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THE WORLD MARITIME UNIVERSITY

PORT DEVELOPMENT

IN

SOMALIA

BY

SAEED HASSAN RAGEH

1987

GENERAL MARITIME ADMINISTRATION

World Maritime University
Malmo, Sweden

**PORT DEVELOPMENT IN
SOMALIA**

BY

SAEED HASSAN RAGEH

A paper submitted to the faculty of the World Maritime University in partial satisfaction of the requirements for the award of a

MASTER OF SCIENCE DEGREE

IN

GENERAL MARITIME ADMINISTRATION

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

Signature



Date: 8th October, 1987

Supervised and assessed by Professor A.A. Monsef

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LIST OF ABBREVIATIONS

SPA	Somali Ports Authority
MMTP	Ministry of Marine Transport and Ports
MPH	Ministry of Public works and Housing
NTA	National Transport Agency
ICA	International Cooperation Administration
UNCTAD	United Nations Conference on Trade and Development
IPP	Improving Port Performance
MARAD	Maritime Administration
USAID	United States Agency for International Development
PMAESA	Port Management Association of Eastren and Southern Africa
IMO	International Maritime Organisation
WMU	World Maritime University
RORO	Roll on Roll off
IDA	International Development Association
IBRD	International Bank for Reconstruction and Development

ADB African Development Bank

EEC European Economic Commission

SSRP Somali Socialist Revolutionary Party

FMC Federal Maritime Commission

NASAN National Administration of Shipping and Navigation

SWL Safe working Load

LLWL Lowest low Water Level

SIDAM Somali Institute of Development, Administration
and Management

IVTC Industrial vocational Training Centre

FRG Federal Republic of Germany

AAPA American Association of Port Authorities

ILO International Labour Organisation

GRT Gross Registered Ton

OAL Over All Length

MARPOL Marine Pollution

OECD Organisation of Economic Cooperation and Develop-
ment.

INTRODUCTION

Expanding world trade and the consequent fast growth in ocean freight traffic have stimulated the construction of mammoth container ships and larger containers, round-the-world container services, and integrated intermodal ocean and land transportation, with double-stack trains crossing the continents.

In some parts of the world this growth has been accompanied by much competition of freight transportation. The hub of this rapidly changing international transport universe is the sea port, a complex network of receiving, storing, container stuffing and stripping, and transporting facilities for cargo carried by ships. In the ports, cargo is transferred between deep-sea vessels, feeder vessels, and inland transportation modes.

While dramatic change continues to occur in intermodal freight transportation, no such breakthroughs have been made within the port industry since the adoption of containerisation in the 1960s. In some ports of the developing world the gantry cranes of today are similar in productivity to those of 20 years ago. Similar methods of materials handling, with similar levels of productivity, also still prevail. The major change has been an immense expansion in size and volume, and hence in the complexity of port operations. Many in the port industry, and many who rely on the efficient handling of cargo in world trade, have come to feel that the port is on the verge of becoming a bottleneck rather than a funnel for world general cargo commerce.

Consequent upon this situation, several nations in the Eastren African Region today are pursuing efforts to develop their ports as major transshipment centers for a number of ports in the remainder of the Region. The Port of Djibouti, for example, has recently formulated major development plans to assure the port's responsiveness to short-and long-term trends in trade, shipping patterns, vessel and port technology, and other factors that will influence its ability to compete for feeder container and transshipment traffics.

The Somali Democratic Republic has recently concluded a short-and long-term master plan for the development of its major ports including the improvement of facilities now being used by cargo ships.

The ports of Mombasa and Dar-es-salaam, which serve as major transshipment centers in the Eastern African Region are already providing container handling capabilities, and the Kenyan Port Authority is studying the possibility of establishing a major free port in DONGU KUNDU which is adjacent to Mombasa.

The development of these ports as major transshipment centers introduces new challenges for technological innovation and port operations and management. As ports undertake major developmental efforts for modernising facilities and increasing capacities, they must provide undiminishing levels of service during the execution of an improvement or expansion project.

It is usually the expectation of more cargo that can be handled that serves as justification for port development projects, and it would be self-defeating if the project work itself is allowed to cause congestion from which it may be difficult to recover.

Moreover, the success of maintaining capacity and increasing capacity by these major transshipment centers will be predicated, in part, on the efficient operation of feeder services by other smaller ports of the Region. Thus, feeder services themselves will involve new transport, handling, and control technology which to be economically efficient will require scales of operation in service and throughput.

In particular, the ability of the Somali Ports as transshipment centers and feeder services to meet the challenges created by new and complex problems will obviously become more critical as the nation becomes more active in its participation in international trade to improve its economy.

New techniques and technologies required for successful operation of national and regional ports will need concomitant changes in the management and operations of the ports. Moreover, operational efficiency for both transshipment and feeder services is not acquired solely through new technology, but also through the application of modern management concepts along with appropriately trained personnel.

The purpose of this study, therefore, is to examine the development, administration and operation of the ports in Somalia with general reference to certain aspects of port problems in developing countries.

Chapter I is a presentation of the Somali Democratic Republic, with brief explanations on its location, climate and natural resources, government system and national trade.

Chapter II is an overview of the country's transport system with suggestions for improvement.

Chapter III presents the system of Maritime Administration in Somalia as a model representative of a developing country, and a short comparison of the systems of few developed countries.

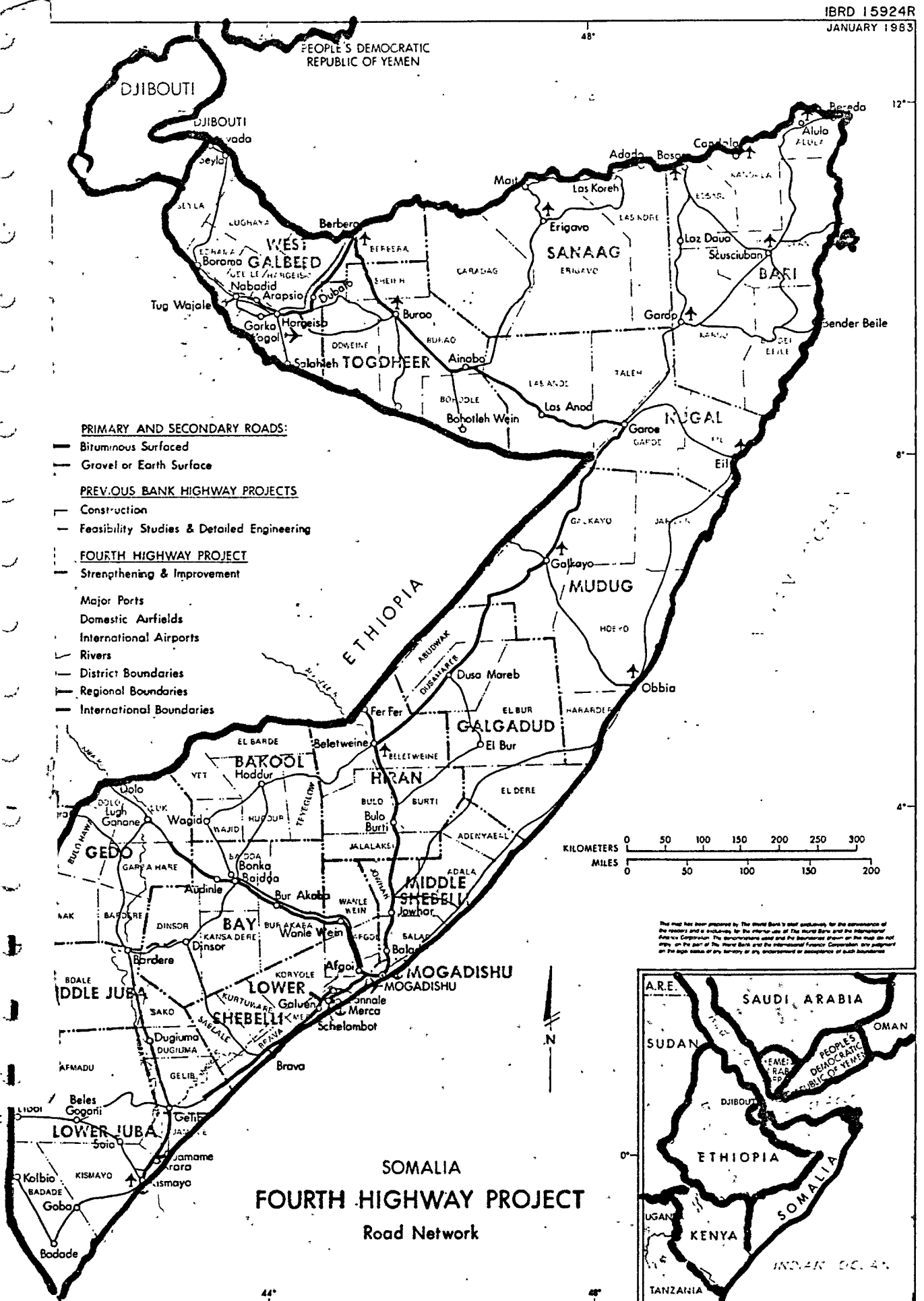
Chapter IV describes the history of port development in Somalia over the centuries, and the factors that can affect port development in general.

Chapter V presents the administration and organization of the Somali Ports as presently established under the auspices of the Somali Ports Authority.

Chapter VI deals with the operation and management of the ports in Somalia. This chapter in its different components touches upon the existing shortcomings and suggests improvements in port productivity, port maintenance, dock labour system and port safety and security.

Chapter VII describes the evolution of technological development of containerisation and its impact on ports with particular emphasis in developing countries.

Chapter VIII is a conclusion of the study with recommendations for improvement to the existing situation in the Somali Ports.



CHAPTER I.

PRESENTING THE SOMALI DEMOCRA- TIC REPUBLIC.

1.1 LOCATION

THE Somali Democratic Republic lies within the latitudes 12°N and 2°S , and longitudes 40°E and 50°E . Somalia which occupies the entire horn of Africa with an area of 686000 sq.km., is bordered by Kenya on the south, Ethiopia on the north and west and the Republic of Djibouti and the Gulf of Aden on the north and the Indian Ocean on east. Somalia's 3330km. coast line stretching from Cape Kiambone in the south (bordering Kenya) to Loyado (bordering Djibouti) in the north, is the longest in the African continent with the exception of Apartheid South Africa.

The only two rivers in the country are Juba and Shabelle, both of which originate in the Ethiopian highlands. River Juba pours its waters into the Indian Ocean at a place called Gobweyn which is 14km. north of Kismayo. The rivers are practically not navigable to any ships of any size. It is however, interesting to note that River Shabelle never reaches the sea, but it disappears in depressions near the Haaby valley, in the lower Shabelle Region, forming a series of marches.

The Equator runs across the Somali Democratic Republic at a place called Sanguni which is 28 miles north of Kismayo, the capital city of the Lower Juba Region.

1.2. PHYSICAL FEATURES AND CLIMATE.

Basically, the land is divided into belts of different topography which are:-

- a) The coastal area;
- b) The Golis Range of mountains;
- c) The Savana grassland of Sool;
- d) The Nugal valley and;
- e) The main grazing belt of Houd.

The Northern Region is somewhat mountainous, with plateaus reaching, between 900 and 2100 meters above sea level. To the northeast there is an extremely dry dissected plateau that reaches a maximum elevation of 2450 meters.

South and west of this area, extending to the Shabelle river lies a plateau whose maximum elevation is 685 meters. The region between the Juba and Shabelle rivers is low agricultural land, and the area that extends southwest of the Juba river to Kenya border is low pastureland.

Somalia has a tropical but not torrid climate, and there is little seasonal change in temperature. In the low areas, the mean temperature ranges from about 24°C to 31°C. The plateau region is cooler, while the southwest is warmer. The periodic winds, the south west Monsoon (June-September), the north east Monsoon (December to March), influence temperature and rainfall. Rain falls in two seasons of the year:-heavy rains from April to June (Spring) and light rains from September to November (Autumn). Average annual rainfall is estimated at about 28cm.

1.3.STATE AND GOVERNMENT.

The state of Somalia came into being when the former British Somaliland (Northern Regions) and the United Nations Trusteeship Territory of Somalia (ex-Italian colony of the south) obtained independence and united on 1st July 1960.

The Democratic Republic of Somalia is a Socialist Democratic country. The Somali Socialist Revolutionary Party (SSRP), is the only political party in the country. The country has a new constitution which was ratified by popular referendum in 1979. The people's Assembly which consists of 171 members is elected in public ballot for five year terms. The President of the Republic who is elected by the people for a seven year terms is also the Secretary General of the SSRP. The Council of Ministers is headed by a Prime Minister who is appointed by the President of the Republic. Somalia exercises a policy of positive neutrality and is a member of a number of International and regional organisations including:-

- a) The United Nations Organisation;
- b) The Arab League;
- c) The Muslim League;
- d) The Organisation of African Unity (OAU);
- E) The non-alignment movement.

1.4.NATURAL RESOURCES.

Somalia's estimated population of 7 millions is unevenly distributed, with the highest concentration in the Southern Region centred in the capital city of Mogadisho, and in the basins of the Juba and Shabelle Rivers.

In the Northern Region, the main concentrations are in Hargeisa, the second largest city. Approximately 46% of the population are nomads, 29%, settled farmers and 25% urban dwellers(*).

Somalia's natural resources are highly influenced by its topography and climatic conditions. Livestock rearing is the main occupation of the people, but agriculture and fishing also play an important role. The total animal population in Somalia is estimated at 40.3 million heads of which goats are 47.7%, sheep 27.3%, camel 14.9% and cattle 10.4%. It has been estimated that 8.2 million hectares of the total land is suitable for cultivation which represents 13% of the total land area. Consequently a large part of the population are engaged in farming. The major crops which are grown for subsistence as well as for exportation include:-Sorghum, maize, rice, beans, sesame, groundnuts, cotton, sugar cane and banana.

Somalia's long coast line comprises the Indian Ocean and the Gulf of Aden, and according to a number of surveys, the potential catch in the Somali waters has been estimated at 200.000 tons per annum, without endangering the stock. Despite this huge potential resources actual catch in 1984 was recorded as 18000 tons. This poor exploitation is due to certain obvious factors which include:- lack of fishing boats, lack of jetties, lack of cooling facilities and the absence of the necessary skills and knowledge.

(*) World Bank Report 6097-S0, July 85, PP. IV.

1.5.NATIONAL TRADE.

Livestock and agriculture form the main basis of Somalia's economy and source of income of the majority of the people, both for subsistence as well as for foreign exchange earning, accounting for about 95% of export earning, and 88% of the gross domestic product. Banana reached, its peak in 1972 at 172000 tons but declined precipitously to 30000 tons in 1979(*). Since then policy reforms including removal of price controls have been pursued and steady recovery is underway. Livestock exportation was also affected seriously in 1983 due mainly to a temporary embargo by the Saudi Government on cattle exports to that country. However, in the light of new arrangements with the Arab Republic of Egypt, and the apparent progress in the negotiations with the Saudis, it is seemingly optimistic that livestock exportation will be maintained in its promising level of the seventies.

These two major items are followed by a number of comparatively minor commodities, but which significantly contribute to export earnings and these include:-hides and skins, fish and fishing products, canned meat and incense and frankincense. Like most developing countries, Somalia is an exporter of raw materials and importer of manufactured goods and consequently records a trade deficit every year. The major import items in terms of value are food (other than meat), mineral fuels and transportation equipment, which accounted for about 45% of the total import bill in 1982.

(*) World Bank; Staff Report 6097,1985, PP. 16.

Somalia trades with a limited number of countries based on historical grounds, geographical arrangements or on political harmony, and these are presently concentrated in Italy, Saudi Arabia, the Arabian Gulf States, Kenya, Federal Republic of Germany, the Arab Republic of Egypt and the United Kingdom.

CHAPTER II.

TRANSPORTATION SYSTEM.

2.1. An Overview.

The transport system in Somalia is important in that it has to support the growth and development of the people and goods throughout the country. The improved and linked communication network will enable human and material resources to be transported more rapidly and efficiently to where they can be employed, the movement between producing and consuming centres, between urban and rural areas.

The main aim in the Republic is to improve the existing routes, eliminate the missing links and open up inaccessible areas so as to create traffic where it did exist and provide development in areas where there was not in the past. It should be noted that a transport and communication system is an indispensable element in the economy, and plays an important facilitating role in economic development of the agricultural, industrial and commercial sectors, by opening up new markets and by permitting the safe, economical and rapid movement of goods and people.

Road transport has been the main subsector which has contributed to this goal. The coastal shipping with dhows which once contributed to trade with the neighbouring countries, as well as to link the economically active coastal cities of Somalia, has essentially been reduced or ceased.

The road transport, which has a large share of foreign costs, is expensive for the general public, and must be given serious thought in order to improve the provision of transport services to the Somali economy.

2.2.POLICY AND OBJECTIVES.

The Government of Somalia recognises the vital role that adequate transport facilities and services play in the development of the nations economy. Its objectives in the transport are to promote social development and economic activities through the provision of transport infrastructure and services, and to reduce urban and rural disparities. The government's policy also includes to ensure regular supply of spare parts and vehicles, reliable transport services to reduce transport costs and protect its assets. However, it is well recognised that the government faces present economic issues which are formidable to overcome in many areas such as (*):-

- a) Inflation,.
- b) Foreign exchange earnings,
- c) Balance of payments,
- d) Efficiency of productive sector.

In light of this priority, the role of the transport sector will be to maximise the provision of transport service with minimum foreign exchange availability, for example:-

(*) Ministry of Planning, Performance of the Somali Economy, 1984 PP. 169.

- a) To reduce costly construction of paved road network through improvement and rehabilitation;
- b) To achieve more efficient use of road vehicles through modernisation and load factor (possibly with increased participation of the private sector);
- c) To maintain the foreign exchange earning capacity of the major ports;
- d) To improve efficiency of port operations to avoid undue delays;
- e) And to reduce transport costs in the distribution of goods through promoting the use of traditional dhows and coastal shipping.

2.3.ORGANIZATION.

The four Ministries which are concerned with the transport sector in Somalia are:-

- i) The Ministry of Public works and Housing (PWH) which, through its civil engineering department is responsible for highway maintenance and for planning and construction of highways, ports and airports;

- ii) The Ministry of land and air transport which is responsible for road transport regulations including vehicle registration and control; for civil aviation through its civil aviation department;
- iii) The Ministry of Marine Transport and Ports which, through the Somali Ports Authority is responsible for port operations, and through the Somali Shipping Agency and Line is responsible for marine transport;
- IV) The Ministry of Interior which is responsible for highway traffic control. Coordination of these responsibilities and activities is provided by the Ministry of National Planning.

2.4.HIGHWAYS.

The total road network in Somalia is 21600km. Of this total 3000km. are paved, 600km. are gravel and the rest are earth roads and tracks. The share of gravel and paved roads has increased significantly in 1976 from 1800 km. to 3600km. in 1985 (*). The coverage of the road network is inadequate for the country's present needs, and although a long trunk road extends north to south covering almost all through the length of the country, most of the paved feeder roads are concentrated in the extreme south around the two rivers of Juba and Shabelle. However, a large area in the north eastern regions still remains inaccessible.

(*) Ministry of Public Works; fourth Highway Project 3604-S0, PP.9.

The land formation of this area mainly consists of dry rivers (wadi), rift valleys, depressions and steep cliffs immediately overlooking the sea.

2.5.AIR TRANSPORT.

The air transport system in Somalia serves a number of scattered regional centres with Mogadisho as the focal point. Only the airports in Mogadisho, Berbera, Hargeisa and Kismayo have paved runways which can handle modern airplanes under all weather conditions.

The Somali Airlines, established in 1964, operates a few Fokker F27 and cessna aircrafts on its domestic routes, and a number of BOING 707 aircraft on its international routes, which connect Mogadisho and Berbera with Rome, Frankfort, Cairo, Nairobi, Djibouti, Dubai, Abu Dhabi and Doocha. Somali Airlines is an autonomous parastatal under the department of civil aviation of the Ministry of Land and Air transport. Technical and management assistance is given by Lufthansa. A few foreign airlines link Somalia with Africa, Europe and the Middle East, which include:- Alitalia of Italy, Kenya Airways, the Saudi Airline, Al-yemda of the Yemen Democratic Republic and Airflot of the USSR.

2.6.ROAD TRANSPORT INDUSTRY.

No systematic records have been kept of road usage on the nation's vehicular fleet and there is a shortage of available information.

Available data on fleet composition, age and condition indicate that there was a high mix-ratio of privately and publicly owned vehicles when the first systematic data collection was made in 1980. Of the total vehicular fleet registered, about 25% were medium to heavy trucks including buses, 40% pick-ups and vans and the remaining 35% were for passengers including taxis. With no rail service in the country, road vehicles cater to the majority of freight movement in the country. Freight Transport is carried by private trucks and by the National Transport Agency (NTA), a parastatal company established in 1978 to provide freight transport services. There are no specific regulatory barriers to entry into the freight transport industry, and although official tariffs exist, the market is reasonably competitive.

2.7. PORTS AND HARBOURS.

The word port is derived from the latin term porta meaning a gate or gateway(*). This concept is still valid in thinking of a water port and particularly of an ocean port which serves as a gateway to the surrounding land area. In this paper the word harbour is not used interchangeably with port. A harbour is usually a natural geographic feature of a coast line, which is always one characteristic of a port that will determine the utilization of the port. The harbour provides the shelter and the land interface. Its natural channel probably will require artificial improvement and other man-made features which include installations to hold, protect and or allow the interchange of cargo and passengers.

(*) Marvin L. Fair; Port Administration in USA PP. 3.

The word " port " is defined as a place which regularly provides accommodation for the transfer of goods and or passengers to and from water carriers. It is therefore not a temporary undeveloped landing place along the shore.

The transfer is usually between waters carriers and non-water carriers, but directly or indirectly it may be between water carriers and water front industry or water front storage facility where goods are prepared for transfer for further reshipment.

Port's handling facilities of goods and passangers may include water front facilities and marginal railway and highway facilities. The former may be a belt line parallel to the shore, and designed to serve as a means of transfer between inland carriers and water front facilities. It is difficult to draw the line between the facilities to be included and those to be excluded. In reality, almost all of the transportation facilities, storage facilities, marketing and banking agencies of the metropolitan area of a port city contribute to the port's operation but all those facilities and agencies are not necessarily included among those administered by the ports authority.

Ports can be designed to handle a specific commodity, compatible catagories of cargoes or a mixture of commodities and cargoes. In terms of the use for which they are designed, ports fall within three groups:-

a) Bulk Cargo Facilities; include bulk liquid ports for handling petroleum or chemical products; dry bulk ports for handling such products as metal ores, coal, cement clinkers etc; and dry chemical products; and grain ports for handling the many products of agriculture;

b) Industrial Facilities are those privately or publicly owned by manufacturing companies for shipment of their products and the importation of raw materials. Examples of these ports include those which are operated by steel mills, paper product manufactures, chemical companies etc;

c) General Cargo Facilities may be included any of several types:-

- i) The conventional break bulk cargo ports which are designed to accommodate a variety of vessel types and cargoes;
- ii) Container ports which are expressly designed and operated for servicing the requirements of containerised cargo movements;
- iii) RO-RO-Ports for Roll on Roll of vessels.

The conclusion that can be derived from the above definitions and explanations, therefore reveals that a port is an interface in the chain of transportation and not a termination point of traffic.

The importance of having direct access to the sea and a well positioned ocean port can never be over emphasised, and the adverse effect of the negative aspect of it is highly recognised by the World's land locked countries which depend on the mercy of their maritime neighbours for the unrestricted movement of their international sea-borne trade.

The Somali Democratic Republic is one of the lucky nations having a vast coast line properly located for the world's major commercial sea lanes. The government of Somalia having recognised this natural privilege and its importance had established the Somali Ports Authority in the early years of independence (1962). The main aim of creating this public agency was to make full exploitation of the potential port and harbour services.

CHAPTER III.

MARITIME ADMINISTRATION.

Maritime administration or maritime safety administration may be defined as the specialised executive organ of a maritime government, irrespective of whether it is a developed or a developing country, to implement the regulatory functions embodied in the national legislations, especially those pertaining to registration of ships, maritime safety, marine personnel, maritime casualty investigations and protection of the marine environment(*).

Since the term maritime administration is a generic one, the concept of its nature and extent can vary depending upon whether the ministry responsible for maritime matters itself is being viewed as the maritime administration or a sub-formation under the said ministry is considered as the maritime administration. Accordingly the structure of the maritime administration can vary. The overall infrastructure of the maritime administration would depend upon the nature and extent of duties and responsibilities involved, which in turn would depend upon the current stage of maritime development in the country and its plans for future maritime developments, including the pace at which the future development is to proceed. However, what is highly important is to ensure that the infrastructure is capable of carrying out efficiently the essential functions of a maritime administration.

(*). Professor P.S. Vanchiswar; Establishment/Administration of Maritime Affairs in Developing Countries PP.55.

In pursuing its activities in the development of the maritime field, the appropriate government authorities would therefore, 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 with the basic policy objective of carriage of national sea borne trade through the ports on larger ships efficiently and with lower cost and for discharging the obligations of the government under international conventions which may be applied. This machinery can best be provided through a well organised maritime administration which will be responsible under the general direction of the ministry responsible 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, operation, and upkeep and maintenance of national shipping fleets; and also other related maritime activities such as shipbuilding, ship-repairing, dry-docking, port operations and maritime training.

The primary functions of the maritime administration in a developing country would have to be both developmental and regulatory and in conformity with the relevant international laws. Developmental functions are those which contribute directly to maritime development and the regulatory functions are those also contributing to such legal aspects of practical implementation of development.

The developmental functions must take the form of participation in the process of policy formulation of the government as regards maritime development and deciding upon the activities to be undertaken in connection with such development, and may include the followings:-

- 1) The appropriate analysis or assessment of the most suitable types and numbers of ships required to meet the scope of development planned of the national fleet.
- 2) Development of man-power needs of the shipping industry, and employment opportunities for national seafarers;
- 3) Development of shipbuilding and ship-repairing industry;
- 4) Development of maritime ancillary industries;
- 5) Assessment of the suitability of national ports for the intended ships and proposals for required development or improvement;

The regulatory functions are expected to ensure, in the main, safety of lives, ships and property, and the protection of the marine environment. These in turn must ensure in the context of development and economy:-

- 1) Maximum efficiency in the operation of ships with consequential economic advantages;
- 2) Creation, development, protection and preservation of national maritime skills;

- 3) Conservation of national property;
- 4) Reduction in the maintenance costs of ships;
- 5) Conservation of foreign exchange;
- 6) Provision of overall impetus to maritime development;
- 7) Projection of the image of the country in very favourable light in the maritime world.

Having briefly explained the concept and the functions that may be undertaken by any maritime administration with particular emphasis on developing countries, I would like to discuss further the situation in my own country, the Somali Democratic republic, but I also attempt to touch very briefly upon a few different developed countries with different administrative systems for comparisons purposes.

In the United States of America for instance, the maritime administrative function has been shifted from the Department of commerce to the Department of Transportation. The unit called Maritiem Administration (MARAD) mainly deals with commercial aspects and promotion of shipping, while legal matters and the whole complex of shipping conferences are dealt with by the Federal Maritime Commmission (FMC). The part of the US Maritime Administration that carries out most of the functions is the US Coast Guard.

The US Coast guard is organised in semi-military style and carries out a very broad spectrum of functions including: examination of personnel, merchant vessel inspection, maritime casualty investigation, aids to navigation, search and rescue etc.

In SWEDEN, the Maritime Administration was reorganised in 1956 and the National Administration of Shipping and Navigation (NASAN) was established. Maritime Administration in Sweden includes the responsibilities of the Ministry of Communication in Stockholm while the head quarters of the Maritime Administration is in Norkkoping. In the directives of this agency, it is stipulated that the activities are to be concentrated primarily on merchant shipping. The present duties of the Administration include: supervision of safety on board, provision of pilotage, fairways and hydrographic activities, management of state ice breaking operations, coordination of search and rescue work, consideration of economic issues of importance to shipping and administration of shipping dues.

In NORWAY, the function of maritime affairs is shared among several ministries and these include:-

The Ministry of Trade and Shipping which is responsible for looking after the interests of the shipping industry on a national and an international basis.

The Ministry is engaged in maintaining and improving the access to the market for Norwegian shipping services and also in attending to the interests of persons who are employed in the shipping trade. The Ministry has under its shipping department three directorates and institutions namely:-

- 1) The Maritime Directorate;
- 2) The Directorate of seamen;
- 3) The Norwegian Government's Seamen's Service.

The Ministry of Communication which is responsible for transport by sea in routes on the coast and ferry. Ship-building yards come under the Ministry of Industry. Fisheries matters, pilotage authorities, the lighthouse services and harbour matters are looked after by the Ministry of Fisheries. Maritime Education and Training is the responsibility of the two Ministries of Education and Culture. Oil Pollution Protection is under the Ministry of Environment, while maritime rescue service is under the Ministry of Justice. The Ministry of local government and labour is responsible for safety in connection with oil exploitation of the Norwegian continental Shelf.

In the Somali Democratic Republic shipping is one of the oldest and important forms of transport for the coastal people, and like all coastal nations the government attaches great importance to maritime activities.

Over the years shipping has not lost its central role in the life of the people; on the contrary the need for shipping has become more important. The type of shipping need has changed from its traditional rowing canoe to workboat and more recently to modern cargo vessels. Those changes have come about because of the need to transport larger volumes and heavier units of cargo.

Historically maritime activities in Somalia have followed the two different systems of the colonial rule. In the northern regions (Ex-British Somali Land), shipping and port administration at its very small scale was under the department of customs, while fishing was under the department of natural resources. In the Southern regions (Ex-Italian colony), there existed what was known as the maritime department. This was in reality a very small unit with limited personnel and experience.

It was responsible for the supervision of ports and shipping movement within the limits of the port territory. The fishing activities were included within trade and industry.

Upon achieving independence in 1960, maritime transport was amalgamated with the Ministry of Public works and communication, while fishing still remained with the Ministry of Commerce and Industry. In 1973 the Ministry of Transport and Communication was devided and a separate Ministry was created for Fisheries and Maritime Transport. It was only in 1977 that recognition was given to the Maritime Transport Industry and the Ministry of Marine Transport and Ports was established excluding fisheries and marine resources.

The functions of the Ministry of Marine Transport and Ports include those connected with marine law enforcement, upon the high seas and waters subject to the jurisdiction of the Somali Democratic Republic. It is responsible for the administration, promulgation and the enforcement of laws and regulations for the promotion of safety of life and for the protection of the marine environment from pollution.

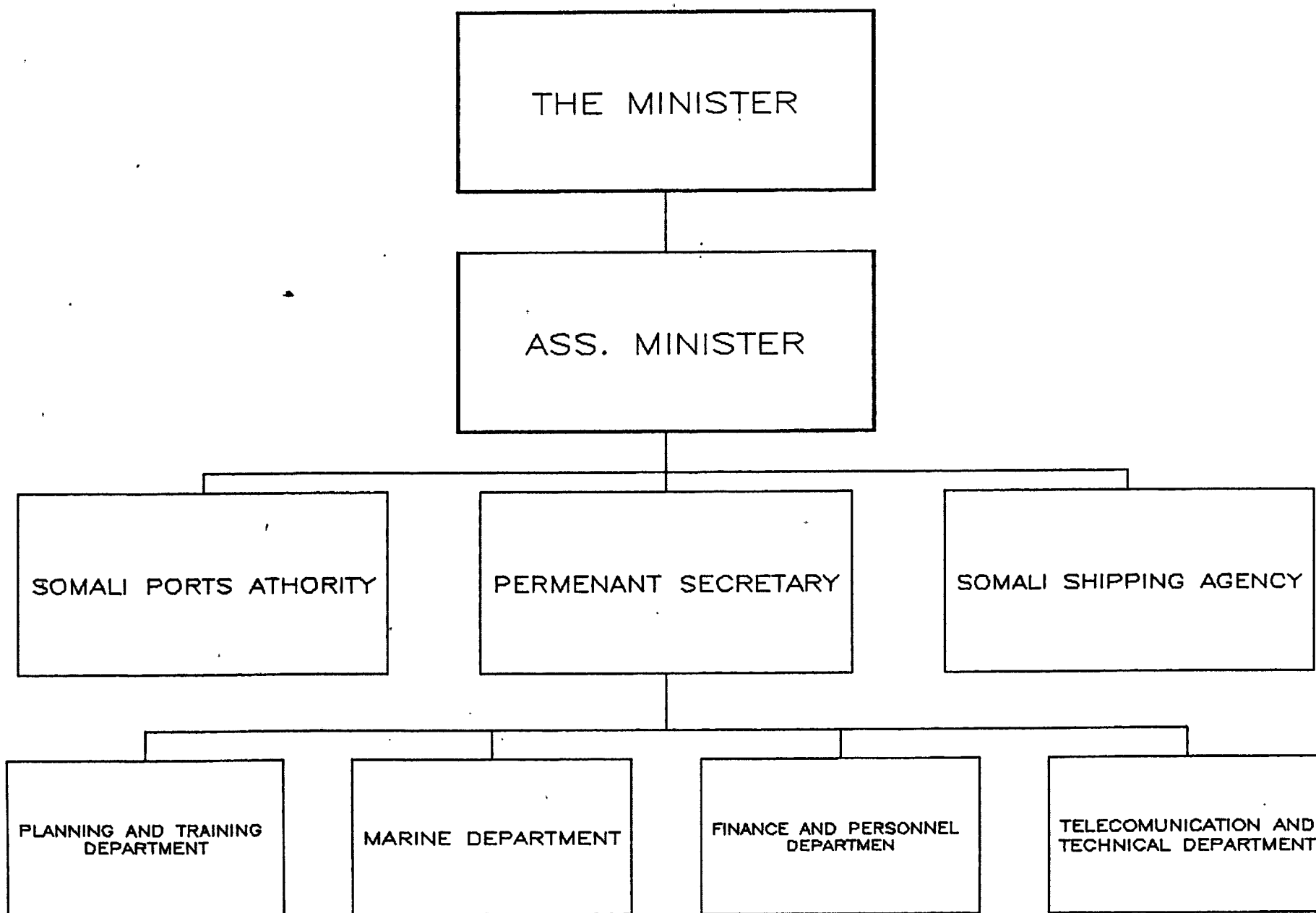
The Ministry is also responsible to provide and operate aids to marine navigation and rescue facilities over the high seas and waters of Somalia. The MMTP. is further responsible for the overall policy of ports and shipping development.

The organisation structure of the Ministry of Marine Transport and Ports consists of the Minister, the assistant Minister, the Permanent Secretary of the Ministry, the Somali Ports Authority and the Somali Shipping agency and Line. The Permanent Secretary who is responsible for the administration and management of the Ministry's day to day activities reports directly to the Minister and the Assistant Minister. He is assisted by four departmental heads namely; the Director of Planning and Training, the Director of Finance and administration, the Director of the Maritiem department and the Director of Telecommunication and Technical works.

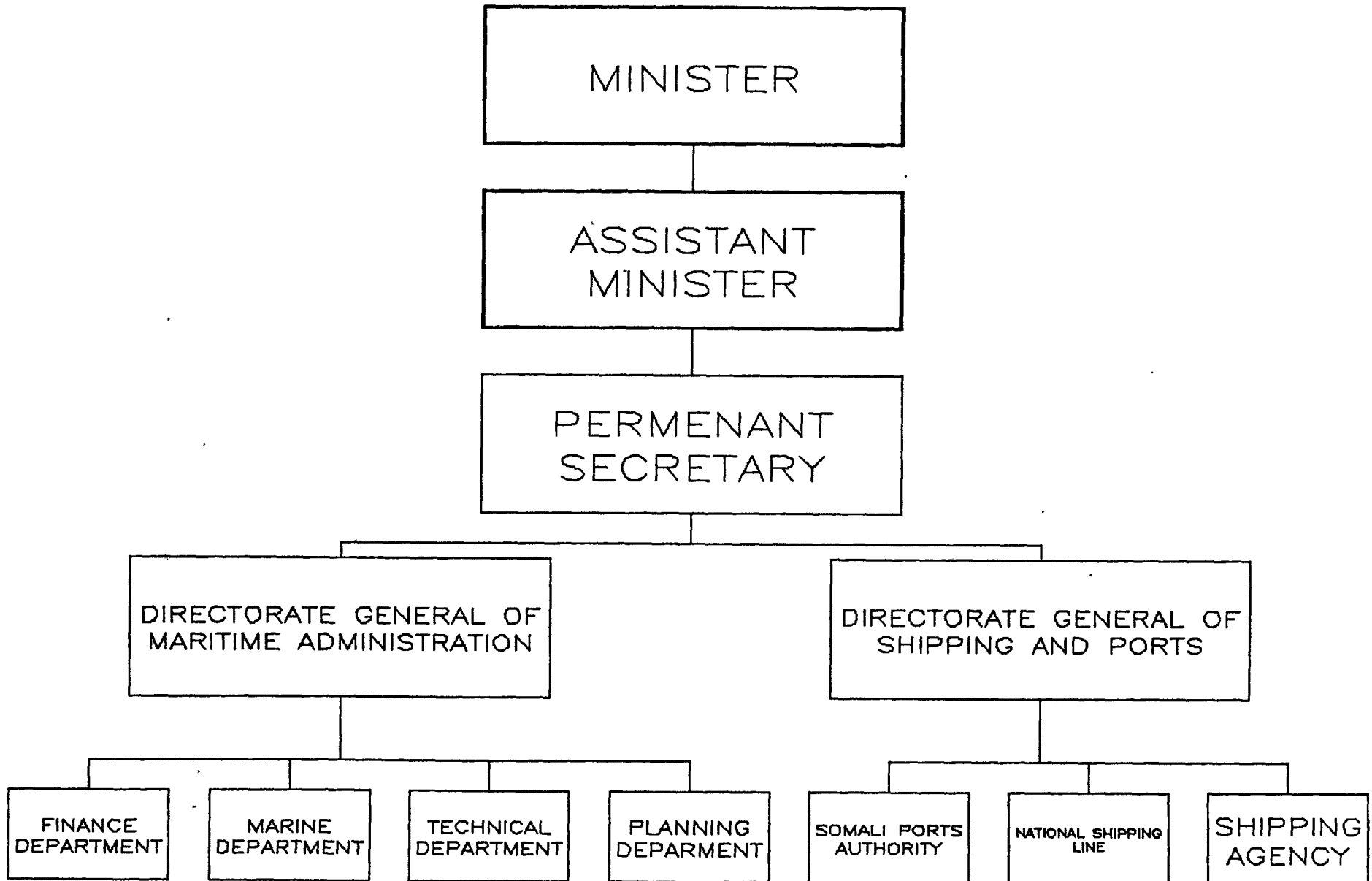
The Somali Ports Authority and the Somali Shipping agency and Line which are autonomous public agencies report directly to the Minister and his assistant.

ORGANISATIONAL CHART OF MINISTRY OF MARINE TRANSPORT AND PORTS

ANNEX II



PROPOSED ORGANIZATION STRUCTURE OF THE MINISTRY OF MARINE TRANSPORT AND PORTS



PROPOSED MARITIME SAFETY ADMINISTRATION

DIRECTOR OF
MARINE DEPARTMENT

REGISTRAR OF
SHIPS

SURVEYORS
NAUTICAL SECTION

HARBOUR
MASTERS

SURVEYORS
ENGINEERING

HYD. & AIDS TO
NAV. SECTION

CHAPTER IV.

PORT DEVELOPMENT.

4.1. HISTORICAL BACKGROUND.

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

- 1) Location with respect to world markets;
- 2) Accessibility to inland trade areas;
- 3) Natural or artificial harbours which will determine the cost of construction and extension works;
- 4) Amount of traffic to be handled and type of vessels expected to use the ports.

The Somali Democratic Republic can not be an exception to considering these criteria, however, by virtue of its location in the African Continent, and as result of its proximity to the cradles and birth places of ancient civilization in the Middle East and Asia, Somalia had acquired an old maritime history.

This can date as back as the 15th century BC. when ancient Egyptians under the rule of Queen Hathshebsut, have traded in the North and North Eastern coasts of Somalia under the name " The Land of Punt " meaning the land of incense and godly plants. During these old ages, ships and dhows from Egypt called at the Somali ports of Zeila, Berbera and Bosaso, and the items they carried back to Egypt included:- incense, Frankinsence, Ivory, Arabic Gum honey and myrrah.

On the Southern side of the country Arab (mainly from Oman) and Portugeese traders carried out commercial activities in the 14th century AD and the places selected for calling by their ships included; Mogadishu, Brava, Kismayo and Merca. This gives a clear evidance that the history of the Somali ports can never have a definite starting point in modern times.

However, as a result of the changes of the trade pattern, trading partners, changes in the pattern of community settlement, and with the arrival of the colonial rule, Somalia has developed three major ports for ocean going ships namely; Mogadishu, Berbera and Kismayo, and a number of minor ports. Minor Ports have limited economic significance and I will attempt to concentrate on the major ports in this paper.

4.2.THE PORT OF MOGADISHO.

Mogaddishu is the principal port of Somalia. It is on latitude $2^{\circ} 02'N$ and longitude $45^{\circ} 20'E$. Mogadishu is among the oldest ports in Somalia and the first pier for handling goods by lighters was built in 1930 by the Italian colonial government.

The purpose of building port and harbour facilities in Mogadisho at that time was mainly for military activities where soldiers, supplies and other military equipment could be handled. Four other finger piers were built in 1940 by the Italians just in the middle of the World War II. These were the finger piers which have been used until recently in the lighterage operations in Mogadisho, of course on the face of constant repairs and renovations including dredging of the entrance channel and harbour basin, where lighters of limited draft could berth.

In the old port of Mogadisho, all vessels loading or discharging cargo, used to stay at outer anchorage, where operations were made by barges. The anchorage area of the Mogadisho port is directly exposed to south west and north east Monsson winds, as a result of which ships are subjected to heavy swell. Due to these unfavourable weather conditions, due to lack of berthing facilities for ships, limitation of cargo handling facilities and equipment and due to the heavy siltation of the harbour basin, cargo handling operations experienced considerable difficulties, whereby the port's average daily throughput could hardly exceed 500 tons.

No major port development program was instituted during the colonial administration for commercial purposes. The capacity of the port facilities as well as services were in the low level standard. Mogadisho being the capital city of the country, the centre of main commercial activities and the traditional inlet for the bulk of national imports, the role of port development was very urgent and decisive factor for assuring the unity of economy and national growth in the future.

It is obviously known that slow and costly services at ports place an economic penalty upon the commerce of the hinterland and therefore jeopardise its growth. Consequently the development of hinterland area is largely dependent upon the development of port as a gateway.

The government has taken seriously in coping and solving developing problems of ports. In this respect, due to limitation of national budget, the government was constrained to seek for foreign aid. The construction of a deep water harbour in Mogadishu was an indispensable requirement, and the International Bank for Reconstruction and Development (IBRD) and the European Development Fund agreed to finance the Mogadisho port project jointly. Feasibility studies and site surveying were made in 1965-1966 by French firm of consultants namely SOGREACH OF GRENOBLE. The first phase of modern port development in Mogadisho started in 1973 and completed in 1977 which involved 4 general cargo berths and a mooring dolphin for loading livestock ships. Later in 1981, the second phase which included one general cargo berth and a large paved yard which was reinforced for handling containers at full three stack high, was launched and completed in 1983. The financing of the second extension stage was shared between the World Bank and the Somali Government. The port of Mogadisho is an artificial harbour made up of a break water and reclaimed land, and its present facilities include the followings:-

- a) INFRASTRUCTURE FACILITIES.

- i) A total land area of 280.000 sq. meters;
- ii) A break water having a length of 930 meters;

iii) A water front quay with a total length of 1000 meters;

IV. Six general cargo berths whose lengths range from 160-180 meters and a water depth of 8-12 meters at low level water line (LLWL); berth no. 3 has facilities for handling crude oil which is pumped directly to the national refinery 10 km. away from the port.

b) STORAGE FACILITIES FOR CARGO.

i) Three general cargo transit sheds with total floor area of 15000 sq. meters;

ii) A container marshalling yard of 30000 sq. meters;

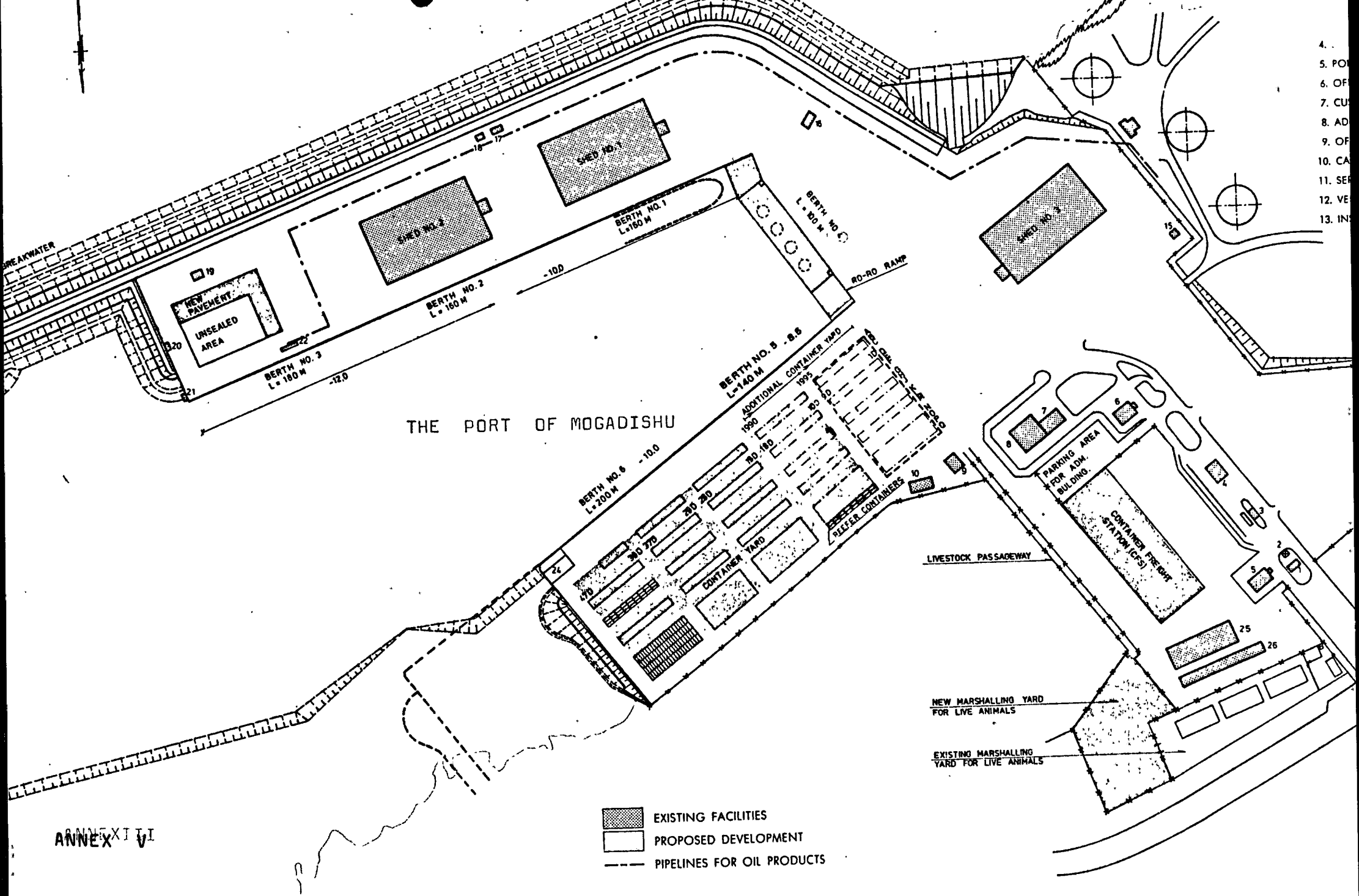
iii) Large open area which is used for the storage of break bulk general cargo units which are either not suited for covered storage or not easily liable to pilferage.

c) CARGO HANDLING EQUIPMENT.




i) 6 mobile cranes whose lifting capacity ranges from 15-50 tons (SWL);

ii) 6 forklift trucks whose capacities range from 3-30 tons (SWL);

iii) 50 trailers of different capacities used mainly for the handling of bagged cargo;



THE PORT OF MOGADISHU

-  EXISTING FACILITIES
-  PROPOSED DEVELOPMENT
-  PIPELINES FOR OIL PRODUCTS

ANNEX VI

- 4.
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- 11. SE
- 12. VE
- 13. IN

IV) 10 tractors of the agricultural type which are used to move loaded trailers from the ship's side to transit sheds and stacking yards and vices versa;

V) 2 tractors with gooseneck attachments which are used to move mafi trailers when handling containers.

d) MARINE CRAFT.

i) 3 harbour tugs to assist ships in berthing and unberthing operations. The horse power of the tugs ranges from 750-1400HP;

ii) 2 pilot boats;

iii) One 6000 HP salvage tug which is kept stand by for quick move to take part in rescue operations of marine casualties reported in the Indian Ocean and the Red Sea.

4.3. THE PORT OF BERBERA.

Berbera is the chief port in the northern regions and the main outlet of international sea borne trade of Somalia's Red Sea coasts. It is on latitude $10^{\circ} 26'$ N and longitude $45^{\circ} 01'$ E. Berbera is 1115 nautical miles from Mogadisho around the cape of Guardafui.

It is also 143 nautical miles from Aden which is situated on the other side of the Gulf, and 137 nautical miles from Djibouti, the capital city and chief port of the Republic of Djibouti.

According to available historical records, Berbera has been used by sailing dhows from the Indian Subcontinent, Persia and countries from the Arabian Peninsula as early as the 16th century AD, under the name " SAHIL ". But its importance as a port appeared after the collapse of the main commercial centre of ZAILA which is 117 nautical miles north of Berbera.

The first pier for handling of goods was built in 1928 by the British colonial administration. The pier provided facilities for sailing dhows and lighters which were used to discharge and load cargo from and to ships operating at outer anchorage.

These were the days when Britain occupied India, Pakistan and the free port of Aden; and the purpose of providing port and harbour facilities in Berbera at that time was to facilitate the movement of the British military personnel and supplies to the Horn of Africa.

Thirty years later the old pier was found incapable to handle the growing traffic and in 1958, the new jetty was built by the British Government, where sailing dhows and lighters could operate more conveniently, and the old pier was gradually closed down to traffic due mainly to its unsuitable location. When Somalia achieved independence in 1960 the government felt the need for a deep water Port in Berbera.

The first phase of the port development project was financed by the Soviet Government. The construction of this phase was started in 1965 and completed in 1968. The port was mainly designed to handle livestock export to the Middle East, but as trade increased with considerable mix-ratio, the need for additional facilities to handle and accommodate general cargo traffic was arisen. The second phase of the port expansion in Berbera, which was financed from a grant given by the government of the United States was launched in 1983 and became operational in 1985.

Berbera is a natural harbour protected from winds and waves by natural indentation of the shore line, which provides haven for ships without the need for break waters, and its present facilities consist of the followings:-

a) INFRASTRUCTURE FACILITIES.

- i) A total land area of 40000 sq. meters;
- ii) Total quay length of 640 meters;
- iii) 4 berths with an average water depth of 9.50m. at LLWL;
- IV) One transit shed having a total floor area of 5760 sq.m. ;
- V) Open storage area of 14500 sq.m.

b) CARGO HANDLING EQUIPMENT.

- i) 11 forklift trucks whose capacities range from 3-25 tons (SWL) ;
- ii) 4 mobile cranes with lifting capacities from 15-30 tons (SWL) ;
- iii) 5 tractors of agricultural type having a HP of 70 each;
- IV) 16 trailers whose capacities range from 10-20 tons.

c) MARINE CRAFT.

- i) 2 harbour tugs having Horse Power capacities of 750-1400;
- ii) 1 pilot boat.

The port of Berbera was originally designed to handle a total annual traffic of 240000 tons, but due to reasons which are beyond the control of its facilities, the port is apparently very much under utilised. These reasons include:-

- i) Limitation of Somalia's international trade;
- ii) Nature of port traffic (Livestock) which is mostly seasonal reaching its peak during the pilgrimage season (The Haj) to Holy Meca;

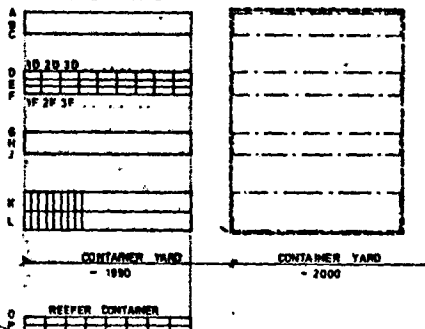
BERTH NO. 2
LENGTH = 165 M - 11,0

BERTH NO. 2
LENGTH = 160 - 8,5

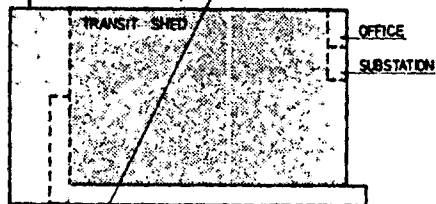
BERTH NO. 1
LENGTH = 160 - 9,5

RO-RO RAMP

CONTAINER YARD



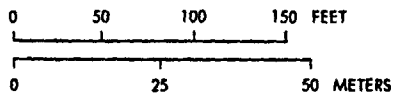
EXTENSION FOR CONTAINER
FREIGHT STATION



TOILET BLOCK

LIVESTOCK CAUSEWAY

EXISTING FACILITIES
PROPOSED DEVELOPMENT



This map has been prepared by The World Bank a staff exclusively for the convenience of the readers and is exclusively for the internal use of The World Bank and the International Finance Corporation. The dimensions used and the boundaries shown on this map do not imply, on the part of The World Bank and the International Finance Corporation, any judgment as to the legal status of any territory or any endorsement or recognition of such boundaries.

iii) Absence of trans-shipment trade;

IV) Non availability of enterpot facilities
(e.g. free zone);

V) The lack of oil bunkering facilities for ships has also encouraged many vessels to call at the neighbouring ports of Aden and Djibouti where such facilities were available.

4.4.THE PORT OF KISMAYO.

Kismayo is the chief port of the Lower Juba regions and it is predominantly used for banana exportation. It is on latitude $0^{\circ} 23' 40''$ S and $42^{\circ} 32' 31''$ E. Kismayo is 234 nautical miles South of Mogadisho and 28 miles south of the equator, and 5 miles south of the point where river Juba joins the Indian Ocean. It is also 289 nautical miles north of Mombas.

The city of Kismayo is located at the northern end of the Kismayo bay. The bay is a natural harbour, at the north end of an open height in the shore line, partly protected by a chain of islands and reefs from the rough seas of the Indian Ocean. It is the only natural harbour along the East African coast between the ports of Berbera and Mombasa in Kenya, a distance of about 1700 nautical miles, and it has long been used as a haven for ships during storms. Kismayo bay has good anchorage space for ships with a water depth ranging from 20-25 meters at low tide and 9 feet tidal differential.

Kismayo like many other ports in somalia has an old history as a port. According to available historical records, Kismayo was used by sailing dhows and ancient ships belonging to Arab, Persian and Indian traders long before the Portugeese sailor VASCO DAGAM visited it, while opening the route to India via the Cape of good Hope in 1496.

Until the end of the 19th century Kismayo was under the suzerainty of the Sultan of ZANZIBAR, when the Italian colonial administration was established in 1905. In 1925 the Italians selected Kismayo as a port site and surveys were made by the Italian firm ALPINA, SPA of Milano. The first pier for handling goods by lighters was built in 1940. The purpose of building port facilities in Kismayo at that time was mainly for military activities, where soldiers, supplies and military equipment could be moved more conveniently. In 1959, the International Cooperation Administration (ICA) of the United States had issued project implementation order to the US Army corps of engineers to make preliminary study of the engineering and economic feasibility of constructing commercial port at Kismayo.

In those days port development was very limited, however, and seaborne freight was transferred from ships to shore by lighters. Dhows and other shallow draught boats were brought close into the shore, at high tide, beached, loaded or off loaded during low tide, and refloated at high tide. These cargoes were restricted comparatively to light weight items.

ICA investigation was conducted during the month of November 1959 (seven months before the country achieved independence), and the report concluded the construction of an adequate port in Kismayo was entirely feasible from an engineering point of view and it appeared to be one of primary facilities needed to improve the economy of Somalia.

Immediately upon achieving independence, the government approached the United States for assistance to finance the construction of a new deep water port in Kismayo. The United States Agency for International Development (USAID) agreed to the project, and the construction of the port which was began in 1964 was completed in 1967. Due to the unfavourable technical conditions existing in Somalia which could not suit the design of the port structure (hollow bridge supported by concrete and timber piles) and as a result of poor maintenance, the port had suffered considerable damages. The financial input that was needed to rehabilitate the port which included a major component of foreign exchange, was beyond the economic ability of the Somali government, and the United States Government again generously accepted to remedy the damages, with a total sum of US\$ 42 millions which is more than the original project cost by 320%. The rehabilitation work was started in 1985 and is expected to complete late 1987. the present facilities of the port consist of:-

a) INFRASTRUCTURE FACILITIES.

- i) Total land are of 56000 sq.m.;
- ii) Total quay length of 640 sq.m.;

- iii) Total berths of 4 Nos. with maximum water depth of 9.5 meters at LLWL.

b) STORAGE FACILITIES.

- i) One transit shed having a total area of 610 sq.m.;
- ii) Total open storage of 30000 sq.m.

c) CARGO HANDLING EQUIPMENT.

- i) Four forklift trucks whose lifting capacities range from 3-28 tons;
- ii) 3 mobile cranes with lifting capacities of from 15-30 tons;
- iii) 2 tractors of the agricultural type with a horse power of 70HP each;
- IV) 5 trailers whose carrying capacities range from 10-20 tons.

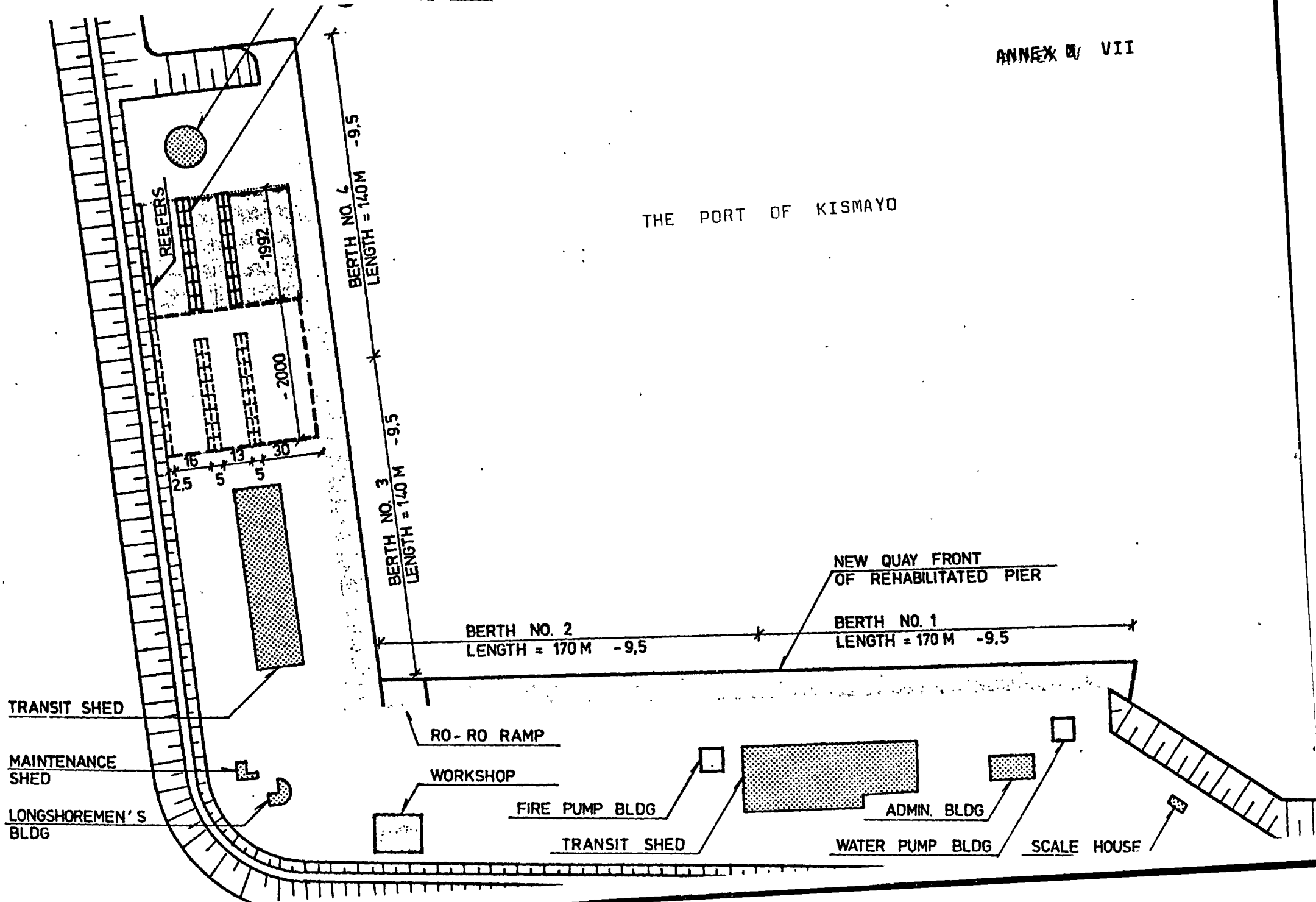
d) MARINE CRAFT.

- i) One harbour of 1400 HP;

ii) One pilot boat.

Although Berbera will remain the main export port for most livestock, Kismayo is expected to increase its exports since cattle production and exports are expected to grow faster than in the north.

THE PORT OF KISMAYO



Map has been prepared by The World Bank's staff and is not a contract and is not a warranty.

CHAPTER V

PORT ADMINISTRATION AND ORGANISATION

5.1 GENERAL CONCEPT.

Throughout the world, most ports today are under some form of public administration. There are certain basic reasons for this. All port development is not generally a profitable enterprise. Ports if they are self sustaining at all, often operate on a very narrow margin of profit. More often they require some form of government support. Thus port development has been unattractive to private investment; and any orderly harbour development usually requires some governmental intervention.

The constitution and objectives of the bodies administering the ports differ quite considerably from country to country and indeed within national boundaries. Perhaps the most striking feature of port administration in the major parts of the world is the diverse form of ownership adopted and the numerous ways in which responsibility for providing facilities and services have been adopted. However, there does exist a certain similarity between the types of port administration adopted in many developing countries, because most of them show a degree of central government control with clear distinction between local port and national responsibility.

Each country has its own circumstances which make the favourable conditions for its port administration differ from any other country, and the followings are the types of port administrations which prevail in most parts of the world today:-

1) Ports directly controlled, administered and financed by the national government have the following positive characteristics;

- a) Long-term port planning can be coordinated within the national plan;
- b) An integrated policy for national transport can be formulated;
- c) Government finance would be available for major port modernisation programmes;

It is however, understood that this system has the following negative aspects:-

- a) Increased political effects on port management;
- b) Centralised system of port administration creates bureaucracy and lack of interest;
- c) Some ports may subsidise others.

2) Ports administered by national port authorities have the following advantages:-

- a) The authority can draw a uniform plan for all the ports in the country, where the national interests as well as the local interests are considered;

- b) The authority is able to concentrate and specialise in the optimum location of capital and in assessing the different projects for port development;
 - c) This centralised authority can manage the important tasks of training, research and statistical information on wider and advanced scale than other forms of port administration;
- 3) Ports administered by a local public authority whether a city or a region have many forms of dependence on the local body. The advantages of this system include:-
- a) Local interests are better looked after;
 - b) Port management decisions are made quicker and the administrative machinery is less complicated;
 - c) The port can have better cooperation with other local services;

This system has its own disadvantages which include:-

- a) The local control system may be exhausted in short-term policies rather than long-view policies;
- b) The different ports of the country may face competition and wasteful duplication of resources.

All forms of port authorities are in one way or another creations of governments. They are established for the fixed purpose of port development and administration. The type of port administration in any one country depends on its political, economic and social objectives. Walter P. Hedden, an internationally known expert in port development, while discussing national versus local port authorities in his book MISSION: PORT DEVELOPMENT said (*):

" In setting up a port authority, the question of the geographical scope of its jurisdiction arises often where there are several ports in the same country, particularly in a country of relatively small size. There are often conflicting traditional patterns of a strong national centralization of responsibilities, versus pride and initiative in a port regarded as an integral part of a local community. With the emphasis on national planning programs to rationalise communications between ports and their hinterlands and to open up important export producing centers by the shortest and most economical routes to the coast, the urge to create new port outlets sometimes conflicts with the established trade patterns of older shipping centers. Creation of new ports usually involves heavy capital expenditures which cannot be carried during the development period by the revenues of the newer projects. Thus to present a variable financial plan of port expansion, often involving international borrowing, there is strong pressure to pool ports into a national ports authority rather than to set up individual administrations for each port district. "

(*) Walter P. Hedden; Mission: Port Development 80.

Hedden pointed out that the important element which affects the pattern of administration is the ability of the local port administration to be self-supporting and conduct its affairs without recourse to national subsidy. It is therefore necessary for a port authority to operate on commercially self-supporting basis.

Port administration in the Somali Democratic Republic tends to be similar to many of those young developing countries. Immediately after independence in the sixties, due to the increasing demand on port services and modern facilities decision was made by the government to build new deep water ports in a number of selected points along the long coast line of the country.

For the government to administer the investment and its eventual management, the Somali Ports Authority was created by legislative decree No. 19 of June 14th, 1962, which was later repealed by decree No. 70 of November 22nd, 1970, and subsequently by Law No. 1 of January 7th, 1973.

The Somali Ports Authority is an autonomous public corporation and is intended to be financially self-supporting. The authority commenced operating on 1st June, 1962 at which date it assumed responsibility for certain port and harbour activities previously conducted by other government departments and private firms. The authority was vested with the assets which had been used in the conduct of these activities without cost or compensation. The Statutory duties of the authority and its activities fall into two principal categories:-

- a) The Somali Ports Authority is given the duties to maintain, improve and regulate the harbours and approaches thereto in all ports of Somalia presently open to ocean going vessels and in such other ports as may be designated from time to time by the government.

In the ports of Mogadisho, Berbera and Kismayo SPA is responsible for their dredging, maintenance and provides harbour and channel buoys and lights excluding lighthouses and beacons and other aids to navigation outside the port limits which are under the direct responsibility of the Ministry of Marine Transport and Ports.

- b) So also in the ports of Mogadisho, Berbera and Kismayo, which handle among themselves more than 98% of the country's international sea-borne trade, SPA is responsible for the provision and operation of such stevedoring, shore handling and quay facilities as may appear to the authority best serve the public interest. Although SPA has statutory responsibilities in maintaining the approaches to all ports of the Somali Democratic Republic, and for the performance of which services it receives dues and charges payable by the vessels and cargo passing through the ports, it is responsible in only three ports for the physical handling of cargo.

The Somali Ports Authority is administered by a board of directors appointed by the President of the Republic upon the advice and recommendation of the Minister of Marine Transport and Ports. The Board of directors consist of five selected members of the major economic operators, including importers, exporters and ship owners. The general Manager of SPA is a permanent member of the board. The functional duties of the board include:-

- a) Decision on the general system of port administration and scheme of executive departments;
- b) Establishment of systems for port operations and the character of operating regulations;
- c) Systems of port tariffs and dues;
- d) Financial policies and approval of annual budgets;
- e) Division and direction of operating activities such as stevedoring, lighterage etc;
- f) Overall policy of port improvement and extension (within the framework of national planning);
- g) Approval of contracts of major construction work and purchases;
- h) Scale of salaries and employment conditions of port personnel subject to national rules and regulations (centralised);

- i) Current relations with the central government and international bodies;

Other tasks and responsibilities delegated to SPA include the followings:-

- a) Anchoring and berthing of ships;
- b) Controlling marine safety and harbour regulations;
- c) Arranging terminal facilities; for the ships' needs;
- d) Assuring accurate and safe distribution of inbound cargo;
- e) Maintaining navigable channels and safety depth of water for maneuvering and anchoring ships;
- f) Providing transit shed, warehousing and open storage accommodation for goods passing through the ports;
- g) Rendering services in connection with pilotage, towage and harbour safety;
- h) Maintenance of roads, electricity and water supply within the limits of the ports.

The day to day execution and implementation of the board decisions are delegated to the general manager of SPA.

ORGANISATIONAL CHART OF S.P.A. IS GENERALLY AS BELOW

ANNEX X

MINISTRY OF SEA TRANSP-& PORTS.

SECRETARIET
ACHIEVE
TWO SERVICES

SOMALI PORTS AUTHORITY
CHAIRMAN.

GENERAL MANAGER S.P.A.

PLANNING
MANAGER

FINANCE
MANAGER

PERSONNEL
MANAGER

TECHNICAL
MANAGER

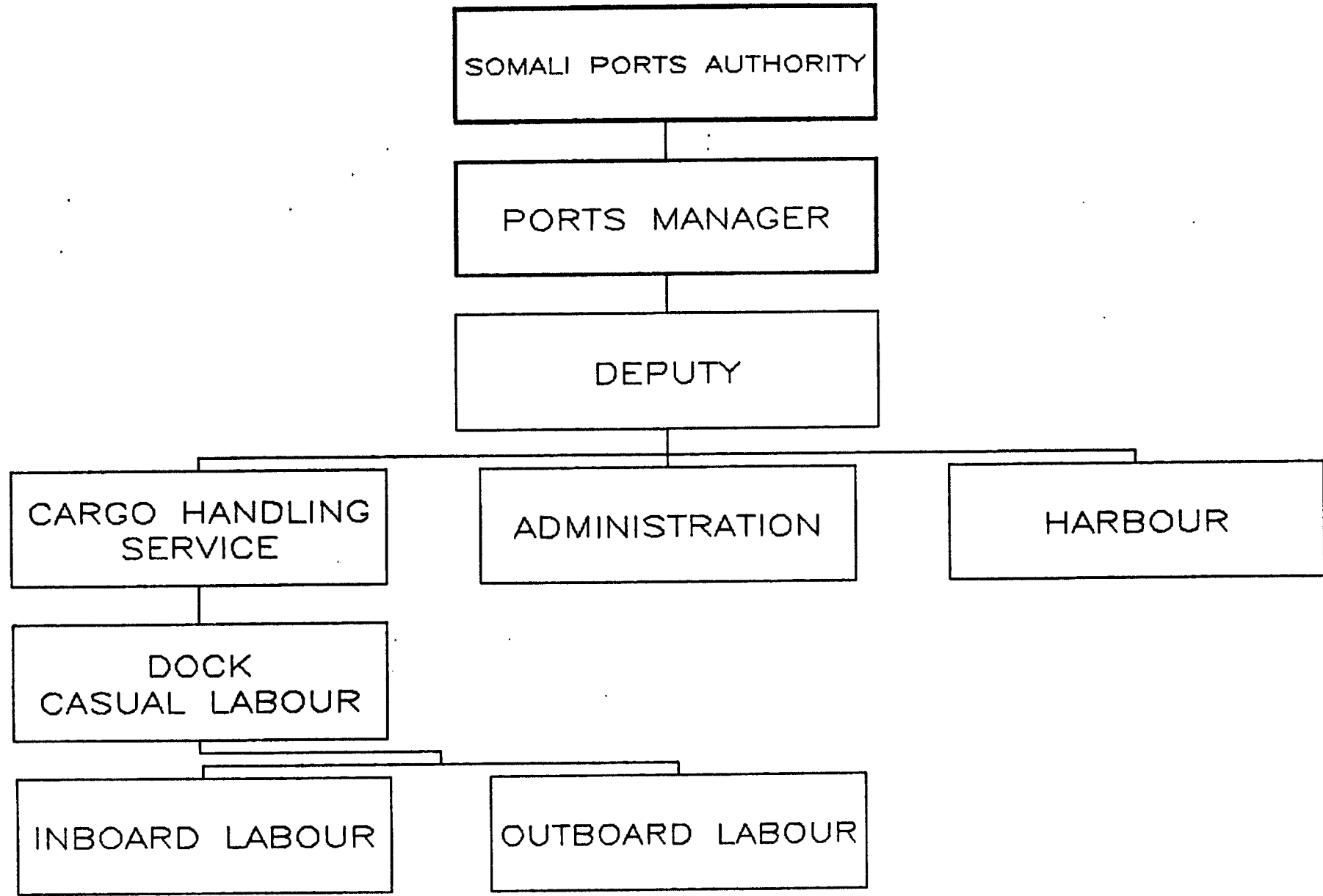
MOGADISHO
PORT

BERBERA
PORT

KISMAYU
PORT

ORGANISATIONAL CHART FOR THE MAJOR PORTS OF SOMALIA IS AS BELOW:

ANNEX X



These functions are organised under four central departments and three individual port managements namely:-

- 1) Planning Department;
- 2) Personnel and training department;
- 3) Engineering department;
- 4) Finance department;
- 5) Mogadishou Port Management;
- 6) Berbera Port Management;
- 7) Kismayo Port Management.

The directors of SPA heading the central departments and the port managers are all on equal level in the management organization and each reports directly to the general manager. Each port has its own operating, maintenance, administrative and technical divisions.

5.2.PORT FINANCE AND TARIFFS

The services of a port are extremely varied, and some of the benefits are indirect as are some of the costs. The benefits to the society as a whole of having a port are likely to be much greater than the benefits immediately apparent to the port authority, since the existence of the port may promote the economic growth of the surrounding region and aid other businesses by making it easier to sell and buy from markets outside the region.

Clearly, many of the assets or resources employed in ports have a limited or no alternative use and hence no economic cost. In practice, however, the port authority has to meet costs associated with these facilities and services and must be provided from the cash flow within the port.

Finance is a primary aspect of port administration because the improvement and operation of port facilities are impossible if adequate funds are not available. Lack of funds is the obstacle frequently reported by port authorities. Good maintenance and provision of needed facilities are improbable if the financial basis of the port is not sound. Adequate funds, therefore is the grist for the mill of any port administration.

Construction, of new ports, harbours, waterways, terminals and new ships require in the aggregate hundreds of millions of dollars; and the availability of funds determines to a large extent the ability of ports to undertake costly investment projects. Even within regions, some ports receive massive financial aids while others regarded as commercial enterprises in their own right have to rely on self-financing in order to survive. The majority of world ports lie between these two extremes. Obviously the magnitude of subsidies granted a port has tremendous impact on the pricing policy adopted by the port.

At some ports the problem of financing does not include the construction, maintenance and operation of specialised water front bulk handling plants. They are generally provided by the industry which uses them.

Rather the problem centers about commercial facilities, those facilities and general harbour improvements which private enterprises will not normally provide and which are necessary to serve the public as a whole.

Profitable returns on general port improvement may be very uncertain and at best take years to be realised.

The Port Authority like a common carrier can not pick and choose its traffic. In serving the community, it must provide both the profitable and unprofitable services.

A great number of factors must be considered before a port authority reaches a final decision concerning pricing policies and the extent to which costly investment in specialised equipment and facilities will be undertaken. Many factors are interdependent that goals such as cost recovery, efficiency in resource allocation, a reasonable rate of return on investment, and hinterland growth and development are often in conflict. A compromise is inevitable and invariably, the overriding factor determining the specific nature of the compromise is the port's access to financial assistance. Indeed, it is likely that no other factor exerts so strong an influence on a port's overall administrative policy.

The port authority must also consider other factors in formulating best pricing policies. Obviously the degree of competition offered by nearby ports and other competing modes of transport is one of the more important factors influencing the choice of a pricing scheme. The keener the competition, the greater the likelihood that relatively high rates might result in traffic diversion to competing producers.

Indeed, rates may be so high as to result in loss of traffic belonging to the port's own hinterland. Traders may find more profitable to route their goods through cheaper ports even at greater inland transport costs.

In the Somali Democratic Republic, the Ports Authority is charged by government under section 3, paragraph 3, letter (a) of SPA decree No. 1 of 7/1/1973 to have sufficient funds for the efficient administration and operation of all the major ports of Somalia. The law provides that the Authority should achieve and maintain a balance of revenue and expenses with provisions for the payment of interest and for renewal and amortization of equipment and other civil works. Surplus profits after meeting all the obligations of the authority are to be transferred to the central treasury of the state.

The revenues of the authority accrue from port dues and charges levied on ships and cargo passing through the ports. Regulation No. WGBD/XW/7/77/85 of 15/1/1985 of the Minister of Marine Transport and Ports stipulates the revised set of port tariffs. In these tariffs all ship charges are based on the net registered tonnage of the ships, except pilotage charges which are based on the gross tonnage, and the berth occupancy charges which are calculated on the ship's overall length and the period of stay alongside. To the exclusion of pilotage and berth occupancy, ship charges are collected as fixed lump sums per ship per operation, and although they are presently fairly sufficient to yield the required revenue it is advisable to base them on the GRT with a multiplying factor instead of the lump sum method.

The need for changing this charging system is because a substantial proportion of gross registered tonnage is excluded from the net registered tonnage as a result of regulatory requirements by different flags of registry, and there is a strong likelihood that ports suffer from heavy losses in this respect. It is also observed that the linear dimensions of ships do not increase proportionately with the increase in tonnage. This creates a situation whereby smaller ship suffers and larger ships make the benefits when berth occupancy charges are based on the OAL. It is therefore reasonable to collect this revenue on the ship's gross tonnage to make it more equitable.

Cargo charges are based on the weight of the cargo where a minimum chargeable unit of 1 (one) ton is established. This is further detailed in a list of commodity types carrying different rates according to their weight, density, bulk, handling characteristics and their potential hazard to human health and of property(*). Handling and storage charges in all the ports of Somalia are much below the levels of those rates practised in the neighbouring ports of the region, and these are heavily cross subsidised by ship charges. The system of charging storage fees is somewhat unsystematic and creates considerable inconvenience both to the customers and the port staff who are responsible for its calculations. It is therefore, necessary to commence charging from a certain point of time after the period of free storage starting from the completion of ship's discharge.

(*) SPA; Port Tariffs of 1985, PP.2.

Storage charges need to be increased from the present levels and the free period reduced from the present 5 days to 3 days, with the aim of achieving higher efficiency in port operations and not for the purpose of making more earnings in this regard.

Containerised cargo in the Somali Ports is still new but the rate of its growth is fairly rapid. This is also charged the same system as break-bulk conventional general cargo and this tends to give no incentive for the expansion of this trade. The few shipping companies operating modern roll on roll off vessels as regular liners have approached the Ports Authority several times for establishing special rates for container cargo. This idea must be acceptable to the Authority and a per box rate as distinct from break bulk cargo should be applied on containerised cargo. This lump sum amount on loading and discharging the box must be borne by the carrier while cargo owners should be charged separately only in stuffing and stripping of LCL containers.

The recent extension of the Berbera Port and the rehabilitation of the Kismayo port together with the current modernisation project in all the three ports are expected to increase the total capital cost of ports to a very high level and according to recent studies conducted by the World Bank, it is apparently unlikely that the present tariffs will cover the total cost of service after the final stage of these projects are attained. It is however, certain that the ports will be able to make reasonable rate of return on these investments just by basically modifying the existing charging system without necessarily raising rates.

A general weakness in the financial administration of the Somali ports is the lack of proper management information system. Tariffs are not adjusted in good time to currency fluctuations, devaluations and the revaluation of assets. There is no adequate comparison of cost and revenue of different cost centers and it is very difficult for the authority to know when a particular facility or service is losing money, when it is making money, or when it is at break even point.

It is therefore strongly advisable that the authority must employ highly qualified staff and retrain its own financial personnel. The ports authority must be allowed to retain its surplus profits and the retention level of the foreign exchange must be increased from the present 65% to 100%. the primary objective of the government and the Ports Authority must be to build and operate adequate port facilities for the benefit of the people to promote the necessary capital funds, but not to make a practice of subsidised operations.

5.3. TRAINING.

One of the prime problems the Somali ports encounter in the midst of their modernisation programs and in their efforts to adapt to the changing patterns of shipping brought about by the containerisation revolution is the training of port personnel.

The resources to implement continuous training programs in the Somali Ports are limited because they are often subordinated to a port's operational and facility construction requirement.

Yet one of the greatest potentialities to assure success in maximising cargo handling efficiency and labour productivity is to improve the skills of port personnel at all levels.

Such personnel include those engaged in loading and unloading vessels, transporting cargo from wharf aprons to places of protected storage, and loading and unloading inland cargo carriers or feeder services. This activity embraces the knowledge of the operation of not only mechanical lifts including vessel and land side cranes, but also forklifts, tractor-trailers, and the various types of nets, slings, pallets, and clamps. On the managerial side, supervisory personnel should understand how to organise space in transit sheds and warehouses for cargo storage, as well as to understand how to read and interpret vessel stowage plans. Proper record-keeping and inventory control as well as organising labour gangs and laying out work plans and programs are important elements of cargo handling operations.

Aside from direct cargo handling, necessary skills of port personnel include maintenance of equipment and of the port's infrastructure. These activities are characteristic of port operations, but do not exhaust the training required to plan and manage a port. At higher technical level, engineers are needed to select and design the most efficient wharves, sheds and fixed mechanical installations, choose and test materials, formulate specifications and supervise construction contracts. Finally, the management of a port requires the skills necessary to any successful economic enterprise, such as personnel management, finance, law, safety, statistics, accounting and public relations. In order to adequately

assess the needs for manpower training in the Somali Ports, a detailed master plan study for the period 1985-2000 was financed by DANIDA of DENMARK. Perhaps the most current comprehensive information available on training in the Somali Ports is contained in the port modernisation project developed by Rambol and Hannemann which is one of the components of the fifth port project of the World Bank.

The study was aimed at identifying manpower training needs and the need for training facilities in the Somali Ports. The network of training programs listed in the present project include:-

- 1) Port sponsored on the job training;
- 2) Port sponsored regularly recurring courses of training;
- 3) And structured courses conducted by the newly established port training school in association with national educational and research institutions including the Somali Institute of Development, Administration and Management (SIDAM) and the Industrial Vocational Training Centre (IVTC), as assisted by GTZ of the FRG.

For the purpose of planning and implementing training programs, port employees are classified into professional and non-professionals. The category of professionals consists of:-

a) ENTRY-LEVEL which refers to those persons who have specialised professional skills acquired through college or specialised training and who have little or no experience. Examples of these include assistant accountants, junior engineers, assistant training officers, publicity officers etc.

b) MID-LEVEL PROFESSIONALS include those persons who have specialised skills acquired through college or specialised training and who are experienced in the skills required of their positions. These include accountants, engineers, statisticians, traffic managers, public relations officers etc.

c) SENIOR-LEVEL PROFESSIONALS include chairmen, general managers, assistant general managers, heads of departments, port managers and policy makers.

The category of non-professionals consists of:-

a) VOCATIONALS, who are non-professional employees holding positions in the accounting and finance offices, secretarial and clerical offices, maintenance units, and stevedoring and terminal operations units.

b) SUPERVISORY EMPLOYEES are simply those non-professionals supervising the activities of the vocational employees.

The Somali Ports Authority had no training plan, strategy, nor the facilities or programs to carry out training. With very few exceptions training provided to its staff in the past has been ad hoc, consisting of senior officials attending short courses and seminars provided mainly by UNCTAD. These courses and seminars dealt with the general aspects of port management, operation and statistics. Although technical assistance provided under previous IDA credits included training elements, the basis needed for continuous training has not been met in a satisfactory manner, due partly to the inability to find suitable instructors and partly due to the lack of training facilities. Training facilities under the proposed project have been determined on the basis that some of the required training will be undertaken by SIDAM and IVTC.

In summary, the programs that have been presented in the current port modernisation project can be viewed as results-oriented and practical approaches to providing training and technical assistance to the Somali Ports. The nature of the problems encountered by the Somali Ports suggest that a need for immediate problem resolution, and the magnitude and intensity of the training needs cannot be accommodated in the proposed project, nor by the other programs existing in the country. The proposed port training school led initially by the World Bank's operational experts should take care of training of port workers who cannot make good benefits from training outside the country either due to language barriers or due to financial limitations that can not permit to train the required number. However, senior management and operations personnel will have to continue attending training programs abroad, offered by International Organisations.

CHAPTER VI.

PORT OPERATION AND MANAGEMENT.

6.1 PURPOSE AND OBJECTIVES.

General cargo ports were designed to accommodate a variety of cargoes shipped in the packaging or unit loads in which they originated from the supplier. The role of the port authority in the operations at the waterfront varies widely among the ports of the world. This variance naturally follows from the difference in the functions performed by them. In the Somali Democratic Republic, the ports authority actually performs all cargo handling, terminal operations in addition to general administration of all ports of the Republic.

The principal goals in port operations are to maintain a high standard of service and a high level of efficiency(*). Good operation is a matter of making the best use of the available resources. The existence of good facilities alone does not assure expeditious and low cost operations. There is still that all important factor of management, in obtaining real efficiency. Port management is concerned with the direction of daily activities at the port to provide an efficient and economical operation as well as with the organization structure of the port. Achieving success in port activities is dependent upon successful organization. Ports can not control the types of cargo they handle. This is dictated by the trade of the port, the countries served, and the carriers that transport the cargo.

(*) Marvin L. Fair; Port Administration in USA PP.151.

Ports can however, control the way the cargo flows through their areas and the efficiency with which it is handled.

This is accomplished by proper systems management, along with control and guidance of the port's man and material resources. The objective therefore, is to maintain a flow of traffic through a modern port that will provide for the low total cost per unit of cargo handled. Utilization should be kept at a high level. Good labour conditions at the waterfront are essential to efficiency and productivity. Bad labour relations can negate the effect of improved design of ports and better cargo handling equipment in the cost and time of loading and unloading ships.

The Somali Ports Authority has a responsibility for services to shippers, shipowners and or operators, which may be impossible to meet if operating conditions are bad. The national legislation which established SPA and its port operating regulations promised good services and the management should never fall short of any effort to achieve the best results. Efficiency also requires the use of the best work process methods in the operation and management of port facilities.

In the ports of Somalia, the poor maintenance of the shed floor and apron of wharf sheds leads to excessive cost of maintaining the motorised equipment such as forklift trucks and tractor-trailers. Sound operating conditions in the physical sense have not been practised, and therefore neglect of good maintenance has increased the overall operating costs.

SPA is the sole body responsible for all port operations

in the country and its regulations stipulate that berthing of ships should be based on first arrive first serve principles.

All available berth facilities are for general use and non is allocated for exclusive usage or long time leases. The aim of adopting, this principle of general use of facilities is to give the necessary flexibility when needed. Yet ports still are facing the problem of assigning ships to berths available so as to give the best possible service to all vessels entering the ports and to make the best possible utilization of port facilities as a whole.

The process of handling both inbound and outbound break-bulk general cargo involves a multitude of individual shipments, each of which must be handled in the most appropriate manner. Each operation is labour intensive and time consuming. With large volumes of numerous commodities, it is inevitable that congestion will occur in the port.

Delivery of cargo during vessel operations will create delays both to the loading of the vessel and the delivery of the cargo. Efficient management and proper allocation of port space will do much to alleviate or control this congestion. The design and construction of the port facilities are planned on the basis of the commodities anticipated for each trade route involved, expected cargo volumes, number of vessel calls, size and configuration of the vessels and many other factors.

Once the port is established, the management personnel must make the most effective use possible of the space and facilities available. The most important consideration is the physical division of the area so as to provide, the required space for the various services.

The cargo storage should be pre-planned to ensure effective use of space and to separate the various functions of the cargo handling so that interference between operations is minimal.

To go back to the situation in 1985, the port of Mogadishu suffered from delays and congestions in the movement of cargo through the transit sheds, low productivity in labour output, and delays in ship turn round, including some inability on the part of shipping to secure berths promptly. The transit sheds in which import cargo was held were crowded and cluttered.

Transit sheds are designed to accommodate cargo for a short time during which delivery formalities are being processed, not as permanent warehouses. Port regulations called for the imposition of shed rent after a period of five days following discharge from the vessel. These shed rents are of a penalty character, doubling at the next ten days, with higher penalties thereafter. An examination of a typical shed in Mogadishu and Berbera in 1985 showed neglected cargoes from several ships, some of which have remained in the sheds as long as two months. The transit sheds were being misused as bonded warehouses, and the enforcement of regulation of both the ports authority and the customs was lax. Some of the factors contributing to this situation include.-

- a) Inadequacy of storage facilities outside the ports,
- b) Storage fee at the port transit sheds was much lower than those charged in private warehouses outside the port.
- c) The customs authority required sampling of almost all cargo in the transit sheds to be taken before delivery,
- d) Customs were slow in auctioning unclaimed cargo which remained in the port beyond the period permitted by law,
- e) The exemption of storage charges from aid cargo donated by friendly countries and international organizations encouraged huge consignments to dwell freely in the port storage for a long time,
- f) Poor planning and control of operations.

As a result, there was much re-handling of cargo, confusion in making deliveries, and slow down in the handling of newly arrived import cargoes from the end of the ship's tackle to point of rest in the sheds. The slowing up of the discharge operations from the ships into the sheds, due to the low productivity of quays made for slow ship turn round. Ships with break bulk general cargo of about 4000 tons lay in berth at an average of 12 days and an average berth occupancy of 71% and ship waiting time of 5 days were recorded in 1985.

It is however interesting to note that as much as 1/3 of berth occupancy time was not accounted for any production.

In an endeavour to meet the demand of shipping for speeding up the release of ships the ports authority had slid into an abnormal percentage of over time work.

Loading and discharging operations continued day and night and transit sheds were kept open for 24 hours including Fridays and other national public holidays. Engagement of casual workers was made on the roads. Mechanical cargo handling equipment was used extrenuously without any maintenance and damages were mounting during night work. The ports incurred large amounts of money in this third shift operations, when productivity was excessively low, and the effect on physical capacity of workers and ability to recruit men for regular daytime work was serious. The net result in cargo handling was an abnormally low record of performance. Coordination of activities was poor , descipline had dropped and damage and pilferage of cargo increased.

6.1.2.PERSONNEL MANAGEMENT.

The business of port management and operations can not be handled properly without stability and competency in the personnel at all levels. In discussing the work of the port manager who leads the management organization, the need, for technical, administrative and political efficiency must be a high order(*).

(*)Marvin L. Fair; Port Administration in USA PP. 159.

Port management is complicated and highly specialised. No manager can coordinate unless he knows what he is coordinating. Each port presents unique problems and functions to be administered. Therefore it takes time for any competent man to know enough about his port and his staff to do a really efficient job of directing personnel.

It has been mentioned earlier in chapter 5, that the Somali Ports Authority had established a personnel department, whose chief reports directly to the general manager and works with him in establishing an effective organization and procedure. The personnel department of SPA is still a small one and its principal functions include.

- 1) Employment;
- 2) Training;
- 3) and promotion.

The importance of effectiveness and morale among the personnel of the port can hardly be exaggerated. The personnel task has many technical aspects requiring special training and competence.

The methods and tools of port personnel management are similar to those to be found in any administration, whether private or public.

Provisions must be made for:-

- a) Recruiting;
- b) Job analysis;

- c) Classification;
- d) Evaluation of applicants;
- e) Orientation of new employees;
- f) Clarification of jurisdictional problems;
- g) Promotion;
- h) Adherence to lines of authority;
- i) Hours of work;
- j) Working conditions;
- k) Vacations;
- l) Basis for firing and retirement and other matters.

One of the obstacles to good port management development in Somalia has been the rapid turn over of the managers. To the opinion of the author of this paper, there is no reason why the manager of a port should be changed more frequently than the president or the general manager of a well established private business.

A second problem facing the management and operation of the ports in Somalia is the creation of the right environment for personnel administration. There is an urgent need for a well organized personnel policy with respect to hiring, training and promotion in order to ensure good " esprit de corps."

The port industry in Somalia is largely a state matter and the Ports Authority adopted the civil service system as a basis for their personnel policy.

The operation of ports is a specialised enterprise which makes it difficult to adopt the stereotyped and cumbersome state civil service system in all respects to the needs of the port operations, but the desired freedom is restricted by the limited degree of independence of the ports authority to adhere to the highly centralised administrative system of the country.

6.1.3. PORT MAINTENANCE.

Marine engineering whether civil, mechanical or electrical because of the environment in which it is carried out tends to be expensive, difficult, time consuming, hazardous and in many instances almost impossible to adequately supervise during construction or installation. In addition, because of the properties of the marine environment many other difficulties and problems arise which demand special precautions during both the design and erection stages if the final facility is to last for a reasonable length of time(*).

Although in theory it should be possible to design a structure or a plant for a given life span it is rarely practicable to do so with certainty, and for major port facilities such as breakwaters, quay walls or quay cranes the survival life in service is mainly a function of their sturdiness and the care with which they are maintained.

(*) World Bank; An Analysis of Port Engineering Standards.

This service life can be different from their physical survival, which is often far longer and can indeed be a problem when they become obsolete and cause heavy removal costs.

It was mentioned earlier in chapter 5 that the ports authority is responsible for all the administrative, and operational activities in the ports of Somalia including the provision and maintenance of infrastructure and superstructure facilities.

All maintenance work is carried out by the ports authority and non is contracted out to private contractors, except for the harbour tugs which are sent at regular intervals to the neighbouring ports of Djibouti and Mombasa, where dry docking facilities are available for hull maintenance and for major repairs of the machinery.

Port maintenance is the single most difficult task facing the port management and the problems presented by it should be discussed in association with the general context of the developing country ports. Port maintenance is expensive and many ports spend more on maintenance than on capital investment. The solving of the problem is usually made more difficult than it really should be, because the engineers (often foreign consultants) responsible for the concept, design and construction are often more concerned with achieving a timely and low cost product rather than with consideration of the difficulties, efforts and costs that would be involved in the necessary maintenance. The overall maintenance problem has to be tackled and solved in a well conceived manner using the best available management and engineering concepts.

In the ports of the developing countries evidence of the wrong attitude adopted towards maintenance include:-

- 1) The substandard engineer, appointed to the maintenance department;
- 2) The poorest office accommodation allotted to the staff;
- 3) And the arbitrary allocations of budgets for maintenance.

Having presented a brief outline of some of the common problems associated with maintenance in the ports of the developing world in general and those relating to Somalia in particular, I had better described for the benefit of the reader the principal activities or assets which would require attention as follows:-

- 1) The civil works infrastructure include berths or quays, paved areas and roadways, sheds and buildings, and the main services such as the electrical power network. Slipways or dry-docks may also be parts of the operations in some ports;
- 2) Although it may be an infrequent activity in ports located in more stable sites, dredging can be a major annual undertaking in river or estuary ports;
- 3) The port's major items of mechanical plant included quayside cranes, rubber tyred or railmounted gantry cranes, bulk handling equipment;

- 4) Stevedoring and general cargo handling equipment such as tractors, trailers, forklift trucks, mobile cranes, front end loaders, vehicles and so on;
- 5) The port's floating craft including tugs, launches, floating cranes barges and dredgers;
- 6) Last, but by no means the least, the maintenance of the human resources, which refers to the need for continuous updated manpower needs plan to be available for use by the management including:-
 - Training needs at all levels;
 - Recruitment needs at all levels;
 - The changes in the manpower needs that will occur as the ports employ newer technology in their operations.
 - Introduction of incentive schemes and bonus payments.

In the case of the civil works, the objective of the maintenance is clearly to ensure that the ports infrastructure is kept in full working order and to protect the substantial investments that have been made.

The result of the maintenance will be improved security, reduced damage to vehicles and equipment, extended life of the structures and collectively, substantial overall cost savings.

In the case of the ports mechanical equipment and floating craft, the primary objective is for the equipment to be available in full working order for as much of the time that it is needed as possible. Obviously the task of making available equipment units that are needed 24 hours a day is a more demanding task than that is only used for an average of two or three times a week and thus the maintenance program must reflect these needs. In making reference to UNCTAD'S IPP 1 (Improving Port Performance) unit four, the maintenance program of the port's mechanical equipment should include the following key elements:-

- Routine inspection carried out at regular intervals against a time frame;
- Routine maintenance also carried out at regular intervals against a time frame;
- Overhauling, major maintenance carried out on a regular basis but which will reflect the workload or conditions to which the unit is subjected;
- Anticipated repair as a consequence of accident, damage, poor handling etc; based on data from previous experience;

- Materials, spare parts, and specialist equipment required to support the program identified against a time frame including the cost and lead time for procurement;

- Manpower needs in terms of managerial, supervisory, technical, skilled and semi-skilled staff.

The maintenance of mechanical equipment in most ports in the developing countries is made more difficult as a consequence of the multi-lateral and bi-lateral aid that they have received over the years. This has resulted in, for example a dozen different marks of forklift trucks. This has become a maintenance nightmare that would probably not have happened in a port in the developed world where the management had decided to concentrate their plant in one or two manufacturers to reduce the training needs and spare parts inventory. Thus in developing ports the training needs and stores problems are more demanding and complex than it really should be. This problem of the spread of equipment over many different manufacturers is frequently the result of international competitive bidding procedures which are usually a requirement of the multi-lateral lending agencies where normally the lowest evaluated bid is selected, even though this may add further types of equipment to that already existing.

Fortunately, in the Somali Democratic Republic no previous major mechanization was undertaken in the port operations; and in the current port modernization project financed by the World Bank it is recognised the need for standardisation with limited diversification to allow a degree of flexibility in the procurement of equipment and the supply of spares with the view to reducing the future maintenance problems.

Similarly, the maintenance problems of the civil works of port infrastructure is often more onerous than it need to be due to the designing engineer's intention of creating the minimum cost solution with little regard to maintenance problems that would result. It is commonly seen as an example, that a steel structure, such as a floodlight tower or transit shed roof is designed and built using a multitude of slender steel sections; a low initial cost but a nightmare to maintain in a humid, tropical, marine environment, typical to that in Mogadisho, Berbera or Dare-es-salaam. Evidence to this attitude is demonstrated by the almost complete lack of any form of manuals for engineering infrastructure. In most instances port managers in developing countries are completely unaware of the probable maintenance cost of the structure that they have accepted. The use of sophisticated systems such as a highly specialised cathodic protection for a steel sheet-pile berth construction is hardly very appropriate in a country where suitable skilled technicians are rare.

Another common scene is often the use of asphalt or bituminous concrete in the paved areas of the port, where there are frequent oil spillages or turning operations by heavy rubber tyred equipment.

Surely it would have been better to have used concrete blocks which have so many advantages in developing country ports. Initial cost is often cheaper since cement is mostly manufactured locally where as bitumen is imported. The laying is labour intensive and ground settlement problems (a common feature in the port of Mogadishu) can be rectified using only labour to relevel the blocks avoiding the use of further imported bitumen.

Many ports in developing countries are operated as government parastatal organizations and the wages and salary levels are directly tied to that of the civil service. Under these conditions it is often very hard, if not impossible, to recruit and retain suitable engineers to fill the essential positions and unless changes in compensation can be brought about the maintenance problem will never really be solved.

This situation is particularly true in the case of Somalia, where serious outward brain drain has happened due mainly to its proximity to the oil rich Gulf States, where more attractive employment opportunities existed during the last decade.

It is therefore obvious that unless there are educated and experienced managers holding the key essential position in the ports technical departments, the establishment of an adequate maintenance problem will be impossible.

A major problem facing the management of ports in the Somali Democratic Republic is the shortage of skilled operators.

Poor levels of education coupled with inadequate training results in many equipment-operators having a poor appreciation of the mechanical concepts of their machines which is reflected in the above average accident rates and maintenance needs. Frequently the training which the operator has undergone to be able to use the equipment is the basic minimum and his educational background does not permit him to understand fully the working and capacity limits of his machine. The result is frequent overloading, too rapid operation or developed habits which are damaging to the equipment.

In concluding this paragraph of port maintenance problems, it may be admitted that the port management is dealing with a task which is far from being easy, and which is very expensive. However, if maintenance programs are developed and well carried out the expense will be very well justified through reduced annual costs and deferred capital investment programs.

There is need for a major change in attitude towards the problem of port maintenance by the firms of consulting engineers who for many years have been engaged in designing port infrastructure and recommending the use of different types of plant and equipment. They must be realistic in the designs they use so that future maintenance burden is reduced. The equipment and plant recommended or to be constructed must also be carefully considered from the maintenance aspects.

The least cost solution is often only the least cost for the tender opening day, but what is required is the least cost solution for that particular aspect of the ports operation for over a period of years; taking into consideration initial operating costs and maintenance costs as well as eventual replacement costs. I have attempted in this paper to outline the importance and magnitude of this engineering task. As can be seen changes in attitude are needed throughout the task starting with the government's need to appreciate that compensation levels for their staff must be initiated through objective port management backed by effective information systems, to the port workshops and stores departments.

6.1.4. PORT LABOUR.

While many types of labour are necessary for the functioning of ports, the critical category of labour is that of the longshoremen who actually move the cargo across the port. Without an adequate supply of efficient longshore labour the finest physical facilities of a port are valueless(*).

Experience in most of the world ports demonstrate that the economic advantages of modern technological progress can be nullified because of the attitudes of port labour. General cargo ports require a larger number of longshoremen than in ports which are predominantly bulk cargo.

The very nature of port work has given rise to complex and often unique employment problems in an industry which is vulnerable to industrial disputes. The large variations in demand for labour, particularly in ports with distinct seasonal trade and the recent ramifications of rapid technological changes, are such examples. Furthermore, dockworkers are often gregarious by nature, a situation which has evolved from the hard environment and conditions under which they work.

The relationship between management and the dock labour force may have significant influence on employment practices and industrial relations outside the direct field of port work.

(*) The Port of New York; Waterfront Labour and Waterfront Commission, PP. 99.

In the ports of Somalia, cargo handling is still a largely labour intensive operation employing a substantial work force. The Somali Ports Authority is employed in cargo handling operations as well as in stevedoring work and constitutes one of the largest single employers in the country.

The employment of a multi-disciplinary work force at operative, supervisory and management levels, obviously presents a wide range of labour management and personnel matters, such examples which frequently emerge as sensitive pressure points in management/labour relations, particularly with dockworkers include, the introduction of regulation of employment schemes and the establishment of a sound industrial relations and disputes procedure within the ports.

One of the major social and economic problems confronting the ports in Somalia is the regulation of employment of dockworkers. The casual system of employment had presented problems in the port operations, and if allowed to continue it may cause more serious set backs in future as new cargo handling practices are introduced and dockworker's standard of living improve. The casual system evolved in ports as the result of labour supply exceeding demand, the irregularity of vessel arrivals and fluctuations in trade. The major defects of the casual system as experienced in the ports of Somalia are:-

- 1) Dock workers lack of security;
- 2) Wide fluctuation in earnings;
- 3) Transitional labour force;

- 4) Preferential treatment leading to corrupt practices;
- 5) Casual approach to management;
- 6) A large body of workers scattered over the port area and ignorant of the actual time and place where work is to be had;
- 7) Complete dependence of the job of the dock worker on the good will of the foreman and on chance;
- 8) Lack of employment continuity.

The conditions under which docklabour force is employed within the ports of Somalia are depressing and degrading to such labour resulting from the lack of any systematic method of hiring, irregularity of employment and unduly high accident rates.

In order to find fundamental cure for the existing situation and lay foundation for future developments the following points should be taken into consideration with immediate effect:-

- 1) Abolition of the discredited casual system of employment;
- 2) Registration of all dockworkers;
- 3) Entry into the industry must be controlled;

- 4) Greater regularity of employment must be ensured;
- 5) Sufficient labour to meet demand must be secured;
- 6) Equitable disciplinary procedures must be introduced;
- 7) Dockwork should be restricted to registered labour;
- 8) Financial compensation (minimum granted pay) must be provided to workers in the event of unemployment or under-employment;
- 9) Discrimination in the potential earnings of the port labour must be avoided;
- 10) The system of port labour employment must be unified in all the three major ports of Somalia (Mogadishu, Berbera and Kismayo) with minimum possible variations as required by local conditions;
- 11) payment to dock workers must be based on piece rate set against a time frame of a shift duration;
- 12) Adoption of a rota system of allocation by the gang and not the individual;

- 13) Provision must be made for the movement of surplus labour between the ports;
- 14) Manning of gangs must be adapted to the cargo loaded or discharged and the equipment used during handling;
- 15) Provision of welfare and amenity facilities must be made for labour in the work place;
- 16) Schemes for compensation and benefits must be established in the event of accidents, disablement and sickness.

6.1.5.IMPROVING PORT PRODUCTIVITY.

Operation in a general cargo port may be divided into three independent functions:-

- 1) The transient storage of cargo at the ports terminals;
- 2) The movement of cargo into and out of the vessel;
- 3) The movement of cargo into and out of the railcars, trucks or barges.

The practical operating capacity of a port is the volume of cargo which can be handled through its terminals with reasonable efficiency and limited and infrequent congestion. But the overall operating capacity of the port may be limited by any of the above three functions(*).

In the Somali Democratic Republic, the limiting factor determining the operating capacity of the ports is the practical capacity for moving cargo into and out of the vessels berthed. This capacity is basically the product of two components:-

- 1) The cargo handling rate expressed in tons per day of occupancy of the berth.
- 2) The number of days in a year on which the berths could be occupied under the prevailing operating conditions.

Some of the more important operating conditions that can affect the general cargo handling rate of the port include the followings:-

- 1) Labour productivity;
- 2) Number of dockworkers per gang;
- 3) Stevedoring operating practices;
- 4) Characteristics of the commodities handled the size, shape, density, type of package, fragility, etc.

(*) Dr. M.J. Schwinner and Paul A.A-mundsen; Management of a Sea Port, PP.257.

- 5) Type of ship being loaded or unloaded---
its size, number of hatches, hatch
arrangement, etc.
- 6) Working space available on wharf;
- 7) Conditions and type of ship's gear, wharf
cranes or other equipment used for
loading and unloading;
- 8) Available and condition of stevedore
equipment;
- 9) The ratio of working days of occupancy
to total days of occupancy.

The combined effect of all these factors was measured in recent studies conducted by a number of leading ports in the industrialised countries and UNCTAD'S Trainmar and IPP Projects. the main aim of all these studies and research programs is to improve port productivity.

Efforts to improve productivity in ports must ballance the needs of the many constituencies that affect the port. Improvements within the port should be accomplished without adding to the total cost of transportation. The question of improving port productivity, therefore must be viewed within the broader prespective of the customer of transport servcice and the total cost of service(*).

(*) Special Committee of in enquiry, Improving Productivity in US Marine container Terminals PP.11.

In the Somali Democratic Republic port operations are still labour intensive and improving port productivity can be accomplished through changes- for example by replacing one element of cost with less one, perhaps labour for capital. This may be achieved by eliminating unnecessary work and delays or by providing required information in its broadest sense.

The options of the Somali Ports Authority are often limited by its surroundings. The Ports Authority is generally provided with a complete piece of port infrastructure. The size and configuration of the port are not usually determined by reasons of absolute low cost to the ports authority in operating it.

The constituencies who affect the port have different goals from the port authority. The trucking community wants to turn their equipment rapidly through the port. The ocean carrier wants a rapid turn round at berth requiring that as many cranes as possible work the ship. As a consequence the ports authority must gear up to provide that service and incur more idle time for a possibly greater set of equipment and its underlying resources. Members of the collective bargaining units want job security and high pay, which are sometimes in variance with ports authority's needs to improve productivity and to engage the number of workers that is economically justified.

In order to manage any enterprising process, it is necessary to measure its productivity, and the management of the port is no exception. The measurement of port productivity is however quite unlike the measurement of, say an assembly line. First, no two ports are alike. Second in

any given port, not two ships worked are exactly alike in configuration or loading. the result is that the work performed in a port is repetitive only in a gross sense.

Productivity is commonly measured in monetary terms since management often views increases in productivity as a means to increase profits. Within a given port such measure do have considerable relevance. However, different ports may well be in different labour markets, use different currencies and be subject to different physical and environment constraints.

In the Somali Ports, it is not clear whether such monetary measures of productivity are either meaningful or useful. As a result, the profile of productivity measures involves physical quantities such as man-hours and crane moves. In this way it is hoped that meaningful comparison can be made among port services here in Somalia and abroad.

The sophisticated technologies used in some ports abroad can not be applied in Somalia as they will not be cost effective in the foreseeable future. Therefore, the primary objective of the ports authoiry must be to increase productivity and the use of existing resources through operational and management level improvements, without unnecessarily indulging into major capital intensification. As a rule, capital improvement should be assessed for their value in improving productivity after the productivity of the current facilities has been improved and utilized to the maximum extent possible.

For each operation in the port a specific package must be moved from a known location to required destination. Any improvement in this process of identifying cargo and locations will not only help the planning of the vessel moves but will also provide feedback to assess the quality of the operation for future improvement. In addition to the means of improved planning, the equipment operators must have exactly the same information.

With information flow improved in this manner much of the delay currently endemic in the ports of Somalia today will hopefully largely disappear.

Since many facilities in the ports of Somalia are presently under utilised, improvements in operating the existing plant must be the first order of business in the port industry. This involves searching for areas that have less productivity than could logically be expected. Making incremental improvements will require additional analytical work, however. This work needs to stress the analysis of the interaction of one segment of the port operation with prior and succeeding operations and with events outside the port. These analysis should look at the functional aspects of operation such as:-

- a) The layout and planned follow of equipment in the port;
- b) The effect of outside forces that impinge on productivity in the port, such as vessel arrivals, interchange of trucks, feeder vessels and gate arrivals (This is most critical where container operations are involved);

- c) The organization and assignment of the port's work force;
- d) The planning operation for working the vessels and storage areas (covered or open);
- e) The operation of gantries and other yard equipment.

Different ports that use comparable equipment and systems can be observed to operate at significantly different levels of productivity. This can generally be attributed to the differences in fundamental management and labour practices. Good relations between labour and management are an essential prerequisite to introducing productivity improvement successfully into the work place. It is in this area that large gains can be realised. Without this improvement can capture only a portion of their potential.

There are two fundamental elements to improve and strengthen these basic relations. The first is to identify labour-management practices that can be conducive to improving the operation. The second is to seek mutually supportive labour-management relations. These two elements not necessarily named in order of their importance are not new. they have been tried and implemented successfully in other parts of the world.

Productivity in the ports of Somalia is presently as low as any unproductive port in the developing countries, and while it is urgently needed to make drastic changes to improve productivity, the following factors should be kept in mind:-

- 1- Better employment of people which includes:-
 - a) Improvement of labour management relations;
 - b) Improvement of the quality of management and supervision;
 - c) Improvement of the quality of management and labour; and
 - d) The quality and flexibility of the work environment.
- 2- Improved information systems to assist in the control of operations and the facilitation of documentation, so that significant potential productivity gains are obtained.
- 3- Improvements in port productivity are important to the success of the Somali port's interests to compete in an economically competitive market.
- 4- The international competitiveness of somalia's products in the export trade is affected by the quality of port operations.
- 5- The port administration must develop and adopt a profile of productivity measures to characterise port performance in a meaningful way for management purposes.

6-In order to achieve substantial improvements in port productivity, a process involving all concerned parties in a continuing dialogue at national, regional, and local levels must be made. This should include:-

- a) Joint labour-management cooperation in addressing the human resources aspects of improving productivity;
- b) The establishment of a profile of productivity measure and acquisition, dissemination and use of productivity data;
- c) The standardisation of mechanical handling equipment and management information system;
- d) The maritime Administration must facilitate and promote the process by working closely with port management, port users and the work force.

6.1.6. PORT SAFETY AND SECURITY.

Port operations have historically entailed very hazardous working conditions. The lack of safety originates not only from the vessel and equipment, but also from the habits and attitudes of the people(*). The type and extent of safety and security that may be needed in ports today might be quite different from the practice prior to the introduction of containerisation, and the many new types of cargoes with highly hazardous properties. William P. Sirignano, Executive Director, Waterfront Commission of the New York Harbour said in a Seminar on Port Security at the 1969 AAPA SESSION:-

" Today the cargo protection, requirements in ports have been very drastically changed by the remarkable growth of oceanborne container traffic and immediate action for new methods of protection is consequently imperative. The same methods used for the protection of breakbulk operations are inadequate to meet the new risks brought about by technological development. It is therefore obvious that protective and security measures adequate to cope with these increased risks must be provided. "

(*) Captain Warren H. Atkins; Modern Marine Terminal Operations and Management PP.194.

William P. Sirignano pointed out the extent of organisation and cooperation required for port operations in this container era, but the degree of intensification of containerisation and the increased carriage and handling of oil and other harmful substances in various forms from 1969, to date warrants the need for proper safety and security measures in ports, not only for cargo but also for the safety of life and the protection of environment. Experience has shown that transport accidents which are triggered off by the cargo transported, happen in most cases at the handling stage. The port is the handling place for transshipment of overseas cargoes. The port is also the main storage place for intermediate storage of cargoes with administrative or other difficulties. Ports have, in the last two decades, been subject to radical changes due to technological transport innovations and the construction of new extensions in historically grown ports (e.g. containerisation, bulk liquid terminals etc). Situations have developed in many ports all over the world, but particularly in ports of developing countries, where new and formerly unknown problems are encountered which cannot be solved any more in the traditional way.

Ports in industrialised countries, have, with tremendous capital investments, adapted to these changes. Safety thinking enjoys a high status, and purposeful management, backed up by the required legislation, has become commonly accepted in these ports.

Ports in developing countries are in a more difficult situation. On the one side they have to deal with similar amounts of dangerous cargoes as the ports in industrialised countries.

On the other side they do not have the resources (financial, expertise, manpower), as in the ports of the more developed countries. Naturally this has repercussions on the safety standards of these ports and not few of them have experienced costly accidents which involved dangerous goods, flagrant fires, oil pollution, structural damages, loss of human life and personal injuries.

In the Somali Democratic Republic, one of the most serious problems facing the Ports Authority is the area of port safety and security. In 1977 there was fire which damaged shed no. 5 of the Mogadisho old port. At the time of fire cylinders containing chemicals were stored at the shed's veranda together with carboard sheets and timber blanks where there was no adequate protection from rain and other moistures. It was speculated that the cause of the fire might have been due to spontaneous ignition which had developed from the chemicals. In 1982 there was another fire in the new port of Mogadishou where vegetable oil, plastic goods and carboard were damaged. The cause of these fires could not be determined by the committees which were designated by the government to investigate them. Other minor incidents have occurred in all the three major ports of Mogadisho, BERBERA and KISMAYO, like vessels hitting shore cranes, breakwaters and jetties, other minor fires on board ships and a host of others. There is little or no facilities in the ports to cope with any great disaster or accident which may occur. There are no disaster plans to evacuate workers and people living in the vicinity of the ports.

The existing laws and regulations in the country are inadequate to prevent major accidents in ports specially at the oil berths and other parts of the ports where dangerous cargoes might be handled. To date, however, SPA still uses the port regulation 1978 (no. 67) which has not been revised since to take into account modern development in the maritime sector as regards international conventions.

The other regulatory aspect of shipping in ports and on territorial waters of Somalia is the Maritime Code 1959 (Decree Law NO. 1) which unfortunately is out dated. Both the Code and the Port Regulations do not contain provisions based on international regulations to deal with all aspects of port safety, port state control and prevention of pollution, and the country did not ratify the updated international conventions on safety and prevention of pollution. Worse still, there is no administrative machinery to implement the outdated legislation. The Ministry of Marine Transport and Ports should as a matter of urgency take remedial measures in this direction. National contingency plans should be drawn to cover the ports and other coastal areas in the country.

There is considerable shipping, fishing and exploration of oil in the country's internal and territorial waters and its exclusive economic zone and the quantities of oil and oil products handled in the three ports are potential sources of pollution, to warrant the drawing up of a national contingency plan.

The country is not party to the International Convention for the Prevention of Pollution from Ships 1973, but the present port regulation includes a chapter which prohibits the discharge of ballast, ashes, oils, paints or any other objectionable matter in a port and it is an offence to discharge ballast so contaminated that it leaves an aridescent sheen of oil on the water. There is however no organisation in Somalia charged solely for clean up of pollution incidents or to fight pollution should one occur in the ports or along the country's coast.

As a result of this absence of any special organization to fight pollution, it is absolutely necessary that SPA should have its own pollution abatement and control teams in all the three ports.

It is important for the Authority to acquire some basic equipment such as booms, oil snares, absorbents and portable skimmers for use in case of pollution incidents, in the ports. The Somali Ports Authority do not presently possess grab dredgers, barges or pontoons that can be used in the event of pollution incident, and it is strongly recommended that a minimum number of these equipments should be maintained. A small core of men of the Authority must be trained in pollution combating for the ports.

Serious consideration must also be given to other sources of pollution in the ports such as tallow which is imported for soap and detergents manufacturing, acids and other chemicals for the industrial sector of the country and adequate plans made for them in the country's contingency plans to combat them should there be a pollution incident.

Seaworthiness of ships and substandard vessels coming to the Somali Ports has to be taken very seriously by the Maritime Administration. Some old vessels have been abandoned in the ports between 1968 and 1985 and the Authority had to scuttle them in deep seas and others have been beached. The Maritime Administration would have to set up a department to be in charge of inspection and survey of not only Somali flag vessels but also all foreign flag ships which come into the ports of Somalia to enforce port state control.

The Maritime Administration must ensure that vessels brought into the port should not only endanger the facilities but also the whole marine environment of Somalia.

Another area of port safety to be taken care of in regulations is the handling and storage of dangerous goods. Their close relations with the sea transport suggest that the ports must orientate themselves to the international requirements which have been set up by the International Maritime Organization (IMO). This would more effectively incorporate the port into the international shipping scene, as well as to save the ports onerous and extremely costly exercises to design their own dangerous goods codes. IMO has published a whole package of regulations and codes of practice which are recommended for application by the shipping industry and for utilization by the port industry. For the ports the two most important ones are the " International Maritime Dangerous Goods Code " (IMDG Code) and the Recommendations on the Safe Transport, Handling and Storage of Dangerous substances in Port Areas. (IMO Port Recommendations). The IMDG Code is a voluminous Code of practice and, indeed, urges port authorities in its General Introduction to use the available information.

The national law establishing the port organization should leave details to the port regulations, but should require the closest possible adaption of the dangerous goods port regulations to the classification and recommendations as suggested by the United Nations.

The purpose of the IMO Port Recommendation is to serve as a standard framework for use in the preparation of Port Regulations to ensure the safe transport, handling and storage of dangerous substances in port areas. The IMO Port Recommendations are not supposed to be copied unchanged since they take into consideration the fact that prevailing special conditions on local or national level would not allow a totally uniform set of rules. They are a guide, and the Ports Authority has to revise its own safety rules in line with the IMO Port Recommendations. The revised Port Regulations must adopt the IMDG Code, as the principal code of practice which should be used as a guide where applicable and be made mandatory where required (e.g. classification, packing, marking, labelling, and placarding and documentation). In addition, the regulations must subdivide dangerous goods as to direct delivery, quantity limitation, allocation of special handling and storage spaces, documentary and administrative requirements, operational procedure and other criteria.

Closely associated with the port safety question is port security which has assumed very serious dimensions in Somalia in recent times where private cargo owners had to assign their own watchmen in the port's transit sheds to check stealing of their cargo. Pilferage is probably the most common and annoying hazard with which security and police personnel will be connected.

It can become such a financial manace and detriment to import-export operations that a large portion of police--security personnel efforts will have to be devoted to its control. Pilferage, particularly petty pilferage, is frequently difficult to detect, hard to prove, and dangerous to ignore. The protection of life and property would become unmanageable in ports if they are not surrounded by adequate perimeter fencing and did not have limited and controlled access points and internal patrol as a minimum supervision. Lack of this control could lead to civil claims for compensation for injuries and accidents and increased insurance cost for cargo losses through which the ports might be made bankrupt.

Specific measures for prevention of pilferage should be based on careful analysis of conditions at each vulnerable area. The most practical and effective method for controlling casual pilferage is the establishment of psychological deterrents. The most common measure to discourage casual pilferage is to bring to the attention of all employees the fact that they may be apprehended if they do attempt the illegal removal of property. Care must be taken to ensure that personnel are not demoralised or their legal rights violated by oppressive physical controls or unethical security practices. An aggressive management security education program may be an effective means of convincing employees that they have much to lose than they do to gain by engaging in acts of theft(*). Case histories should be cited where employees were discharged or prosecuted for pilferage.

(*) Louis A.Tyska and J. Fennely; controlling cargo theft a handbook of transport security, PP.521.

It is important for all employees to realise that pilferage is morally wrong no matter how insignificant the value of the item taken.

It is particularly important for supervisory personnel in warehouses and sheds to set a proper example and maintain a desired moral climate for all employees. All employees must be impressed with the fact that they have responsibility to report any loss to proper authority. Adequate inventory and control measures must be instituted to account for all material, supplies, and equipment. Poor accountability if its existence is commonly known, provides one of the greatest sources of temptation to the casual pilferage.

In order to achieve better coordination, higher efficiency and improvement in the present port safety and security and to carry out port state control and train the staff for pollution control, it is suggested that the followings should be given thorough consideration:-

- 1) The government has to adopt and implement the International Conventions enumerated below:-
 - a) International convention for the Safety of Life at Sea 1974;
 - b) The protocol of 1978 relating to the International Convention for the Safety of Life at Sea 1974;
 - c) International conventional on the Law of the Sea 1982;

- d) International convention on the Establishment of an International Fund for Compensation for Oil Pollution Damages 1971;
 - e) International convention for Safe Containers 1972;
 - f) International Convention for the Prevention of Pollution from ships 1973 as modified by the Protocol of 1978 relating thereto.
- 2) A special unit for Port Safety and Security must be established in each of the three major ports with the following responsibilities:-
- a) Fire fighting and fire prevention;
 - b) Handling and storage of dangerous goods in port areas;
 - c) Pollution Control, Prevention and combating in port areas;
 - d) Enforcement of port safety and security rules in port areas;
 - e) Control of pilferage;
 - f) First aid and ambulance services.
- 3) Port security men should be provided with special uniforms to distinguish them from other employees.

- 4) All employees and visitors while in the port area should have identification badges or cards to be displayed upon request or worn on outer garment.
- 5) At present bookies and vagrants wander all around the ports at will and without restrictions. It is therefore absolutely important that no persons, other than employees and persons carrying out a legitimate business, should be allowed within the ports;
- 6) Vehicles should be parked away from sheds and ships in clearly defined and marked parking areas, preferably outside the perimeter fence of the port;
- 7) The ILO Code of Practice on Safety and Health in Dock Work (Convention 152, Recommendation 160 Code of Practice) and other relevant international guides should be utilised for the safe operations of dangerous goods in ports.

PORTS	IMPORTS		EXPORTS		BANANA	TOTAL CARGO	LIVESTOCK IN NOS.		
	DRY CARGO	PETROLEUM	DRY CARGO	PETROLEUM			CAMEL	CATTLE	SHEEP/GOAT
MOGADISHU	508654	210888	222226	41581	14523	797872	204		37334
BERBERA	133807	26000	41566			20137	4815		1340100
KISIMAYO	33581	8766	26444		32046	100837	1650	26213	
TOTAL	676042	245654	90236	41581	46569	110008	6669	26213	1377434

SOURCE:- SOMALI PORTS AUTHORITY ANNUAL REPORT 1985

CHAPTER VII.

CONTAINERISATION AND ITS IMPACT ON PORTS.

7.1.CONTAINER DEVELOPMENT.

The traditional sea port, equipped with labour, rope nets, slings, crowbars, and hand trucks, was phased out during the 1940s as the wood pallet and forklift truck came into general use. This was just the step in the rapid evolution of cargo handling. It was followed by the through shipment of unitised loads, the introduction of roll-on roll-off systems, and finally the onset of containerisation. Each change evolved from a primitive form to the more sophisticated result(*):-

- a) The pallet from the cargo tray;
- b) The modern container from the many reusable military containers in use during the World War II;
- c) The straddle carrier from the lumber carrier of the 1930s; and
- d) The container crane from the many earlier shipside gantry crane types.

The overwhelming motivation for the evolution was profit and the need to remain competitive.

(*) Special committee of enquiry; improving Productivity in US Marine container Terminals PP.105.

Increasing shipping costs demanded technological changes to improve productivity. In this perspective one may come to realise that there is nothing new under the sun, but each change along the way required departure from tradition and a willingness to step into the unknown or at least the unproven.

The energy crises of the 1970s followed by high-interest rates, the strong dollar with resultant trade imbalance, and the recession of the late 1970s that brought on intense competition forced the maritime transport industry to reduce staff, eliminate research and development, and even cut back on maintenance and repair costs in order to survive.

Cargo handling costs were the largest single expenses in the carriage of ocean borne cargo, and these entailed a high degree of handling during the entire journey over land and sea from the consignor to the cargos' final destination. While labour was cheap there was no particular disadvantage in this, but during the 1950s and 1960s shipping costs began to increase rapidly in the industrially developed countries and labour costs, including stevedoring, were rapidly taking up a larger share of the total.

The most promising approaches to reducing this increase were firstly to increase cargo capacity, in particular the utilisation of cargo space on a given vessel size, and secondly to reduce the amount of handling required during the cargo loading and discharging process. This led to the two major innovations in the shipping of cargo which have dominated thinking on cargo stowage ever since.

One was the discovery of the advantages of bulk shipping and the other was the development of the concept of unitisation of smaller-scale cargo. This latter innovation has advanced to the point where containerisation is universally accepted as the most successful solution, which virtually reduced the incidence of all cargo losses and stabilised the rising transportation costs.

Unitisation in general and containerisation in particular provides for the combination of various pieces of general cargo into large standardised parcel, which can then be handled economically and efficiently by mechanical means. For the ship operator, the elimination of costly and repetitive loading and discharging procedures means that handling costs are significantly reduced, as is the time spent in port, although the implementation of unit handling methods also allows savings throughout the door-to-door transportation chain, from the manufacturer to the consignee. Economies of scale can also be realised for the first time and, on the shipping side, the shortening of port turnaround time enables larger and faster vessels to be operated economically.

The premise behind containerisation is that labour intensive operations are replaced by capital intensive ones. Although these involve heavy initial expenditure on inland distribution infrastructure and handling equipment, the maintenance of this whole network is thereafter relatively inexpensive compared to labour costs which have tended to increase each year at much more rapid pace than the revenues which have to support them.

Moreover, the investment in capital intensive systems of cargo transportation and handling will be compensated for

by the improved efficiency and the introduction of economies of scale.

Seaborne container transport began with the containerised coastal services which developed around the United States. The early services multiplied rapidly and were brought into the North Atlantic Trade in 1965. Containerisation which has spread quickly was first confined to the trades between the highly industrialised countries of the North West Coast of Europe and the United States, Japan, Australia, New Zealand and some other traffics on short sea routes. The development of this first traffic of containerisation was based on the following conditions:-

- 1) Highly developed economies existed at both ends of the sea routes with accordingly highly developed transport infrastructure.
- 2) There were intensive trade relations between these countries which guaranteed a balanced flow of cargo in both directions.
- 3) There was full employment in all the branches of the economies.
- 4) This state of full employment led to a permanent trends of rising wages entailing the necessity of developing labour saving techniques.
- 5) Because they have already attained a high stage of mechanisation in handling conventional general cargo, they were able to achieve a high degree of productivity by using the new technology.

As containerisation developed more and continued to spread, some ports on the routes between highly industrialised countries (so-called way ports) were included in the container traffic; due to their strategic geographical location on the routes of the large conference lines.

These way ports included some of those in the developing world, specially countries with rich natural resources (oil producing countries) where congestion was mounting due to extreme increase of imports. Containers were for many years regarded as unsuitable for developing countries for the following reasons:-

- 1) The very real difficulties involved in containerisation;
- 2) The large size of investment required;
- 3) Containerisation was regarded as being fundamentally capital intensive, and therefore unsuitable for the developing world;
- 4) For many developing country trades the pattern is import of manufactures and export of produce and commodities and as their exports were unsuitable to a container service there was a great deal of trade imbalance;
- 5) In the developing countries where manual labour was abundant and capital resources scarce a labour intensive system in port operations was more economically justified;

Developing countries have the one advantage that they are containerising after two and a half decades of intensive technological development which has improved systems immensely and widened the range of options available. They are, however faced with a number of problems including:-

- 1) Ports are run by the public and the consortia of lines and other interests which may often form port operating companies are not encouraged in the developing countries. This creates difficulties in raising funds for port investment;
- 2) Lack of tradition for the planned maintenance which is essential for the operation of complicated and high cost container handling equipment;
- 3) Physical and administrative difficulties in the integration with inland modes leading to problems in the operation of integrated system and maintenance of container control;
- 4) The movement of empty boxes is unremunerated and the cost of their carriage must be borne by the feeble economies of the developing countries by increasing the cost of the overall container service;
- 5) Customs and other bureaucratic delays leading to potentially long inland container turnaround times and container dwell time in port;

- 6) Social difficulties in dealing with a reduction in labour requirements in the port.

Developing countries argue that containerisation is being imposed on them and that the benefits accrue only to the developed countries; and although they have every right to be cautious based on the preceding factors, there are a number of reasons why this perception is now changing which include:-

- 1) Container ships provide more capacity per unit of capital than conventional ships and almost all general cargo ships now built are of modern design and incorporate a substantial container capacity;
- 2) The advantages to traders stemming from containerisation are now generally acknowledged, although this may mainly be related to experience of traders between industrial countries;
- 3) There are already precedents for successful carriage in containers of wool and fresh tropical fruits;
- 4) Other base produce may benefit from light packed.

For instance experiments are going on in the Indian sub-Continent in the use of cardboard cartons in which to pack tea, the cartons being then loaded into containers, enabling traders to dispense with the traditional, expensive tea-chests altogether;

- 5) There has always been a border line where certain bulk or semi-bulk cargoes move in and out of liner and bulk trades respectively, according to competitive conditions. Containers have helped some cargoes to move satisfactorily in liner services e.g. malt, cattle feed, where bulk loading of containers is possible;
- 6) Where cargoes continue to be bagged, lighter bags are possible for many products if these are loaded into containers and protection is still greater than in a ship's hold. This also eases cargo control and the problem of delay resulting from long loading largely disappears;
- 7) There is an increasing tendency for dock workers to be unwilling to handle dirty cargoes directly out of break-bulk holds. Wet hides already move satisfactorily in large quantities in containers. A similar approach can be taken to bones and other dirty cargoes;
- 8) Where developing countries are extending into manufacturing, precisely the same benefits accrue as for industrial country manufactures.

Some products like canned fruits have been particularly successful as container cargo, with a very marked reduction in the incidence of damages.

The above suggests that many developing countries liner cargoes are suitable to container transport; indeed with the passage of time many more cargoes have been found suitable for carriage on container vessels than was originally thought to be the case.

7.2 CONTAINER HANDLING SYSTEMS.

From the earliest days of containerisation, not more than 35 years ago, the pioneering American container carriers developed different container handling systems. Sea-land decided on the chassis system, and it is still its method of choice. Matson Navigation Company preferred a straddle system using the straddle carriers, and it is still its principal mode of operation. Equipment manufacturers promoted still different systems by developing specialised machines for handling containers. PACECO'S transtainer was the basis for a high density stacking system commonly called the TRANSTAINER SYSTEM. Comparable machines produced by other manufacturers are called transfer cranes, rubber tired gantry cranes, yard cranes and so on.

Forklift manufacturers have equipped very large forklifts with spreaders to handle containers from their upper corner castings with high lifting capability to enable stacking of containers three high.

The corresponding container handling systems are called

port packer systems, top-lift and the like. The sideloader, another variation of the forklift came into common acceptance as a supplementary machine to handle the stacking of empty containers. Also there are combination systems, for example, one bay area of a terminal uses port packers for the ship operation, transtainers for receiving and delivery, and sideloaders for stacking empties. The latest development is based on rail-mounted yard cranes that span 20 container rows and operate in semi-automated mode by means of computer systems. This is the most modern but very capital intensive handling system under operation, and I will concentrate only on the three container handling systems most commonly used both in the industrialised and developing ports; the straddle carrier, the chassis and the forklift systems.

The straddle carrier system relies on a single piece of equipment for operations within the port and for serving ships. To operate efficiently straddle carriers must be equipped with two way radio systems that have sufficient radio frequencies to control their movements and conduct operations. The major difference between this system and the chassis system is that random selection of containers is seldom possible with straddle carriers, since the containers are stacked two, three or four high in a yard depending on the type of straddle equipment used.

Consequently this system requires an entirely different yard plan for the storage of containers. The yard is arranged in long rows which may run perpendicular or parallel with the quay face, and the containers placed end to end.

The straddle carrier is advisable in such cases where the

LCL percentage is high and the distances within the terminal are very short. The advantages of the straddle carrier system include:-

- 1) Straddle carriers are widely used in container terminals because of their flexibility and their ability to meet peak requirements;
- 2) High level of container stacking;
- 3) The straddle carrier system requires only half or one third of space necessary for the chassis system;
- 4) The vertical arrangement of the container yard in the straddle carrier system reduces the travel distance;
- 5) Straddle carriers can be used for both multi-user terminals or those appropriated for single use;

The disadvantages that can arise out of the use of the straddle carrier system include the followings:-

- 1) Maintenance costs and high damage incidence;
- 2) Safety operations demand that pedestrian and vehicle traffic may not be permitted in the working areas, since the poor operator visibility and high travel speed create an enormous danger.

The chassis system operates on the premise that there is

a chassis or trailer for each container in the port, with the possible exception of empty containers. The chassis, a frame construction fitted with twist-lock fittings at the corners, is designed for the carriage of containers. Each chassis is licensed for highway use and is commonly referred to as an over-the-road chassis. Ports using the chassis system receive and deliver containers on chassis, as well as use the chassis for yard storage and transporting containers between the vessel and the storage areas including yards and container freight stations.

The chassis are invariably owned or leased by the shipping lines; they are rarely furnished by the port. The carrier must provide the port with the required number of chassis, in the sizes appropriate to the containers normally handled. In a few ports, the containers are transferred from over-the-road chassis to yard trailers for storage or movement within the terminal. The yard chassis is specially designed for terminal use and is not licensed for highway use. The chassis system is used most widely in appropriated terminals (exclusive use) and where FCL percentage is high and if most inland transport is done by truck.

The chassis system is an extremely efficient operational system which provides fairly high production rates in vessel operations; and its advantages include:-

- 1) Flexibility and speed in the horizontal transport on the container terminal;
- 2) The random access to each container is guaranteed during the whole dwell time;

- 3) Easy pre-planning for both the vessel and yard operations;
- 4) It is very beneficial in intermodal trade where containers can be removed from the terminal rapidly to a rail loading area;
- 5) Less maintenance and repair costs.

The major drawbacks of the chassis system include:-

- 1) The high land requirement for a relatively small number of containers; containers can not be stacked more than one high on the trailers;
- 2) The chassis system is unsuited for multi-user terminals.

Instead of the straddle carrier also heavy forklifts could be used. To handle 20' and 40' containers forklifts with sufficient hoisting capacity must be available. The forklifts are fitted either with side or top frames to handle containers. When containers are equipped with tunnels the stacking of the containers can be made with normal forklifts. Forklifts are suited for terminals with low annual throughput of container units.

The advantages of the forklift system include:-

- 1) The forklifts could universally be used for roll-on roll-off for handling conventional general cargo;

- 2) Better ground slot density can be achieved by allocating areas exclusive to 20' containers and by block stacking empties provided that the resulting constraints on the use of space and on operations are acceptable;
- 3) The forklift is a very adaptable piece of equipment, and with its low initial cost, reliability and simplicity, has attractive features for developing ports where adequate parking space is readily available.

The forklift system, however, has a number of disadvantages which include:-

- 1) Forklifts are not well suited for horizontal transport;
- 2) The storage area must be specially paved because of the higher wheel pressure within the system;
- 3) With the increasing stacking capacity the random access per container goes down;
- 4) Visibility is not particularly good when the trucks are carrying loaded containers and this presents a safety hazard;
- 5) The high land requirement compared with the straddle carrier system.

7.3.IMPACT ON PORTS.

World trade is subject to many factors, among which the effectiveness of ports in facilitating the transfer of goods and the handling of vehicles used in the transport of goods is among the most important. Port related costs, such as port user charges, port charges against cargoes, port turnaround time, cost of transport vehicles, and the cost of handling goods from origin to destination often assumes a major share of the total cost(*).

In addition, the time of transfer of goods through ports often assumes a major proportion of the total time of transport of goods from origin to destination. It is therefore recognised that improvements in the cost of international trade depends to a large extent on port effectiveness.

To be effective port management must be engaged in a continuous search for opportunities and identification of issues and problems. Technological developments offer port management opportunities for improvement of port operations in terms of greater productivity and better response to the changing requirements of port users.

The introduction of large third generation and round-the-world container vessels for long distance trades between industrial countries is expected to result in the consolidation of many container trades and the combining of many container companies. A trend towards joint venture operations is evident already.

(*) DR. Ernst G. Frankel; Impact of Socio-Economic and Technological Changes on future US Port Development PP.8.

These changing trends in world trade and in shipping technology are expected to have profound effects on ports. The large, fast and expensive container ships require more rational route planning. Due to their technical peculiarities, they need deepwater berths and highly specialised cargo handling methods and equipment. They have also required a very quick turnaround in the ports of loading and discharging, so that their huge daily running costs could be kept at minimum. The use of these modern container vessels on liner shipping serving developing countries will result on sailing only on major trunk route.

Another major development is the increasing use of single port calls in any one trading area. This port consolidation is generally referred to as load centering. Load center ports are selected by major long distance container ship operators, such as trans-shipment, distribution and collection ports. These, in turn, are generally served by feeder lines which emanate from the load center like spokes.

In order to exploit the potentials of the large and fast vessels, ports must be prepared to face the following repercussions:

- 1) A selective elimination of port calls will take place;
- 2) Cargo will be funneled from load centers to the remaining ports by means of feeder ships;

- 3) Many traditional ports will be dropped from their liner itineraries, some never to regain their status;
- 4) Within individual ports, manpower requirements will drastically be reduced by container handling technology;
- 5) Under employment of port labour will become a long term problem in many developing ports;
- 6) The investment involved will considerably be high and the physical facilities of ports will require fundamental changes such as:-
 - a) From existing finger piers to straight heavy duty quay faces;
 - b) From covered storage to open back-up storage areas for container storage;

In this juncture, the roll on roll of (RORO) ships with their self sustaining ability to load and discharge themselves will provide an ideal mode of transportation in developing ports where limited facilities exist. These ships are usually equipped with capacious and versatile forklift trucks and perhaps a crane or two, is capable of handling from alongside a whole range of wheeled vehicles as well as palletised and containerised cargo, without necessarily requiring heavy capital investment, as compared to fully cellular container vessels.

- 7) The increasing use of land bridges will result in feeder ports losing significant share of their revenue as a result of reduced direct ship calls;
- 8) The ability of major containership operators to play ports against each other is so great, that intense competition among ports will result in over investment creating over capacity and under utilised facilities.

Port technological change is largely introduced exogenously, where users lead and ports lag behind. As effective evaluation and management of technological change is an important function of port management, ports must participate from initial stage, the introduction of technological changes with the objectives:-

- 1) Decisions in port technological changes must assure the right choice, timing and scale or size;
- 2) Decisions must be based on economic, and competitive advantages;
- 3) Port management must understand the function of a process or operation and the influence of alternative techniques available to perform the function;

- 4) Ports must operate on cost and maximum efficiency while maintaining required flexibility to respond effectively and timely to changes in port user requirements as well as changes in the market place.

- 5) In order to make full benefits of containerisation and operate port's container handling services economically, it is important that adequate facilities are provided to carry containers further inland to the consignees door steps or in special inland depots instead of the containers ending in the ports.

It must, however, be stressed that the inherent advantages of containerisation and the effective management of the impact of other technological changes in ports can only be realised if the critical areas of the port operations are kept under control. Thus, the following points have to be adequately covered:-

- 1) Intensive use of the facilities, guaranteeing optimum throughput;

- 2) Excellent maintenance, which necessitates preventive maintenance and the possibility of locating a repair shop close to the terminal;

- 3) An adequate administrative organisation, capable of collecting the traffic data well in advance to be used as input for operational planning;

- 4) Unity of control of the operations over the whole port for all cargo types and for all ship types;
- 5) The continuous monitoring of performance through the collection and presentation to management of statistical performance indicators;
- 6) A high degree of segregation between different activities, but not in a state of isolation, in order not to mix two different operational set-ups, but to keep the possibility of interchange of equipment when needed;
- 7) Close collaboration with all port users (these include, shipping agents, forwarding agents, rail and road operators etc.).

CHAPTER VIII

CONCLUSION AND RECOMMENDATIONS

The efficiency of the technical operations and maintenance of infrastructure and equipment and port operations, in Somalia is suffering because of a variety of reasons.

Inadequate allocation of foreign exchange or import licence for the acquisition of equipment for replacement, essential spare parts for repairs and improvements, materials for preventive maintenance have all contributed to the problem in the past.

There is also the problem of effective utilisation of the present facilities and infrastructure due to physical limitations or ignorance of operators about the benefits of their use. As a result, port equipment and structures have either degenerated into unsatisfactory conditions, gone out of service or are under utilised. The cumulative effect of all these pitfalls is unnecessarily high operating costs and ship delays in ports due to lack of adequate modern equipment and storage space particularly for containers. Cargo remained in the port areas for considerable periods of time due to customs and other bureaucratic delays and due to internal transport problems. As a result ports have become drain pipes on the economy instead of promoting economic growth.

There is need for internal reforms in the organisation of the Somali Ports Authority to cut down on staff, recruit more qualified personnel and train staff to meet modern techniques of port operation and administration.

A special directorate for shipping and ports should be created within the Ministry of Marine Transport and Ports with experts and specialists to be responsible for the long term formulation of policies and development programmes for shipping and ports in Somalia.

The Government must revise and update the present Maritime Code in such a manner as to serve the national needs and conform to international regulations that may apply. The revised maritime code must clearly stipulate jurisdiction as regards shipping in the internal and territorial waters of Somalia and adequate education and training must be given to national personnel to implement and administer the provisions of the law. It is strongly recommended that the Somali national flag should be legally restored as a flag of open registry for ships, and the updated maritime legislation must make adequate provisions for its administration. However, a genuine link between the state and ships must be maintained through the maritime safety administration.

In order that ports are operated safely and pollution and other hazards to the marine environment are prevented it is recommended that discharge of domestic sewage into the sea must be prohibited specially in the major cities where urbanisation is highly concentrated. Town planning and sanitary codes of health and local authorities must contain provisions for pollution prevention. The Government should ratify the relevant international conventions.

These conventions include the International Convention for the Safety of Life at Sea 1974; the International Convention for the Prevention of Pollution from Ships 1973 as modified by Protocol of 1978 relating thereto (73/78); the International Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damages 1971. The International Convention on the Law of the Sea 1982 must also be ratified to provide the basis for regulations of the activities on the country's continental shelf and the Exclusive Economic Zone.

The Port of Mogadishu should be provided with reception facilities because of the existence of the National Refinery in accordance with the provisions of MARPOL 73/78 and also for the cargo ships which come into the port which might want to dispose of their sludge. There is need for a contingency plan to be drawn for the country to map out the most vulnerable areas where fishes and fish stock and other marine species breed; tourist attractions along the coast; the mangrove swamps and other habitats which are also vulnerable and to be protected. Plans should be drawn up for cooperation with neighbouring countries in emergencies, and the Government of Somalia must initiate efforts leading to the adoption of an international treaty to designate the Gulf of Aden as a special area in which discharge of oil and oily mixtures into the sea is prohibited except segregated or clean ballast.

With the view to making the ports safe in respect of cargo handling, the International Convention for Safe Containers 1972, International Convention on Tonnage Measurement of Ships 1969, International Convention on Load Lines 1966, the International Maritime Dangerous Goods Code (IMDG Code) and IMO Recommendations on Handling and Storage of Dangerous Goods in Ports should all be adopted into port regulations to ensure that workers and the cargoes handled in the ports are safe.

The Somali Ports Authority should train a core of security personnel to protect both cargo and port equipment and infrastructure and provide them with equipment and facilities to combat fire, pollution and other accidents which might occur in the ports. These men should also be in charge of physical security of the port and ensure that stealing, pilferage and other acts of vandalism are not committed in the ports. The ports must be maintained and modernised to ensure that ports contribute to the economic development of the country. The master plan must be modified to be kept up to date with changing situations.

One of the most apparent problems facing the Somali Ports is the low level of productivity in container handling as well as in conventional general cargo operations; and while it is urgently needed to make drastic changes to improve productivity the following factors must be kept in mind:-

- a) Better employment of people;

- b) Improved information systems to assist in the control of operations and the facilitation of documentation, so that significant potential productivity gains are obtained;
- c) Improvements in port productivity are important to the success of the Somali Ports interests to compete in an economically competitive market;
- d) The international competitiveness of Somalia's products in the export trade is affected by the quality of port operations;
- e) The port administration must develop and adopt a profile of productivity measures to characterise port performance in a meaningful way for management purposes;
- f) There must be joint labour-management cooperation in addressing the human resources aspect of improving productivity;
- g) Standardisation of mechanical handling equipment and management information systems;
- h) The Maritime administration must facilitate and promote the process by working closely with port management, port users and the work force;

- i) The present casual system of port labour employment must be abolished, and greater regularity of employment should be ensured by registering all dockworkers.

Bring greater efficiency into the operations and administration of the ports, requires that labour should be trained properly at all levels in the Authority. Staff must be sent on courses and on-the-job training should be arranged for all. Refresher courses, seminars and conferences should be organised for senior executives and middle level personnel, and junior staff should be encouraged to improve their skills and talents. Manpower development and training programmes should be linked to well-defined carrier planning programs for the workers. Advantage must be taken of technical assistance programmes offered by friendly countries and international organisations to train staff.

Major rehabilitation of the ports should be undertaken, but since the current economic ability of Somalia cannot permit such ventures by SPA or by the government, assistance must be sought from international financial institutions such as the World Bank and its subsidiary the International Development Association (IDA), the African Development Bank (ADB), the Islamic Bank, the Arab Social and Economic Development Fund, the EEC and any of the other institutions and from friendly foreign governments through bilateral loans or grants.

In conclusion, the Government of Somalia must give great importance and interest in participating in the evolution of IMO global maritime safety standards, and the national maritime administration should be manned by duly competent officials of the proper categories, who should be capable of assuming the multiple roles to be fulfilled in the maritime administration.

In order to reduce and eventually eliminate dependence on foreign experts, the government must continue and strengthen the interest already developed in the World Maritime University, where advanced training and education is provided to nationals who will take on the various expert maritime tasks themselves.

The Somali Ports Authority is a member of the Port Management Association of Eastern and Southern Africa (PMAESA) covering the Indian Ocean Coasts of the Continent, and the Arab Union of Sea Ports which covers the Gulf of Aden, the Arabian Gulf and the Red Sea. The Government of Somalia has a vested interest in both of the two areas. Therefore, there must be obligation for the government to see that the governments of these countries should have a programme of action for cooperation among themselves in the development of transshipment ports, harmonisation of port statistics, harmonisation of port tariffs, joint dredging and technical marine salvage operations, technical expertise exchange and training.

This cooperation in pooling resources, efforts and ideas will strengthen the bargaining power of these countries in the international shipping world and in their common approach towards developed countries in securing assistance, with eventual hope that the gap between developed and developing countries may be bridged by further global cooperation and understanding.

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