships unless exempt from registration not recognized as Tanzanian ships

4.—(1) Notwithstanding that an unregistered ship is owned wholly by persons qualified to be owners of Tanzanian ships, that ship (unless she is exempted from registry or is not required to be registered by this Act) shall not be recognized in the United Republic or for the purposes of this Act as being entitled to the rights and privileges accorded to Tanzanian ships.

(2) Any Tanzanian ship whatever unless exempted from registry under this Act may be detained until the master of the ship, if so required, produces the certificate of registry of the ship.

Exemption from registry

5. The Minister may, by notice published in the *Gazette*, exempt certain classes of ships, not exceeding 125 tons register, to be designated by him, from registry under this Act.

Registrars of Tanzanian ships

6. The Minister may, by notice published in the *Gazette*—

- (a) declare any port in the United Republic to be a port of registry; and
- (b) appoint registrars of Tanzanian ships and deputy registrars at such ports of registry.

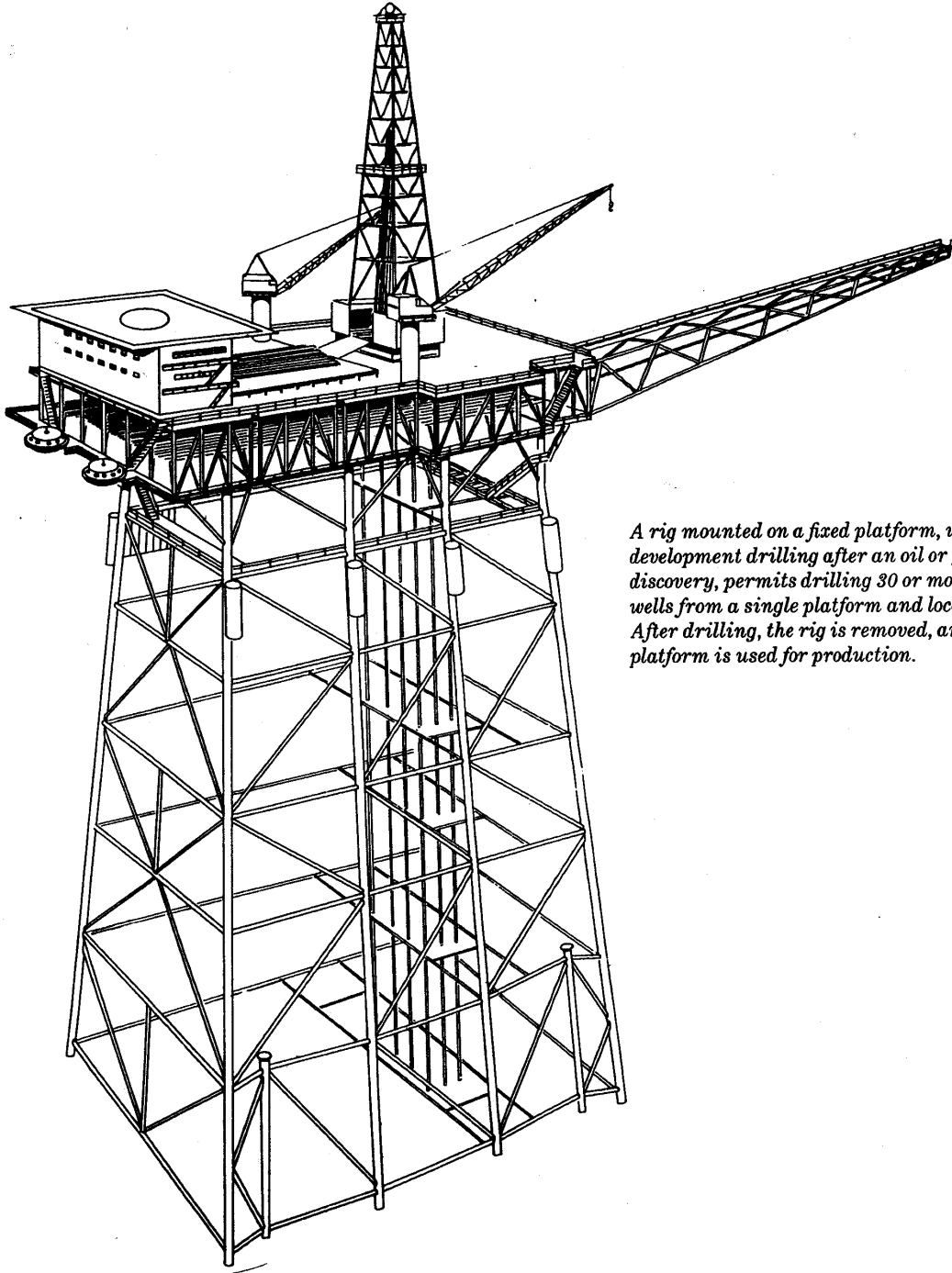
Procedure for Tanzanian Registry

Register book

7. Every registrar shall keep a book to be called the Register Book, and entries in that book shall be made in accordance with the following provisions—

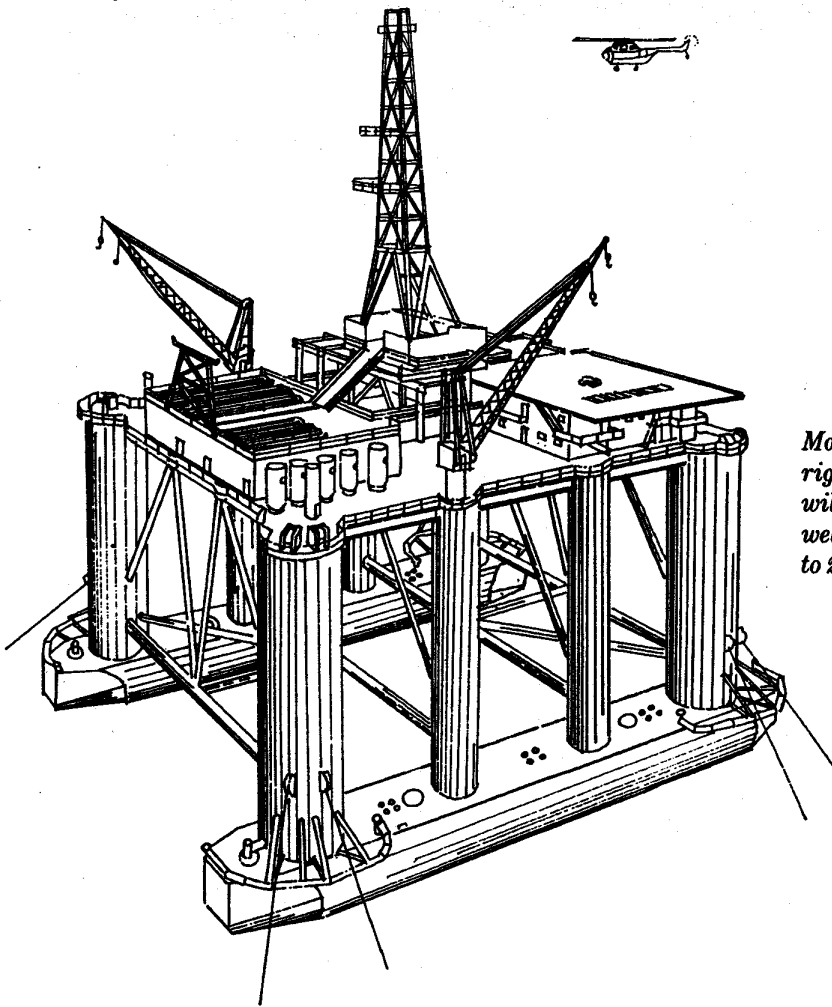
- (a) the property in a ship shall be divided into 64 shares;

APPENDIX 4a



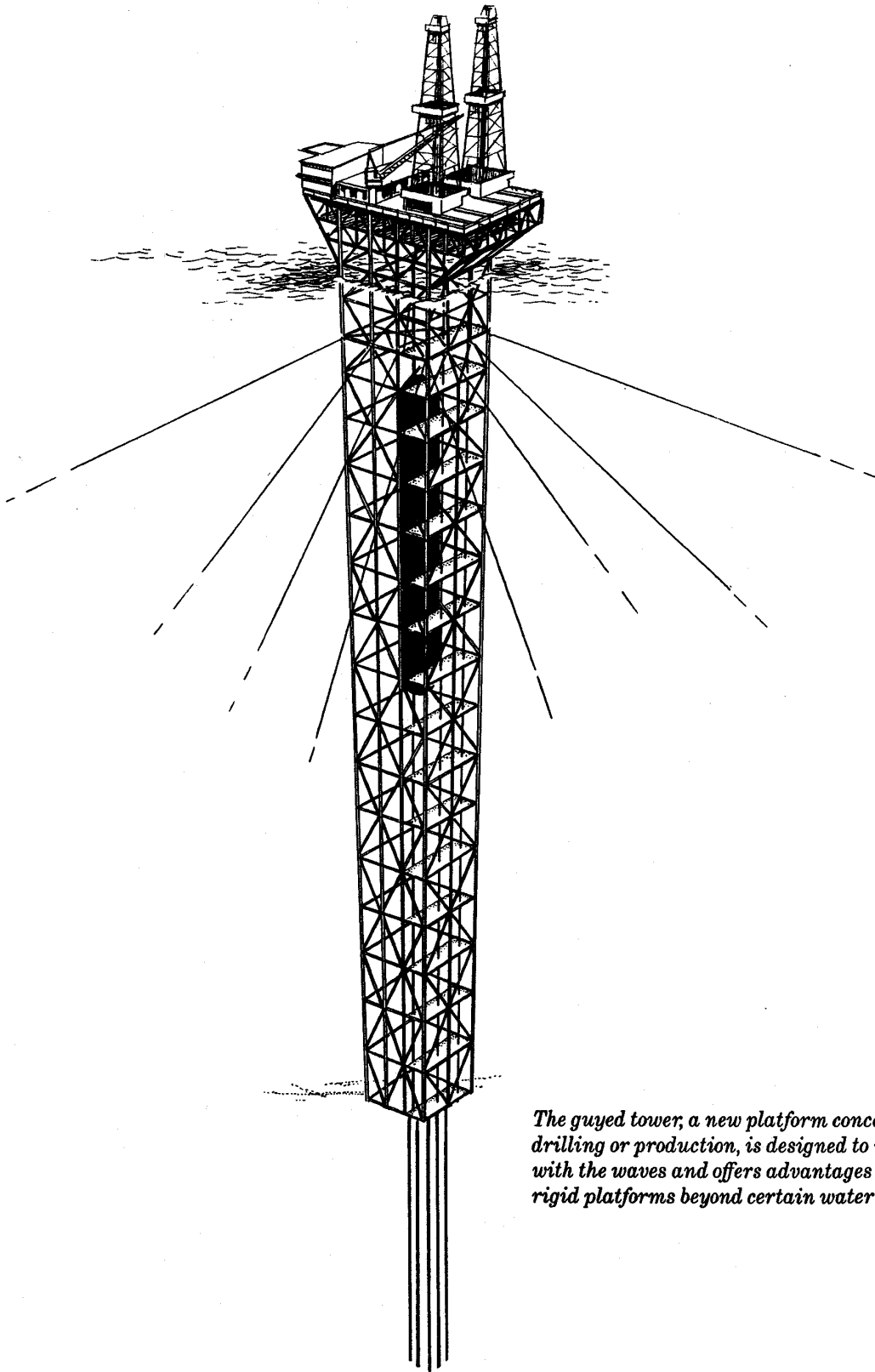
A rig mounted on a fixed platform, used for development drilling after an oil or gas discovery, permits drilling 30 or more wells from a single platform and location. After drilling, the rig is removed, and the platform is used for production.

APPENDIX 4b



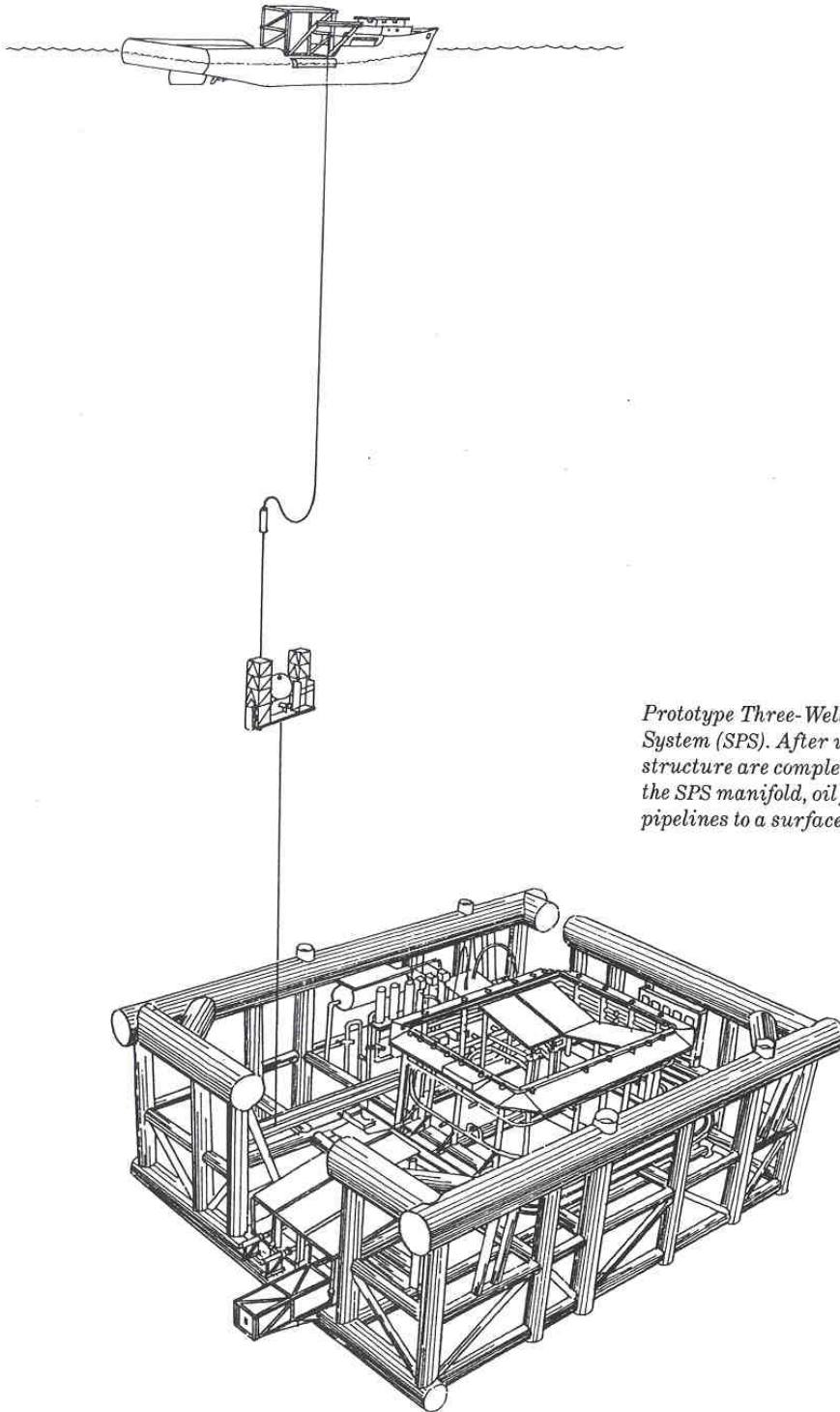
Moored semi-submersible rigs are used to drill wildcat or exploratory wells in water depths up to 2,500 feet.

APPENDIX 4c



The guyed tower, a new platform concept for drilling or production, is designed to move with the waves and offers advantages over rigid platforms beyond certain water depths.

APPENDIX 4d



Prototype Three-Well Submerged Production System (SPS). After wells drilled through this structure are completed and connected to the SPS manifold, oil flows through pipelines to a surface facility.

Appendix 5
Centers of maritime activities in Tanzania

