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WORLD MARITIME UNIVERSITY
MALMÖ, SWEDEN.

IMPROVEMENT OF PORT
EFFICIENCY BY THE TRAINING
OF MIDDLE MANAGERS IN
OPERATIONS DEPARTMENT IN IRAN

by

Parviz Bavarsad Ahmadi

IRAN

November 1987

A paper submitted to the Faculty of the World Maritime University in partial satisfaction of the requirements of a Master of Science degree in MARITIME EDUCATION AND TRAINING (NAUTICAL) COURSE.

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

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ACKNOWLEDGMENT	iii
ABSTRACT	iv
PREFACE	vi
CHAPTER ONE: An introduction to Iran & its maritime industries	1
CHAPTER TWO: The role of ports in national economy	17
CHAPTER THREE: Seaports as a vital link in the international transport system	28
CHAPTER FOUR: Organization of the seaports in Iran and the world	69
CHAPTER FIVE: Port management	114
CHAPTER SIX: A module general short course for middle managers of the Port Operation Department	152
CHAPTER SEVEN: Summary of conclusions and recommendations	159

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ABSTRACT

This paper deals with improvement of the port efficiency through the training of middle managers of port operation departments in Iran.

As the paper mainly concerns Iran, the approach will be one that is suited to the conditions of the port authorities of Iran ;therefore the contents have been divided into seven chapters as follows:

Chapter One gives general introduction to Iran and also as port authorities other than their main functions are branches of the Ports and Shipping Organization(P.S.O) which acts as the maritime administration of the country, a very brief introduction has been given to the maritime industries of Iran.

Chapter Two explains the importance of the seaports to the national economy, where as ports in all countries has been realized as vital industries for the existence of other industries, but their proper way of operation and management can have great influence on the national economy or make a disaster of it.

Chapter Three describes the ports and their functions and roles within the transportation system, basic requirements, structure, types and ownership and consequences of changes in shipping on them.

Chapter Four gives an overview of the Ports and Shipping Organization and its functions and the port authorities of Iran.

Chapter Five explains the importance of management in the ports.

Chapter Six describes a module course presented for the middle managers of the port operation department of the port authorities of Iran.

Chapter Seven presents conclusions and recommendations for the further developments of the P.S.O and port authorities of Iran.

PREFACE

Ports as terminals and intermediate points form very important links between land and sea transport. At the same time they may also carry out other governmental functions as being responsible for maritime administration even as port authorities.

Although merchant and navy officers have carried out managerial responsibilities at different levels at ports in both developed and developing countries, technological changes and development in maritime industries and shipping have resulted in the need for specialized training and experience for the management of ports.

As a consequence of the above, there has been the need, over the past fifteen years to organize and provide systematic training for all managerial levels at ports in developed as well as developing countries. However, there are still many developing countries where this approach is not utilized and others where it is not even known and so many of the ports suffer from a lack of properly trained managers at all levels.

In most ports of the world navigators have been the pioneers in management, especially in the operational departments. In developing countries, however, where they were unavailable due to the absence of adequate maritime training institutions, economic and political reasons, ports have suffered from poor management and this has become more evident in the past two decades as technological changes in ports have continuously increased.

Ports also are places where the daily activities of all

employees involve them with all operations including safety, efficient operations and the handling of cargo and profitability as all they may relate to the economy.

The main aim of this thesis is to offer recommendations to ports in Iran for the training of staff in ports, especially to managers who should be considered as the backbone of port operations.

In twelve years of personal experience at ports in Iran it has been concluded that problems are not only associated with the operating personnel but also in other areas all of which require analysis and the provision of general and technical training in port science and general knowledge.

CHAPTER 1

Part One

1-An INTRODUCTION to IRAN and its MARITIME INDUSTRIES

1.1-Introduction to Iran

1.1.1-Geographical features

1.1.2-National characteristics

1.1.3-Economic system

Part Two

1.2-Maritime industries in Iran

1.2.1-Governmental industries

1.2.2-Private industries

1.1-Introduction to Iran

1.1.1-Geographical features

(i)- Location and area

Iran also known as Persia or the Land of the Aryans, is situated in the Middle East in the Northern Hemisphere and surrounded by the Soviet Union and Caspian Sea to the North, the Persian Gulf and Oman Sea to the South, Iraq and Turkey to the West, and Afghanistan and Pakistan to the East.

The area of Iran is 1,648,195 sq.km. and it is the sixteenth largest country in the world. It is a mountainous country and more than half of its vast area is covered by mountains. The famous Damavand Mountain whose peak is covered by snow has a height of 5,671 meters and is situated adjacent to Tehran, the capital of the country.

(ii)- Climate

Iran's climate because of its natural location is characterized by wide variation in precipitation and temperature. Seasonal changes are abrupt with a short fall and spring. Prevailing winds bring adequate precipitation in the northwest along the Caspian Sea. Along the Persian Gulf and Caspian Sea oppressively high humidity accompanies the heat.

Mainly in the mountainous regions the climate is semi-arid and in the desert regions it is dry. The average rainfall all around the Caspian Sea coast is significant, resulting in vast expanses of jungle and woodlands in that area, whereas the central and desert regions have a minimum amount of rainfall. The overall average

annual rainfall in the country stands at about 20-30 centimeters. In many parts, mainly in winter time, the North, West and Central areas receive a lot of snow.

(iv)-Seas and Lakes:

The Caspian Sea which is situated to the north of Iran is the biggest lake in the world. All the northern part of this sea belongs to the U.S.S.R and the Southern areas which has more depth and more concentration of marine life is situated in the Islamic Republic of Iran and the best caviar in the world is got from here. Iran through the Volga River in the U.S.S.R, has sea links with the Black Sea and trades totally about 2 million tonnes annually.

The Persian Gulf to the south of the country with all its northern coasts belonging to Iran is another sea which connects the country to the international shipping lines and the main seaports and oil terminals of the country are situated along the coasts of this gulf.

Iran through the straits of Hormuz is connected to the Oman Sea and Indian Ocean, and the main seaports of Iran along these coasts are the ports of Chah Bahar and Jask.

The main navigable lake of the country other than Caspian Sea is the lake of Urumiyeh in the North-west of the country; others have less importance due to their improper location. The main navigable river of the country is Karun with 890 km; it originates from the central parts, in the South-west two branches fall into the Persian Gulf and the Arvand rood (Shat al Arab) between Iran and Iraq.

1.1.2-National characteristics

(i)-People

Two-third of the Iranians are of Aryan origin from which the present name of the country is derived and the major groups of this race are: Persian, Gilanie, Mazandarani, Kurds Lurs, Bakhtiyari and Baluchi. The other third of the population is primarily Turkish, Arab, Armenian, Jewish and Assyrian. The population according to the 1986 census was about 47 million.

(ii)-Language and religion

The official language of Iran is Farsi (Persian) which is of Indo-European origin. Farsi is written in Arabic letters and numbers, but there are four extra letters known as P, CH, G and JU .

The majority of Iranians are Shia Moslems, but also there are Christian, Jewish and Zoroastrian as official religions in the country and their followers have representatives in the Parliament.

(iii)-Constitution and Governmental system

The governmental system is an Islamic Republic after overthrowing of the Pahlavi dynasty in February, 1979. The Islamic constitution was approved by a national referendum in December 1979. It gives supreme authority to the religious leader of Islamic revolution (Vali Faqi) or his successor. Administration of the government is composed of the President who is popularly elected for a four-year term and he is the head of the executive force and appoints the prime minister subject to approval by the parliament. The highest governmental bodies of the country

are as follows:

1-Presidency

After the leader of the nation, the president is the highest official post of the country and in charge of executing the constitution of the country and laying the grounds for the relations between the three branches of the government.

2-The Council of Ministers(execution force)

The prime minister who is appointed by the president and is introduced to the Assembly to win the vote of the confidence is chairman of the cabinet and is responsible for his cabinet ministers to the Assembly. The cabinet of the Islamic Republic of Iran consists of twenty six ministers.

3-The Assembly is composed of 270 representatives elected for four-year terms.

4-The Council of Guardian

They ensure that the rules of Parliament are in accordance with Islamic law and with the Constitution. They also supervise the elections whenever necessary.

5-The supreme Judicial council

This council consists of five persons:

(A)-Chief of Justice of the country.

(B)-Chief Prosecutor-General, and

(C)-Three other Judges and Jurisprudent Judges.

(iv)-Local governments

The country is divided into 24 provinces each with a capital city and under a Governor General and sub-divided into 195 towns under a Governor and thence 498 districts each under a Governor of a district.

As was mentioned earlier the capital of the country is the City of Tehran. Other main cities are:
Esfahan, Mash had, Tabriz, Shiraz, Ahwaz, Rasht and Bakhtaran.

(v)-Economic system

The economic system of the country is based on the public co-operative and private sectors. These economic activities which hold strategic value and whose administration is best advisable to be handled by the government include all the heavy and basic industries, foreign trade, big mines, banks, insurance, power, dams, big irrigation canals, - radio and television, posts and telegraph and telephones airlines, shipping, railways, arm industries, etc.

The ownership in three sectors is guaranteed and backed by the laws of the Islamic Republic as long as they are within the limits of the laws of Islam and result in the increase and advance of the country's economy.

(vi)-Industry

Iran as a developing country and also as member of the OPEC with great oil and gas resources has a unique industrial situation among other similar countries. There are heavy industries such as Esphjan Iron ore factory, Ahwaz Steel manufacturing plant, Mobarekeh great

wagon company, Hipco manufacturing company (manufacture heavy vehicles), two ship yards in southern ports and arm industries are the factories in this field.

Also Iran as an oil producing country is very advanced in oil products and petro-chemical industries, which are assisted educationally by the Abadan oil faculty.

There are a few car manufacturing companies making automobiles; in many parts they are self sufficient. Industries such as textiles, carpets, plastics, furniture, sugar, tea, tobacco, caviar, glass, cement, foodstuffs, electricity and electronics etc, also have made great progress towards self-sufficiency, particularly after the Islamic revolution. Many kinds of products can cover the national necessities.

(vii)-Agricultural

The Iranian population relies greatly on agricultural activities and rain-fed planting is very important in most parts of the country. The northern parts which receive the most rain comprise the greater part of arable land.

Wheat is cultivated in many parts of Iran as the main crop and particularly in the province of Azarbijan. Tea and rice are grown mainly in the North along the Caspian Sea. Pistachio, which is one of the major export products are cultivated in Kerman in the centre of Iran. Other than wheat, barley and corn Iran is self-sufficient in other agricultural products and even exports large quantities to many of the Arab states in the southern parts of the Persian Gulf. The Islamic government is strongly encouraging agricultural activities and great efforts have been made since the revolution towards mechanizing agriculture.

Chapter I.

Part II

1.2-Maritime industries in Iran

1.2.1-What are maritime industries?

The term maritime industries is applied to those activities which directly or indirectly are engaged with the ship, sea, ports and shipping. Mainly they are complex, capital intensive and nowadays labour-saving and international, but most of them serve the sea transport. The most important among these industries are shipping companies, port authorities, shipyards, navy, stevedoring companies, ship agents, maritime institutions and coast guard.

1.2.2-Area of activities

Most of these organizations are communicating and conducting their activities within the almost of these districts: port authorities, cargo and ship owners, shippers, ship consignors, surveying agencies, shipyards, banks, marine insurances, international maritime organizations, etc.

1.2.3-Maritime industries in Iran

As a starting point in an assessment or presentation of any development proposal in maritime industries where the seaports are important links between them, is it important to be briefly familiar with all marine industries in a

country in terms of organization, capabilities and availabilities, for the purpose of understanding how the system is set up and runs within the governmental departments of the country.

Marine industries in Iran, as is the case in other countries are distributed among within different ministries according to the function and nature of work and objectives of any individual industry itself. Therefore, for better understanding they have been categorized into two parts as governmental, being those under the supervision of their own ministries and of major importance, and nongovernmental marine industries being those which are technical or providing labour force for some of the first category and work in the form of companies with private management.

(i) - Governmental marine industries

1- The navy of the Islamic Republic of Iran

Although discussion of the navy is not within the scope of this paper, as in other maritime countries, the navy has its own important role in the development and constancy of the national marine industries.

The history of the modern Iranian Navy goes back to the beginning of the Kingdom of Nadir when he ordered the suppression of some of the rulers of the southern parts of the Persian Gulf in 1735 .

Also the geographical location of Iran-in between Asia and Europe-in 15th century required the nation for the protection of its long coasts along the Persian gulf and Indian Ocean to have a powerful navy.

Although there have been great attempts to develop the

navy in the last 60 years, but as an dependent policy the two main structural factors, namely navy shipbuilding and the training of the navy officers were always given over to different western countries during the Pahlavi dynasty. This was particularly true for the training of the officers, in spite of the great marine abilities from many years ago within the country.

After the Islamic Revolution one of the most important actions was the establishment of the Marine University for this purpose in North of Iran so called the Nooshahr Higher Marine Education Centre to fulfil the navy's and part of the merchant navy requirements within the country while following a policy of self sufficiency in the education fields.

This university is supervised by the navy which itself is under the authority of the Ministry of Defense.

2-The Islamic Republic of Iran Shipping Lines(IRISL)

This company was formed in 1967 as a liner shipping company known as Arya National Shipping Company of Iran. In its present form it works as a nationalized company (since the Islamic Revolution) under the Ministry of the Economic and Finance and has a joint venture company with India known as the Irano Hind Shipping Company (Iran and India). IRISL has played a very significant role since the revolution and particularly since the imposed war and has had considerable growth during the war as a result of damage received through the war consequences in sea and ports. It also has had a very important role in sea transport of the country during this period. "At present the fleet of IRISL consists of 70 vessels of which 27 are bulk carriers, 3 product carriers, 1 chemical tanker, 2 container

vessels and the rest different liner vessels, giving a total of 1.47 million DWT". Also there are plans in the very near future to increase the capacity of the fleet to 93 ships and 2.3 million DWT.

3-Ports & Shipping Organization(P.S.O)

As will be discussed later on in Chapter 4 the P.S.O is the legal maritime body of the country and supervises and manages the port authorities and port operations. At the same time it is the maritime administration of the country. P.S.O. is branch deputy organization of Ministry of Roads and Transportation.

One of the main objectives of the presentation of this part of the paper is to show the importance of the role of P.S.O. in terms of supervision of the enforcement of the national and international maritime law and technical marine advice and co-operation for or between these very important and large maritime industries.

4-National Iranian Tanker Company(N.I.T.C)

This company was established in 1954, after the crisis of the Iranian oil nationalization in 1952, but until 1975 it did not have very considerable activity with its 7 tankers and 682,000 DWT.

In 1974 a joint venture company was established with United Kingdom and presently the company has 28 tankers with 1,467,230 DWT and is working under charter terms or direct operation of the N.I.T.C. The company works under the supervision of the Ministry of Oil and its central office is in Tehran.

5-Fisheries

A fisheries company called Shilat Iran is owned by the government and is subordinate to the Ministry of Agriculture. The company supervises all fisheries on internal rivers, the Caspian Sea, the Persian Gulf and the Oman Sea. All operational fishery affairs have been assigned to the industrial catch company which has 31 fishing vessels with 5,389 DWT.

6- Ministry of Higher Education

This ministry through the maritime secondary and higher education schools also has been involved in marine affairs since the Islamic revolution.

(i)- The Chah Bahar Maritime Faculty which is one of the branches of the University of Sistan and Baluchestan was established in 1978 with co-operation of Southampton University and started to conduct courses for deck officers. After the Islamic Revolution and some changes in the policy of this faculty, the Council of the Revolutionary Education agreed to re-open this university again for the maritime higher education requirements of the merchant marine organizations. It presently conducts courses of 4.5 years duration for deck and engine officers leading to a B.Sc degree. Any further development of this university with its great economic, political and social role in the self-sufficiency of the national interests should be done with the close co-operation of the related industries towards regular recruitment and upgrading of their marine personnel and other assistance to this university which mainly can be supported greatly with a manpower planning programme.

(ii)-Secondary Technical Schools

The necessity for technical manpower for the maritime organizations of the country due to the realization of their importance to the national economy, - trade and technical activities was considered greatly and systematically after the revolution. In 1982 with the co-operation of the Ministry of Education and Training and other maritime organizations of the country, two marine technical school at the secondary level were established, one in the north at Anzali and other in South at Bandar Abass. The objective of the establishment of these schools was to provide the educated and skilled technician level of manpower for the marine industries of the country. In these schools presently there are six courses each with a duration of four years leading to the diploma of completion of high school education, the same as other general schools and all related to marine industries as follows:

- (1)- Fisheries Navigation
- (2)- Merchant Navigation
- (3)- Marine Electronic and Communication
- (4)- Electro Mechanic
- (5)- Marine Mechanic
- (6)- Installations and Air Conditioning and Hull Maintenance

7-Ministry of Heavy Industries

This ministry through the two shipyards, one of which is

already under construction in Bandar Abbas and near completion and the other called the Bushehr Marine Industry centre, are engaged with the maritime affairs and related rules and regulations. The shipyard in Bushehr is engaged in the construction and repair of ships up to 1500 DWT and the one in Bandar Abbas after its completion is expected to build and repair ships up to 20,000 DWT. These activities will definitely play a great role in the saving the foreign exchange which currently is being paid on a large scale to foreign shipyards.

8-Ministry of Oil

Oil terminals, platforms and some of Iran's ports are engaged with the operations related to oil and its production, export and drilling, etc. All of these activities which consist of a large amount of marine activities, pilotage of ships, tug services, etc are run directly by the oil terminals themselves, which are under the direct supervision and management of the Ministry of Oil and in some ports (Bandar mahshhar) with the co-operation of port authorities.

9-Coast Guard

The Coast guard in Iran is a military division of the Iranian Gendarmerie which itself is a military section of the Ministry of Interior. Any changes in the maritime administration of Iran for the purpose of development should also affect the Coast Guard as a military arm of the maritime industries in sea, through the appropriate training for the Coast Guard officers and crews. The Coast Guard now is partly involved with the investigation of certificates of local seafarers and small vessels and

endows, but their officers all needed to be trained in the international maritime law and conventions to assist properly and simultaneously the P.S.O in the achievement of its national functions and liabilities.

(ii) - NON-GOVERNMENTAL MARINE ORGANIZATIONS

(1) - Ship's agents

Presently there are more than 30 ship agents which are operating in southern ports. In addition to this function they are also engaged with brokerage and exporting and importing of cargo. Establishment and evaluation of their activities are under the P.S.O. responsibility and many of their personnel need proper marine and shipping knowledge to be able to fulfil the national interests in relation to the activities with foreign enterprises and shipowners.

(2) - Survey & Classification Companies

These companies in the last 12 years have had an increasing growth. They are engaged mainly with the surveillance of cargo but one of them, the Iran Group of Surveyors (SGS) does surveys on behalf of some of the international classification societies.

A broad dimension of the nature of their task and also their specialization in all aspects of ships and cargo is very important to many of the national and international maritime organizations. Also proper knowledge of their task greatly covers the national economical interests and P.S.O. in encouraging them toward acquiring more

specialization has a significant role in the national and international levels in facilitation of the procedures.

(3)-Traditional private fishing or cargo endows or vessels

It has been estimated that over 3000 endows of 5 to 100 DWT are classified under Iranian flag, mainly engaged along the Persian Gulf coasts with fishing and regional trade and passenger services .Establishment of the secondary technical marine high schools with regard to the role of this section in the regional trades and employment in maritime provinces of Iran is of significant importance for upgrading the technical knowledge of the concern seafarers.

(4)-Stevedoring Companies and Co-operatives

Most of these companies are engaged with ship hold operation in berth or anchorage. These companies have very important roles in the economy and safety of port operations and consequently in the national economy. Both in the port worker and management levels definite training in port knowledge and port authorities will have a great role in the elimination of vital weaknesses.

CHAPTER 2

2-THE ROLE OF PORTS IN NATIONAL ECONOMY

2.1-General overview of port economy

2.2-Specific aspects of port economy

a)-External influences

b)-Internal influences

2-THE ROLE OF PORTS IN NATIONAL- ECONOMY

2.1-GENERAL ASPECTS

As will be discussed later on in more detail, seaports are places where goods are imported or exported to/from a country. In the case of Iran many more goods are imported than are exported. In ports different costs in the form of variable and fixed costs such as customs and ports dues and charges, stevedoring costs both to the ship and the cargo will be charged.

The objective of the total sea transport system should be to minimize the cost of cargo movement and the time ships stay in the ports. Frequent handling of the same piece of cargo in ports, particularly in developing countries, during ship operations and cargo delivery, increases the landed costs of goods to shore gates. Careful cargo handling operations planned in advance should be programmed by the port authorities and other parties concerned for the purpose of executing the primary function of the port.

Ports are very important industries which can affect positively or negatively the national economy of a country, therefore, good co-ordination and co-operation are needed to minimize the costs and increase the efficiency of the ports. One of the main economic features of ports particularly in the last two decades in developing countries, appeared in the form of surcharges, damages, and delays in the delivery of cargoes. In some oil producing countries at different periods these factors have been disastrous to the national economy for several years, such as Iran during 1974-76 and in the beginning of the imposed war (1980-84) when annual paid demurrage has been

estimated to be about one Billion \$ U.S.

This was a great burden on the national economy and estimated in those periods to amount to 1/20 and 1/25 of the G.N.P of the country and this sum could have be used significantly for the country's vital balance of payments. Table 1 indicates waiting times of ships in Iranian ports during 1983-84. Although the major causes of the waiting times have been the consequences of the sudden imposed war in that period, the port capabilities themselves in terms of lack of or poorly trained manpower, cargo handling equipment and methods in quay, ship and shed and appropriate reserve temporary facilities such as silos and liquid tanks, number of berths, etc. also contributed to the problem during 1974-76. Improvement of these shortcomings could greatly reduce the amount of demurages.

Generally speaking, ports as major gates of the foreign trade of countries play a significant role in the life of diifferent industries and people, especially where in many countries the productivity and sound operation of an industry are greatly influenced by the port operations. Ports as will be discussed in Chapter 3 in more detail always have operational and national objectives , which can be achieved by different means and methods. In both cases, it is expected that ports be a source of increasing the national income or, depending on the kind of port ownership, that they be profitable enough for further existence. But whether they are profitable or not or they can increase the national income or not, they are long term investments and essential for the further development of the inland industries and day-to-day life of the country. They cannot be closed because of unprofitability, but their entire management can be very effective to the national economy.

From another point of view the importance of the ports to the national economy can be defined when a country is planning for further development of the life ,employment industries and also of the export of the excess products or needs to supplement imports, for these investments , therefore,ports have vital role in providing the necessary requirements in this respect.

The influence of ports on the national economy is very broad and the nature of the port services are the same,but to some extent this vital role can be approached and seen in the following terms.

2.2-Specific aspects of the port economy

A large number of the seaports in the world are not considered any more as merely places for loading and discharging commodities.Ports nowadays are industrial complexes,which similar to other large industries have different economic aspects in a country,regionally and internationally.These influences can be investigated internally(on output of the port operation itself) and externally(by the influence on the port users and people).

2.2.1-External aspects of the port economy

Ports which are unsafe or delay ships and their cargoes or provide heavy costs to them can greatly affect the efficiency of other marine industries.They can also have great negative impacts on the environment and employment. However,the main external aspects of seaports as regards the national economy can be discussed as follows:

1-Social impacts of seaports

Ports as major labour intensive areas in many countries, as regards to direct port operations or associated professions in a port city ,can very easily and quickly affect and change the feature of the indirect employment such as port personnel or the annual number of drivers and visitors to ports.It has been estimated that about 40000 individuals are engaged daily with seaport activities in Iran.

2-Impacts on land transport systems

In all ports, particularly in developing countries where railroads to ports may not be provided,there are a large amount of drivers who continuously are engaged with the distribution of cargoes from/to ports which have great social and quite sensitive profession in the viability of the industries and economical life of any country.Table 1 shows the importance of seaports as regards social and transport aspects.

3-Impact of ports on inland industries

Most industries in countries receive or deliver their needs from/through ports,therefore the economical viability of industries inevitably depends upon the seaports.

4-Impact of ports on marine industries

In regular operations of a port there is very close and important co-operation and co-ordination with other marine industries of different interests such as in ships or cargoes or both.Within these industries there might be large and quite significant marine industries such as

national shipping companies and shipyards, which have their own complex and sensitive operations, all vital to the national trade, development and economy of the country. An efficient and effective operation in a port can also create similar results in national shipping or improve the shipyards and repair industries resulting in their regular engagement. Also operations in a seaport have other forms of bilateral co-operation with other branches of marine industries such as ship's, agents brokers, shippers, banking systems, marine insurances, surveying companies, each of which has its own important and essential tasks with regard to ships and her cargoes, but mainly in monetary terms rather than operational duties.

5-Impact on development of foreign trade

When a port can reduce or maintain freight rates, the internal market and production centers become motivated to increase their output or demands for further developments and find overseas markets, which consequently will increase the employment and earning of currency which inevitably will strengthen the national economy.

2.2.2-Economical aspects of cargo handling in ports

Port operation which is a combination of ship's movements and cargo handling activities to/from a port and ship's holds and also a series of a very sensitive, costly, labour intensive and time consuming activities, involves different national and overseas parties with different interests. Therefore, generally an inefficient ship approach to port or long turnrounds of ships or cargoes in port may affect and damage financially other parties. However with

Table number 1 shows the importance of seaports in employment, society and the inland transport system.

Name of ports	Number of Truck/trip /year		Estimated number Trucks		Number of visitors to a port/year	
	March 1983/84	March 1984/85	83/84	84/85	83/84	84/85
Imam khomaini	147921	111740	3082	2328	295842	147168
Bushehr	87949	73584	1832	1533	175898	147168
Abass	196460	206475	4093	4301	392920	412950
Chah bahar	—	28834	—	600	—	57668
Anzali	50730	33199	528	346	101460	66398
Nooshahr	23606	17405	246	181	47212	34810
Rajae	236644	222400	4930	4633	473288	444800
Total	743310	693637	14711	13714		
Employment asp.			2X 14711	2x 13714		
Social aspects	2x5x14711 =147110	2x5x 13714= 137140	Assumptions: - Each truck 2 drivers - Each driver 5 famil		- Each truck in southern ports 4 trips and northern 8/monthly	

respect to large amounts of annual foreign trades through the seaports, the difference between possible and actual landed costs can vary greatly and consequently the importance of the seaports operations generally becomes evident.

Nevertheless, major parts of charges and costs to ship and cargoes when ships start to approach the port and during her turnround can be considered as follows:

2.2.2.1-Charges and dues to ships

Mainly they are in the form of fixed charges: pilotage and tug services, lights and entrance dues to channel, berth occupancy, etc. There may be variable expenses also such as fuel and fresh water costs, provisions and health costs, etc.

2.2.2.2-Cargo handling operations costs

These are costs and charges on cargo to/from of ship's holds to the port gates. They are in the form of fixed and variable operational cargo handling costs paid for loading and discharging, transferring, storing and reloading of cargoes in port and costs of using different equipment in the following stages: ship operation costs, quay operation costs and storage operation costs.

The last two stages mainly take place on general cargo operation, but all three are labour-intensive operations and require some mechanical equipment to handle the cargoes, therefore any miscalculation in deployment, over estimation of labour and equipment, time scheduling, routing distance between quay and storage or bureaucracy in documentation procedures etc. can increase

the landed costs of cargo or delay the ship's turnrounds and consequently increase the freight rates.

1-Ship operation costs

One important economic element in this process is that this operation is very labour-intensive and sensitive to the shortages which may appear in other related operations, such as shortages in trucks or wagons or storage areas which may lead to very expensive idle times of hundreds of workers for hours in a shift and continuously in daily operations of a port.

This is an operation related to the type and size of packages and other features of cargo and also different numbers of labourers and crane drivers and signal men are involved in the holds and gears of a ship in pilling / breaking a set of cargo to/from hook from its storage position in a ship's hold. Depending on the type of package - palletized, carton, bag, pip, etc - and their properties, different sizes and numbers of gangs are necessary to work in one hold of a ship. As a result, in a one or two shift period in a port there may be one or two hundred labourers engaged in cargo handling only in this process in one ship in a port where employment of a few thousand of men is normal.

Another aspect of the economy of cargo handling operations is based on the extent to which ship gears are used to load or discharge the cargoes, particularly in developing countries such as Iran. In southern ports there is a lack of quay mounted cranes, minimum use of pallet system, an old design of storage facilities related to the quay apron for faster use of fork lifts, etc. All these are factors which cause a high continuous increase in freight rates and long turnround time of ships.

14-Other direct personnel involved in ports P.S.O,
Customs, shipping companies and agents, cargo owners,
etc:10,000

15-Total minimum estimated personnel involve:38,488

16-Rough daily wages for each in three basis:20,40 and 70
U.S.D.

(17)-20 x 38488 = 769,760 U.S.D daily.

(18)-40 x 38488 = 1,539,520 U.S.D daily.

(19)-70 x 38488 = 2,694,160 U.S.D daily.

(20)-769760 x 360 =277,113,600 U.S.D annual.

(21)-1539520 x 360 =554,227,200 U.S.D annual.

(22)-2694160 x 360 = 969,897,600 U.S.D annual.

With regard to these tremendous figures which are very important in all aspects for port economy it can be pointed out again that the cargo operations within the ports as a measure of productivity are composed of the involvement of the different factors with different characteristics and functions. Also partly with the contradictory interests (longer time of berth occupancy, longer days of occupation for labourers) port management or authorities need to have a very comprehensive supervision on the whole operation and related documentation activities within the ports, with the availability of the appropriate and qualified different levels of port workers, personnel and managers. This is the only proper and systematic approach to cope with the function and objectives of a port which is an essential link within the other industries of a country, in particularly developing countries.

Consequently because of these problems and with regard to large amount of annual foreign trades the national economy will stand a heavy burden in terms of currency to compensate for the weaknesses and also the employment of large number of costly port workers to handle these operations.

For a better understanding of the relationship between port operations within a country such as Iran and those features which have been mentioned and the realization of how much this process is labour intensive and due to the existence of other variable factors, the landed costs of tonnes of particular cargo have great variations.

A survey carried out at one Iranian port Bandar Shaheed Rajaei (in a good situation) can be taken as an example to illustrate the factors mentioned above.

- 1-Type of ship:General cargo.
- 2-Cargo volume:8000 tonnes.
- 3-No of holds:6
- 4-Gang:6 gangs with 18 personnel each.
- 5-Daily shift:2 shifts,each with 8 hours working time.
- 6-Shift production:200-300 tonnes normally,daily
400-600.
- 7-Duration of completion:20-27 day.
- 8-Total daily men needed: $2 \times 6 \times 18 = 216$
- 9-Total turnround of ships in 1984 in Iran:700,930 hours
- 10-Total number of ships in 1984 in Iran:1,291
- 11-Daily average number of ships in Iranian ports:43
- 12-Daily labour needed for ship operation: $43 \times 216 =$
18,488
- 13-Daily labour needed for quay and storage and private
port operations roughly:10,000

Chapter 3

3-SEAPORTS as VITAL LINKS in the INTERNATIONAL TRANSPORT SYSTEM

3.1-The seaborne transport system

3.2-Definition and general features of sea ports

3.3-Basic requirement and functions of a port

3.4-Main customers of seaports

3.5-Classification and maintaining of ports

3.6-Common organizational structure of ports

3.7-Types of port ownership in world

3.8-Impact of technological changes on ports

3-SEAPORTS as VITAL LINKS

3.1-The general Characteristics of sea transport

Seaborne trade can be considered as a world in itself, because of large common international interfaces and its linking of all maritime countries.

Industries inevitably in most parts of the world depend on transport systems, particularly sea borne trades, because rarely are the source of material and production lines available in the same place. In fact, sea transport costs (trade and shipping) are the major bridging costs, which can determine the final cost of a product to the consumer and transportation costs may vary between 10 and 100 percent of the actual value of the goods which have been transported.

The processes involved in seaborne trade and shipping can often be very complex, fragmented through the control of many different national and international organizations, because international business may be subjected to different fluctuations such as:

- i-National and international economy.
- ii-National and international politics and
- iii-National and international brokers and shippers.
- iv-Sea conditions

It has been estimated that over 80% of the world trade by volume is carried out by means of sea transport by different types of ships and methods of trades.

Main advantages of sea transport compared to other modes are:

- i-Low costs of freight rates per ton miles
- ii-Great volume of cargo movement in each voyage
- iii-Rapidity of sea transport in relation to its greater volume of movements
- iv-Flexibility of sea transport in handling any kinds of trade and
- v- Freedom of the seas

3.1.2.Objectives and disturbances

The term "shipping" is applied to a process whereby goods transported by ships from a given port called the (port of origin) move to another called the (port of destination) at a required time. The business of shipping has the same features which have been mentioned about maritime industries ,which nowadays are labour saving industries requiring high capital investment.

In spite of these disadvantages, after the second world war many countries, particularly maritime developing countries , after years of desires established shipping companies as private or governmental concerns or both . The main objectives behind this approach were:

- 1- saving currency
- 2- increasing the employment in shipping

- 3-developing specialization techniques in the business of shipping and other maritime activities
- 4-earning foreign currency
- 5-developing selfdependence toward national capabilities of transportation of their foreign trade and
- 6-developing of the sea power.

The efficiency and effectiveness of shipping companies are affected by many different factors such as:

- 1- shipping organization.
- 2- ship types.
- 3- nature of the trade
- 4-ports facilities and
- 5-role of the government

Important factors in the development of shipping involve knowledge of the above mentioned elements within the organization itself and the country. For the purpose of meeting the requirement of these factors effectively and economically in developing countries such as Iran with its newly established national fleets (20 years ago) there is a need for the proper understanding of shipping industries both national and international. Regarding the organizational infrastructure of these countries, there is a need of good supervision and management of maritime affairs through an independent body within the marine

industry system of the country.

National fleets, particularly during these days of heavy imposed war in Iran , act as the second defense line where their efficient operation can save millions of US\$ annually. To achieve this national objective MET (maritime education and training) has a decisive role in providing capably trained personnel for efficient operation ,management ,chartering, purchasing, etc. of the national fleets and involvement in sea transport of the country.

Briefly the benefits of national shipping to the national economy can be summarized as follows:

1-savings in currency as regards the carriage of cargoes with national fleets

2-Assistance in development of the national maritime industries and increase in the technical knowledge of the country

3-encountering with imposed surcharges caused by the foreign shipping companies and ultimately reducing the landed costs of goods

4-saving in charges due to the waiting times of foreign ships

5-in the case of war,savings in insurance premiums and controlling the item to some extent for chartered ships if there are any

6-prevention of international frauds of different sorts , particularly for developing countries which may have some weaknes in foreign transactions and shipping

bussiness

7-encouraging the national shippers to export the goods consequently growth of national economy.

The cost of sea transport is high but how to reduce it is a serious question and problem for developing countries , particularly for Iran with a large volume of the annual trade. In the long term shipping freight rates and costs at least should cover each other. Inefficiency of national fleets which may result from mismanagement in industry itself, due to the lack of the qualified and experienced personnel.

3.1.3: Main elements of the sea borne trade

The evolution of the world merchant fleets after the second world war was due to the tremendous increase in the world foreign trade, arising out of demand for reconstructions after the war. This consequently resulted in:

1-Larger ships as an economic consideration and

2-Greater in ship types.

These two factors actually caused the productivity of maritime transport to be improved and also facilitate and developed the world trade.

Ships which are the main element of sea transport mode can be categorized in three different types:

1-general cargo ships

2-dry bulk cargo ships

3-liquid bulk ships

General cargo ships generally offer services to different customers and are involved in different cargoes at the same time. In this trade the ships which operate on specific routes with fixed schedule agreed rates provide what is called liner service. Those cargo ships without specific route schedules and agreed rates and operating wherever they get business provide tramp service.

Bulk carriers, on the other hand, are normally chartered by the shippers to transport the product at a particular time.

Figure 2

Source: A & P. Appledore
1982

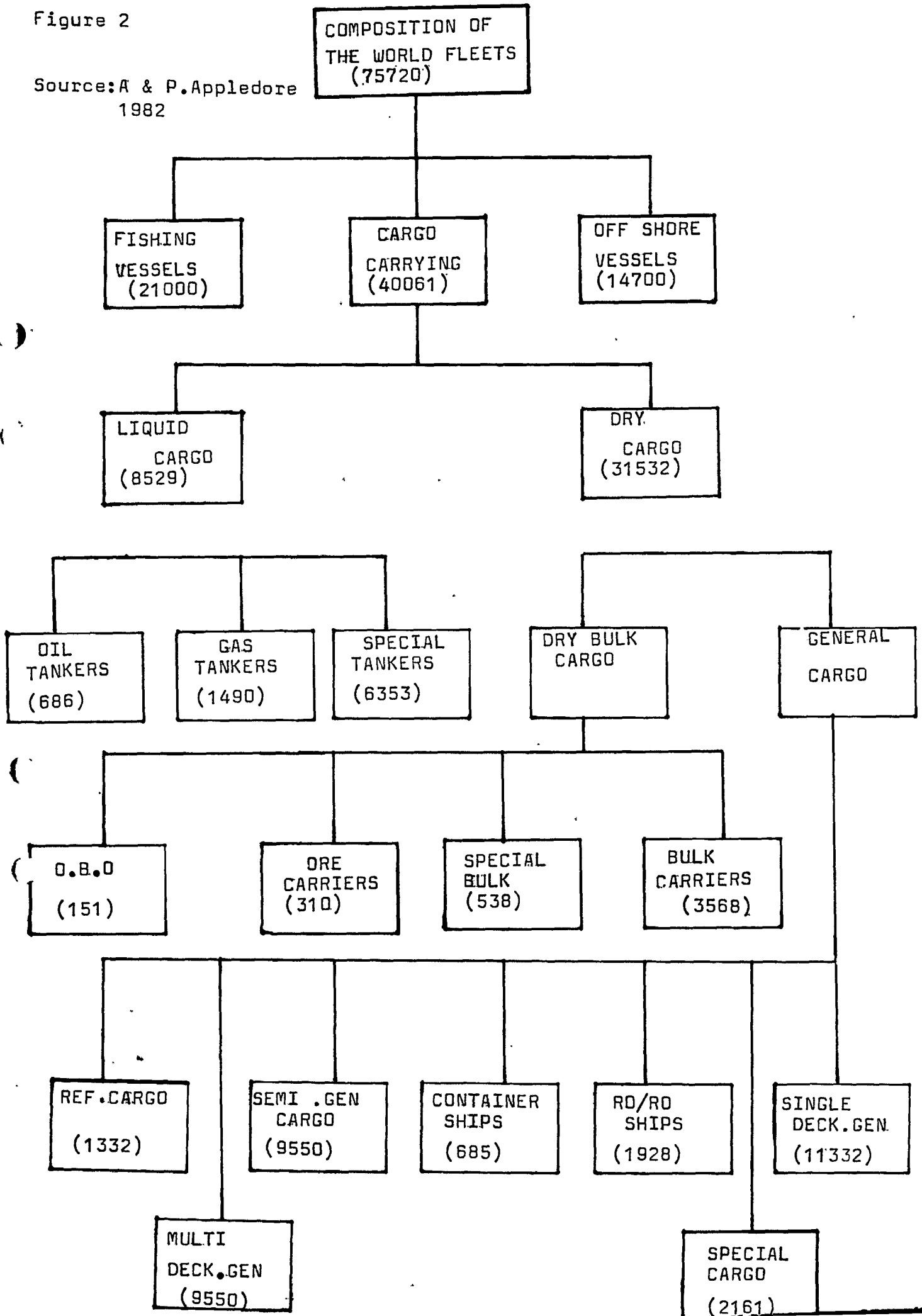
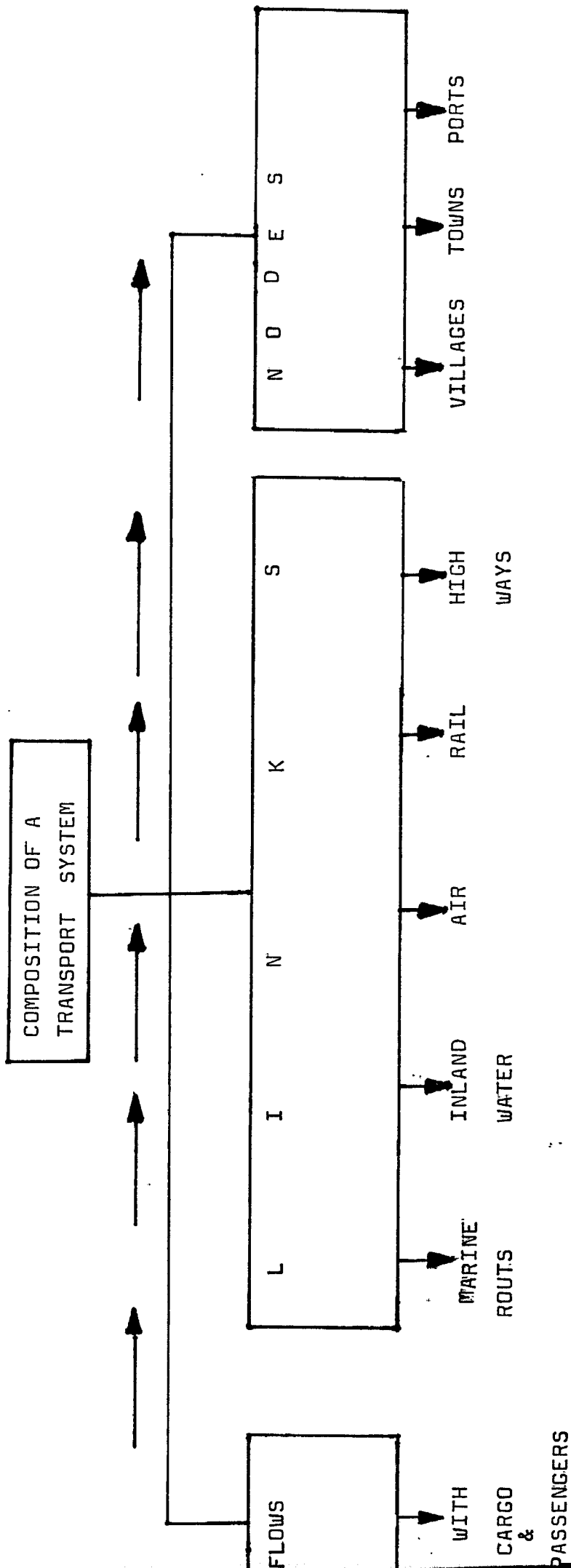


TABLE NUMBER 3



At present about 3200 ships (dry bulk and general cargo) are operating within the oceans and creating a network of international trade to supply the interests of different nations. The general cargo ships are subdivided in conventional, multipurpose and special ships, which mainly are involved with unitized trade such as container.

Figure 2 shows the composition of the world fleets at January 1982.

Presently about half of the world's merchant fleets belong to developed countries which possess the technology, trained personnel, effective and efficient management. In spite of the great developments in the sea transport industry (shore and sea) from the last century, this industry still has its political and economical features varying among all countries involved. In some parts the industry is completely private (U.K) or in some other countries it is totally operated by the government (U.S.S.R), while in some other countries both systems coexist.

Shipping is an international business and since more or less in all maritime countries sea transport handles about 70% to 80% of their foreign trade, particularly in developing countries, many factors such as national security, economic and international prestige, and employment are involved.

Just as transport in world trade depends to such a large extent on movements by sea, so also does sea transport itself depend on the existence of the sea ports and cannot realistically operate with any degree of efficiency without them.

3.2-General definition of ports

Ports are defined as places with facilities, installations

and equipment for serving ships through loading and discharging and storing the cargoes. Usually these areas are great cities and established in estuaries and natural bays or along the coasts.

In other words ports are assumed to be important nodes (figure 3)because as it has been shown in this figure they are situated at the interface between two links (sea and inland transport system) where large amounts of cargo are handled annually .A major objective of the entire transport system is to minimize the cost of handling goods, and ports should also follow the same basic principle.

3.3-Functions of a port

Ports, as defined earlier, are vital links within the sea transportation chain. A well understood function of a port is the quick and efficient handling of goods between the sea and shore and therefore the prime objective is to come as close as possible to putting that function into effect. Basically the primary function of ports has not changed throughout the centuries, but the way of approaching the objectives has changed from time to time, as innovations and the influences of other changes in shipping and technology come into play.

For many centuries and especially after the industrial revolution in Europe, port operations were very labour-intensive , although this feature because of innovations and the use of mechanization and automation largely has been reduced. Nevertheless, many ports still suffer from congestion and man still plays an important role in cargo handling, management and the paperwork of ports, particularly in the ports of developing countries, which have not experienced the advances as in more developed maritime

nations. Therefore, the functions of port authorities regarding the management and supervision of direct or indirect operations can be summarised as follows:

1-to provide qualitatively and quantitatively appropriate facilities for the cargo handling to and from ships

2-to construct adequate port facilities and maintain them for effective and efficient utilization

3-to ensure that all the new changes in shipping had been considered and appropriately synchronized with port facilities and operations

4-to provide the well trained personnel at all levels for the safe, effective and efficient handling of all the various responsibilities associated with the operation

Port investments have not only related to commercial functions but also ports are built and operated for the development of other national objectives at different periods. In other words, the functions of a port are always within the national objectives, but these objectives may differ from country to country. However, common experiences show that some of these may be as follows:

1-to create permanent employment during the construction and after the completion

2-to cope with excess foreign trade or to increase the future planned trade

3-to increase the national income

4-to stimulate the growth of economy and

5-to develop certain areas or regions in the country

3.3.2- Basic requirements of ports

Ports in developed and developing countries are considered as long-term investments. Their economic life because of the huge investments and long term construction period which they all need, are based on 50 to 100 years. Nowadays with a very complicated system in maritime transport which greatly affects the seaports, any port construction particularly in developing countries should be based on two very general and basic requirements:

1-The port should be well planned and designed for long-term use and to accommodate the inevitable changes in the trade. This may include the construction of breakwaters as protection for equipment representing high capital investments.

2-Provision of efficient and effective port management teams dependent on quality and quantity of personnel with adequate standards of education and training. In this regard the quality of managers and personnel of ports have direct and important influences on the efficiency of port. Also since the national level advisors or experts who made policies and plans receive or collect the necessary information through the port management system, there should be personnel at the posts who have the knowledge which is of vital importance for the ports and this should be at the different levels of management.

Since cargo handling is the chief concern of ports and also that sea transport is the main reason for their existence, there should be adequate resources in terms of personnel and equipment to cope with the process. The foll-

owing items would therefore be necessary:

- i)- qualified personnel at the different levels of management and supervision
- ii) -suitable training facilities for updating the training in the required skills
- iii)-appropriate and adequate equipment for efficient and capable operations, especially to cope with the fast turnround of ships. Ports in all countries always seem to receive pressure from two sides
 - A) the increased volume of trade, which ports have to accept and adapt themselves to efficiently and
 - B) adaption to technological changes in shipping

The planning department or committee of ports should continuously consider these two important variable factors during planning and operation namely:

- iv)-assignment of appropriate operational activities to ports
- v)-creation of appropriate rules and regulations to encourage the personnel toward efficient operations
- vi)-supporting the cargo handling departments by the backup and public services on time and according to the requirements.

3.4-Main customers of seaports

Within the port area or city of a port there may be different organizations and companies which somehow directly or indirectly have an interest in and involvement with ships or cargo. Any port must, therefore, according to the scale of activity and sea traffic, facilitate the proper conditions of work for them. The establishment of appropriate rules and regulations and operational guidelines by the port authorities is of a significance for the protection of the entire port and meeting the national objectives and interests in respect to the users of the ports. Users of ports according to the type of port management, features of the trade and regulations concerning governmental departmentation, national rules and regulations may find different situations with different functions and styles of management, however they all in the day-to-day operations of a port, play important roles and can affect port performance, cost effectiveness of the landed cost of the cargo, ship costs and turnaround time. Some of the users are labour-intensive companies and, therefore, for many other important factors, close co-operation and clear understanding of their technical jobs and responsibilities should well be known by the port management or authorities. The principle operations among port activities include the following:

- 1- stevedoring
- 2- shipyards and dry docking
- 3- water and fuel suppliers
- 4- store suppliers
- 5- private storage terminals, adjacent to the port area or city sites
- 6- ship and shipping agents
- 7- shippers
- 8- cargo receivers or owners

9- ship survey and ship classification agents or companies

10-tally clerk companies

11-insurance companies and

12-inland transport system associated with the port system

3.5-Classification and maintenance of ports

3.5.1-classification of ports:

Ports may be classified either by their geographical features or by the type of trade or activities conducted. This classification can be used in studying ports.

3.5.1.1- Ports - geographical classification

In the geographical classification of port, the basic types are identified as natural and artificial ports.

3.5.1.1.1-Natural ports:

These ports are constructed along the natural waterways and they may be deep inside the shore with one or two accesses to the sea. A main characteristic of these ports is that they do not need any breakwater. The main types in this category are :

i)-River ports: these ports are situated along the rivers such as port of London in the Thames or Abadan and Khoramshahr along the Arvand River in Iran. These ports usually are subject to limitations further expansion and draft and may need dredging continuously and so are costly to maintain.

ii)-Coastal ports:these ports are constructed along the coasts.If they need any protection for ships against the waves and currents they may be referred to as semi- artificial ports,such as the port of Cardiff in the U.K.

iii)-Channel ports:these are located in the natural channels,such as the port of Bristol in the Bristol Channel or the Port of Imam Khomiany in Khore Musa.

iv)-Lake Ports:These are located along the shores of a lake in one or more countries.They may have access to the open sea or not. Examples are the port of Rochester ,Detroit and Toledo in the United States of America or Toronto in the Canada and the Port of Anzali in the Caspian Sea in Iran (which is the biggest lake in the world and which has access to the open seas during the summer).

v)- Bay Ports:These are constructed in bays,such as the port of Chah Bahar in the Indian Ocean in Iran .

3.5.1.1.2-Artificial Ports

These ports basically are constructed artificially because of the need for protection of ships against the sea influences.they have some characteristics of natural ports and are very costly ports to construct.One example is the Port of Shaheed Rajaei in Iran.

3.5.1.2-Ports by the nature of trade

The categorization of these types cannot be definite as those in the other groups since ports mostly can be involved in two or more trades at the same time.However ,

by means of the volumes and percentages of the main trades, they have been classified as follows:

- 1-General cargo ports
- 2-Passenger ports
- 3-Fishing ports
- 4-Naval ports
- 5-Oil terminals
- 6-Free zone ports
- 7-Bulk terminals(liquid or dry), and
- 8-Industrial ports

3.5.2-Maintenance of a port

As was mentioned earlier, ports are very capital intensive investments and need a long time to be constructed and are of importance to the viability of many industries,- the growth of the economy and the day-to-day social life of a country.They also vary in trades and may have two or more characteristics at the same time, such as the ports of Rotterdam or Hamburg.Whatever the nature of the trade is,as far as they are the main chain of the infrastructure of a country,any development in the port or the port city ,toward the increase of trade should not suffer or limit the main trade,because in spite of those mentioned facts about the capital needed for a port,it has been seen that many of the well constructed ports,gradually further development of them had diminished by inappropriate port planning or maintenance,and put very heavy burdens on the national economy for the purpose of the construction of a new port.

Ports by nature are labour-intensive areas or activity, therefore,as the servant of the transport system must always be capable of further development.For this reason

there are a few very basic and important elements regarding port maintenance namely:

- 1- maintaining the depth of the waterway of the port and berths as a safety measure for ships and accepting highest possible draught during the port life.
- 2- maintaining the predicted reserved area beyond the hinterland for a 50-to-100 year period, clear from any living spaces, market centers and heavy industries.
- 3- access to the port from the shore is a very important consideration for the in-/outflow of traffic to port gates. To maintain access there should be effective and continuous supervision and also co-ordination with port town planners.

3.6-Difference between port management and port authority

Before we go further I would like to generally distinguish between port management and port authority. Port management team, particularly in ports of developed countries, are those who are hired by a port for a relatively long period and are not responsible for the basic construction and developments and sometimes for some of marine operations such as pilotage or tug boat services they are responsible to the port authority, council, municipality or whatever governmental body is responsible, to the ports or maritime affairs of the country, such as the port of Rotterdam or Hamburg, which are the users of ports and do most of the operations.

A port authority is a governmental body and takes care of the national objectives, rules and regulations concerning the ports.

3.7-Types of Port Ownership in World

There are different types of port ownership and management in the world or within a country. These are influenced by political, cultural, economic and general maritime consideration and port activities. The type of management in an individual port or chain of ports in a country can affect the element of success, efficiency and effectiveness of those ports. The most common types of port ownership in the world are:

3.7.1-State Controlled Ports

These ports are managed directly by governments and are usually in a department in the ministry of transport or communication. Important decisions are made by the central office and usually most of the operational decisions are carried out by the ports themselves. These ports can be operated privately or by port authorities. Main responsibilities of the state in these ports are as follows:

- 1-future port planning
- 2-control of capital investment
- 3-training requirements
- 4-control of charges and tariff and
- 5-employment and departmentation

Typical examples of this type of port management are the Iranian Seaport Authorities and the Port of Southampton and the Port of Hull in the United Kingdom.

3.7.2-Private ports

Many countries, particularly developed which have a great

developments and industrial productions or shipping companies with a large amount of activities and according to their national rules and regulations have built or hired ports which are operated by these concerns depending on the terms of the agreement they usually have government representation and other parties in the board of commissions. i.e. Granton Harbour Ltd, operates the port of Granton in the east of Scotland.

3.7.3-Municipal Ports

These ports which are common in the world are controlled by a municipal council and are found mostly in those countries which for a long time have followed the decentralized policies where local governments or provinces have a great deal of autonomy. The member of the local government is in charge of the council for the port, but he is assisted by a technical body with port experience and knowledge. The Port of Antwerp is a typical model among these ports.

3.7.4-Public Trust Ports

The board of these ports may be comprised of representatives of the government, shipping companies and other users of the ports. A typical model of these ports is the ports of London and Liverpool which are respectively managed by the Port of London Authority and Mersey Dock & Harbour Board.

3.7.5-Autonomous Ports

Whatever the type of port management, the main objective is to obtain the effective and efficient throughput with

the highest possible standard and safety both of the cargo and the ship. Developing countries which are looking objectively for better performance in ports may have or will start to change the type of their port management within one of those systems, but if problems are identified properly, before any attempt they should realize that within the port activities, there will be good performance (effective and efficient) when the organizational system of that or those ports communicate properly. To achieve this, well trained personnel and managers within the port industries are needed.

3.8-Common Organizational Structure of Ports

Ports as organizations should have organizational structures within which human resources in terms of seniority according to job description. By means of an organizational chart a port is able to deploy and monitor the personnel at all the different levels of their skills for efficient and effective execution of their functions.

This structure differs from one port to another, because of the nature and volume of the trade or national employment and organizational policies. But all seaports, regardless of their largeness or trade have a common basis in their structure. Other than those mentioned factors which mainly affect the chart of a port, there are more to be considered, which all can be mentioned as follows:

- 1-national policies
- 2-availability of men for service in ports(qualitatively and quantitatively)
- 3-volume and type of trade(ship,cargo and system)
- 4-port infrastructure
- 5-financial supports and
- 6-general and technical port knowledge of the involved people

3.8.1-Main parts of a port structure

The deployment of personnel within a port(together with other marine organizations)are mainly in the following sectors:

- 1-Operation Departments

Personnel within this department directly work or give services to a ship or her cargo. The Operation Department in the port authorities of Iran is divided into two sub-departments. These deal with cargo handling operations in different stages and the Marine Department gives and provides services for a ship or her safety during a turn-round.

2-Back up activities

These are within the departments which support the operational department (personnel & equipment) to perform their day-to-day tasks. They feed operating sources to continue the activities, for example, by means of financing the personnel, in both operation and personal aspects, or technical department which takes care of all repairs and periodic maintenance.

Depending on the type of ownership of the port, the trade and the stage of development of the country as measured by the rate of exports and imports, there may be other departments such as marketing and public relations.

3.8.2-Principle of Port Operations

Depending upon the port, trade, volume, ownership, cargo handling system and marine activities of a port in the interest of the safe movement of a ship and the efficient handling of cargo, there may be different departments within the operational duties of a port. However, under this broad headline ships in any voyage need to pass through or use these procedures .

Marine and cargo handling activities

3.8.2.1-Marine departments

Based on the port, trade, volume, ownership and marine activities of a port for the purpose of safe movement of ship to berth and vice versa, there may be different departments within this area of operation and a ship on one voyage may need to pass or use the following procedures:

1-Pilotage operations

Pilotage both in harbours and at sea are for the safe berthing, unberthing and movement of ships in ports or rivers and channels. As regards the dangers which exist within most accesses to ports (depth, width, density of traffic and anchored ships) it has been said and experienced that ships in these areas are in more danger of collision, stranding, etc. than in other parts of their navigation. Also, although pilots are assumed to be advisors to the masters of ships, in most cases and most ports, they operate independently and masters are still responsible for the safety of their ships. In the ports of developed countries, this important task of pilotage performed by the ex-masters or senior officers who are qualified and experienced with great knowledge of ship behaviour.

As technological changes occur in ships, the masters and officers are to pass new and appropriate courses in pilotage for the additional and regular handling of different ships. The courses should be on a continuous basis to enrich these pilots to perform their job properly.

The situation in developing countries is rather different and depending on the country there may be a great dif-

ference between the qualifications and experience of the pilots and masters who internationally should have minimum standards in both aspects, which significantly can affect the efficiency and effectiveness of pilots and ports on the one hand and the safety of ships on the other hand.

2-Tug Boat Services

The main task of this sector is to assist pilots during ship berthing and unberthing. The aim of the assistance of tugs to ship is to prevent damage to ships and berth, both of which are very essential and profitable for ports and shipping companies. Another aspect of tug services is towing within ports and sea. According to the size, power and function of a tug, in developed countries different levels of ex-marine officers deck and engine are employed. In spite of the important role of tugs in respect to ships, they are very expensive investments to obtain, operate and maintain, particularly in developing countries which have different difficulties to overcome in each of these areas.

The tug master is an important link between the master of a ship, the pilot and port control and other tugs and this has been realized in many ports of the developed world for the purpose of safety of ships and other facilities. As a result there are appropriate procedures in the employment, certification, training and operational activities of qualified personnel for tugs.

In many developing countries, however, there is a lack of proper standards in the employment of qualified personnel for tugs, causing poor communication between the ship/shore and tug operations and consequently endangering ship operation procedures and efficiency in tug operations and

maintenance.

In many developing countries tug master or engineer professions obligatorily from early days have been considered as merely practical job. However presently with very sophisticated tugs and ships and port facilities there is a need for revision of this attitude and for appropriate training in fields such as marine sciences, managerial skills, law of the sea, maritime English, etc .

3-Dredging and Hydrographic Department

A main element in providing safety for ships is to provide appropriate depth and width of channel and berth and this is one of the significant considerations for viability of the port in medium-and long-term periods. With the highly technical operations of sophisticated dredgers,- there is a need of well trained officers on board and ashore, to improve the reliability of the port in providing a safe port.

4-Aids to Navigation Department

The role of this department within the ports is very important and depending on the location of the port this may be a large or small operation, but very essential for the safe movement of ship through the access. In all ports there are many types of buoys, beacons, piles, transits and other equipment which had been installed in the sea and ashore with different characteristics. They should be checked and repaired regularly to ensure the safe passage of ships. This means there is a need for well-qualified personnel and managers to maintain and programme the operations appropriately and to meet national and international standards.

5-Traffic Control Center

In any port, small or large, there is a center in charge of communications and co-ordinations between harbour master, ship, pilots and tugs or other ports, and this is very important and essential to port operations. The officers may be in charge of means and systems other than simple V.H.F, such as Radar or VTS by which the activities within this center become quite important to the safety and efficiency of port and ships, during a 24 hour period. In developed countries, depending upon the system which is being used, the officers in charge are appropriately trained and qualified to perform their tasks regarding operational and communicational requirements and co-ordinations reliably. They are usually ex-masters or pilots.

6-Survey and Registration Department

In many ports this department is engaged with registrations and issuance of the certificate of registration and the regular and periodic surveying and inspections of ships gears, equipment, engines, certificates of ships and other marine craft, in terms of port state control duties or their own specific tasks they are responsible for the enforcement of the national and international safety rules and standards related to ships and their crews. The technical personnel involved in this department must be well qualified and experienced to be able to cope with the minimum international rules and regulations concerned. Technical officers and inspectors in this department in developed ports have extensive sea experience and high technical qualifications and come mainly from among ex-masters, marine engineers and naval architects.

3.8.2.2-Cargo Handling Operations

The users of a port were mentioned earlier in Chapter Two. The cargo handling operations and procedures from the hold of the ship to the quay and then to the warehouse and beyond or vice versa are basically similar all over the world, although executed with different systems and sources. The main elements of cargo handling operations within the ports will be briefly discussed below:

1-Cargo handling Activities

Depending to the type of port ownership and management, the cargo handling operations may be done by different agencies such as stevedoring and shipping companies or port authorities. Very often stevedoring companies provide the required personnel in the form of gangs which consist of normal port workers, crane drivers, signal men, foremen etc. The terms regulating shipments (cost and freight or free on board) will make the carrier or the cargo owner be responsible for these arrangements.

2-Main Elements in Cargo Handling Throughput

In a comprehensive analysis of the main factors within a port which may affect cargo handling, many elements may have be considered.

The human factor in these organizations falls within the training programme which will be suggested for the improvement of port operations throughput in Iran. As variable and intensive human parties have direct influence on port operations, as individual companies or within port management or authority system.

2.1-The personnel involved

the personnel at all levels port workers, staff and managers all have significant roles in the efficiency and safety of operations and therefore must be trained continuously and comprehensively, which is the main objective of this thesis.

2.2-Interested parties

interested parties form a possible factor which can influence the output of port operations due to poor co-ordination, port knowledge and skills, particularly in developing countries where there is a lack of technical knowledge. This seems to be a common occurrence.

Among these parties the most important ones are as follows:

i)-Stevedoring companies

The main objective of these companies is to load or discharge the cargoes in/from ships. However depending on the port ownership and national port policy, in different countries the stevedoring company may only be a supplier of the gangs or more in developed countries depending on the terms of agreement with port authorities they may be responsible for all activities from the hold to storage. They may even be a port operator and have their own huge facilities and equipment and department in the port management. In developed ports they may operate separately (by the nature of operation) or join together and establish a pool as in the port of Rotterdam. They are an important link in

the effectiveness and efficiency of the entire port operations, and in ports of developing countries, particularly in Iranian ports, there is the need for identification of the average number of port workers who are involved in these companies for the purpose of a systematic approach towards the port worker training requirements.

ii)-Tally clerks

In the sea transport process because of the variety of the temporary cargo holders from the end of the production line to aboard the ship or from the ship to the cargo owner in the port of destination, wherever cargo is going to be changed, there should be a tallyman to check the quantity and condition of each hookés contents. This process in fact protects each holder of the consignments to prevent from future claims. Tallying of goods is quite important for cargo documentation and the system depends upon the port management, national rules and regulations and traditional port and customs procedures which may vary in the practical work or on the basis of the number of tallymen available on-the-spot in any ship.

Tallying of cargoes instituted mainly in two ways

1-On the spot system

This method must be performed on board in the hold of ship, although it often happens on shore on truck or rail, and in particular cases and conditions in the warehouse.

2-In-stuck system

This system appeared for the first time in East African ports. Under this method, the nominated shed or open spaces for an indirect delivery cargo is specified and measured by marks, and the bales, pallets, etc. of each bill of lading are stored and stuck in that marked place directly. As the area and volume of each package and also the ground is known, the tallying will be performed more efficiently .

3)-Composition of tally men

In ports as the variety of the interests of different parties, such as shipping companies , port authority, stevedore, cargo receiver, customs, shipping company and driver of the truck or railroad may interact with each other, there may be an independent tally clerk company which is accepted by all parties concerned or in the case of the involvement of individual interests or duties such as involvement of port authorities in Iran in operational activities, there may be two or three tally men who are involved for one hook.

Whatever the system of tallying and nature of the work is a tally man has important responsibilities and protects the national interests which are involved. Throughout the entire operation and activity in the port of origin or destination, the tally clerk must fulfill the minimum requirements, such as the ability to read and write properly his native language and the English language for the purpose of the reporting, and also general knowledge of ships, characteristics of cargoes, ports, shipping law and insurance to be effective in his job.

iii)-Customs

Customs in most seaports are responsible for the collecting of taxes and dues on behalf of the central government. They are charged on import goods, depending upon the quantity and quality. To fulfill this very important economic national duty, customs officers carry out sampling procedures on different packages and types of cargoes imported or exported to ensure that declarations are accurate.

The functions and procedures of the customs in seaports particularly in developed countries have changed and improved greatly with respect to documentation and efficient sampling. The bureaucratic and long times for practical investigations are barriers to the sound and quick flow of cargo in ports, one of the consequences of the changes which occurred in the concept of the whole international trade, particularly after the generation of the unitization trades. In developing countries there is still a need for attempts towards the providing of more investigations and educational facilities for the customs officers to become more familiar with the national objectives of sea transport and seaports.

iv)-Ship's Agents

Ship's agents are the legal representatives of the ship owners wherever the ship goes. Their main functions within national laws of a country can be summarized as follows:

1-Preparations of the ship (voyage) requirements in the port with regard to the reserving berth, pilots,

customs, immigration, etc.

2-Meeting the ship on arrival and performing the operation requirements with regard to ports and related organizations

3-If necessary requesting the stevedoring services

4-Paying ship charges, dues and cash to the master of the ship if necessary

5-Providing provisions for crew and ship

6-Providing water and fuel and other services for the ship

7-Arranging medical and health requirements for ship's personnel

8-Providing technical, navigational and tariffs, information for shipowners

9-Receiving the sailing permit of the ship and

11-Reporting to the ship owner important measures which are being carried out for the ship during her turnround in the port.

The above mentioned functions can indicate simply the importance of the ship's agents within the marine industries of a country with regard to the daily and annual financial and operational procedures, activities and analysis and the necessity of different levels of the managers in these companies, particularly operational ,

having and receiving proper and appropriate knowledge about the port, maritime and transport sciences.

v)-Forwarding Agents

These are agents who on behalf of their clients arrange for the export and import of goods. They have expertise in cargo handling, documentation procedures and basically they are working with cargo and are very close to shippers.

vi)-Brokers

They provide intermediary services and always act on behalf of the ship owners or insurance companies to negotiate with shippers, forwarding agents and cargo owners. They are mainly involved in the chartering of ships or to be as agency. Brokers have strong association and mainly work with London brokers. In the maritime industry they operate as :chartering brokers, owners brokers and ship brokers, loading brokers, sale and purchase brokers and ship's agents. In most of the developed maritime countries they are very active in the shipping business and specialists in their own sector.

vii)-Shippers

Shippers depending upon their trade are persons or companies who are specialists in providing goods (in a country) to be exported and making agreements with carriers. They are very active in countries with open and non-governmental trades and depending on the country and shipper organization, within a country they may have

their association and packages of cargoes marked with the shippers name.

2.3-National rules and regulations concerning custom , foreign trade,port rules and tariffs

2.4-Berth & storage layouts

This factor is fixed parameter and cannot be changed easily in a short period

2.4-Ship's gear efficiency

The age and capability of the gears in a continual operation is among the important elements of the port operation output.

2.5-Quality and quantity of the port operation equipment

Whether in a port there is mobile equipment or quay mounted cranes,and whether the equipment is maintained effectively for day-to-day operations ,has a great influence on the port operation throughput.

2.6-Reserve storage facilities

In many ports,particularly in developing countries, there are quite significant relationships between day-to-day and consequently annual throughput of the port which depends on the short,medium and long term port development and extension plans within the port area and its hinterland.

2.7-Documentations systems

In addition to cargo handling operations and the role of different agents, companies and authorities who directly and, as a part of their legal duties, can affect cargo handling, another element which can affect the port operation performance documentation.

2.7.1-Functions

The function of documentation in any industry and business is to facilitate the sound, reliable and legal transfer of any trade of goods between different holders in different stages from the end of production line to the port of origin, carriers and port of destination and parties concerned.

2.7.2-Disadvantages

Although documentation has been established to improve different aspects of the daily human life and to facilitate the process of the trade cycles, nature of the paperwork, which involves transferring information, orders and especially the internal and external liabilities and responsibilities, can also be a cause of delay and thereby defeats its own function. Even in developed countries, in spite of the application of the most advanced systems and procedures and well qualified personnel, there have been claims about. The main reasons for some of the problems in the developing countries may be the lack of sufficient theoretical knowledge and understanding of the documents themselves barriers such as the limits of responsibility, interpretation of laws and regulation in different

districts which in fact sometimes defeat their original function.

2.7.3-Impacts of Technology on Documentation

One of the main reasons for the need of documentation within the world trades such as the sea transport system was the lack of information about the movement of ship and cargo toward both sides of the trades and parties concerned. Following the great improvements in communication systems in sea transport facilities such as radio, post, telephone, facsimile and satellite were introduced. Also the appearance and improvement of air transport, train and other land services, compared with the volume of the trade became much faster and much more reliable, the proper training of personnel in this documentation always has been and is the key for the efficiency of sound cycle and distribution of process.

Many attempts by countries regionally and through international agencies have been made to minimize and simplify the documentation in sea transport and shipping. Among these is the agreement of the National Standardization Institutes of Nordic countries (Sweden, Norway, Denmark and Finland) between governmental departments, shipping companies, banks, insurances companies, etc. which has greatly reduced the documentation procedures. Moreover the execution of the port conferences and seminars in national levels, comprising all parties who are involved in this business, regularly can be a great attempt towards the improvement of the port performance and a solution for many of the related problems.

3.8-Impacts of Technological Changes on Ports

As was mentioned earlier ports are international gates of any country and as such they are open to foreign trades. They are under the consequences and impacts of the changes in the shipping, mainly through the ships or in other words, ports are the functions of shipping requirements.

Technological changes mainly occur in the developed countries when there is a need to increase speed, improve the standard of the work, or to reduce costs. The general direction of these trends is toward the replacement of manpower by mechanized and automated equipment. Therefore, ports as very labour-intensive places, always are challenged to reduce the number of the men/ton of the handled cargo or to change entire profession or update the degree of knowledge and skills. In other cases the used manifestations of technology also become too slow and uneconomical and must be replaced with modern and updated technology.

Impacts of the technological changes on ports do not apply only to cargo handling equipment and technology which almost always are more in exposure of the common view or changes, but also happen in all aspects of the port systems, mainly in port planning, financing, administration such as the applications of the computers, radar and ship and cargo handling simulators in different departments of a port.

Changes in ships have a direct influence on the shape of berths, mobile and mounted quay equipment, for example the generation and improvement of container ships or Ro/Ro systems and inevitable construction and establishment of container terminals with heavy mobile

and quay mounted cranes or Ro/Ro berths in many ports in the world.

Developed countries as the origin of the technology gradually have adapted themselves the changes of industry although they have met economic pressures and even crises as a result of these adaptations. But the case is greatly different in developing countries, for a few basic reasons (financial sources and qualified personnel). Some developing maritime countries are partly behind or have started to extent to approach, systematically and some some started but not in comprehensive approach within their port industries. Developing countries, whatever the reason for their inability to adapt will pay, according to the volume of their trade obligatorily compensations in different terms the most famous types are demurrages and higher freight rates, in which they may not consider the sum of these gradual compensations and improve it by short and long-term appropriate treatments.

Efficiency and effectiveness of the port management is largely dependent upon how, when and how much a port has been adapted to and updated in the different aspects of the technology which may concern the ports. For instance in bulk trade there are bulk installations which are able to load a ship at a rate of about 2000 tons/hour in many of the developed ports. Bulk carriers which are subject to well co-ordinated supervision and inland transport with conventional bulk discharging systems have been able to discharge a maximum of 250 t/hour in two shifts with full gangs. In Iran with its great volume of annual bulk trades - about 3 to 4 million tonnes - a ship with 30,000 tons of grain sometimes has discharged only 100-200 tonnes in two shifts in some ports because of the lack of reserve storage facilities within the port to release the ship even with the conventional system as quickly as possible.

which in the normal turnround for these types of ships is about 10 to 15 days. Iran's own national ships and those which had being chartered had long waiting times to come alongside other than do the trade in an acceptable annual rate. Also in an approach which carried out by Professor A.D. Couper, in 1982 in a terminal in India, 5000 workers were engaged with the operation of a bulk coal carrier, - which for the same ship in the port of origin with the application of an automated system (grab and conveyors) only used 14 workers.

Although the application of technology in some of the developing countries should be considered very cautiously because of large populations and low cost, adaptation of such technology is inevitable to some extent to ensure safeness of the national economy.

In the case of Iran this backwardness is among the major shortcomings of the port authorities, which have remained from the long-term neglect of the management in ports, where man handling and ship's gears are the regular features of the port operations ever in southern ports that handle the major parts of the foreign trades.

Examining the foregoing, it becomes clear that the need for well-qualified managers at different levels to examine and cope with the basic shortcomings of the ports particularly operational, is of great importance for the appropriate adaptation of the port to the technological changes in shipping.

3.9- Factors determining port operation equipment and facilities

Port operation equipment and facilities play a significant role in the effectiveness and efficiency of port toward its short, medium- and long-term goals and objecti-

ves. Therefore in both aspects these services which are provided entirely for ship safety (in marine departments) and for through transport at the least possible of costs (in cargo handling departments) throughout the world, are going to receive more attention for the provision of co-ordinated and sophisticated equipment, for the purpose of coping with the general port function which in both aspects is assurance of more safety for the ship and as much as possible through transport of goods at low costs as mentioned above.

Efficient and effective ports with well equipped berths with modern mobile and quay mounted cranes or capable and in-service modern and well maintained marine crafts or aids to navigation equipment in port and harbour area are important factors to be considered for the escalation of the annual port operation rates and greatly can cope with possible excess volume of the trade in that port. Thereby some major elements which can be determined when they are required to be bought are as follows:

1-Marine operation equipment:

- type and maximum tonnage of ship which can approach the port
- channel or river features (length, width, depth, tide, etc)
- weather and sea condition
- port traffic and
- port personnel (quality and quantity)

2-Cargo handling equipment

-type of vessel

-maintenance availabilities

-nature of the trade(general cargo,dry bulk,liquid or dry bulk,unitized systems.etc)

-weather conditions

-present resources

-present cargo handling costs

-market conditions(national and international)

-training facilities and programmes and

-employment constraints

CHAPTER 4

Part One

4-ORGANIZATION OF THE SEA PORTS IN IRAN

- 4.1-Role of the ports and Shipping Organization(P.S.O)in
Iran
- 4.2-P.S.O and the imposed war
- 4.3-Types of ports and ownership in Iran
- 4.4-Port operation system in Iran
- 4.5-Port Authorities in Iran
- 4.6-P.S.O and international relationships
- 4.7-Shortcomings of the port authorities in Iran

Part Two

- 4.8-Port authority organizations in the world

4-THE Role of the PORTS and SHIPPING ORGANIZATION in Iran

4.1-Introduction

The Ports and Shipping Organization (P.S.O) is the legal maritime body in Iran responsible for the port authorities and including their construction, operations and representative of the Islamic government of Iran for maritime and shipping affairs. The history of the establishment of P.S.O. under different names and ministries dates back about 178 years. Its first official name was the Institute of Ports and Shipping, but in 1961 because of the improvement of the ports, the title of "Organization" was added. In fact for the purpose of the recognition of the importance of port operations and the enforcement of the maritime laws of the country, etc. many other organizations within the governmental system of the country have more authority relatively in comparing with the pure ministries affairs, to execute its significant and technical functions appropriately and economically. The P.S.O is under the auspices of the Ministry of Roads and Transportation, responsible to deputy minister and has its own constitution. Its central office is located in Tehran with a total number of 7091 permanent personnel who are mainly working in port authorities in the south and north. Figure 3 shows the organizational chart of the P.S.O .

4.1.1-P.S.O. Prominent

The prominent who are the most important decision makers for the P.S.O are as follows:

1-High Council

This council is composed of the Minister of the Economy , The Minister of Roads and Transportation ,The Minister of Planning and Budgeting and the Commander of the Navy or their deputies.

The responsibilities of the council include specification of the general policy of the P.S.O. ratification of tariffs of port dues for submitting to higher bodies, approval of the budget of P.S.O its annual report, organizational chart , and job description of the related departments.

2-The managing director and deputy to the Minister of Roads and Transportation, who has the highest rank within the P.S.O. and responsibility to higher bodies.

3-The executive council

This council is composed of the managing director and his/her four deputies.

The council in fact provides the outlines of the suggestions and proposals for the high council and approval of the important internal decisions.

4.1.2-Categories of qualification in P.S.O

One of the main elements of improving the efficiency of Iran's ports is to supply, quantitatively and qualitatively the ports authorities with the personnel and managers able to perform ,supervise and manage the assigned functions properly and appropriately.

Table 4 indicates the P.S.O personnel according to their educational backgrounds which for the last 12 years had

been decreased, can be distinguished. It is clear that there is a lack of personnel capable of handling the very important functions of the maritime administration such as port operation management, financing, port construction, ports and maritime training. Table : 5

.....
 Total number of p.s.o
 personnel

M.Sc	B.Sc	Associate of art	high school	high school 1st phase	literature
23	303	78	920	3737	2030
0.3%	4.2%	1%	12.8%	52.7%	29%

4.1.3-Structure of the P.S.O.

The central office is divided into five deputy departments: operations, technical, finance and administrative, port planning and port authorities. The training department and the legal jury are not as big as the deputy district and are therefore managed and supervised directly by the high general director in two different departments.

Each deputy according to the rate of activities has two, three or more directorate districts, but port authorities other than those of Hormuzgan (Bandar Abass) with an extra deputy department in construction, have three departments, namely operations, technical and finance and administrative.

nistrative affairs.

Operations departments of the port authorities, which are the main concern of this project, are different depending on the size of the port, trade and its activity, but composed of the main parts of the total port personnel and in different ports have two, three, four or five sub-ordinate departments as follows:

1-Harbour Master

2-Dredging and Channel Safety Dept

3-Registration Dept

4-Cargo Handling Dept

5-Container Dept

The port authorities of Hormozgan (Bandar Abass), particularly after the imposed war, have the largest number of personnel and operations.

4.1.2-National functions of the P.S.O

1-Management of the seaports and marine commercial affairs of the country

2-Establishment, completion and development of the buildings, facilities, ports and marine commercial work shops and related tools and equipment and their utilization ;

3-Provision, regulation and enforcement of the regulations concerning the seaports and maritime affairs ;

- 4-Regulation of the pilotage of ships with the ratification of the high council of P.S.O. ;
- 5-Management of loading ,discharging and handling of cargoes within the port areas
- 6-Managing of the communications networks(radio,telegrams,telephone,teletype,etc)within the port authorities;
- 7-Comprehensive supervision of coastal and commercial shipping affairs with diligence in their developments of them and ensuring the safety of navigation the performance of any necessary actions leads to the improvement and development of commercial and coastal shipping activities;
- 8-Establishment and management of signals and lights, buoys. bacons,etc. for the safety of navigation of ships and other marine crafts;
- 9-Registration of commercial ships,pleasure craft and vessels and enforcement of the related regulations
- 10-Granting of certificates of competency to seafarers and vessels according to the related regulations;
- 11-Collection of port and river dues and charges related to discharging,loading,transportation and warehousing and other incomes according to regulations either directly or through other governmental organizations;
- 12-Enforcement of the national maritime law and execution of the duties granted to the P.S.O. and other

related concerns:

- 13-Assigning and enforcement of the manner of application and the rate of utilizing port facilities, equipment, movable and fixed P.S.O properties according to the ratification of high council ;
- 14-Scientific research and study of ports and marine affairs and commercial shipping ;
- 15-Provision and regulation of the annual and long-term plan and enforcement after the approval of the high council;
- 16-Investigation of the international proposals and agreements related to the ports and shipping and commercial navigation for the purpose of submitting to higher bodies:
- 17-Membership of the international related organizations with the approval of the high council and parliament;
- 18-Attending of international conferences and associations related to the ports and shipping ;
- 19-Determination of the free zones, if necessary and provision of its regulations and conditions of utilization with the approval of the high council and parliament
- 20-Control and management of the railways from the inner switch point to outer ones in the port areas and also the providing of wagons and locomotives and related facilities and other necessary tools for the purpose of the transportation of the loaded or discharged goods into the open and closed areas ;

21-Establishment of the pilotage schools and merchant marine personnel and selection of students to go abroad for education in specialized courses with regard to the P.S.O.

22-Issuance of the permission of the establishment of berth and other facilities and equipment after the approval of its project plan,with regard to the rights of supervision and utilization of P.S.O. ;

23-Issuance of the permission for the establishment of the offices,seaman's clubs,restaurants ,stores and other necessary facilities by the request of competent applicants.Furthermore,P.S.O with regards to its own possibilities in ports is authorized to grant the land for those facilities in terms of leasing ;

24-Granting of some parts of services the execution of which by the competent private sectors are economical and advisable ;and

25-Effort in the reduction of freight rates to Iranian ports with port equipment and speeding up of the loading and discharging of goods and elimination of the waiting times of ships for the purpose of the supporting the national economy ;

4.2-P.S.O and the imposed war

Iran one year after the Islamic revolution became involved in an imposed war,which in September 1987 will be the 7th anniversary.If it does not lead to a solution or victory for Iranian islamic forces during these six years every

body and every organization whether governmental or not.- has been involved supporting the armed forces, particularly ports which are the essential for the protection of the provisions and requirements of the country and war. From the first moment of the war port authorities of Khoramshahr and Abadan were two of the main targets or elements for the beginning of this imposed war and many of the personnel of the ports and other marine industries sacrificed their lives to handle and release the main marine crafts and equipment within the port area to safe ports and places.

Port of Khorashahr had a great role in the cargo handling of the foreign trade of the country for almost few centuries, in which about 70% of the total 80% of the trades passed through the seaport. About 70% used to be served by the port authorities of Khoramshahr and Imam Khomaiy, the former is totally out of use and in the latter the activities dropped greatly-to about 30% and less, with regard to its very dangerous location near the borders about 45 km and by the entrance channel about 17km at the nearest point- therefore the use of the port of Khomaony was a vital necessity with sacrificing of the many of lives from this port. and other ports, particularly pilots and tug boat personnel, really this port played its essential role till the completion of the new port projects in Bandar Abass and Chah ba har and extension of the old .ports. Port construction and extension under the great financial, operational, social and political pressures and crisis were completed, through the appropriate and strict attention and supervision of the P.S.O and the ministries about the beginning of 1984. Tables 5 and 6 are witness to these great efforts, in terms of comparisons the available berths before the war (22 sep 1981) and in 1984.

Table 6 Available berths in Iranian Seaports on 22 September 1981 at the beginning of the War.

Name of port	Length/m	No. of berth	barging	
			NO	length
Khoramshahr	2070	13	2	500
Imam khomaini	6180	33	3	1224
Bushehr	350	2	1	60
Abass	1050	6	3	250
Sh. Rajae	1000	5	-	-
Anzali	400	4	-	-
Noowshahr	300	2	-	-
Total	11350	65	9	2034

Table 7 Available berths in 1984

Name of port	no/ berth	length/m	barging	
			Number	Length
Khoramshahr	-	-	-	-
Imam khomaini	33	6180	3	1224
Bushehr	3	410	6	130
Abass	6	1050	3	250
Sh. Rajae	12	4700	-	-
Chah bahar	4	600	4	480
Anzali	5	564	-	-
Noowshahr	3	450	-	-
Total	66	13954		

4.3-Types of ports and ownership in Iran

4.3.1-Types of ports in Iran

There are three distinguishable port types in Iran, namely:

1-Seaports (commercial ports)

2-Oil terminals and

3-Fishing and regional passenger ports

It should be noted that within the islands in the Persian Gulf for facilitation of the life of the local people of the islands there is free trade system with southern countries bordering the Persian Gulf.

4.3.2-Port ownership in Iran

Ports in Iran are under governmental ownership and as self investments are provided by the government through the P.S.O. There are, however, different management systems according to the types of trades of the ports. The different types of port management in Iran are as follows:

1-Port Authorities Management

In these types of ports the permanent personnel of the P.S.O owns, operates and supervises all the operations within the seaport.

2-Oil terminals management

Iran as one of the major producers of the oil within OPEC has a number of very important oil terminals, ports and artificial islands engaged with the production and exportation of crude oil. The entire operational, financial and personnel management of these ports are supervised by the Ministry of Oil. Among these ports and terminals are the Kharg island, Bandar Mahshahr and Siri and Lavan islands also Noorooze and sirus pillars are the major ones to be mentioned.

The P.S.O in some of the major oil terminals has close relationships in its offices in terms of co-operation in providing the pilots (Bandar Mahshahr) or legal governmental procedures and P.S.O financial interests in tanker operations within Iranian territories (Kharg island).

3-Customs Ports

Port customs has been one of the oldest organizations which, up to 1973 along with the P.S.O had been under one ministry but within two different districts. In most of the ports according to the law, regional and cabotage trade with U.A.E, Qatar, Bahrain, Kuwait, India, Pakistan, etc., by tradition small vessels have an important activity mainly in regional exports/imports and partly passengers. Small but very important ports under this category are governed and supervised by customs officers.

After any development and port construction projects for the purpose of the international trades in a particular port, P.S.O takes over the port authority responsibilities. Presently in the major ports, a department called the port office within the customs organization custom, is in charge of the P.S.O legal duties. These major ports are:

1-Hindi,an

2-Genaveh

3-Kish and

4-Qishem

4.4-Port Operation System in Iran

Port operation in the terms of pilotage,tug boat services dredging and aids to navigation in South and North ports are government controlled and managed.In southern ports there are also private activities in tug and barge services which sometimes even may compete with the P.O.S. There are two main operational differences between northern and southern ports.

4.4.1-Northern system

In the port authorities of Anzali and Nooshahr along the Caspian Sea,ships up to 5000 dwt.owned by Russia operate regularly.

In these ports the entire operations from holds of ships to the port gates are handled by port authorities with the permanent personnel.Quays other than the mobile equipment are equipped with quay mounted cranes,which due to the nature of the trade and volume and this unique composition of the operation and management have had an efficient output.

4.4.2-Southern system

Cargo handling operations in southern ports which are larger have two main characteristics. Ship operations to hook in quays incurred by private companies, so called stevedores, which they be assigned through the shipping companies or cargo owners depend to case, with the supervision of the P.S.O, and quay and storage operations and delivery, directly handled and supervised by port authorities, which owns whole installations and facilities within the port area.

4.5-Port Authorities in Iran

4.5.1-Introduction

The structural organization of all seaports is basically same, but might be slightly different depending upon the number of berths, the annual operation, trade, port facilities, weather and location, etc. each works according to its volume of trade and largeness in three categories which may indicate the priority of the ports to each other as follows:

1-Directorate general district

2-Port authority department and

3-Port authority office

All of them are based on two, three or four deputy districts, which were mentioned in the beginning of this chapter. The main common facilities of these have been shown in table 6 There are 11 port authorities in Iran in both the south and the north, with which this thesis is mainly concerned. An introduction to each is as follows:

4.5.2-Port Authority of Khoramshahr

This port is situated on Arvand River and before the imposed war was the most important and largest port of Iran, because of its ancient and political feature and naval base. It has great facilities such as railway, airport, populated town and important national and international agencies. This port was engaged mainly with general cargo. Due to its very close position to the other side of the border river, it was hit in the early stages of the war and the eastern part of the port was occupied 22 days after the beginning of the war, involve heroic battle of the civilians and querillas during this period. It was reoccupied 18 months later by Iranian forces but mainly that part were destroyed.

4.5.3-Port Authority of Abadan

This port, also situated on the eastern coasts of the Arvand river, was to be one of the districts of the port authority of Khoramshahr and also has as an oil terminal port run by the Ministry of Oil. The Abadan oil refinery which was the biggest in the world, during the war in spite of more than one year pressure of the enemy from all directions was never occupied, but badly damaged. This port other than general cargo operations, which mainly belonged to the Ministry of Oil also was a port with great facilities for bunkering. After the imposed war all the personnel of these mentioned ports were distributed over other sea-ports which were suddenly faced with a great burden in operation.

4.5.4-Port Authority of Khomaini

This port is a directorate district and situated at the end of the Khor Musa Channel in the northeast part of the Persian Gulf. It is the deepest seaport of Iran with great geographical and port characteristics. It has very important industries such as gas and petro-chemical complexes with the railway and road networks and a great potential for further developments. It has always played an important role in the foreign trade of the country particularly after the war. The container terminal in Iran was built in this port and there is an incompleted project for grain which is one of the main items of the imports of the country in this port. The port has been equipped with iron ore mechanical facilities. Before the war it was a very operational port both in cargo and in tanker which passed this port toward Bandar Mahshahr. The permanent number of the port employers is about 1800, but stevedores and labour co-operatives are operational as well activity.

4.5.5-Port Authority of Bushehr

This port is situated in the north east of the Persian Gulf and has a directorate authority and is one of the ancient ports of the country. It is involved in merchant marine trades, a naval base and fishing and regional passenger traffic. It is a small port with mainly few berth for general cargo and direct delivery grain cargo handling. It is a capital city equipped with an airport. Port authority personnel are about 409 and are under the port extension projects.

4.5.6- Port authority of Hormozgan

This port is located in south of the country right on the North of the Hormoz Strait in the Persian Gulf and is one of the oldest ports in Iran's maritime history. It has played in different centuries a great role in the military and economical and sovereignty of the country in the Persian Gulf and Oman sea region.

Presently this port is the most important seaport of Iran with its great facilities both in-shore and off shore and, about 1700 permanent personnel. As a part of the national projects, great attempts are being made to connect this port to the national railway network. Recently and particularly since the imposed war the government has paid great attention to the establishment and development of the port infrastructure such as the development of shipyard, water and power supply, town facilities and the city of the port is the capital of the Hormozgan state. In this port there are many private companies which supply or support the marine industries operations and activities and the port is equipped with an international airport and naval base.

4.5.7-Port Authority of Shaheed Rajaei

This port is a new port complex which is constructed about 30 km in western part of the old port of Bandar Abbas and came into full use in 1984 after about 10 years of construction. Particularly since the imposed war, great attempts were made by the government to substitute it for ports lost in the war zones. The complex is equipped with about 5 km berth and well situated and designed storage facilities and container terminal, Ro/Ro berth, heavy lift cargo berth and large potential for the further extensions and deve-

lopments in all aspects.

Presently there is united supervision for both the old and the new port and the port training centre of the Shaheed Rajaei is located in this port.

4.5.8-Port Authority of the Shaheed Beheshti(Chah Ba har)

As was mentioned earlier, one of the most important factors which since the imposed war found very critical and sensitive feature in coping with the countries absolute requirements were the port capacity which reduced suddenly about 60% to 70% .Therefore very great efforts and supervision were paid to the construction of a new port complex with temporary berths installations in this port, which in fact must be considered as the first Iranian general cargo port in the Indian Ocean. The new port construction about 3 years after the war became operational in 1984 and is situated in the Bay of the Chah Ba har. At the same time the merchant marine faculty of the Chah Ba har was reopened and the port is going to be further developed as a national project to protect the east and southeast part of the country and developed an efficient transport system and consequently have a positive impact on the socio-economical aspects of this vast state which for centuries has been nearly forgotten .

4.5.8-Port Authority of Karg island

There is a small port authority in this island and it is mainly engaged with the enforcement of the rules and regulations and financial interests of P.S.O resulting from the traffic of the tankers and also execution of the port authority responsibilities to the local fishing and wooden cargo endows which are engaged in the regional trades and

fishing.

4.5.9-Port Authority of Anzali

This port is the biggest and most important port of the country in the north along the Caspian Sea and at the same time it is the base for the fishery fleets of the North Iranian Industrial Catch Company and a naval base. It is constructed in the estuary of Anzali Lagoon and is a port directorate district with about 896 permanent employees. The main difference between this port and ports in the south parts of the country as was mentioned is that all operations are managed by port authorities personnel. There is a port training centre which is engaged mainly with refresher courses in deck and technical fields for the port itself and sometimes deckhands for the national fleets.

After the systematic improvements of the marine industries during the Islamic government, the Ministry of the Culture and Higher Education established a marine technical school at the high school level and four years duration in different fields of the marine industries runs mainly with the co-operation of the navy and P.S.O in the provision of the required teachers.

4.5.10- Port Authority of the Nooshahr

This is the second commercial port of Iran in the Caspian Sea, but less important and active than the previous port but similar in operational character, with total permanent personnel about 400. It is engaged with tanker trade if necessary.

In 1982 The Noo Shahr Marine Higher Education Centre main-

ly for navy purposes was established.

4.5.11-Port Authority of Orumiyeh

There is a big salty lake in the northwest of the country which connects the two states of West and East Azarbijan and also a few islands which are populated and important in agricultural terms. This port is engaged with the local passenger and cargo trades and recently tourists. The port structure is based on two sections as financial and technical, operational departments, with total personnel about 51.

4.6-P.S.O AND INTERNATIONAL RELATIONSHIPS

4.6.1-Introduction

As was mentioned earlier P.S.O as the legal maritime body and as the maritime administration of the Iran is responsible for membership in different related international organizations and agencies with regard to the interests of the country and approval of the authorized bodies dependent upon the liabilities.

4.6.2-Importance of maritime international organizations

International relationships had improved and developed after the first and mainly the second world war, particularly with great participation of the newly independent countries.

Ports as a good sample of physical means of international relationships in a maritime country are parts which form

Table: 8

Name of ports	Bandar I. Khomaini	Bandar Bushehr	Bandar Abass	Bandar Sh. Rajyee	Bandar Noo Shahr	Bandar Anzali	Bandar Chah Bahar
Equipment & facilities							
Cranes	44	14	20		16	26 + 4	10
Tractors	56	14	19		11	26	16
Fork lifts	37	25	24		19	21	18
Trailer	142	89	105		50	67	52
Bulk vacuum tower	1	—	1		—	—	—
Gantry Crane	2	—	—		—	—	—
Transtainer	—	—	—		—	—	—
Tug Boat	10	4	—	—	3	3	—
Floating Crane	2	—	—	—	—	1	—
Dreger	1	2	—	—	2	3	—
Water-Barge	1	1	—	—	—	—	—
Barge	—	—	—	—	9	3	11
Fire Fighting	2	1	—	—	—	—	—
Fuel Tug	1	—	—	—	—	—	—
Pilot & Service Boats	8	2	—	—	3	3	—
Shed	38000 ³ m	13398 ³ m	28000 ³ m	164000 ³ m	6000 ³ m	23084 ³ m	18000 ³ m
Open area(sq)	1228x10 ³	443x100	3x10 ⁵	14x10 ⁵	285x10 ²	10098 m	35000m
Berth	6495	990m	1300m	4700m	450m.	564.	—
Depth	15-3.6m	9-2m	10-7m	1.4-5.5m	4.5	4.3m	—

and need the international relationships. This concept generally can be developed in different aspects for the improvement of politics, economics, social, technical and cultural life, operations and new procedures, etc.

In maritime industries which have international characteristics, and quite significant importance in different national objectives, the need for maritime international relationship, especially for developing countries like Iran with its vital interests and important sea location, is a must which should be considered seriously.

Improvements of relevant standards in port industries shipping, fishing, shipyards, etc. in the world at the international level affect the national marine industries. The international maritime organizations and agencies, mainly under the auspices of the United Nations are sources to be systematically considered and approached. To make the best use of the facilities available from the international maritime organizations, it is appropriate and logical to become a member and then establish a systematic approach for participation in different sessions of these agencies for the purpose of gaining maximum possible information about the changes and improvements regarding the marine industries. Without this systematic approach to participation and more by developing countries with different limitations or inabilities in obtaining the results of any improvements and changes in the world of the shipping and ports, the national standards in those fields cannot be co-ordinated and adjusted with the minimum international requirements which at least operationally, economically and managerially in that country those industries will be suffered.

4.6.3-The Role of the Training Department in National Maritime Administration

Whether the training and international relationship department in the maritime administration of a country is responsible for or not, which in the case of Iran is, the results of all regular and irregular meetings, conferences, seminars, etc. at any level and whether participated or not, must be appropriately received and analysed through the reports of the participants and then be issued by national instruments for the adaptation and conformity of the national rules and regulation. To do this very important national function, this department must first be well assigned and equipped with the quantitative and qualitative personnel since this is the main element. With the proper deployment of this team and other resources the creation of an national systematic approach can be achieved.

4.6.4-Iran and International Maritime Organizations

As a consequences of some of the above mentioned situation regarding the interest of Iran in the maritime industries particularly after the recent development of national fleets and ports in the last two decades, there has been a decrease in interest in the ratification of some of the I.M.O conventions which mainly are concerned with the port operations as are mentioned in Table 8. Although Iran has been one of the pioneers of the establishment of the U.N and I.M.O, at present there are still some backwardnesses of the P.S.O and other marine industries. But according to the latest information received from P.S.O there is project in analysing and investigating some of the major important I.M.O, conventions as regards national interests as the first step in the systematic approach toward the ratification of the following conventions which are indicated in

table 10 .

Table 10 Ratified Conventions.

NUMBER	Name of the Convention
1	S.O.L.A.S. 1960
2	TONNAGE MEASUREMENTS 1969
3	LOAD LINE 1966
4	S.T.C.W 1978 HAS BEEN ACCEPTED BY THE HIGH COUNCIL OF P.S.O AS A MINIMUM OPE- RATIONAL GUIDELINE UNTILL NATIONAL PROCEDURES OF APPROVALS TO BE COMPLETED

Table 11 indicates the situation of Iran and international maritime or port organizations.

YEAR OF	1945	1957	1958	1961	1965	19
MEMBER SHIP						
NAME OF ORGANIZATION	ILO	IALA	IMO	IHO	IAPH	UNCTAD

The following I.M.O conventions are going to be ratified

by Iran in the future:

1-S.T.C.W 1978.

2-S.O.L.A.S. 1974

3-MARPOL 73/74

4-COLREG 1972

5-INT.CONVENTION IN INTERVENTION IN HIGH SEAS 1969

6-CIVIL CONVENTION (CLC)1969

7-FUND CONVENTION 1971

4.7.Shortcomings of port authorities in Iran

Port problems in different countries differ from one to another.In the ports of developed countries the possible important problem may be in the form of the lack of financial sources for new inventions or obtaining the maximum efficient output,but on the other hand many of the ports in developing countries may suffer from the:

1-traditional design of the port construction

2-lack of financial resources for reconstruction and new developments.

3-lack or poor port management and

4-lack or insufficiency of the port or maritime training centers.

✓ The important common problem of the ports of developing

countries in addition to the consequences of the colonialism and the World War II ,is the backwardness resulted from the inability to cope with the rapid changes in the shipping industry and consequently their impact on ports as the servant of the shipping and foreign trade. This gap became more apparent particularly after the rapid developments in the unitization trades,especially containerization.

In the case Iran's port problems which will be indentified and presented here with the historical background , there has been port construction and developments on a great scale in the last two decades. Similar to many other developing countries there have not been co-ordinated developments in all aspects,particularly through a systematic approach to the training of the port personnel at all levels.The delay between the different phases of the port projects within the ports themselves and with other essential hinterland requirements lead to a general deficiency and consequently the generation of new problems and an entirely a incomprehensible port complex.

Before the Islamic revolution when parts of the present port installations were constructed,there had been great opportunities in terms of time,financial sources and international availabilities to be used,but as mentioned earlier there has not been a constant management of ports with a high attitude and outlook to consider a systematic approach to the port development.Consequently after the revolution and the consequences of the imposed war,one year of new government,will not be appropriate to judge although in spite of the results of the long term war destructions.In this short period there have been great systematic approaches in marine industries as basic requirements which before had been neglected.

Those important neglects mixed with a huge escalation of the foreign trade volume and obligatorily operational activities within the ports with regard to the basic lack of mechanized and automated cargo handling and trained personnel have lead to the present visible and invisible deficiencies of the port in Iran, particularly in operational sections. The following shortcomings were identified from investigation and experience after 12 years service in different levels of responsibilities.

1-Lack of the existence of a maritime university or port institutions for training at different levels in the country before 1976. These were established late in 1976 with a low output in the beginning.

2-Inadequacy of organizational set-up of the P.S.O. and port authorities with respect to the assigned and actual functions and operations, with regard to the combination of the maritime administration and port authorities and management in one department.

3-Rapid posting and deposting of senior and some times middle managers in ports and headquarters created a generally unsystematic approach to port developments and particularly in port operation systems which were subject to great impacts from the changes in the shipping world.

4-Unsystematic approach to the international organizations, such as IMO, UNCTAD, IAPH, ILO etc as reliable sources of international technical and educational assistances.

5-Inadequacy of the job descriptions with respect to

actual operation and duties.

6-Lack of the appropriate knowledge of English at the different levels of the managers in ports and headquarters of port authorities and P.S.O. where such responsibilities lay.

7-Lack and shortage of the technical and theoretical knowhow of the personnel of stevedoring companies.

8-Inadequacy of the co-operation between internal departments and port users, such as cargo owners, shipping companies, customs, agents, transport systems, and shippers.

9-Lack of an approach towards the organization of conferences, seminars in marine or port activities at the national level, and exposing port problems to public view.

10-Lack of systematic training programmes for the updating of the knowhow of the personnel at different periods, particularly for the non-marine oriented personnel and managers who need to have at least a general knowledge of the national and international maritime industries.

11-Inadequacy of the approach toward the application of the technological changes of shipping on ports, particularly in relation to palletization and containerization.

12-Lack of any medium and long-term manpower planning.

13-Centralized port management system.

14-Lack of systematic and permanent motivations for specialists to be at ports.

Chapter 4 part II

4.8-Port Authority Organizations in the World

After this brief survey of the port authority system in Iran, it will be appropriate to some extent to describe two port authorities and management systems, the port of Rotterdam and port of Gothenburg in Sweden.

4.8.1-Port of Rotterdam

4.8.1.1-Location and ownership:

Port of Rotterdam is situated at the combined mouth of the rivers Rhine and Maas, with direct lock and bridge providing free access to the open sea. It has a sophisticated network of waterways, roads, railways and pipelines linking it with the continental hinterland.

The port is controlled by the city council and area of the responsibility of the council includes port operation of the dock basins, quays and sites and planning, construction and the ensuring of orders and safety measures.

Aims of the port are to improve all functions of the port and selective industrial expansion and promotion of the good relationship between industries and customers and prospective customers of the Rotterdam port and new waterway area, which is enforced by the port of Rotterdam authority in collaboration with other local authority departments.

The city council has entrusted the management of the port

the name of the port of Rotterdam and port users mainly deal with this department.

4.8.1.2-Responsibilities of the Port Authority are to ensure

- 1-the safety in port
- 2-the efficient movement of the very dense traffic
- 3-the adherence to port regulations and
- 4-managing of the dock basins, quays and similar facilities, particularly design, built and maintain new basins, - quays and yards. The port authority has nothing to do with cargo handling.

4.8.1.3-Responsibilities of the Dutch government in the port

The central government also has certain responsibilities and controls in the port area because of the Nieuwe Maas. The new waterway and entrance to the port, the pilotage and docks, buoys and beacons are all state controlled.

4.8.1.4-Structure of the port is composed of

- 1-local authorities
- 2-the employers and
- 3-the employees

4.8.1.5-Rotterdam Port Employers, Association (SVZ):

The SVZ is the result of the combination of all the forces in port and transport business which was formed in 1907 and presently consists of 250 transport and port companies.

4.10.1.6-Functions of SVZ

The primary functions of the SVZ in the beginning were:

1-the establishment of controlled conditions in port operation and

2-the prevention of disputes between employers and employees

But in time SVZ developed to become a co-ordination centre for the:

1-social sectors

2-economic sectors

3-technical sectors

4-commercial sectors

5-administrative sectors and

6-educational sectors.

SVZ also

i)-watches over the interests of the shipowners whose vessels call at Rotterdam.in respect of pilotage,customs,port dues,contact with local authorities, etc,. The general aim in this respect is to improve fast turn-round for ships calling at Rotterdam

ii)-maintains and consolidates relations with shippers,- receivers,forwarders,hauliers and the railways and

iii)-negotiates with trade unions

4.10.1.7-Port Operation System

1-Cargo handling

Most of the dock yards, quays and industrial sites are leased on a long-term basis (25 years or more) to private firms. The sheds, the cranes, and equipment, all cold stores, silos and storage tanks belong to these firms.

Cargo handling is operated entirely by the private enterprises, such as shipowners, stevedores, forwarders and warehousing and storage firms.

2-Pilotage System

The Dock and Pilotage Service Departments of the Port of Rotterdam Authority are authorized only in the dock basins. It controls the safety measures and port traffic and the state pilotage service, pilots sea-going vessels into and out of the port. Both departments are controlled from the Captain's Room of the port, the co-ordination centre, which is run from the port authority building.

4.10.1.8-Stevedoring in Rotterdam

Stevedores load and discharge vessels directly into or from barges, railway wagons, trucks, coasters or other sea-going ships or indirectly via the quay or shed where the goods are kept in short-term storage in their own sheds pending onward transport. Warehousing and storage firms are geared to indefinite storage. As a rule, goods will be stored by one of these firms if the time of production or arrival does not coincide with the time of sale or consumption. They act as a distribution centre for unknown destinations. Stevedores have dockyards with deep water

berthing, fully equipped with sheds, cranes and transport.

4.10.1.9-Port equipment and facilities

Port of Rotterdam in many types of activities and figures is the largest in the world, with a 500 km radius its activities cover Europe. In fact it is a port of different ownership, management; different types and sophisticated equipment and more than 30,000 sea-going ships annually call at Rotterdam to discharge or load goods. Therefore for this great amount of dense traffic and efficient operations which is one of the characteristics of the port, there should be very sophisticated and appropriate number of facilities and equipment to cope with the aims and objectives of the port.

Table 12 below shows some facts about the port of Rotterdam in terms of facilities and equipment:

1-length of quays:	37,410	m
2-sheds and warehouses:	1,420,286	sq/m
3-cold storage:	61,044	sq/m
4-silos:	468,500	ton
5-dry bulk cargo:	5,621,300	ton
6-tank storage :	32,280	cub/m
7-floating elevators:	8	
8-loading bridges:	20	
9-cranes:	322	
10-floating cranes:	16	
11-floating derricks:	20	
12-shore-based elevators:	19	
13-container cranes:	31	
14-tugs:	46	
15-ramps(roll on/roll off):	14	

4.8.2-The Administration of Swedish ports

4.8.2.1-General introduction

Sweden is situated in the northern part of Europe and has a population of just over 8 million. Most people are employed in industry and this means Sweden is a highly industrialized country and extremely dependent on a large foreign trade.

Sweden has no land communication except with Norway and Finland, and the rest of the Swedish boarderline is sea. The coastline has a total length of about 2,500 km and more than 90% of the foreign trade of Sweden is seaborne. The importance of Swedish seaports becomes very explanatory in its national economy and transport system. There are about 200 ports 40 of which handle about 80% of the total seaborne trade.

4.8.2.2-Port ownership in Sweden

All Swedish ports are owned by the municipalities and normally any municipality administers its port by means of harbour boards.

The members of a harbour board are appointed by the Municipal Council. This means that the board members and the directors of the board represent the various political parties, which together form the municipal council.

The objectives and responsibility of the board are stated in regulations established by the municipal council. As

the port is a part of the municipal administration, the real legal and financial responsibility is borne by the municipal council. Any decision in financial matters and tariffs must be taken by the municipalities upon the proposal of the harbour board, because the council is the formal owner of the port installations.

The port authority owns the quay, cranes and accordingly the crane operators are employed by the port authority which according to the law ports are to serve trade and not to earn money for the municipality. All money collected in port business must be kept within the port, but a considerable part of the capital used for financing expenditure in new facilities has to be borrowed. Apart from the fact that the competition between ports would prevent the port authority from keeping a high tariff policy, the law does not allow revenues to exceed operating costs by more than 12% .

The municipal ownership is appropriate and advantageous because it facilitates the creation of a permanent system of co-operation between the port owner, the local enterprises, the export and import industry, the shipping industry, etc. in the management of the port. On the other hand, this kind of ownership maintains a real competitive situation between ports on services and price and this is a basic incentive to make the port effective.

4.8.2.3-Duties of the harbour board

The main duties are to plan, design, construct and maintain all sorts of port installations and to direct and control the port traffic responsible for the port's economy and ensuring the appropriate tariffs.

The harbour board has to apply to the municipal council for the provision of the necessary borrowed capital for investment purposes, which means that port authorities in times of tight money have to compete with each other.

4.8.2.4-Stevedoring in Swedish ports

This function is handled by private companies and not port authorities. According to an agreement between shipowners and stevedoring associations, the stevedoring industry shall set its tariffs at a level corresponding to the costs but giving no profit. The reason for this is that the stevedoring industry is considered an industry which must serve shipping, industry and trade and nothing else. This means in a national or international competition a Swedish port or ports to a great extent depends on the ability and efficiency of a private stevedoring or terminal operating company.

Earlier the port authority in a port had difficulty influencing the work and costs of stevedoring companies which was an improper condition. Because of this, some port authorities solved the problems by means of agreements and became part-owners or partners of the local stevedoring companies or at least of one of them, giving the port authority an influence on the stevedoring industry. A close and confiding co-operation between them is essential in the efforts to make the port technically and commercially successful.

4.8.2.5-The role of the central government on ports

The central government has taken a small part in port affairs, therefore there are few laws concerning the

government control of the ports. The important one among others states that port tariffs (charges on ships and goods) have to be approved by the national administration of shipping and navigation. The main reason for this is to make sure that the municipalities do not make extra profits out of the sea-borne trade.

4.8.3-The organization of the port of Gothenburg

4.8.3.1-Introduction

Gothenburg is the second largest city of Sweden and Scandinavia's main seaport with total berths of 18km. This port is a combination of different harbours as follows:

1-Tor Oil Harbour is designed for tankers up to 200000 dwt.

2-The Skania Harbour is specially built for containers, Roll on/Roll off and lift on/lift off, handling of unit load cargo with four container cranes in operation. This harbour is used by shipping lines for the Far East and U.S services, Australia and the U.K.

3-The inner harbour on the northern banks of the river are Sannegard Harbour for European services with conventional ships.

4-The Lindholmen Harbour is for conventional services to the Far East.

5-The Lundby Harbour for shipping lines to African countries and Australia.

6-In the South part of the river there are some overseas traffic at the Majnabbe and Stigberg Harbours and European users use the Gullberg Harbour. The majority of the services on this side concentrate on Ro/Ro and Passenger ferry services to Denmark and West Germany.

4.8.3.2-The structure of the port of Gothenburg

The operation of the port is performed by the general manager and seven departments as follows:

1-Secretariat department

This is composed of a secretary and legal advisers who are responsible for the flow of matters commissioned to the authority by the municipal council or by government bodies, the Swedish Association of ports, etc. In any case matters from formal or judicial points of view are referred to this department.

2-Planning and development department

This department is responsible for providing in time the necessary port facilities and services, through analysis of the long-range trend of transport demands with regards to transport techniques as well as qualities of cargo.

3-The personnel development department

This department is responsible for the development of

industrial relations and industrial safety measures and also plans for the development of the staff through training courses.

4-The commercial department

This department is responsible for the marketing of port services and mainly is engaged in the co-operation between shipowners and stevedoring companies for providing customers, and also the development of transport means, methods and costs, real estate management and public relations.

5-The port operation department

This department is responsible for the plans and directs ship movements within the port area, including port piloting. It also distributes vessels to berths, operates quay cranes and provides storage of cargo in sheds or on quays aids to navigation and dredging, safety matters, and prevention of oil spills.

6-Engineering Department

This department is responsible for the projecting, design and construction of the port facilities, maintenance of port facilities, control and co-ordination of consultants and works of contractors.

7-Department of Finance and Administration

This department is responsible for operational revenues and expenditure, fixed capital expenditure, the redemption and borrowing of capital, state light dues, pilot dues, etc.

4.8.3.3-Objectives and policy

1-To provide facilities and services to industry,commerce and shipping in a way and to the extent that benefits society.

2-As the main Scandinavian port to serve all Scandinavian countries,especially in respect to overseas trade of general cargo and unit loads.

3-To take an active part in the regional planning for Gothenburg,in order to be able to expand the port to meet users demand.

4-To take part in the national planning with respect to port matters,such as general transport policy,shipping policy,environmental policy,to ice breaking,competition between Swedish ports or with continental ports.

5-To embrace the principle of free competition between ports and also advocate that seaborne traffic via the port could not be charged with costs or be subjected to restrictions that may impair the competitiveness of the port,either from a national or an international point of view.

6-To pay attention to the tariff policy of the Swedish Railways and try to influence it in order to promote traffic via Gothenburg.

7-To ensure that cargo is transferred in the most efficient manner.

8-To ensure that port pricing reflects the actual cost

to the authority by the specific traffic, thereby ensuring a high capacity utilization.

9-As far as possible, to aim contracts at long-term utilization of port facilities.

10-To ensure that port revenue covers port costs.

11-To carefully appraise investments in port facilities.

12-To keep volume of investment in fixed capital kept at such a level that long term financing by borrowed capital does not exceed the financing out of the authority's own capital resources.

4.8.3.4-The port authority and harbour board

Gothenburg Harbour board is the executive authority responsible for the administration of the port. There are ten directors on this board which have responsibility for three years. One of them is appointed by the government, seven are elected by the municipal council, two members are appointed by the Gothenburg Chamber of commerce, one of these two representing shipping and the other one commerce.

4.8.3.5-Legislation

As was mentioned earlier in the "Administration of Swedish ports" the legislation in the Swedish ports is not very comprehensive, and mainly the port tariffs are approved by the national Administration of Shipping and Navigation.

4.8.3.6-Municipal regulations

The responsibility and duties of the Harbour Board are prescribed by regulations laid down by the Municipal council, which generally as was mentioned earlier in the administration of the Swedish ports, come under the different municipalities.

4.8.3.11-Port authorities industrial relationships

According to the basic agreement between employers and employees' associations, Swedish enterprises have set up so-called industrial councils, to provide consultation and information between the employers and employees.

This council in the port authority assembles once quarterly to discuss matters of economy, operation, organization, investments, personnel policy, industrial safety training, etc. On the council are representatives of management and the employees, unions and every member employed by the port authority.

This council has four sub-committees

- 1-Working advisory committee
- 2-Suggestion scheme committee
- 3-Editorial committee
- 4-Training course committee

Neither the council nor the sub-committees have any executive power, but act exclusively as consultative bodies.

4.8.3.12-Gothenburg port parties

1-Port Authority of Gothenburg

As was mentioned earlier port installations are in general municipally owned and operated by local authorities. The most important responsibilities of the port authorities can be summarized as follows:

1.1-Aids to navigation, approach channels, break waters, basins berths (jetties, quays, aprons), marshalling areas sheds and floating cranes and also planning, projecting, construction and maintenance of these facilities and employment of the crane operators, are among the services and responsibilities.

1.2-Pilotage services are, with one exception (pilotage in Gothenburg port area provided by the port authority only) provided by the Swedish Administration of Shipping and Navigation, which is a state enterprise.

1.3-Towage in a number of cases provided by the port authority, but quite often also by private enterprises.

2-Free port

Sweden has three free ports, one of which is Gothenburg. The Gothenburg free port company as a municipality owned enterprise, offers storage and warehousing services and the ancillary cargo handling.

The free port company of Gothenburg has a board which is identical with the harbour board and the same general manager as has the port authority. In practice the company operates as a subsidiary of the port authority.

3-Stevedoring company

In the case of Gothenburg, the municipality owns 25% of the shares in the Gothenburg stevedoring company, and is represented on its board by the general manager of the port authority. The shipowners hold 50% of the shares and cargo owners 25% .

Machinery and equipment for cargo handling is the property of this company.

4-Railways

The Swedish state Railways is the responsible body for the transport of cargo to and from the port and executes all train movements within the port track area.

The port authority has to construct and maintain at its own expense all railway tracks, signals, etc. .

5-Road hauliers

Cargo transport by hauliers are mostly privately owned. The Swedish railways (SG) the major share-holders are of the largest hauliers.

6-Customs

The clearance of goods imported to Sweden has become a very simple procedure.

7-Pilots

The system was mentioned earlier.

8-Boatmen

The boatmen assist at the ship's arrival and departure , especially at berthing and unberthing. A small private company provides these services.

9-Tug services

In this port towage is provided by private enterprises, subsidiaries to some of the larger shipowners.

10-Shipyards

From a port authority's point of view, the existence of an adjacent repair shipyard is of great importance.

Gothenburg boats have in the inner harbour a large repair yard and also quite a number of lesser repair and service shops to serve ships calling at the port.

11-Fire brigade

The Swedish fire brigade includes not only fire fighting but also fighting of oil spill and the prevention of damage to people and property, by the handling of dangerous cargoes , as well as decontamination in cases of accidents in the oil harbour. The port authority has financed the installation of equipment for special fire fighting.

The co-operation between the port authority and the Gothenburg fire brigade is very close for the sake of preparedness for action in cases of emergency.

12-Police

Swedish ports have no policemen of their own. The police surveillance in port and port water areas is thus the task of the public force, which is a state entity.

CHAPTER 5

5 - PORT MANAGEMENT

- 5.1-Concept of management
- 5.2-Important elements in port management
- 5.3-Port congestion as a result of poor port management
- 5.4-Type of managers in ports
- 5.5-An overview of a middle manager's job
- 5.6-Why training for middle managers?
- 5.7-Port management education & training (PMET) in the world
- 5.8-Types of PMET programmes

5.1-Concept of Management

There is no precise confirmation about the time of the origin of group and social life of the human. Management, however, has been with the human from the early days, in the form of managing themselves in harvesting, and against difficulties, although in early days group living and utilization of the earth resources were not as strong as nowadays. Mental improvement of the human on a great scale actually started from the end of the 14th century and gradually developed till the industrial revolution in the 18th century. This provided the basis and thought for how to live better individually and in group with the efficient uses of the environment's resources. The 19th century was actually the century of creation and scientific management as a result of the industrial life and requirements.

Management by definition means a set of skills which are needed to run an organization effectively and efficiently. Nowadays this set of skills causes people to have more co-ordination and synchronization which results in an increase of output and efficiency of the organization. All organizations have a series of functions and objectives both at the national and international levels, in which the resources (human, equipment, etc.) should be directed in such a way, that in the shortest less possible time costs decorate the organization to those functions and objectives. Presently with the highly complicated technical and economical world, management appears as a speciality and has its own philosophy, method and know-how, so that the enforcement of the management principle needs prepared managers other than the pre-training of managers to meet the continuous changes in environment. There is also a need for continuous knowledge updating for the purpose of kee-

ping the situation and development of the organization up-to-date.

5.1.1-Basic Requirements of a Manager

Certainly there are many elements in which a manager in a department or organization can use as resources for the performance of an efficient duty. These elements can generally fall into the following areas:

1-Specific knowledge of the Manager

These relate to the main objectives and functions which a manager seeks to achieve in a section, department and organization.

2-Principle of the Management:

Depending upon the job requirements (job, education, organization, etc.) the individual needs to know to some degree the scientific approach to the management skills.

3-Experience

The gradual application of those two elements during the practice and also work environments give to any one who should operate as a manager in a junior, middle or senior level, a broad outlook of the practice of the theoretical thoughts and assumptions and their importance to the efficiency and effectiveness of the department or any new thoughts and ideas in this relation. The posting of a manager with these requirements can affect greatly the efficiency of the organization and while the appointment of a manager without these basic factors, particularly in the

sensitive firms and organizations such as shipping companies and ports, shipyards, etc. can lead to financial disasters and may eventually result in destruction of the whole company or business. With this general introduction to management, it becomes obvious that all managers particularly in port authorities, which are very important and vital industries in maritime countries, at least for the efficient operation of other vital socio-economic inland industries need technical and managerial knowledge in the beginning of the employment and during the service as well. These areas of knowledge in more specific terms than mentioned earlier and for any future approach have been pointed out in the following ways:

1-general principles of the management

2-administrative information

3-technical information and

4-psychological information

5.1.2-Measuring the organizational performance

As mentioned earlier, ports similar to other organizations have various functions and goals to be achieved, where for further improvements and eliminating the barriers and constraints there should be a systematic output evaluation in system.

This can be measured in different ways and methods through daily, weekly, monthly or annual evaluations of cargo handling rates costs/tons of cargo handling, waiting times of ships in port berth occupancy etc. However, in every

kind of measurement there are two principle words which should be considered in this evaluation, called management control process:

1-Effectiveness

This means how well an organization such as a port authority does its job toward the established goals and objectives.

2-Efficiency

This term in management control process means how well the resources of an organization such as ports have been used towards attaining the goals and objectives of that port as an example.

These terms in most cases are related and in operational organizations such as ports with a variety of different interests and influences, may be difficult to be measured accurately, particularly in developing countries. An organization may have them both in positive or negative forms or opposite of each other. i.e a port may be effective because there have been figures which show that port has been in operation for most of a year, so in fact it has accomplished one of its goals and objectives, but the same port may not be efficient because of the expensive cargo handling costs or poor utilization and deployment of the equipment and personnel or dredging operations.

Therefore, in port operations the evaluation of the port managers particularly at middle levels, who mainly have to be faced with the deployment of resources, must be clearly understood for the proper and appropriate accomplishment of the assigned functions.

5.2-Important Elements in Port Management

5.2.1-The importance

The major distinction between the managers and the personnel of an organization such as a port with an integration of significant activities, is the role of the leadership of manager in his/her work place.

Leadership to some extent can be an inherent divine blessing, but nowadays it can be developed through systematic training and experience.

Within these three basic factors which influence the management, the training may result in the following consequences:

- 1-An increase and development of the efficiency and effectiveness of the output.
- 2-The mental development and broadening of expertise of managers for future promotions and greater responsibilities.

Therefore the expectations of an organization from a manager as indicated by the job description largely depends upon the variable elements in training, which generally means, preparation of a person for the presentation of the highest possible effectiveness and efficiency during the service. Port managers at different levels because of the complexity of the present foreign trade, sea transport, ship and port industries themselves, must be provided with the appropriate management skills depending on the type of work assigned and future expectations.

5.2.2-The Elements of the Port Management

With regard to all the above mentioned principles and requirements which influence the efficiency of the management, the elements in this respect can be outlined as external and internal factors:

5.2.2.1-Internal factors

Within the port management district, obtaining the maximum possible output from the different departments of a port is the responsibility of the general port manager and other sub-ordinate managers at the different levels. As the management in a port similar to other organizations, teamwork is required, therefore, the best co-ordination and co-operation is achievable when the network of a management team:

- 1-has appropriate common interfaces and technical backgrounds to interact with each other using the least possible time;
- 2-has deployed ,humans and equipment properly;
- 3-has utilized the financial resources appropriately;
- 4-has enforced the rules and regulations concern appropriately; and
- 5-has conducted continuous general and specific training courses for personnel

5.2.2.2-External factors

These factors to some extent and depending on the country and type of port ownership etc, are out of the control of the port management and can be categorized as:

1-the support of port management in all aspects of the port requirements, such as human, financial, equipment, etc.;

2-users' capabilities and co-operation, both at national and international levels.

5.3-Port congestion, the result of poor port management

The response of ports to the national economy, labour force relationship, politics and military aspects and also operations as gates to international relationships should always be considered by port managers and other related bodies and users.

Seaports are the main gates for foreign trades and can easily in very short time become congested or inefficient. This may be considered the result of an imbalance between imports/exports and cargo handling performance within the port or insufficiency of the inland transport system to cope with port requirements.

Congestion of ports is the result of different causes but poor management, which mainly is due to the lack of the trained managers, because of their short-term function which is supervision of the operational tasks and at the same time forecasting of the future port requirements and investigation and reporting of the weaknesses of the port. Main reasons for the poor port operation management can be

summarized as follows:

- 1-lack of well-trained managers at different levels particularly ,specialist managers in port activities;
- 2-lack of trained personnel and port workers;
- 3-poor organizational structure;
- 4-improper use or malfunction of the equipment;
- 5-improper deployment of the resources;
- 6-bureaucracy within the port;
- 7-inadequacy of the job discriptions;
- 8-unplanned port operations;
- 9-lack of motivation and
- 10-imbalance between the accountability and authority of the different levels.
- 11-rapid changes of the managers,paricularly at senior and middle levels;

For the treatment of all these shortages and inadequacies the performance of the middle managers who are assumed to be experienced and well trained in marine and port industries sciences play a very important role whether they be superiors or sub-ordinates. Because they are at different levels of management such as supervisory planning, reporting. Middle managers in the operation department

of ports who are involved directly with ships, cargo, ship-pers shipping agencies, insurance companies, survey departments etc. and particularly in port which are government controlled and operated since they may be replaced within different departments occasionally, should be well trained in marine and transport fields and regularly be upgraded by different short courses.

5.4-Types of Managers in Ports

Different countries have different criteria for the categorization of the managers in general, but even within a country this categorization may differ slightly from the general rule. Nevertheless according to the definition, a manager is one who enforces and supervises others' work. Usually in port operations they are considered as being from the supervisors to port director and in most countries according to the grade and responsibility assigned they follow the hierarchy of the organizational chart and may be categorized as:

1-junior managers;

2-middle managers or

3-senior managers

Within these categories and depending on the country and system of the government there are mainly three elements which are related to these categories and used for promotion as follows:

1-level of education, general and specific;

2-experience,both related and unrelated;

3-accomplishment of the related short courses.

In the case of Iran,in port authorities which follow the general grade procedure in the staff employment affairs They are classified from grade 3 to 12.

1-junior Managers

These fall within the grades between 3 and 6 and are those who have primary school and high school education,whether completed or not and depending on their experience may be different and supervise a few staff or labourers according to the nature of the job.This category of managers can be found among foremen,berth supervisors,junior tug boat masters or chief engineers,etc. .

2-Middle Managers

These are categorized from the grade 6 to 9 and generally have high school certificates or above and depending on the education,the experience may vary such as training officers,marine or cargo handling experts,control officers,terminal managers,etc. .

3-Senior Managers

In fact these managers particularly in ports with complicated and sensitive operations and different short-terms interests of the different users,must be well qualified and experienced to plan and supervise their departments for the efficient and effective accomplishment of the assigned functions.They fall within grades 10 to 12. Among

these are the heads of departments, high experts, advisors, - surveyors, port directors, etc. .

5.5-The need for training of middle managers:

As has been mentioned before ports have a very important role in the international and national foreign trades of a country. The main characteristics of this role are considered once again and include:

- international impacts,
- national importance,
- highly specialized labour feature,
- very capital intensive construction,
- complex feature, and
- very economical operations.

Regarding those features, the variety of different operations and the great number of different parties and interests in goods, ships and services create significant responsibility for the port managers who are accountable to their superiors and play an important role in the daily life of the industries and people.

These complexities and variations come from the introduction of new systems of transportation such as very fast modern container ships, gantry cranes, transtainers, new communications systems in port areas which many countries particularly developing countries become obliged to use.

They require systematic port education and training programmes to update their managers in these new techniques and sciences.

Middle managers in many countries, particularly in developing countries, play a very important bridging role between junior managers who might be new employees with or without technical backgrounds or managers by experience and likely have not any theoretical knowledge about the port or maritime industries with regard to the main characteristics mentioned earlier and generally are not in charge of big decisions. On the other hand the senior managers who may not be the same but from country to country their post may have other sensitivities which requires them to be supported appropriately by the middle managers. Therefore, as regards the absolute requirements of the management of any technical and economical organization for the presentation of an efficient and effective output, these are categories which by experience receive a great burden and need to be supported with an appropriate training programme.

Middle managers are the backbone of any organization, because most of their ideas are essential for work for any decision making of the superiors, on the other hand, they have to be a good and reliable model for sub-ordinates in both the practice and theoretical knowledge.

Bad or poor deployment of a gang by a supervisor or an improper order from the head of section in cargo handling or chief engineer and master in tug or pilot because of the lack of technical knowledge can easily delay a container ship one day in a port which was supposed to be only a few hours with daily costs of about \$ 60000 per day, which nowadays may be the cost for the full education of the two managers in two to three year degree courses, in the port

industry.

5.6-Types of Education and Training Related to Ports

Port education and training (PET) specifically related to ports at university degree levels even in developed countries have not yet been developed, other than in the U.K where there is a diploma course in port management in Cardiff, UWIST. The idea still is quite new, being in existence only since the 1960s. The belief in ports of developed countries, until then was that "management know-how in the ports and generally in maritime fields could be acquired by experience".

However, the rapid impact of technological changes on shipping and ports and consequently on their management schemes required the phenomena of the on-the-job training courses in management fields for staffs who are serving in ports and many efforts through these countries. Also international maritime organizations started different approaches in port industries activities for the formation of them in a systematic way of study and research for the purpose of increasing the efficiency and effectiveness of the ports which had become complex industry from the beginning of the 1960s.

The complexity of management in ports obliged many of the developed and developing countries to establish short courses for their managers in areas of ports administration, operation, development, etc. particularly after the great systematic assistance of the UNCTAD in the provision of the courses for port instructors, junior and middle managers at an international level in the last ten years, such as improvement of port performance courses (IPP cour-

ses) which has been held for the first time in 1982 in UWIST, in the U.K. .

The need of the ports of developing countries in the field of the training in management skills falls within different levels, therefore there is a need of better definition of the various available courses, whether they are for short-or-long term periods. They are mainly divided into two categories as degree and certificate courses.

5.6.1-Degree Courses

These degree courses are long-term courses executed at the university level in different general and specific fields in maritime, shipping, law, economic, marine transportation, etc. and fall into four categories as follows:

5.6.1.1-Diploma courses

The United Kingdom has been the pioneer in presenting this type of course in port management in UWIST. The duration of the courses is one year. Entry qualifications courses in port management may not include initial educational qualifications, but in many countries such as Iran, the credits of this diploma had been accepted by the Ministry of the Higher Education as a university level.

5.6.1.2-Bachelor Science courses(B.Sc)

These courses mainly had been under three titles in the world as follows:

1-Bachelor of science in marine or maritime science

2-Bachelor of science in marine transportation

3-Bachelor of science in marine engineering

The duration of these courses varies between three and five years and participants work as marine officers on board ships which indeed is very effective for supporting theory with experience working in ports.

5.6.1.3-Master of Science courses(M.Sc)

The duration of these courses varies between 18 and 24 months and are applied in both general and specific fields of marine courses,such as M.Sc. in marine law,or transportation from the UWIST,or five M.Sc courses at the WMU in Malmo, Sweden.

5.6.1.4-Doctor of Philosophy courses:

These courses are available in many of the maritime universities,depending on the personal interests and the country's higher educational system.They are available in general and specific fields,which may take 3 to 5 years. Examples are Ph.D. courses in UWIST and Bremen University.

5.6.2-Short courses

Normally these various courses have been arranged for the experienced managers in different general and specific fields of shipping or ports.These are usually very extensive and have been presented in the form of lectures,seminars,workshops and visits. The duration of short courses usually is between 2 and 3 months with certificates being awarded for attendance or successful completion by the trainee of the course if there are any examinations.

5.6.3-Fellowship or special short courses

According to the need of a shipping or port organization these courses may be arranged for individuals or small groups by overseas countries or international organizations. The main specialities of these courses are the time limitations and contents of the course. The duration of these courses varies between 1 and 12 months.

5.6.4-On-the-job training courses

This types of training covers the majority of all short courses. This kind of training can be made through different ways such as self reading, asking help from experienced personnel or taking both practical and theoretical classroom training. One of the advantages of this type is that the trainee learns on the actual equipment or in the target environment.

5.7-Future of port education and training(PET) and world availabilities

5.7.1-Future of PET

Particular degree courses in the port management purely at the port industries level have not yet been established by developed countries or international organizations.

But this does not mean ports are not places with theoretical and technical sciences. Because of the traditional involvement of the ex-seafarers in port administrations and operations, depending from country to country even until now the sea farers in many of the countries particularly developing ones are appropriate enough to cover the port and national requirements. With the improvement of the unitized systems and changes of the different aspects of the world economy and trade in the last two decades on ports-their operations, management, construction etc. in the seaports has considered greatly in the marine universities as a field of study in maritime sciences and it seems to be considered and approached more toward a special degree course in the world.

The reason for this is that ports are vital links between the sea and land transport, where a manager as a qualified person in a modern port must know the important elements of the sciences and techniques at both sides of these systems. In many countries there are opportunities to study in the field of general transport and maritime science (MET) which are greatly related to each other. Therefore, with the great improvement of the port industries and their increasingly complex and sensitive features, there may be a combination of the MET and general transportation as future of the PET in B.Sc or M.Sc. level in some

of the universities in the world .In Australia in the last term of the nautical science course there are some credits for those who want to be specialists in the port industries fields.

5.7.2-World availabilities in PET

The opportunities in PET on a worldwide basis can be considered in international and national dimensions in all types of training in ports and marine fields.First at the international levels courses are available through the UNCTAD,IMO,IAPH,ILO and ICHCA.Secondly at the national level,courses in the Netherlands have been considered.

5.7.2.1-United Nation Conference on Trade and Development (UNCTAD)

This is a permanent organ of the General Assembly of the U.N. which was established in 1964.Its aim is to promote international trade and economic development in the world particularly in developing countries.

The objective of UNCTAD with regard to maritime transport is twofold as follows:

- 1-To increase the efficiency of maritime transport in its function as the major carrier of international trade.
- 2-To increase the participation of developing countries in the international shipping industry.

UNCTAD presently has six main committees as follows:

1-committee on Commodities

2-committee on Manufacturers

3-committee on Invisible and Trade Finance

4-committee on Shipping

5-committee on The transfer of the technology and economic co-operation among developing countries and

6-Special committee on trade preferences

5.7.2.1.1-Assistance from UNCTAD:

UNCTAD is concerned with the economic and commercial aspects of shipping and ports and multimodal transport including the economic applications of the technological developments in shipping ,ports,economic and commercial aspects of maritime law.Also technical assistance and training is provided to the shipping companies,shippers or equivalent organizations,port authorities and governments.

Assistance has been classified by UNCTAD in 11 different fields,4 of which are particularly related to the ports.

5.7.2.1.1.1-Assistance in Port Operations

Assistance is available for operation and maintenance of port facilities and equipment,including specialized faci-

lities for bulk cargoes (solid and liquid), perishable goods, pallets, containers and other unit load systems. Methods of improving the overall efficiency of a port (including operational research methods) with particular reference to:

- 1-Marine operations within the port, e.g. ship movements, berth allocations.
- 2-Stevedoring, cargo handling and warehousing operations within the port.
- 3-Transfer of goods from /to inland transport links.

5.7.2.1.1.2-Assistance in Port Administration

- 1-Port Legislation and Regulations.
- 2-Structure of a port administration.
- 3-Use of modern management techniques in ports, including budget and financial control.
- 4-Consultations with port users.
- 5-Collection and use of port statistics for administrative and planning purposes.

5.7.2.1.1.3-Port Development Planning Assistance

- 1-Economic feasibility studies of port development

2-Analysis of demand for port facilities(forecast of cargo flows and maritime traffic)

3-Analysis of the impact of new shipping technologies and cargo handling techniques on port design

4-Assessment of dredging requirements in relation to port traffic and

5-Problem of resource allocation between different ports in the same trading area.

5.7.2.1.1.4-Assistance in Training

In addition to the above forms of technical assistance UNCTAD also provides training in the following forms:

1-general training courses, normally lasting two to three months, dealing with broad economic, commercial and management aspects of shipping and ports

2-specialized seminars, normally lasting two to three weeks, in such fields as port operation, port planning, ocean chartering, shipping policy and multimodal transport operations

3-assistance in building up the national/sub-regional training institution of developing countries in the other ten fields

4-workshops arranged for small groups of participants, comprising theoretical and practical training specific-

cally geared to the needs of organizations in individual countries or possibly small groups of countries

5-individual training fellowships, normally involving the secondment of fellows for practical training in other countries.

5.7.2.1.1.5-Assistance in Economics and Management of Shipping

5.7.2.1.1.6-Assistance in Freight Rates and Conferences.

5.7.2.1.1.7-Assistance in Consultation Machinery

5.7.2.1.1.8-Assistance in Trade Organization and Shipping

5.7.2.1.1.9-Assistance in Private Law

5.7.2.1.1.10-Assistance in Multimodal Transport and

5.7.2.1.1.11-Assistance in Containerization.

5.7.2.2-International Maritime Organization(IMO)

IMO is a specialized agency of the U.N. whose activities are entirely in the maritime fields. It was established in January 1959 and was brought into a special relationship with the U.N. by means of an agreement in accordance with Article 57 of the Charter of the United Nations.

5.7.2.2.1-IMO objectives

Objectives are inter alia to provide the machinery for co-operation among governments in the field of governmental regulations and practices relating to technical matters of trade, and to encourage the general adoption of the highest practical efficiency of navigation.

Membership of IMO is open to all states that are members of the U.N. and to other states in accordance with admission procedures contained in the convention establishing it. IMO has 127 full member states.

5.7.2.2.2-Principle Organs of the IMO

1-The Assembly, which consists of all IMO member states, is the supreme governing body:

2-The Council, which consists of 24 member states, acts as the governing body between the biennial assembly sessions;

3-The Maritime Safety Committee, which consists of all member states, is the chief technical body of IMO and is responsible in particular for maritime safety and efficiency of navigation;

4-The Marine Environment Protection Committee

5-The Legal Committee

6-The Technical Co-operation Committee; and

7-The Facilitation committee

There are sub-committees under some of the principle committees.

5.7.2.2.3-Assistance from IMO

IMO is connected with the technical and related aspects of shipping and ports and multimodal transport. The areas of substantive responsibility of IMO for the servicing of requests for experts/consultants, fellowships and equipment.

A descriptive list of items falling under the various broad headings which are directly related to ports and training and maritime affairs are mentioned below, but technical assistance is provided on request to governments shipowners or port authorities.

5.7.2.2.4-Training assistance

1-Establishment of national/regional maritime training institutions and updating of existing maritime training institutions.

2-Technical and practical training of all seagoing personnel for all modes of maritime transport and minimum standards and qualifications and requirements for the issue of certificates, including provision of experts, - lecturers, up-to-date equipment, preparation of suitable syllabuses and arrangements for fellowship training aboard of national counterpart officers.

3-Assistance in Specialized Training

- 3.1-advanced navigation,naval architecture,marine engineering and pre-sea training of deck and engine cadets
- 3.2-training in the fields of harbour masters,pilots,tug masters,dredger operators and personnel for other harbour floating crafts
- 3.3-prevention and combating of marine pollution
- 3.4-fire fighting damage control
- 3.5-radio communication and marine electronics
- 3.6-ship inspection,survey and certification
- 3.7-tonnage measurement
- 3.8-examination of seagoing personnel for issuance of certificates of competency
- 3.9-navigational aids
- 3.10-carriage of cargoes in containers
- 3.11-carriage of hazardous and noxious cargoes
- 3.12-ship construction and repair work
- 3.13-technical aspects of port operations and
- 3.14-maritime law and regulations

5.7.2.2.5-Assistance in Maritime Administration

1-Organization of maritime safety administrative offices.

2-Preparation and application of rules and regulations for the implementation of requirements of IMO conventions,tonnage measurement,ship registration,ship inspection survey,certification, classification,etc. .

5.7.2.2.6-Assistance in Ports

Assistance in all aspects of the safety of ship and equipment in ports and their approaches together with the services relating to,safety measures and services associated with movement of ships and equipment in ports.

5.7.2.2.7-assistance in laws and regulations applicable to ships and shipping

5.7.2.2.8-assistance in design of ships

5.7.2.2.9-assistance in ship and cargo operations

5.7.2.2.10-assistance in shipping

5.7.2.2.11-assistance prevention and control of marine pollution

5.7.2.2.12-assistance in facilitation and

5.7.2.2.13-assistance in maritime law

5.7.2.2.14-Assistance from World Maritim University(WMU)

i-General introduction

World Maritime University is a 'unique center for higher marine educations where all the present fields of educations covering port industries at an appropriate level of general and special senior management training are also offered.

This university was established in July 1983 in Malmo, Sweden, under the auspices of the I.M.O and offers advanced courses in maritime fields not available elsewhere.

ii-Objectives of the W.M.U

"A primary objective is to help reduce the acute shortage of expert maritime personnel in the developing countries, such as teachers in maritime training institutions, surveyors, examiners, marine safety casualty investigators and safety administrators, general maritime administrators and technical managers of shipping companies", all of which are directly related to port authorities and management.

iii-Major purpose of W.M.U

The purpose of W.M.U is to strengthen and serve as an apex institution in the international network of training and technical co-operation in maritime transport.

iv-Courses of Study at W.M.U

1-Two Courses in General Maritime Administration

These two courses have been designed mainly for those managers and experts in ports and shipping and other related maritime fields who are responsible for matters related to marine affairs and must have an adequate knowledge of shipping, ports, cargo, ship and other allied matters. Entrance qualification for these courses is an academic degree, at least a B.Sc. .

2-Two Courses in Maritime Safety Administration

The emphasis of these courses which are available in nautical and engineering fields is on the survey and inspection of ships, conduct of maritime accident investigations, and examination of maritime personnel. The courses also cover allied matters within Maritime Safety Administration.

3-Two Courses in Maritime Education and Training

These courses in nautical and engineering fields place emphasis on the education and training of maritime lectures. It also covers the examination of seafarers and the investigation of maritime accidents.

4-One Course in Technical Management of Shipping Companies

The emphasis in this course is directed towards developing technical managerial skills required by officials serving in managerial capacity in shipping companies e.g. fleet managers, marine or engineering superintendents. Special emphasis is placed on the management of

personnel, safe operation of ships and technical matters affecting economic viability of ships.

5-Duration and Degree awarded

Duration of all courses is two years or four semesters and the degree awarded is an M.Sc. in related course.

6-Entrance qualification for all courses

For all courses highest seagoing certificate or academic degree in either Nautical or Engineering is acceptable and for the two courses in General Maritime Administration at least a B.Sc can be appropriate to enter the university.

As I.M.O is an international maritime organization between governments, all applicants who are nominated to come to W.M.U must be sponsored through their governments.

5.7.2.3-International Association of Ports and Harbours (IAPH)

IAPH Officially came into existence in 1955 and is a world wide association of port authorities.

The principal aim of IAPH is to "develop and foster good relations and collaboration among all ports and harbours of the world".

5.7.2.3.1- Aims of the IAPH

1-The association strives to promote and increase the efficiency of all ports and harbours by exchanging

information connected with new techniques and technology relating to ports development, organization, administration and management

2-Common viewpoints, policies or plans are encouraged where members share a mutual interest

5.7.2.3.2-Organization of the IAPH

IAPH is administrated by a board of directors composed of members who are elected by regular member states. An executive committee, comprising 21 members representing the three geographically divided regions, is the chief executive body responsible for implementing the board's policy as well as generally directing all the association's various activities.

In addition there are 6 technical committees, composed of volunteer association members and covering the following areas:

1-committee on Cargo handling operations

2-committee on Port safety, environment and construction

3-committee on Trade facilitation

4-committee on International port development

5-committee on Legal protection of port interests and

6-committee on Public affairs.

5.7.2.3.3-IAPH, Bursary scheme

The object of the scheme is to provide financial assistance towards the cost of sending selected applicants on approved training courses overseas. Applicants must have been employed in an IAPH member port for at least three years and must already be employed in a junior or middle management capacity.

5.7.2.4-International Labour Organization(ILO)

5.7.2.4.1-Establishment and objective

ILO was set up in 1919 with the objective of promoting united actions between governments, employers and trade unions for the purpose of achieving better working conditions and social justice with building up a comprehensive code of law and practice. Presently ILO has 151 country members.

5.7.2.4.2-Structure of ILO

ILO is composed of following departments and bodies:

- 1-The General Assembly
- 2-The Governing Body
- 3-The International Labour Conference
- 4-The Executive Council
- 5-The Permanent Secretariat and
- 6-The International Labour Office

The ILO also works through subsidiary bodies such as regional conferences, industrial committees and panels of experts.

5.7.2.4.3-Technical assistance from ILO

ILO technical assistance and co-operation within the port fields are as follows:

1-Assistance in Training:

Assistance in the formulation of training policies and systems, management training, vocational training development of teaching methodologies and materials, manpower planning, etc. .

All of these co-operations are in the forms of:

-The training of instructors

-Fellowship programmes

-Curricula development

-The design, purchasing, shipment and installation of necessary equipment for establishing a port training center

2-Assistance in the industrial relations, social security, worker's education and assistance to employer's organizations.

All these activities in port training can be carried out through the co-ordination with ILO's International Centre for advanced technical and vocational training. ILO also has completed a series of 34 modules for supervisory

training in maritime activities.

5.7.2.5-International Cargo Handling Co-ordination Association (ICHCA)

5.7.2.5.1-Establishment

ICHCA was established in 1951 with the aim of facilitating improved handling techniques in the world transport system. Its centre is located in London and has 90 state members.

5.7.2.5.2-Aims of ICHCA

To increase efficiency and economy in the handling and movement of goods by all modes of transport and all stages of the transport chain.

5.7.2.5.3-Ways of approach

1-By generating contacts among members

2-By presenting opportunities for membership dialogue and information exchange

3-By collecting and disseminating information from all available sources

4-By participating in technical and regular activities which significantly affect cargo handling in practice.

5.7.2.5.4-Organization of the ICHCA

The organization is composed of:

- 1- The council which consists of chairmen of each national section.
- 2-The general assembly:reporting the policies to assembly
- 3-The national and regional sections.
- 4-International secretariat:co-ordinates the work of national and regional sections under the direction of council.

5.7.6.5-ICHCA activities

Activities mainly concentrated in:

- 1-National and international meetings
- 2-Luncheons and
- 3-Short workshops and seminars on important subjects.

ICHCA has consultative status with the major regulatory bodies and training agencies affecting the transport industry, and conducts international study projects in response to identified needs for information within the membership and publishes the results as reports and technical papers.

Some of the recent titles include:

1-The securing of ISO containers.

2-Theory and practice.

3-The handling of ISO containers in low throughput situations.

4-An international survey on handling of iron and steel products.

5.7.2.6-Port training at national levels

5.7.2.6.1-Rotterdam port management training programmes

This port is among the pioneers of the port training in both port worker and manager levels in Europe and in the world and has organized different short courses in port management and operations with a duration of four weeks. Technical and Management Port Assistance Office(TEMPO)of the Rotterdam Port management has the following courses:

1-Multipurpose Terminal Operations

Training aims

To train Multipurpose Terminal Managers in the consequences of handling multipurpose cargo in respect to terminal lay-out, equipment, personnel, administration, safety, etc. . Multipurpose cargo in this context means: general, unitized and partially containerized cargo.

2-Container Terminal Operations

Training aims

To introduce terminal managers to the various disciplines required for the efficient development and operation of a container terminal.

3-Equipment Planning (incl. preventive maintenance)

Training aims

To introduce the managers and/or technical staff of port authorities stevedoring equipment types, allocation and maintenance.

4-Port Administration course

Training aims

To introduce basic port administration principles to middle management staff within ports authorities in developing countries.

5-Port Training

Training aims

To introduce port personnel of middle management level to the set-up of structural training programmes in ports: "Training the Trainers".

6-Hinterland Transport Connections course

Training aims

To introduce middle management staff of ports in developing countries to the philosophy that the port is a link in the entire transportation chain. Efficient connections to the hinterland (by various modes of transport) are vital for a port to function.

Set-up of workshops

The time available will be sub-divided into roughly 50% theory and 50% practice. Lectures from the co-operating organizations and institutions will be responsible for the theoretical part, whereas the practical part will be devoted to study visits to various terminals, institutions and organizations in the port region.

CHAPTER 6

6- Presentation of a short course for the purpose of the "Improvement of the Port operation"

6.1-Characteristic of the training course

6.2-Type and duration of the course

6.3-General objectives of the course

6.4-Syllabus and table of contents

6.5-Other specialities of the course

6.1- Characteristics of a training course

Training and education all over the world is very expensive to organize, arrange and implement, particularly those courses which are among the on-the-job training type. This is so, firstly because in the running of the course itself both sides, the training centre and trainees, cost a lot of money, and secondly in the case of developing countries, - most of these courses are not advanced.

Personnel and managers at the time of training who are expected to be actively producing are called to sit in classroom. In many cases and situations, especially in developing countries for various reasons, this is not always such possibility and recognition of continuous on-the-job training. With all these factors any designer of a course, for individuals or groups should pay great attention to the different essential and prime requirements needed to be considered during the first stages of preparatory tasks.

The main (experienced) elements in this relation as noted by UNCTAD (Professor A.D. Couper), an influential international organization involved in the port management training, are as follows:

1-Title of the course

2-Objectives of course

3-Category of trainees

4-Number of trainees

5-Entry requirement

6-Syllabus

7-Duration of course

8-Type of training

9-Number of training centers

10-Number of lecturers

11-Number of course per year

12-Number of trainees per course

6.2-Type and Duration of Training

These factors are of significance to a training course, particularly in an operational, economic and sensitive field such as port authorities. The type of training is important because it covers the possible and available facilities for the implementation of training and time, which is very important to the port. It should be as short as possible, but also the duration should be appropriate for the efficient execution of the course.

In the case of a course which is introductory and covers non-marine or port educated managers, it should be long enough to be used effectively by the trainees. Such a course, therefore, may be developed as follows:

1-Type of training will be in the form of classroom lectures, films and slides and group discussion .

2-Duration of course:

- Total period 12 weeks
- 6 days a week
- 6 hours a day
- Total hours: 432

6.3-Number of courses per year:3 at each training centre

6.4-Number of trainees per course:15-20

6.5-Number of trainees year :45- 60(per training center)

6.6-Estimated number of trainees: 200

6.7-Number of training centres involved as follows:

- 1- Shaheed Rajayee Port Training Centre in Bandar Abbas
- 2- Anzali Port Training Centre on the north coast.

6.8- Number of instructors needed:3 in each training center

6.9-class of managers: as mentioned before, two types of middle managers of the operation department of the port authorities supposed to attend this course:

- 1-Non-maritime or port educated managers, and
- 2-Maritime or port educated managers.

For both categories, maximum efforts will be made for the attendance of individuals with similar qualification and experience.

6.10-Purpose of the training:improvement of the efficiency of the operation department of the port authorities.

6.11-General objectives:-

mainly the goals of this course are the:

- 1- Improvement of technical and operational communication of middle managers of port authorities
- 2- Stimulation of middle managers towards self-operational and technical training
- 3- Improvement of managerial abilities in the planning organizing and controlling of the daily operation;and
- 4- Improvement of safety and efficiency of port authorities.

6.12-Syllabus and contents:

preliminarily syllabus of this general port management course are as follows:

- 1- Safety in port
- 2- Introduction to unitized systems
- 3- Maritime law(national and international)

- 4- Cargo handling management
- 5- Management
- 6- Harbour seamanship
- 7- Ship construction
- 8- Maritime industries in Iran
- 9- Economies of marine industries
- 10- Marine insurance and
- 11- An introduction to international maritime organizations

6.12.2- Contents of syllabus

- 1- SAFETY (Safety in ports, on board ships, safety and security vs port operation throughput;
- 2- Unitized systems (palletization, containerization, LASH, RO/RO systems;
- 3- Law: (national maritime law, customs law, port rules and regulations). international law (rules of the road, salvage, law of the sea, documents)
- 4- Cargo handling management (ship operations, quay operation, storage operations, and direct delivery operations ,

handling of dangerous goods in ports)

- 5- Port management(principles,port functions,objectives departmentations in ports ,port users,types of ports and owner ship,etc.).
- 6- Harbour seamanship(concept of navigation,type of navigation,buoyage systems, principle of tide,etc.);
- 7- Ship construction and stability(ship organization, identification of ships,types of ships,ship dimensions and tonnage,principles of CG ,KG ,GZ and GM etc. ;
- 8- Maritime industries in Iran(an introduction to the objectives,role and functions of the national shipping ship,fisheries,shipbuilding,stevedores,coast guard,etc. .
- 9- Economics(principles,marine economics vs national economy);
- 10-An introduction to the international maritime organizations(I.M.O, UNCTAD,I.L.O,I.A.P.H,W.M.U,etc) and
- 11-Marine insurance(general average,P&I Club,different types of ship and cargo insurance,chartering and ship brokering,procedures of claims,etc).

CHAPTER 7

7-CONCLUSIONS AND RECOMMENDATIONS

7.1-Conclusions

7.2-Recommendations

7.1-Conclusions

Seaports should not be considered any longer as places where ships remain for many days at the berths loading or unloading. Ships are the main elements involved in large volumes of foreign trade in addition together with the human resources and equipment there must be proper coordination for obtaining the best results. In these aspects, the human factor deserves the greatest attention if effective and efficient operation and performance are to be expected at seaports.

In this respect, managers who are the decision makers in matters which may be technical, financial, administrative or operational must have the appropriate training and experience in these specific fields so as to provide them with the capability to supervise subordinates efficiently and to transfer proper and reliable information to superiors and so result in the type of port and maritime operations which can give the expected results.

7.2-Recommendations

- 1-The implementation of unitized cargo handling systems in all aspects of operational procedures as a means of improving the efficiency of the system.
- 2-The instituting of a comprehensive manpower planning study at the P.S.O. for the purpose of regularizing the recruitment process and identifying the training requirement in terms of who should be trained, the area of training and the duration of the courses.
- 3-The support of the present port training centres in all aspects through the provision of instructors and requirements for training as these relate to short-and long-term training courses, their updating and necessary training equipment.
- 4-The revision of job descriptions and requirements for port personnel in accordance with national and international practices and specifications and the use of the completion of appropriate training course as a means toward promotions.
- 5-The support of training at the maritime universities through the selection of the numbers of students to be trained and the training areas based in the manpower plan and the requirements of the maritime administrations of the country.
- 6-Identification of the international maritime conventions which are appropriate for the development of the maritime affairs of the country. their adoption and legal implementation, and recruitment of the properly

qualified personnel to put them into effect.

7-Encouraging of the circulation of current publications on maritime and port operation matters as a means of providing up-dated knowledge and information on all aspects of technology and management in the field of shipping and port operations.

8-Co-operation with and encouragement of different national maritime organizations in the education and training of maritime lecturers for the universities and the formation of a legal maritime organization in the country.

9-Giving consideration to the importance of technological changes in the world of shipping and ports as these may relate to port operations and the national economy of Iran.

10-The utilization and importance of quay-mounted cargo handling equipment as these relate to port performance freight rates and the national economy.

11-Investigation and giving consideration to the importance of reserve storage facilities for bulk trade as a significant aspect of port operations.

12-The regular holding and encouragement of seminars, conferences and workshops on port and maritime matters at the national level with the participation of all appropriate maritime interests and organization.

13-Reconsideration of the present structure of the P.S.O. not only as port authority and maritime administration, but so that it will be more involved in port operations and so that more time and emphasis are concentrated on these aspects while the maritime administrative functions should be placed elsewhere.

14-Ensuring the port personnel with maritime educational backgrounds to successfully complete appropriate training courses which will provide them with knowledge and information necessary for the improvement of efficiency at the ports.

15-The encouragement of qualified personnel to investigate and publish information on port activities so as to obtain a wide readership among all port employees and personnel.

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