

Unit 14

PORTS AND HARBOURS

Basic terms

<ul style="list-style-type: none"> • <i>port, harbour, haven</i> • <i>port structures</i> <ul style="list-style-type: none"> • <i>wharf</i> • <i>berth</i> • <i>quay</i> • <i>pier</i> • <i>jetty</i> • <i>dock</i> • <i>mole</i> • <i>breakwater</i> • <i>dock basin</i> • <i>terminal</i> 	<ul style="list-style-type: none"> • <i>Port Authority</i> • <i>Harbour(master's) Office</i> • <i>port areas</i> • <i>storage facilities</i> • <i>port facilities</i> • <i>maritime administration</i> • <i>berthing accommodation</i> • <i>dock basin</i> • <i>port regulations</i> • <i>port facilities</i> • <i>port dues</i>
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Ports and harbours conduct four important functions: **administrative** (ensuring that the legal, socio-political and economic interests of the state and international maritime authorities are protected), **development** (ports are major promoters and instigators of a country's or wider regional economy), **industrial** (major industries process the goods imported or exported in a port), and **commercial** (ports are international trade junction points where various modes of transport interchange; loading, discharging, transit of goods).

A port is a facility for receiving ships and transferring cargo. They are usually situated at the edge of an ocean, sea, river, or lake. Ports often have cargo-handling equipment such as cranes (operated by longshoremen) and forklifts for use in loading/unloading of ships, which may be provided by private interests or public bodies. Often, canneries or other processing facilities will be located near by. Harbour pilots and tugboats are often used to maneuver large ships in tight quarters as they approach and leave the docks. Ports which handle international traffic have customs facilities. (Source: Wikipedia)

The terms "port" and "**seaport**" are used for ports that handle ocean-going vessels, and "river port" is used for facilities that handle river traffic, such as

barges and other shallow draft vessels. Some ports on a lake, river, or canal have access to a sea or ocean, and are sometimes called "inland ports". A "fishing port" is a type of port or harbor facility particularly suitable for landing and distributing fish. A "dry port" is a term sometimes used to describe a yard used to place containers or conventional bulk cargo, usually connected to a seaport by rail or road. A "warm water port" is a port where the water does not freeze in winter. Because they are available year-round, warm water ports can be of great geopolitical or economic interest, with the ports of Saint Petersburg and Valdez being notable examples. A "port of call" is an intermediate stop, for example to collect supplies or fuel.

Cargo containers allow efficient transport and distribution by eliminating loading of smaller packages at each transportation point, and allowing the shipping unit to be sealed for its entire journey. Standard containers can easily be loaded on a ship, train, truck, or airplane, greatly simplifying intermodal transfers. Cargo often arrives by train and truck to be consolidated at a port and loaded onto a large container ship for international transport. At the destination port, it is distributed by ground transport.

The **world's busiest port** is contested by several ports around the world, as there is as yet no standardised means of evaluating port performance and traffic. For the past decade the distinction has been claimed by both the Port of Rotterdam and the Port of Singapore. The former based its measurement on cargo tonnage handled (total weight of goods loaded and discharged), while the latter ranks in terms of shipping tonnage handled (total volume of ships handled). Since 2005, the Port of Shanghai has exceeded both ports to take the title in terms of total cargo tonnage.

According to Wikipedia, the following ports have variously made claims to be largest world port: Port of Shanghai, Port of Singapore, Port of Rotterdam, Port of Hong Kong, Port of New York/New Jersey.



Various dictionaries give the following main entries for the word ‘port’:

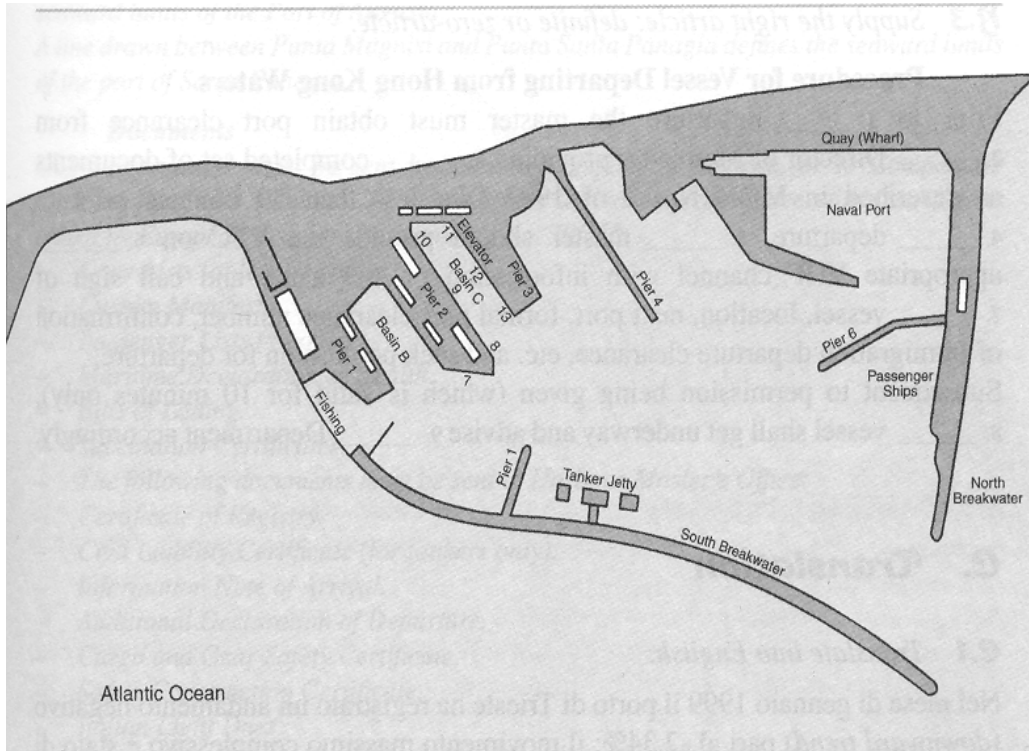
- *a place on a waterway with facilities for loading and unloading ships.*
- *a city or town on a waterway with such facilities.*
- *the waterfront district of a city.*
- *a place along a coast that gives ships and boats protection from storms and rough water; a harbor.*

In what follows several aspects of ports worldwide will be discussed (port structures, port terminals, basic port information, port regulations, etc.).

1. Port structures

The terms **port**, **harbour** and **haven** are more or less synonymous, but each of them also has specific meanings.

Port layout: Mar del Plata



A **harbour** (US spelling "*harbor*") is a place of security and comfort, a small bay or other sheltered part of an area of water, usually well protected against high waves and strong currents, and deep enough to provide anchorage for ships and other craft. It is also a place where port facilities are provided, e.g. accommodation for ships and cargo handling facilities.

The term **port** or **seaport** normally includes the harbour and the adjacent town or city suitable for loading goods and embarking men. A **haven** is a type of harbour used in literature or in names and adds the idea of refuge.

Ships are accommodated and handled, i.e. loaded and unloaded, at such **port structures** as; wharfs or quays, piers and jetties, and sometimes alongside moles or breakwaters.

Any place where a ship can safely lie alongside a quay, pier or dock, at anchor or a buoy, and where she can carry out loading/discharge operations or embark and disembark passengers is called a **berth** (*vez, pristan*).

A **dry dock** (*suhi dok; remontno brodogradilište*) is a type of dock consisting of a rectangular basin dug into the shore of a body of water and provided with a removable enclosure wall or gate on the side toward the water, used for major repairs and overhaul of vessels.

When a ship is to be docked, the dry dock is flooded, and the gate removed.

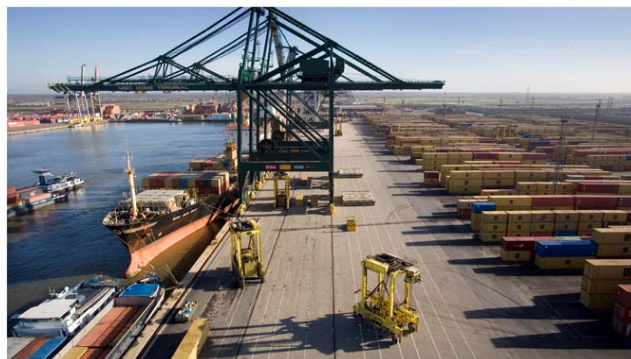


Berths and dry docks, Tilbury

Wharf (*(lučka obala)*) is the oldest term in English referring to port structures. It denotes any structure of timber, masonry, cement, or other material built along or at an angle to the navigable waterway, with sufficient depth of water to accommodate vessels and receive and discharge cargo or passengers. The term can be substituted for **quay** (*(lučka obala)*) when applied to great solid structures in large ports. The area between the quay wall (made of solid masonry) and the nearby warehouse or storage facility is called the **quay apron**.

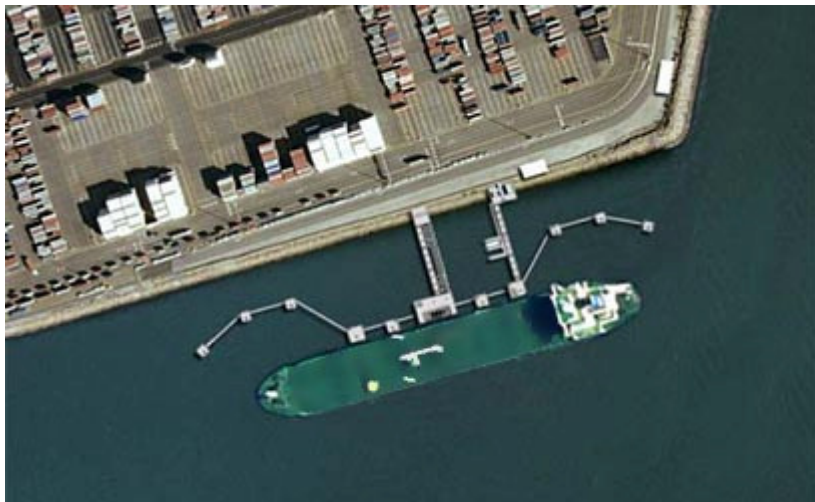


Quay / wharf



Quay / wharf

A **pier** (*gat*) is a construction work extending into the harbour with sufficient depth of water alongside to accommodate vessels, also used as a promenade or landing place for passengers. A **jetty** (*gat*) is a small pier, usually made of timbers for boats, yachts or fishing boats (*fisherman jetty*), but it also refers to large ships (*tanker jetty, T-jetty*).



Oil jetty – Oil terminal

The term **dock** (*dok; ustava; gat; lučka obala*) has a number of meanings. It is an artificially enclosed basin into which vessels are brought for inspection and repair. A dock is a place, usually man-made area of enclosed water, where ships are loaded, unloaded or repaired. Originally, it denotes an area of water that can accommodate a ship and can be closed off by locks to allow regulation of the water level. It also means a space between two wharves or piers for the mooring of ships, i.e. a **dock basin**. Often it can be interchanged with the terms wharf or pier. In US it often indicates a small landing pier for accommodating boats in a river or lake creek.



London docks



dock



dock



dock

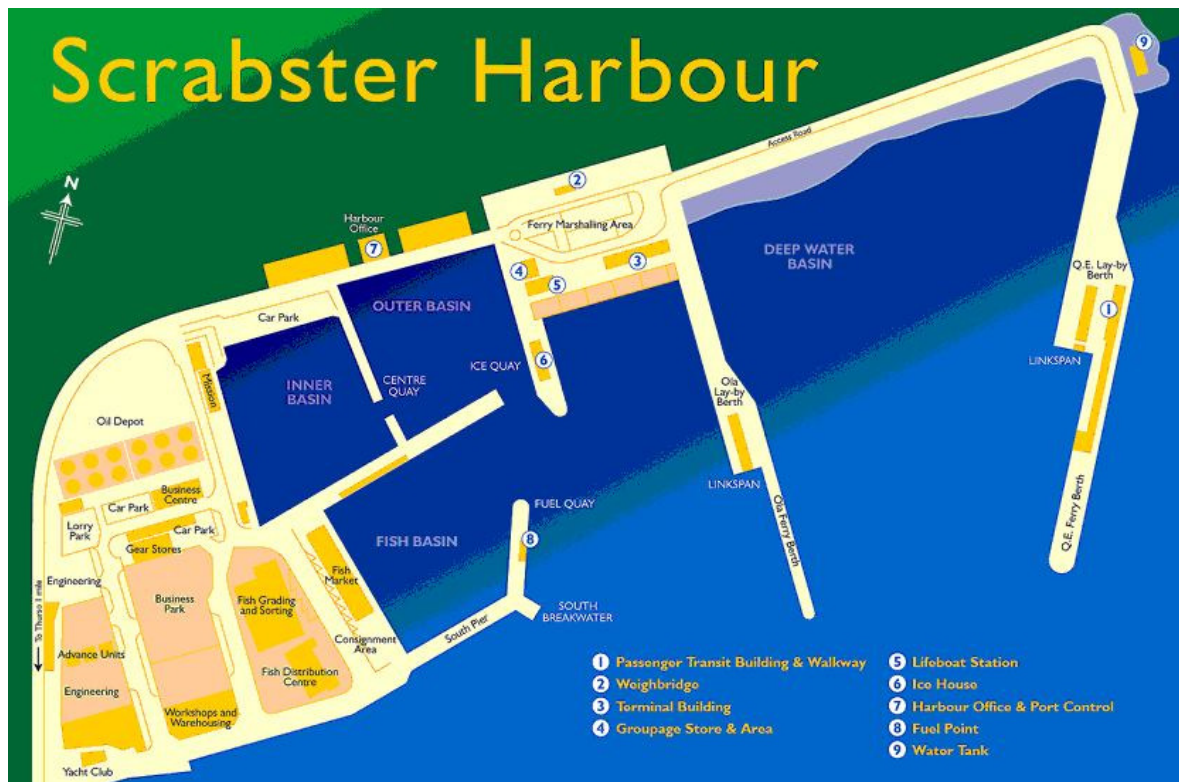


dock



dock basin - Felixtowe

Layout of a port – port structures (*lučki objekti, lučka infrastruktura*):



Port Terminals

The word *terminal* refers to a complete port facility for accommodating, loading/ discharge of ships and for the storage, stacking and handling of cargo on shore (e.g. *bulk cargo terminal, oil terminal, livestock terminal, etc.*).



container terminal



bulk cargo terminal



oil terminal



roll-on/roll-off



ferry terminal



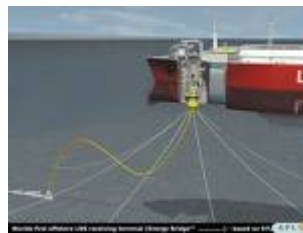
ferry terminal



cruise terminal



LPG terminal

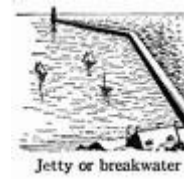


LNG terminal



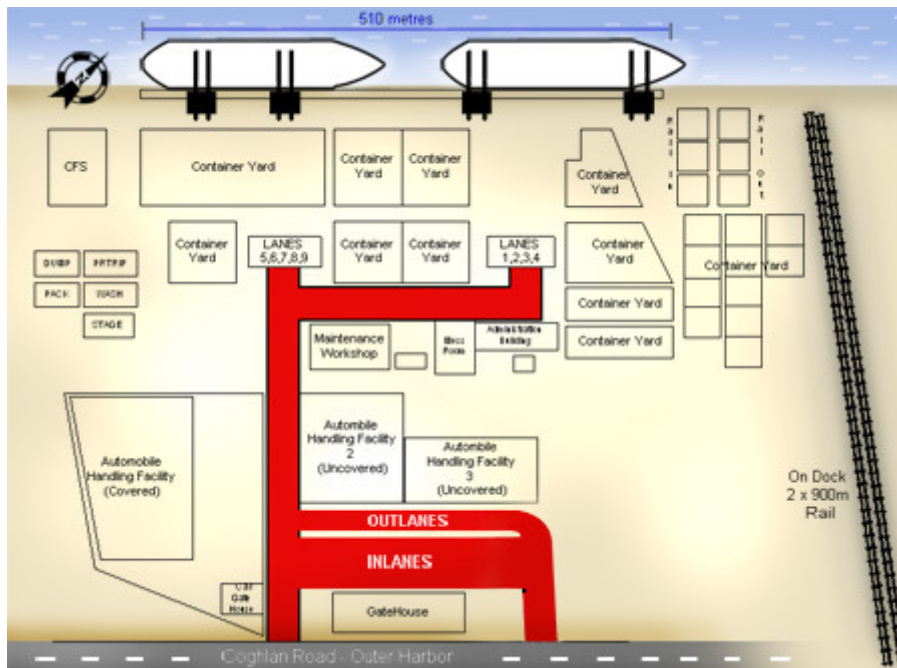
Product tanker terminal

A *mole* or *breakwater* is a massive port structure made of masonry or large stone blocks laid in the sea to protect the harbour from waves and current. Sometimes the terms *jetty* and *pier* are used to mean the same.



breakwaters

Jetty or breakwater



Container terminal

NEW DEEPWATER QUAY

A new deepwater quay and adjacent backup land within the ports' existing deep-water basin is planned to meet the growing demand from the Atlantic Frontier and the expected development of the Pentland Firth as a major tidal energy supplier. There are a range of options for development and a preliminary visualisation of the development is shown below:

The project would create a modern supply base and enable the port to offer the same range of supplies as found in the more distant east coast ports. In particular the development offers the following:

- Increased deep water berthing (at 8 metres water depth). An additional 400m of quay would be created (at 8-9 metres at chart datum). The overall length of available deepwater quay at the port would increase to 730 metres. The supply basin would be capable of accommodating 6 vessels at any time.
- Increased lay down areas, open storage and warehousing. Additional land will also be acquired by the Trust, at close proximity to the port, providing opportunities for further lay down areas, storage and fabrication areas.
- Enhanced Heavy Lift capability
- Capacity to deliver new services such as bulks and fuel. An improved supply of water is already available from new storage tanks installed in 2006. Water is available at rates up to 100 tonnes per hour. Supplies of water have increased by tenfold in 2006, a further 100% growth has been experienced in the first seven months of 2007.
- Access to high quality responsive services, skills and project support

The works will enhance Scrabster's ability to accommodate the increased demand from oil supply boat traffic and the marine logistics required to support development on the Atlantic Frontier and service the needs of the emerging renewable sector closer to home.

Service installations in the Atlantic Frontier can save in excess of 20 hours on a round trip by using Scrabster rather than the principal North East Ports. Scrabster already offers the oil sector

significant competitive advantages and operating cost reduction through:

- Faster deliveries of materials
- Higher vessel utilisation
- Reduced downtime

The new development further enhances Scrabster's position as a more cost effective base over distant east coast ports.



Port development: master plan 1



Port development: master plan 2

2. Basic information on a port:

Port Handbooks such as "**Guide to Port Entry** and **Lloyds Port of the World**" usually include basic information on any port:

<ul style="list-style-type: none"> - latitude, longitude (Admiralty Chart, Time Zone, UNCTAD locoed (local code)) - authority - towage - traffic - provisions (supplies) - bunkers - officials - pilotage - approach - tides - radio frequency information 	<ul style="list-style-type: none"> - dangerous goods - ship repairs, dry docks - airport - medical facilities - working hours - local holidays, - development - port operators, - cargo handling equipment - terminals - berthing accommodation - storage accommodation - shipping companies, - custom authorities, etc.
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Port accommodation is divided into berthing and storage accommodation. Berthing accommodation includes general cargo berths (wharves, quays, piers, docks), oil tanker jetties or terminals, bulk cargo facilities, container and roll-on/roll-off terminals, liquefied gas terminals, etc. Storage facilities include transit sheds (along the wharves or docks), back-up storage located away from the dock, warehouses, stockyards and stacking areas for containers, stockpiles for bulk cargo etc.

New Berth Layout – Oil Terminal



The figure above shows the proposed marine berthing structure. Four fenders are mounted on four breasting dolphins which form the fender line, with which the moored ship will be in contact. The fender line is approximately 280 feet from the shore line. The unloading platform is the larger rectangle in the middle that is inside the fender line so the ship won't actually touch it. The unloading platform supports the unloading arms, pumps and the operator's shed. The north trestle (shown on the left) connects the unloading platform to the shore and includes a roadway and the oil pipelines. The six smaller squares are mooring dolphins, which hold the mooring lines that secure the ship in place at the berth. The various size ships will use the appropriate mooring dolphin to maintain the correct mooring line geometry. The south trestle is the smaller connection to shore and used primarily for access to the gangway tower. Future use for the south trestle may also include access to AMP facilities.

This figure below shows the silhouette of the four basic "design vessels" that the berth is anticipating. They are:

- A. The Panamax
- B. The Aframax
- C. The Suezmax
- D. The VLCC

3. PORT REGULATIONS

PORT OF LONDON PORT ENTRY GUIDE

A summary of the principal rules and regulations governing navigation within the Port of London

USE OF VHF - Vessels over 20m LOA, passenger vessels and tugs engaged in towing, are required to maintain listening watch on VHF as follows:

VTS CALL SIGN	VHF CHANNEL	AREA COVERED
"London VTS"	69	Outer limits to Sea Reach No.4 Buoy
"London VTS"	68	Sea Reach No.4 Buoy to Crayfordness
"London VTS"	14	Crayfordness to Teddington

REPORTING - Vessels over 40m LOA or over 50 gt and tugs engaged in towing, must report to the relevant VTS when passing Waypoints as indicated on approved charts. They must also inform London VTS before the vessel navigates the Thames and obtain clearance from the relevant VTS centre so to do.

On arrival at the outer limits, vessels are required to report on Ch 69 that they "Comply with the navigational safety requirements of PLA General Directions". This signifies that: appropriate charts and navigational publications are corrected to date, a passage plan has been prepared, the vessel complies with the ISM code (or, if not subject to this code that there are no deficiencies or defects to crew or to equipment / machinery for navigation / propulsion / manoeuvring) and that appropriate mooring assistance has been arranged."

PILOTAGE - The requirements for compulsory pilotage in the Port of London are contained in the PLA's Pilotage Directions. The services of a pilot can be obtained through your Agent, or by calling the following pilot stations on VHF Channel 9, NE Spit Pilots (Ramsgate), Sunk Pilots (Harwich), Sheerness Pilots (Warp / Oaze) and London Pilots.

NAVIGATION WITHIN PORT LIMITS - Masters must advise London VTS which approach channel they intend to use. Vessels with a draught of 6.0 metres or less should use the Barrow Deep or Princes Channel, waiting when necessary for sufficient height of tide to transit these channels. Any vessel uncertain of its position should call the relevant VTS station immediately. Large scale charts of the river may be obtained through local Agents.

"SPECIFIED VESSELS" - Are defined in PLA General Directions and covers vessels carrying quantities of explosives, or flammable or toxic substances in bulk or non gas-free following discharge of such cargoes. These vessels are required to display a red flag by day and an all round red light by night. All vessels should maintain a half-mile separation from specified vessels.

Permission is required from the Harbour Master before reducing that separation or overtaking a specified vessel.

RESTRICTED VISIBILITY (less than 0.5 nautical mile) - All vessels over 40m LOA must have an operational radar to navigate in restricted visibility. Additionally, all unpiloted vessels or vessels without a valid Pilotage Exemption Certificate holder in charge, having a draught in excess of 4.0 metres, are not permitted to navigate in Restricted Visibility.

Vessels so prohibited, must proceed to nearest safe anchorage and wait until visibility improves to more than 0.5 nautical mile, or the arrival of a PLA pilot, if so requested.

DANGEROUS NAVIGATION - Masters are advised that navigating without due care and attention, or navigating in a manner liable to injure or endanger persons, other vessels or structures such as berths or jetties (this includes damage caused by wash or draw off due to excessive speed), is an offence liable to prosecution. The Harbourmaster will vigorously investigate any such infringements.

INCIDENTS - Vessels must advise the Harbourmaster immediately (through the relevant VTS station) if involved in any of the following incidents: Collision, sinking, fire, grounding, pollution, damage to ship or structure, foul or lost anchor.

ANCHORING - Except in an emergency, vessels must only anchor in designated anchorages as shown on approved charts. An effective bridge watch should be maintained whilst at anchor.

DEFECTS - Vessels with structural, mechanical or equipment defects affecting their ability to navigate safely, must inform the Harbourmaster of the defect. Such vessels shall not move without having obtained the consent of the Harbourmaster.

EMERGENCY PROCEDURES - When a Port Emergency or Major Incident is in progress, the Master of every vessel must for the duration of the incident:

- ⌚ Minimise transmissions on VHF.
- ⌚ Proceed with caution when near the incident and follow directions as given by London VTS or the on-scene co-ordinating vessel.
- ⌚ Give assistance as required.

AREAS OF SPECIAL CONSIDERATION - Masters are advised that extra care must be taken when navigating in the following areas:

Pilot boarding and landing areas	NE Spit, Sunk, Ooze Deep, Warp and Gravesend
Thameshaven, Coryton and Canvey Island	Oil and gas jetties. Tanker traffic warning lights at Canvey and Cliffe will be exhibited when specified vessels and large tankers are manoeuvring in the area.
Tilburyness	Large vessels manoeuvring for Tilbury Dock and riverside Northfleet Hope berths.
Broadness, Stoneness and Jenningtree Point	Beware of unusual tidal sets. All vessels must navigate on the correct side of the fairway when rounding the points.

4. Procedure for a vessel entering the Port

No vessel is allowed to enter Hong Kong without the permission of the Director of Marine. Not less than 24 hours before the intended entry, the owner, his local agent or master of the vessel must apply in writing for permission for entry - Pre-arrival Notification providing the required information. Tankers should also submit a Tanker Arrival Notice. Application should be sent to the Director of Marine by telex 63607 or by fax to 2858 6646.

Not less than 4 hours before entry to Hong Kong waters, confirmatory notification must be given which should include the ship's name, flag, expected arrival time, status of various equipment on board, present position, course and speed. The report should be made on the VHF channel appropriate to the intended point of entry. Continuous tracking of the vessel movement will be maintained by the Vessel Traffic Centre (VTC) which will also pass relevant navigational information affecting the projected route to the vessel.

Within 24 hours of the ship's arrival, its owner, local agent or master should submit the documents to the Port Formalities Office (PFO).

5. Port of Rijeka

APPROACH Well sheltered harbour, anchorage outside good and safe. Breakwaters 1.754 and 420m. Width of entrance 270 m, width of entrance to Susak Basin 43 m. Depth at entrance 40 m, in mid-harbour 20 to 28 m, at quays 6 to 10 m. Bay of Bakar, 4.700 m long, 700 m wide, average depth 26 m, at entrance 44 m. Entrance to Bay of Bakar is 400 m wide. Max tidal range is 1,2 m.

ANCHORAGE Depth 30 - 50 m, muddy bottom. However, during NNE gales (in winter) a vessel could be forced to leave anchorage and seek shelter under the lee of the nearby island Krk.

Tankers and vessel carrying dangerous cargo may anchor inside the following area:

- a)** 45° 17,8' N; 14° 28,2' E **b)** 45° 16,2' N; 14° 31,9' E **c)** 45° 14,2' N; 14° 29,4' E
d) 45° 15,1' N; 14° 27,1' E

PILOTAGE Harbour pilotage is compulsory for vessels over 500 GT. Boarding place within the area between:
 45° 20' N - 14 E, 45° 17'5 N - 14° 20' E, 45° 14'1N -14° 29'4 E, 45° 16'1 N -14 E.
 If required, a pilot is available at Rijeka for all ports of the Croatian coast. Coastal pilotage according to agreement. Pilotage on VHF Channels 12.

Rijeka Radio call sign 9AR, 500 kHz., Radio telephone on 2 m band covering area of N Adriatic sea or by VHF Channel 16.

ACCOMMODATION. Accommodation for 35 ocean-going vessels and a

number of smaller coasters. Harbour comprises four basins: **Rijeka** port basin, 2.545 m wharfage, 5 m to 12.80 m depth, for general cargo, phosphates, grain and cereals, ore etc. and includes on its eastern part several berths exclusively for small passenger vessels and on its western part the petrol port for coastal tankers; **Susak** port basin, 2.400 m wharfage, 5,5 m to 12 m depth, for timber, general cargo, containers, ore, etc; **Bakar** port basin, average depth 26 m, a bulk cargo terminal for discharging iron ore, bauxite and coal, also one berth for discharging general cargo and loading vehicles, and oil refinery terminal for loading refined products; **Rasa** port basin, consisting of Brsica timber terminal, 164 m long wharfage, 10 m depth; **Urinj** tanker terminal for discharging crude oil and loading virgin naphtha.

Length of rail track 20 km. Electric lights for night work. Rail connections with Central Europe, Italy and the Balkan Peninsula.

STORAGE Covered surface storage of 113.000 m² for general cargo, 53.000 m² for timber, open storage of 150.000 m². Tanks for discharge of vegetable oil of 3.600 m³. A 57.000 t capacity silos for grain and soya storage with 5.000 t/day unloading rates. Phosphate terminal cap. 15.000 t.

A. Comprehension & vocabulary

A.1 Supply the key-words to the following text:

- ***tide*** • ***port*** • ***access*** • ***light houses*** • ***entrance*** •
- miles*** • ***harbour*** • ***approach***

Arrival in the Port of Boston

The Port of Boston is about 50 1. _____ north-west of the tip of Cape Cod. Boston harbor is the largest 2. _____ in New England. The north-eastern 3. _____ is obstructed by islands and shoals which extend four miles from the 4. _____ to the port. The approaches are marked by powerful 5. _____ and the principal dangers are buoyed. It is recommended that vessels approaching or departing from Boston 6. _____ use the buoyed traffic separation scheme. The most commonly used 7. _____ is on the north side of President Roads with depths over 50 fl. The mean range of the 8. _____ is nine feet (2.75 m).

A.2 Give a description of a port of your own choice using the information headlines in the reading text.

A.3 Complete the sentences with the required container terms:

- *storage* • *facility* • *straddle carrier* • *gantry* • *wharf*
- *terminal* • *gantry* • *shed*

The Boston Container Terminal

The largest container 1. _____ offers 42,555 ft (1,300 m) of 2. _____ with water depths from 10-12 m and 101 acres of 3. _____ plus a 20,000 sq. m 4. _____ for breakbulk cargo and LCL operations. Container 5. _____ at berth 11 includes two 40 ton container 6. _____ cranes. The container 7. _____ cranes have an outreach of 35 m. A number of 8. _____ for moving containers on the terminal are used.

A.4 Choose suitable headings for the following basic information on Port Sudan:

- **bunkers** • **communications** • **pilotage** • **working hours** • **officials** • **supplies** • **authority** • **weather conditions** • **access** • **port facilities** • **latitude, longitude**

1	latitude, longitude	:	19°37' N, 37°14' E
2		:	Sea Ports Corporation
3		:	Managing Director, Harbour Master
4		:	Good entrance 278 m wide with no hazards
5		:	Compulsory
6		:	VHF Channel 16, Radio station Port Sudan
7		:	Prevailing winds from NE, strong gale force winds likely from N in December and January
8		:	General cargo berths - depths 9-12 grain silo, container & tanker berth
9		:	Good supplies of meat and fish available
10		:	All grades of fuel, diesel and gas oil by pipeline or by barge
11		:	1 st shift 0600-0900, 1000-1400. Overtime, 2 nd shift 1400-1730, 1800-2130

A.5 Supply the appropriate term in the text below:

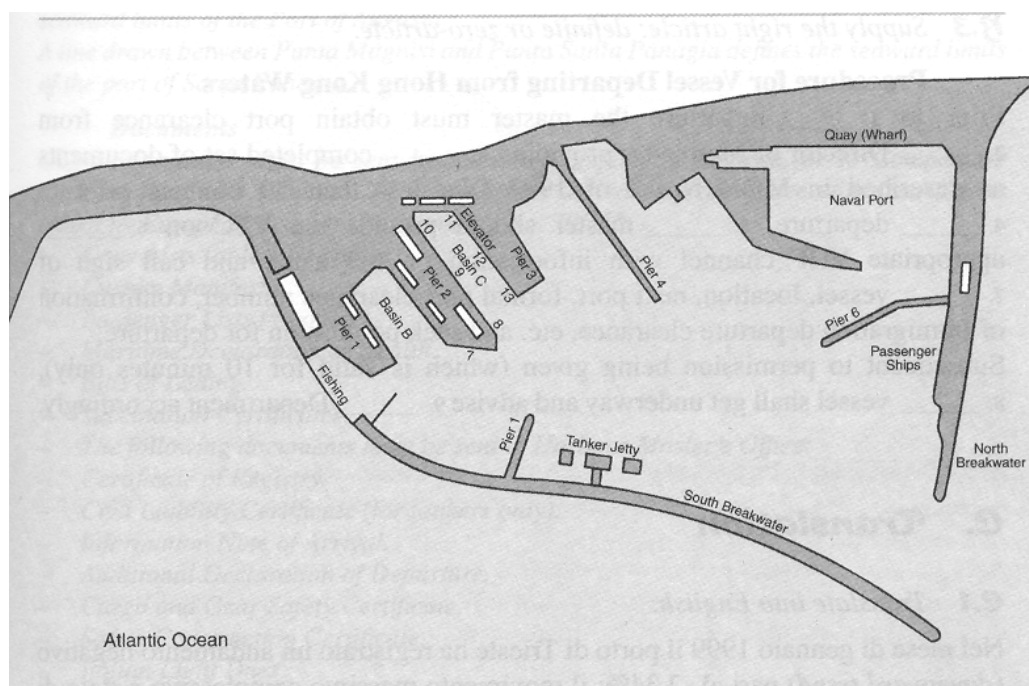
- **transtainers** • **discharge** • **traffic** • **facilities**
- **quay** • **portainers**

Pier 7 - Port of Trieste

The "Pier 7" Container Terminal is one of Europe's most advanced port 1. _____ for container handling. At completion of the works underway, it will have a total area of 400,000 m², with about 2000 linear metres of operational 2. _____ and a draught alongside reaching 17.7 m. The smooth movement from the storage areas to the loading 3. _____ areas for special vehicles and wagons to the ships will be ensured by an advanced integrated ship-to-shore system relying on 4. _____, i.e container cranes in the stacking area.

The Pier is equipped with 4 Paceco portainers (another 3 5. _____ of the Post Panamax type and 5 transtainers are being installed), 17 straddle-carriers. The present handling capacity is 240,000 TEU approx. (to be extended to and above 400,000 TEU). A real-time computer system controls container 6. _____.

A.6 Using the port layout below present the types of structures in the port of Mar del Plata to your classmate



A.7 Look at the Layout of a port (Scrabster Harbour) and make an oral presentation of the port berthing and storage facilities.

A.8 Look at Port development: master plan 1 above and make an written presentation of the port berthing and storage facilities.

A.9 Supply the missing port-related terms (stack, bank, shipping lines, Ring, joint-venture, berths, yard, quay gantries, shed, facilities, terminals)

Shanghai Pudong International Container Terminals Ltd

(Waigaoqiao Phase-1 Terminals)

Shanghai Pudong International Container Terminals Limited is a _____ established on March 1, 2003 and invested by Shanghai Waigaoqiao Free Trade Zone Stevedoring Co., Hutchison Ports Pudong Limited, COSCO Pacific (China) Investments Limited and COSCO Ports (Pudong) Limited.

Shanghai Pudong International Container Terminals Limited is located on the south _____ of the Yangtse River, in Area A of the Waigaoqiao Free Trade Zone, and adjacent to the Outer _____ Road, Yanggao Road and the Hu-Chong-Su (Shanghai-Chongming-Jiangsu) Cross-River Project which is under preparation for construction. The Terminal has a total quay length of 900 meters, and its three container _____ are able to accommodate the fifth and sixth generation container ships. Its land area is 500,000m² with a container _____ of 8,200 flat container slots capable to _____ 30,000 TEUs at the same time. Furthermore, special purpose areas for reefer containers and dangerous cargo containers and a container stuffing and stripping _____ have been set up. It is a modernized container terminal with perfect _____ and functions.

The well-equipped and technology-intensive Shanghai Pudong International Container Terminals Limited has 147 machinery and equipment of various kinds, including 10 _____, 36 RTGs, 73 container trucks and 11 forklifts. It is one of the modernized container _____ with high-tech content in China, through technological development and innovation, it employs advanced systems in the operation of containers such as CTMS real-time production, marshalling and controlling of the container trucks of the whole yard, handling of containers with the same multiples and the intelligent container yard. The Company provides the _____ and its customers with tailor-made quality service by the establishment of a safe, convenient, economic and reliable service platform.

.....

A.10 Supply the missing port-related terms:

timber, wharfage, cereals, petrol port, terminal, berth, crude oil, rates, connections, general cargo, storage, basins,

ACCOMMODATION. Accommodation for 35 ocean-going vessels and a number of smaller coasters. Harbour comprises four _____: **Rijeka** port basin, 2.545 m _____, 5 m to 12.80 m depth, for general cargo, phosphates, grain and _____, ore etc. and includes on its eastern part several berths exclusively for small passenger vessels and on its western part the _____ for coastal tankers; **Susak** port basin, 2.400 m wharfage, 5,5 m to 12 m depth, for _____, general cargo, containers, ore, etc; **Bakar** port basin, average depth 26 m, a bulk cargo _____ for discharging iron ore, bauxite and coal, also one _____ for discharging general cargo and loading vehicles, and oil refinery terminal for loading refined products; **Rasa** port basin, consisting of Brsica timber terminal, 164 m long wharfage, 10 m depth; **Urinj** tanker terminal for discharging _____ and loading virgin naphtha. Length of rail track 20 km. Electric lights for night work. Rail _____ with Central Europe, Italy and the Eastern Europe.

STORAGE Covered surface storage of 113.000 m² for _____, 53.000 m² for timber, open storage of 150.000 m². Tanks for discharge of vegetable oil of 3.600 m³. A 57.000 t capacity silos for grain and soya _____ with 5.000 t/day unloading _____. Phosphate terminal cap. 15.000 t.

B. Grammar

B.1 Make sentences using the verb in brackets.

1. Tugboats up to 4,300 KN for towing, docking, undocking and shifting (*be available*).
2. Tugs radio communication on VHF channel 10 (*maintain*).
3. Inbound vessels usually in the vicinity of anchorage areas 1 and 2 (*meet*).
4. Arrangements usually in advance through ship's agents (*make*).

B.2 Supply the required prepositions:

Contact with the US Coast Guard

1. _____ the purpose of search and rescue the US Coast Guard maintains a station 2. _____ Lat 12°22' N, Long. 71°03' W, on the south bank 3. _____ Carles River 4. _____ the mouth. The National VHF-FM Distress System provides continuous coastal radio coverage outwards 5. _____ 20 miles 6. _____ Channel 16 (156.80 MHz). After contact 7. _____ Channel 16, communication 8. _____ the Coast Guard should be 9. _____ Channel 22. Urgent, safety and scheduled marine information broadcasts are made 10. _____ CG radio stations, transmitted both 11. _____ radiotelegraph and radiotelephone. Marine forecasts are issued 12. _____ the National Weather Service four times daily.

B.3 Supply the right article: definite or zero-article.

Procedure for Vessel Departing from Hong Kong Waters

Prior to 1. _____ departure the master must obtain port clearance from 2. _____ Director of Marine by providing 3. _____ completed set of documents as described in MDN No. 2 of 1997. Not less than 30 minutes prior to 4. _____ departure, 5. _____ master should provide the VTC on 6. _____

_____ appropriate VHF channel with information on the name and call sign of 7. _____ vessel, location, next port, formal port clearance number, confirmation of Immigration departure clearance, etc. and seek permission for departure.

Subsequent to permission being given (which is valid for 10 minutes only), 8. _____ vessel shall get underway and advise 9. _____ Department accordingly.

B.4 Supply the missing adjective:

international, compulsory, flammable, bad, main, normal,

Pilotage

Pilotage is _____ for vessels over 500 g.r.t. - 24 hours service - Second Pilot recommended by Local Authorities for vessels of 60,000 g.r.t. or above. Weather permitting, Pilot boards about 1 mile East of port _____ entrance. In case of _____ weather, the pilot boat will station itself just inside the entrance and instructions to proceed will be given to vessels by VHF. Upon request, to facilitate vessels, or for other special reasons, Pilot can board up to 3 miles off the _____ embarkation point.

Pilot charges vary with vessels g.r.t., for hours between sunrise to 0800 hrs. and 1700 hrs. to sunset for night hours, for Sundays and holidays, for _____ and explosive cargo and for boarding over 1 mile from main breakwater.

ETA to be confirmed 1 hour before arrival, calling "Augusta Pilot Station" on VHF Channel 12. In case of no radio contact vessels must stop about 2 miles Eastward of the breakwater and hoist or flash _____ code signals.

For tankers calling to load: 72 hours prior arrival send cargo layout, preferred order of loading and number of grades ship can load at same time.

B.5 Supply the missing verb:**berth, loading, discharging, moored, are, connected, used*****Berthing****Commercial Wharves:*

- *Ro/Ro Pier: Length 260 m. Depth 12.0 m.*
- *Banchina di Riva: Length 246 m. Depth 12.0 m.*
- *Commercial Quay: Length 255 m. Depth 12.0 m.*

Consortium Jetty:

Length 738 m. Depth at seaward end 12.2 m. 6 berths _____ available. With Port Authority permission vessels may _____ to discharge dirty ballast or transshipment cargoes.

Berth Nos. 1, 2 and 3 are at a finger jetty. Berth Nos. 1 and 3 _____ only by coasters and bunkering barges. Depth 12ft. Berth No. 2 used by vessels up to 25,000 d.w.t. on stern discharge. Depth 28 ft.

*Enichem Augusta:**Punta Cugno - Berth Nos. 3, 4, 5 and 5 Bis.*

Berth No. 3 Northern Jetty used by Enichem Augusta for _____ and loading chemical products. Berth accepts vessels up to 3,000 d.w.t. mooring alongside. Depth 17 ft.

Berth No. 4 (Mid Jetty) used by Enichem Augusta for barges.

Berth No. 5 (Southern Jetty) used by Enichem Augusta for vessels up to 30,000 d.w.t. _____ by stem for loading/discharging black/white products and chemicals. Depth alongside 30 ft.

Berth No. 5 used by Enichem Augusta. It is a steel island connected to Berth No. 5 for vessels up to 5,000 d.w.t. for _____/discharging black/white products and chemicals. Depth alongside 21 ft.

Further reading

AUGUSTA (including Priolo and Melilli)

37.13 N - 15.14 E (see Plan)

Location

Augusta - Position refers to Torre Avolos Old Lighthouse in position Lat. 37° 12' 37" N, Long. 15° 13' 34" E.

Priolo - Same position as Augusta, Priolo lays on Southern part of harbour including a chemical pier outside the breakwaters.

The port is under the jurisdiction of Siracusa.

Melilli - Correct name, is Siracusa Santa Panagia, located 6 miles South of Augusta. Lat. 37°06'30" N, Long. 15°15'40" E.

Largest scale charts: B.A. 181-187. U.S. 53000-53200-53201. Italian 270-271.

Port limits

A line drawn between Santa Croce Lighthouse and Magnisi Lighthouse defines the seaward limits of the Port of Augusta.

A line drawn between Punta Magnisi and Punta Santa Panagia defines the seaward limits of the port of Santa Panagia.

Documents

Ships information must be sent by telex to Compamare Augusta, or to Compamare Siracusa for Santa Panagia, 24 hours before arrival in accordance with instructions issued by European Economic Community No. 79/116.

- Crew Lists (at least 4 copies).
 - Custom Manifest.
 - Passenger Lists (4 copies).
 - Maritime Declaration of Health. - Bills of Lading.
 - Vaccination Certificates.
 - The following documents must be sent to Harbour Master 's Office:
 - Certificate of Registry.
 - Civil Liability Certificate (for tankers only).
 - Information Note of Arrival.
 - Additional Declaration of Departure. - Cargo and Gear Safety Certificate. - Safety Construction Certificate. - Italian Light Dues.
 - Tanker Check List (to be presented to Pilot for acknowledgement).
- Augusta (Melilli)

In addition ships bound for the Esso Terminal must also radio the refinery, Rafinesso Augusta, via Roma Radio (IAR) 72 hours and 48 hours before arrival, giving ETA in local time and following advice:

Bill of Lading quantities in long tons, metric tons, gross bbls./net Wis.

stop quantity, water percentage, tank number: If stop mixed with cargo, advise quantity cargo in stop tank.

Arrival draft.

Temperature of cargo for vessel carrying atmospheric residues and catfeeds.

Augusta: Enichem Terminal

Pilotage

Pilotage compulsory for vessels over 500 g.r.t. - 24 hours service - Second Pilot recommended by Local Authorities for vessels of 60,000 g.r.t. or above. Weather

permitting, Pilot boards about 1 mile East of port main entrance. In case of bad weather, the pilot boat will station itself just inside the entrance and instructions to proceed will be given to vessels by VHF. Upon request, to facilitate vessels, or for other special reasons, Pilot can board up to 3 miles off the normal embarkation point.

Pilot charges vary with vessels g.r.t., for hours between sunrise to 0800 hrs. and 1700 hrs. to sunset for night hours, for Sundays and holidays, for flammable and explosive cargo and for boarding over 1 mile from main breakwater.

ETA to be confirmed 1 hour before arrival, calling "Augusta Pilot Station" on VHF Channel 12. In case of no radio contact vessels must stop about 2 miles Eastward of the breakwater and hoist or flash the international code signals.

For tankers calling to load: 72 hours prior arrival send cargo layout, preferred order of loading and number of grades ship can load at same time. Examples:

Messages sent to vessels: Vessel over 20,000 g.r.t.:

Please send the following information cabling Compamare Augusta, Telex: 912336.

Vessels data, ETA Pilot, reasons for call, cargo/ballast details, if SOIAS Certificates 74-78, em. 81/83.

CLC data, IGS yes/no, Paris memo issued date prescriptions, if any, last port and confirm if all apparatus, hull machinery in good order:

Anchorage

Pilot compulsory inside and outside the breakwaters with in the port limits.

The Inner Anchorage has a central zone with a depth of water not less than 22.4 m. Outside it is recommended to anchor South of Main Entrance, because North of it there are many limitations.

For Santa Panagia Pilot compulsory inside the harbour limits - vessels anchoring outside of this line are not considered to be in port and consequently without port dues.

Max. size

VLCCs can enter the harbour with lug assistance with the following limitations: 69 ft. draft for operations in the road (bunkers - provisions – crew changes) and 66 ft. 10 in. with a max. displacement of 450,000 tons to moor alongside SELM Priolo Supertanker Jetty. For Santa Panagia no limitations.

Repairs

Not permitted to tankers while alongside refineries jetties, may be carried out, while at anchorage, subject to Harbour Master's authorisation. If repairs to engine or it will affect the proper use of engine or in any way restrict the capability of manoeuvring the ship, continuous tugboat assistance may be imposed. Light steel, carpentry and routine maintenance is available from small local shipyards. Also electronic and electrical services.

Health

Vessels arriving from countries not suspect of epidemical diseases can ask and receive Free Pratique by radio, sending a telegram not more than 24 hours before arrival to "Sanimare Augusta" via Roma Radio (IAR) or "Sanimare Siracusa" for the Port of Santa Panagia. Arrivals from Italian or EEC Ports are considered clear:

It is necessary to request Free Pratique by radio because Health Officers do not board vessel from sunset to 0800 hrs.

The Office of the Health Department is located at Via Lungomare Rossini. Tel: (0931) 974920.

Radio

Augusta Radio P.T. Listening on 2182 kHz. Working on 1643 and 2260 (24 hour service).

VHF

Augusta Radio P.T. Call Channel 16, working Channels 26 and 27 (24 hour service).

- *Harbour Master (Channel 16).*
- *Pilots (Channel 12). Working 24 hours.*
- *Tugs and Line Handlers (Channel 8). Working 24 hours.*
- *Taxi-boats (Channel 10) From 0600 to 2330 hours.*
- *Agents Connection (Channel 9). Office hours.*
- *Traffic Control (Channels 9 and 12). Working 24 hours.*

Tugs

Tugs available in the harbour: 4x2,000 h.p., 2x2,400 h.p., 3x2,500 h.p., 2x 1,200 h.p. and 1 lug on stand-by/emergency of 2,600 h.p.

Harbour service: 6 tugs on duty from 0700 - 1200 hrs. and from 1300 - 1800 hrs. 3 tugs available from 1800 - 2200 hours and 2 tugs available from 2200 - 0700 hrs.

Tugs' charges vary with vessels g.r.t., for hours between 0001 - 0800 hrs, 1200 - 1300 hrs., 1700 - 2359 hrs., for Saturday, Sunday and holidays, for service exceeding 1 hour, for operations at SELM - Priolo Terminal.

For Santa Panagia there are 3 tugs available, 1 tug can be employed from Syracuse Harbour - additional tugs can be supplied from Augusta Harbour.

Use of tugs is compulsory for berthing and unberthing- The number of tugs allocated is decided by the Harbour Authority according to gross tonnage. Because of tug crew duty rosters, the most suitable tugs may not always be available. Tugs make fast on the hook after the vessel has cleared the entrance, using ship's ropes. Pilots communicate with tugs via VHF portable radios which they bring on board with them.

Line Handlers: Service is performed with 1 launch for vessels of less than 10,000 g.r.t. and 2 launches for vessels above 10,000 g.r.t.

Wires are not accepted but may be used when provided with a 5 m. Manila or other fabric end tail with eye.

Charge varies with vessel g.r.t., flammable and explosive cargo, rain, waiting time (1 hour

delay), overtime from 0600 - 0800 hrs., 1200 - 1300 hrs., 1700 - 2000 hrs-, night hours, Saturday, Sunday, holidays, lines above the total of 8 and mooring on dolphins/buoys.

Berthing

Commercial Wharves:

- *Ro/Ro Pier: Length 260 m. Depth 12.0 m.*
- *Banchina di Riva: Length 246 m. Depth 12.0 m.*
- *Commercial Quay: Length 255 m. Depth 12.0 m.*

Consortium Jetty:

Length 738 m. Depth at seaward end 12.2 m. 6 berths available. With Port Authority permission vessels may berth to discharge dirty ballast or transshipment cargoes. MACE7: Berth Nos. 1, 2 and 3 are at a finger jetty. Berth Nos. 1 and 3 used only by coasters and bunkering barges. Depth 12ft. Berth No. 2 used by vessels up to 25,000 d.w.t. on stem discharge. Depth 28 ft.

Enichem Augusta:

Punta Cugno - Berth Nos. 3, 4, 5 and 5 Bis.

Berth No. 3 Northern Jetty used by Enichem Augusta for discharging and loading chemical products. Berth accepts vessels up to 3,000 d.w.t. mooring alongside. Depth 17 ft.

Berth No. 4 (Mid Jetty) used by Enichem Augusta for barges.

Berth No. 5 (Southern Jetty) used by Enichem Augusta for vessels up to 30,000 d.w.t. moored by stem for loading/discharging blacklwhite products and chemicals. Depth alongside 30 ft.

Berth No. 5 Bis used by Enichem Augusta. It is a steel island connected to Berth No. 5 for vessels up to 5,000 d.w.t. for loading/discharging blacklwhite products and

chemicals. Depth alongside 21 ft.

Stevedores: Available from Compagnia Lavoratori Portuali.

Cranes: Heavy Lifts: Floating cranes with lifting capacity of 20 - 94 tons at a distance of 27 m. - 12 m. are available.

Medical: Medical and hospital facilities available. Vaccinations done on board. Advance notice preferred for assistance required on arrival.

Tankers: See "Agents Report" for accomplishments required before entering the Harbour and "Berthing" for facilities.

Density: 1025, however it may be reduced by heavy rain.

Fresh water: Good quality potable water available by barges.

Fuel: All grades available by pipe-line or barge at anchorage, max. draft 65 ft. Suppliers Esso, Agip, I.P., Shelf; Mobil 48 hours notice required.

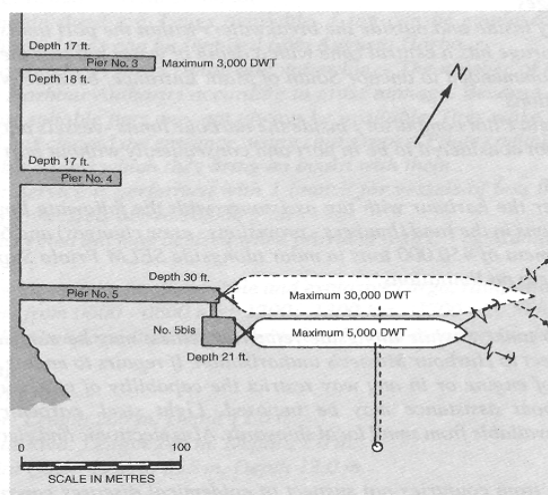
Gangway/deck Watchmen: Employment of shore watchmen advisable. Employment of shore fire guards advisable.

Opening/closing hatches: Normally by ship's crew.

Customs allowances: 40 cigarettes and 1 opened bottle wine/spirits per man.

Identification cards: Shore passes given by Immigration Police.

Dry docks: One floating dock, length 105 m., breadth 17.10 m., lifting capacity 3,000 tons. Ships up to 5,000 g.r.t. can be moored alongside the dry dock for light repair operations. One floating dock, length 115 m., breadth 22.0 m. Lifting capacity 2,750 tons.



The Top-10 Port Environmental issues

Periodically ESPO and EPF undertake a survey of European Ports to evaluate the progress made in environmental management, and to identify the Top Ten sustainable management issues. The mission of EPF is to provide cost effective solutions for the Top-10 Environmental Issues in European Ports.

The Top-10 Port Environmental Issues (ESPO Survey 2004)

- 1. Port Waste Management**
- 2. Dredging**
- 3. Dredging Disposal**
- 4. Dust**
- 5. Noise**
- 6. Air Quality**
- 7. Bunkering**
- 8. Hazardous cargo**
- 9. Port Development (land related)**
- 10. Ship discharge (bilge)**

1. Port Waste Management

Waste can be defined as any substance or object that the holder intends to or is required to discard. This includes oil and oily waters; noxious liquids; special, controlled and hazardous wastes; sewage and garbage. The production of waste is an aspect related to most of the activities carried out in a Port (e.g. shipping, storage, maintenance, waste management); for this reason if its management is not suitable it can be considered as a significant aspect. Recent regulations introduce the concept of "duty of care" that require that wastes be followed (documented) from "cradle (origin) to grave (disposal)".

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2-3. Dredging and disposal of dredged materials

Generally speaking, dredging activity consists of periodic removal of material from the seabed in approach channels to port and harbour basins to maintain widths and depths in previously dredged areas to ensure the safe access for vessels. It also involves the disposal of the excavated material (ABP Research, 1999).

The potential environmental effects of maintenance dredging are generally two-fold, firstly as a result of the dredging process itself and secondly as a result of the disposal of the dredged material. It can have effects such as reduction of the water quality (e.g. acute chemical toxicity, increase of the suspended sediments, release of organic matter, nutrients and or contaminants), turbidity, smothering/removal of organisms, bioaccumulation, alteration of the community structure and the substrate type.

But, dredging and disposal can also have some positive effects such as removal of contaminated sediments and relocation to safe areas or use of

the material extracted to regenerate beaches, mudflats or salt marsh habitats.

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4. Dust

Dust is considered a set of particles emitted to air and can constitute visual, physical, chemical, or health hazards for employees or the public. The most common sources of dust are open storage, handling (e.g. grabs) and spillages of dry bulk cargoes. Fine particles require little wind to create dust.

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5. Noise

Noise can be defined as unwanted sound. The generation of noise is related to most mechanical or industrial activities carried out in a port and this aspect creates an important impact on the employees, wildlife and the public. Noise can interfere with sleep, communication and privacy: aggravate stress, result in irritability and reduce working efficiency. High levels of noise can lead to hearing loss. Therefore, noise can constitute an occupational hazard, result in complaints and be considered a public nuisance under the law.

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6. Air quality

Air emissions include substances (gaseous or solid), material and energy escaping to the atmosphere through stacks, ducts, vents, stockpiles, windows, transport and materials handling. The presence of these products in the atmosphere and their interaction can create air pollution affecting the local climate, the building structure, the weather*, health (human and wildlife) and the global environment (global warming, depletion of ozone layer).

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7. Bunkering

Bunkering is defined as the action or process of supplying a ship with fuel. This operation, also known as refuelling, is a very normal activity taking place in ports and can originate oil spills in this area. This kind of pollution and its fate and distribution can create potential harmful effects on the environment (water quality and sediments quality), health (human and wildlife) fisheries and recreational pursuits. The persistent toxic constituents of fuel, such as heavy metals, can become stored in the sediments and taken up into the food chain affecting the whole ecosystem.

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8. Hazardous cargo

Storage of hazardous & dangerous cargo may result in specific environmental risks dependant on the physical- chemical characteristics of the chemicals stored; the method of storage, the location, size and management of the storage site. Dangerous cargo, their properties, stowage and storage requirements are given in the 'International Maritime Dangerous Goods Code' (IMDG) published by the IMO.

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PORT OF RIJEKA

Incorporating **Susak** and **Bakar**.

AUTHORITY Harbour Master: Capt. _____, Tel: 214-031, Fax: 211660, VHF 10.

Rijeka Port (Traffic) Control: VHF 09 (MMSI - 002383500), Tel. 333-600, Fax: 331-295

LLOYD'S AGENT Jadroagent, Koblerov trg 2, (PO Box 120), 51000 Rijeka, Tel: (385 51) 338759, Fax: 213-616, E-mail: lloyds@jadroagent.hr

P & I Correspondent Jadroagent - Rijeka, Tel: + 385 51 213-787 (AOH 515-023) Fax: 215-357 E-mail: pandi@jadroagent.hr

DOCUMENTS**ETA**

APPROACH Well sheltered harbour, anchorage outside good and safe. Breakwaters 1.754 and 420m. Width of entrance 270 m, width of entrance to Susak Basin 43 m. Depth at entrance 40 m, in mid-harbour 20 to 28 m, at quays 6 to 10 m. Bay of Bakar, 4.700 m long, 700 m wide, average depth 26 m, at entrance 44 m. Entrance to Bay of Bakar is 400 m wide. Max tidal range is 1,2 m.

ANCHORAGE Depth 30 - 50 m, muddy bottom. However, during NNE gales (in winter) a vessel could be forced to leave anchorage and seek shelter under the lee of the nearby island Krk.

Cargo vessels with non-dangerous cargo may anchor in an area limited by:

W anchorage:

a) 45° 20,0' N; 14° 22,7' E **b)** 45° 19,5' N; 14° 24,6' E **c)** 45° 17,1' N; 14° 21,3' E **d)** 45° 17,5' N; 14° 20,0' E

E anchorage:

a) 45° 19,3' N; 14° 25,3' E **b)** 45° 18,4' N; 14° 28,5' E **c)** 45° 15,1' N; 14° 27,1' E **d)** 45° 16,4' N; 14° 23,2' E

Tankers and vessel carrying dangerous cargo may anchor inside the following area:

a) 45° 17,8' N; 14° 28,2' E **b)** 45° 16,2' N; 14° 31,9' E **c)** 45° 14,2' N; 14° 29,4' E **d)** 45° 15,1' N; 14° 27,1' E

PILOTAGE Harbour pilotage is compulsory for vessels over 500 GT. Boarding place within the area between:

45° 20' N - 14 E, 45° 17'5 N - 14° 20' E, 45° 14'1N -14° 29'4 E, 45° 16'1 N -14 E. If required, a pilot is available at Rijeka for all ports of the Croatian coast. Coastal pilotage according to agreement. Pilotage on VHF Channels 12.

Rijeka Radio call sign 9AR, 500 kHz., Radio telephone on 2 m band covering area of N Adriatic sea or by VHF Channel 16.

WEATHER Prevailing winds SE and NE.

ACCOMMOD Accommodation for 35 ocean-going vessels and a number of smaller coasters. Harbour comprises four basins: **Rijeka** port basin, 2.545 m wharfage, 5 m to

12.80 m depth, for general cargo, phosphates, grain and cereals, ore etc. and includes on its eastern part several berths exclusively for small passenger vessels and on its western part the petrol port for coastal tankers; **Susak** port basin, 2.400 m wharfage, 5,5 m to 12 m depth, for timber, general cargo, containers, ore, etc; **Bakar** port basin, average depth 26 m, a bulk cargo terminal for discharging iron ore, bauxite and coal, also one berth for discharging general cargo and loading vehicles, and oil refinery terminal for loading refined products; **Rasa** port basin, consisting of Brsica timber terminal, 164 m long wharfage, 10 m depth; **Urinj** tanker terminal for discharging crude oil and loading virgin naphtha.

Length of rail track 20 km. Electric lights for night work. Rail connections with Central Europe, Italy and the Balkan Peninsula.

STORAGE Covered surface storage of 113.000 m² for general cargo, 53.000 m² for timber, open storage of 150.000 m². Tanks for discharge of vegetable oil of 3.600 m³. A 57.000 t capacity silos for grain and soya storage with 5.000 t/day unloading rates. Phosphate terminal cap. 15.000 t.

CRANES Floating cranes, for heavy lifts, one of 30 t and one of 100 t cap. One bridge crane of 300-325 t cap available under special arrangement. 43 mobile cranes lifting up to 32 t, 130 fork lifts up to 12 t, and 64 electric cranes up to 5 t.

WATER Available.

CONT_RORO Container terminal at Brajdica (Susak basin) 40.000 m² storage area: 1 quay 163 m long, 56 m wide ro/ro ramp, 10-12 m d. equipped with 1/35 t portal crane. 1 quay 244 m long, depth 11 m, equipped with 3/40 t portal cranes. Additional equipment: 1/50 t straddle crane, 1/ 35-45 t side loader and tugmasters for ro/ro trailers. Facilities for REEFER containers available.

BULK Bulk cargo terminal in Bakar Basin; one 300 m long, berth, 18.5 m depth, for vessels up to 150.000 DWT, unloading iron ore, bauxite and coal. Two shore unloaders, 1/16 t and 1/45 t cap. Stockyard capacity 400.000 t. Max d 17.5 m for vessels up to 300 loa, otherwise 15.5 m d. Max height to hatch covers 16 m.

TANKER Bakar basin, four jetties for tankers loading derivatives. Depths up to 9,50 m alongside and up to 11.5 m when vessels bow is at anchor and stern moored at jetty. At Urinj one berth for tankers loading virgin naphtha only. Tankers moor stern to quay, heading SW, 70-100 m from shore, 17 m depth marked by two buoys.

LIQ_GAS A berth for loading LPG situated at Srsica, near Urinj tanker terminal is 68 m long with 10 m depth alongside and can accommodate vessels up to 4.500 DWT. Loading rate is approx. 200 t/hour through a 6" flexible hose.

SLOP At present one shore tank (2.000 GMT capacity) for oily/ballast water at Bakar Petrol berth of INA (Refinery Rijeka) only for tankers. Discharging through one 12" line at 200-300 CBM/h rate.

M/T ECOMAR capable to collect 1.000 MT. of oil residues & ballast/bilge water directly from ships and discharging it later on to shore tank at Bakar Petrol berth.

GARBAGE First removal of food waste is compulsory. Advance notice for removal of other kinds of waste required.

BUNKERS IFO 380/180 CTS, MDO and GO available, Delivery by barge.

PROVISION ISSA members available.

REPAIR All kinds of repairs; floating docks for vessels up to 65.000 DWT. Shipyard [Victor Lenac](#) operate two floating docks of 24.000 t (201,5m) and 12.000 t (165m) lifting capacity. A floating crane of 100 t. Shipyard Kraljevica operate two floating docks of 8.500 t (155x23,4m) and 1.100 t (64x12,8m).

TOWAGE 8 tugs from 1.030 kW to 2.220 kW, equipped for fire fighting.

MEDICAL All kinds available.

AIRPORT Rijeka Airport, on the Island of Krk 28 km from Rijeka, [Zagreb](#) - 190 km.

WORKINGhrs Monday to Friday 06:30-14:30, 14:30-22:30. Overtime 22:30-06:30 usually arrangable. Timber operations normally during first shift only, 06:30-14:30. Saturday and Sunday overtime.

TRAFFIC

1994 - 3.585.501 t of dry cargo and 7.486.577 t of crude oil/derivatives.

2007 - 5.623.375 t of dry cargo and 7.588.889 t of crude oil/derivatives

Port of Redwood City
San Francisco Bay

Port Berthing Facilities

■ Wharves No. 1 & 2

- Overall length 855 feet.
- Depth alongside 34 feet (MLLW)
- Ship unloading conveyor of 800/1000 tons per hour.
- Bulk cement pipeline and hoppers.
- Adjacent to 30,000 sq. ft. transit shed.
- Bulk cement and general cargo

■ Wharves No. 3 & 4

- Overall length 450 feet, plus additional berthing of 280 feet with dolphins.
- Depth alongside 34 feet (MLLW).
- Reinforced concrete pile and deck.
- Ship loading conveyor of 300 tons/hour.
- Open upland area for marshaling/storage.
- Scrap metal and dry bulk cargo.

■ Wharf No. 5

- Overall length 500 feet.
- Depth alongside 34 feet (MLLW).
- Reinforced concrete deck.
- Petroleum pipeline.
- Adjacent to paved area and storage tanks.
- Petroleum and liquid bulk products.

■ Additional Facilities/Services

- All wharves lighted for 24-hour operation.
- Electric, telephone and water hookups.
- U.S. Coast Guard certified oil waste reception facility.
- Handling equipment: 25-ton mobile crane, tractors, and forklifts.

Shanghai Pudong International Container Terminals Ltd (Waigaoqiao Phase-1 Terminals)

Shanghai Pudong International Container Terminals Limited is a joint-venture established on March 1, 2003 and invested by Shanghai Waigaoqiao Free Trade Zone Stevedoring Co., Hutchison Ports Pudong Limited, COSCO Pacific (China) Investments Limited and COSCO Ports (Pudong) Limited.

Shanghai Pudong International Container Terminals Limited is located on the south bank of the Yangtse River, in Area A of the Waigaoqiao Free Trade Zone, and adjacent to the Outer Ring Road, Yanggao Road and the Hu-Chong-Su (Shanghai-Chongming-Jiangsu) Cross-River Project which is under preparation for construction. The Terminal has a total quay length of 900 meters, and its three container berths are able to accommodate the fifth and sixth generation container ships. Its land area is 500,000m² with a container yard of 8,200 flat container slots capable to stack 30,000 TEUs at the same time. Furthermore, special purpose areas for reefer containers and dangerous cargo containers and a container stuffing and stripping shed have been set up. It is a modernized container terminal with perfect facilities and functions.

The well-equipped and technology-intensive Shanghai Pudong International Container Terminals Limited has 147 machinery and equipment of various kinds, including 10 quay cranes, 36 RTGs, 73 container trucks and 11 forklifts. It is one of the modernized container terminals with high-tech content in China, through technological development and innovation, it employs advanced systems in the operation of containers such as CTMS real-time production, marshalling and controlling of the container trucks of the whole yard, handling of containers with the same multiples and the intelligent container yard. The Company provides the shipping lines and its customers with tailor-made quality service by the establishment of a safe, convenient, economic and reliable service platform.

The Port of Southampton is situated on one of the world's finest natural harbours, with a maximum tidal flow of only 2 knots and a maximum tidal range of 4.5 metres. By virtue of its unique "double tide", Southampton's harbour enjoys 17 hours of rising water in every 24 hours. Seaward access is gained either via the Nab, to the East of the Isle of Wight or via the Needles to the West. The deep water channel from Fawley to the Container Terminal is maintained to a depth of 10.2m below Chart Datum. Owned and managed by Associated British Ports the Port of Southampton is one of the largest and most diverse ports in Europe, handling 55,000 commercial vessel movements and 34 million tonnes of cargo each year. Its natural deep-water harbour and unique double tide allow unrestricted access for the world's largest vessels. and has long been the UK's principal cruise port, handling almost half a million passengers in recent years.

The operations room of the **VTS (Vessel Traffic Service) Centre** is situated at 37 Berth in Southampton's Eastern Docks and is continuously manned 24 hours a day by a minimum of three people, comprising one VTS Officer and two VTS assistants. A pilot officer is also present in the room controlling pilots and pilot boats. The VTS operations and information service covers the Solent and Southampton Water, excluding the port of Portsmouth north of a line between Gilkicker Point and Horse Sand Fort, and involves the monitoring and co-ordination of shipping movements. By using four radar scanner's, its radar service extends from the East Lepe buoy, Western Solent to No Mans Land Fort in the Eastern Solent. In practice, however, because of a scanner located at Eastney the radar coverage is more extensive and continues beyond the Nab Tower in the East. The station maintains a listening watch on VHF channels 12, 14 and 16. VHF CH12 is the principal working frequency for communication with VTS, as well as inter-ship communications throughout the area. Harbour radar information and selected harbour operations work of the VHF channels 14 and 20. All vessels over 20m LOA must maintain a listening watch on channel 12 when in the area.

As well as being a World-class hub port for containers and new vehicles, Southampton handles a wide range of other trades including cruise ships, grain and agribulks, fruit and fresh produce, liquid bulks and project cargoes. It has specialist facilities dedicated to handling particular trades, and spacious covered accommodation and extensive open areas with 25 quayside cranes of up to 35 tonnes capacity. Southampton is the UK's number one vehicle-handling port, handling approximately 750,000 vehicles a year. Regular calls are made by all major ro-ro ship owners, with services to the Middle East, the Far East, Australasia, the Mediterranean, USA, Africa, Continental Europe and the Baltic states. and has of the UK's first port-located multi-deck car terminals. The current operational port estate, owned and operated by ABP, covers an area of 680 acres, and is divided into two sections: the Eastern and Western

The Eastern docks at the confluence of the Rivers Test and Itchen was the first area to be developed, the foundation stone for the modern docks being laid in

1837. Unusually, the port developed upstream, Has one of the UK's first port-located multi-deck car terminal covering approximately one hectare, providing almost 5 hectares of storage for up to 3,120 cars on five levels at Berth 34. Southampton is the UK's premier cruise port, handling almost half a million passengers. In 2003, Southampton handled in excess of 200 cruise calls. It is the home port to all of P&O's and Cunard's UK cruise vessels, and is regularly chosen by cruise lines for the promotion of their new vessels and for the hosting of naming ceremonies. The picture left shows part of the Eastern docks showing the large area allocated to the shipping of vehicles.

The Western docks were reclaimed from the sea and developed in the 1920s. The most recent phase of development, at the far Western end of the port estate, is the Container Terminal, built in the 1960s. Southampton's four-berth container facility is operated by Southampton Container Terminals (SCT). It is the second largest container operation in the UK, with the majority of the trade with the Far East. There is also a dry dock facility which can accommodate all but the very largest ships. The picture to the left shows a busy day at the Western Docks.

PORTSMOUTH The Queens Harbour Master QHM is responsible for the monitoring and co-ordination of all shipping movements for vessels of 20 metres LOA or over, North of a line joining Gilkicker Point and Horse Sand Fort Light. Although QHM's area extends south of this line, the VTS in that area is delegated to ABP Southampton by private agreement. QHM Harbour Control maintains radar coverage of the Eastern Solent including the Portsmouth Harbour Approach Channel. A continuous listening watch is maintained on VHF Ch11 and 13, Ch11 being the primary channel for the co-ordination of shipping movements entering and leaving Portsmouth. Ch13 is normally used by the naval tugs and to control naval movements within the naval base, but on occasion QHM may authorize its use in the event of Ch11 being busy. All vessels over 20m in length underway in Portsmouth Harbour and remaining north of a line joining Fort Gilkicker and Horse Sand Fort are to maintain a continuous listening watch on VHF Ch11, they must also request permission from QHM before moving within the Harbour or leaving their berth. Harbour Control is situated at Semaphore Tower adjacent to the South Railway Jetty (SRJ). Weather, VHF, Radar and CCTV, are recorded and can be archived for later use in investigations.

SOUTHAMPTON VTS 1-All vessels in excess of 20 metres in length, bound to or from or passing through the Port of Southampton, vessels bound to or from or passing through the Dockyard Port of Portsmouth and vessels bound to or from anchorages or other locations in the Solent are required to communicate by VHF with Southampton VTS. 2-All vessels in excess of 20 metres LOA entering the East Solent are required to report to Southampton VTS on VHF Channel 12 when 10 miles from Nab Tower. When leaving the East Solent vessels are required to report to Southampton VTS Channel 12 when passing latitude 50 degrees 40 minutes North giving their position as a distance East or West of Nab Tower. 3- Vessels proceeding to an anchorage for shelter in the Solent or for subsequent berthing, must report to Southampton VTS when anchored, together with their approximate position. Whilst at anchor vessels must maintain a listening watch on VHF Channel 12. 4-Vessels leaving a sheltered anchorage must also report, at

least 30 minutes before getting underway, and must advise Southampton VTS of their intended destination and route. 5-Vessels outbound from the Port of Southampton should establish communications at least 30 minutes prior to leaving berth and obtain permission from Southampton VTS before letting go. 6-Vessels clearing Portsmouth Harbour should establish communications with Southampton VTS when passing Southsea War Memorial.