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Head Office: Kotohira-Kaikan Bldg. 2-8, Toranomon 1-chome, Minato-ku Tokyo 105, Japan Tel.: TOKYO (591) 4261 Cable: "IAPHCENTRAL TOKYO" Telex: 2222516 IAPH J

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The Cover: Port of Bremerhaven

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IAPH announcements and news

Board approves the agenda for the 14th Conference

As a result of the meeting by correspondence of the Board of Directors held on April 4, the agenda for the 14th biennial conference has been finalized. It is the same as that outlined in the previous issue of this journal as the "provisional agenda."

Nominating Committee Members to be appointed by the Board

On the authorization of President Tozzoli and in accordance with the provisions of the By-Laws of the Association, Secretary General Sato sent a letter to the Board on March 13, 1985 to call a meeting by correspondence on April 15, 1985, to deliberate the membership of the Nominating Committee, a conference committee, for the 14th Conference in May.

Section 38 of the By-Laws of the Association provides that a Nominating Committee of nine members, composed of three members from each of the three regions, appointed by the Board of Directors, shall prepare the nominations of the offices of President, First Vice-President, Second Vice-President and Third Vice-President of this Association for the next term and present them to the Board Meeting.

The Board shall further present the nominations to a plenary of the Conference. At the Hamburg Conference, the Nominating Committee is scheduled to meet on Sunday, May 4, 1985, from 16:00 to 17:00.

The nominations thus proceeded will be reported and duly acted upon at the Second Plenary (Closing) Session on Friday, May 10, 1985.

The following individuals, whose participation in the Hamburg Conference has reportedly been confirmed, were proposed to the Board for their appointment to serve on the Nominating Committee.

African/European Region

Mr. J. Dubois, Port of Le Havre, France

Mr. J. Mather, Clyde Port Authority, U.K.

Dr. K.L. Mönkemeier, Port of Hamburg, W. Germany

American Region

Mr. F. Gingell, Fraser River Harbour Commission, Canada

Mr. W. Greene, North Carolina State Ports Authority, U.S.A.

Mr. A.J. Tozzoli, Port of NY & NJ, U.S.A. (As Chairman)

Asian Region

Mr. M.I. Arshad, Karachi Port Trust, Pakistan

Mr. T. Hirota, Ministry of Transport, Japan

Mr. R.T. Lorimer, Auckland Harbour Board, New Zealand

Bursary recipient announced

Mr. J.K. Stuart, Chairman of the IAPH Committee on International Port Development, announced that he has approved a bursary for Mr. Lepani Tule, Stevedoring Plannning Officer, Ports Authority of Fiji, to attend the port management and operations course at the Port of Singapore Authority for the period 1-19 July 1985.

Secretary General Sato has completed the remittance to the organizations involved, namely his course and accommodation fees to the Training Manager of the PSA and the travel expenses to the Personnel & Industrial Relations Manager of the PAF.

PSEC Committee completes the new version of ``Guidelines on Port`Safety and Environmental Protection''

The IAPH Committee on Port Safety, Environment and Construction (PSEC), currently chaired by Mr. J. Dubois, Director General, the Port of Le Havre Authority, has recently completed the new version of the "Guidelines on Port Safety and Environmental Protection."

The Committee was established under the name "Committee on Large Ships" at the 5th Conference of IAPH, held in Tokyo in 1967. At the 12th Conference held in Nagoya, in 1981, it was given its present name to describe more appropriately its wide-ranging work, and at the same time it was divided into 5 sub-committees. The Committee has been led by a total of six chairmen and served by numerous able people, all of whom have participated in the task of producing the Guide.

The long endeavors of the Committee have finally culminated in the new version of the Guide, which covers a host of topics such as topographic, geographic and climatic criteria, safe navigation and protection of local environments. It is the Committee members' wish that the Guide should be of assistance to Port Authorities in their efforts to determine and perform their tasks in a professional way, and that Port Authorities may find it useful as they face some of the main problems which tend to arise in relation to Port Safety and Environmental Protection.

The Guide is divided into 4 sections:

- Section 1: The Port Authority
- Section 2: Nautical Functions
- Section 3: Landlord Functions
- Section 4: Miscellaneous

The Guide will be made available to all participants at the Hamburg Conference, and those who cannot participate in the conference will receive it in a binder from the Head Office after the event.

Visitors:

On the morning of March 11, 1985, Mr. Henry G. Joffray, Assistant Executive Port Director, and Mr. Joe Knecht, Commissioner of the Port of New Orleans, accompanied by Mr. Hiroyuki Matsumoto, Managing Director-Far East of the Port, visited the Head Office and were welcomed by Dr. Hajime Sato, Secretary General, and his staff. They were visiting as members of the Port of New Orleans and Louisiana Industrial Mission to Japan.

(Continued on page 12)

Moderators and Speakers of the Working Sessions finalized for the Hamburg Conference

Working Session I

14:30/17:30, Monday, May 6

The Requirements of Ports in Developing Countries

The existence of an efficient ports sector, with adequate and appropriate port facilities, often has a vital role for the achievement of satisfactory patterns of economic activity, and nowhere more so than in developing countries. Developing countries can still afford capacity shortages, congestion and other port problems with their negative impact on trade volumes, the balance of payments and economic growth. At the same time, capital for investment – whether in the port sector or elsewhere – is scarce in many developing countries.

This means that there is a vital need to ensure that the best possible use is made of existing port facilities. There is similarly a vital need to avoid wasteful investment, and to ensure that port investment is appropriate in its timing and scale, and in relation to technological and commercial changes in shipping and transportation.

These matters have implications for various aspects of port development and of port management, operation and training.

This session — which will be taken wholly in plenary form will consider the problems from two standpoints:

There will be a paper on the needs of developing country ports: and a paper on the scope for inter-port cooperation, especially in the context of IAPH.

- Moderator: Mr. J. Keith Stuart, Chairman, Associated British Ports, London, U.K.
- Speakers: Mr. V.R. Mehta, Asian Development Bank, Manila, Republic of the Philippines – Mr. P.C. Bakilana, General Manager, Tanzania Harbours Authority, Dar es Salaam, Tanzania

(Other speakers will be named on the list of participants.)

- Presenter of Mr. Anthony J. Tozzoli, Director, Port Summary: Department, Port Authority of New York & New Jersey, New York, U.S.A. (President of IAPH)
- Recorder: Mr. Eric Pollock, Associated British Ports, London, U.K.
- Assistant: Mr. H. Schröder, Port, Shipping and Transport Division, Hamburg, Federal Republic of Germany

Working Session II

09:00/12:00, Tuesday, May 7

The Role of Communication in Ports

The introduction of advanced technology in transport has led to very short ship turnaround times in port, notwithstanding increases in the volumes of cargo handled. The tasks and aims of communications, information and administration within the ports have considerably changed. In addition, it has been necessary to change and improve structures of organisation. How can and how should the introduction of electronic data processing influence discharging and turnaround times in ports with different degrees of technical development? Are international regulations necessary? How can the chain of transport facilities and services be supplemented by information links, the ports having an interface function?

Answers to these and similar questions will be considered in a symposium. Three papers will deal with different aspects and will put forward points of view for discussion. The way of working that has been chosen will make possible both a broad overview, and a many-faceted discussion.

- Chairmen: Mr. Jean Francois Soupizet, Director of Policies, Intergovernmental Bureau for Informatics IBI, Rome, Italy
 - Dr. Hanspeter Stabenau, Director, Deutsche Auβenhandels – und Verkehrsschule, Bremen, Federal Republic of Germany
- Moderator: Dr. Reckel, Zentralverband der elektrotechnischen Industrie, Frankfurt/Main, Federal Republic of Germany
- Speakers: Dr. Dieter Lazak, Siemens AG, Munich, Federal Republic of Germany
 - Mr. Helmuth F.H. Hansen, Executive Director, Port of Hamburg, The Representative, Hamburg, Federal Republic of Germany
 - Mr. Curtis, Trieste, Italy
 - Dr. Christoph Seidelmann, Studiengemeinschaft f
 ür den kombinierten Verkehr, Frankfurt/Main, Federal Republic of Germany

(Other speakers will be named on the list of participants.)

- Recorder: Mr. John Mather, Managing Director, Clyde Port Authority, Glasgow, U.K.
- Assistant: Mr. Heiko Meyer, Datenkommunikationssystem GmbH, Dakosy, Hamburg, Federal Republic of Germany

Working Session III

14:00/17:00, Wednesday, May 8

Free Ports: Preconditions, Systems, Importance

As long as tariffs and other trade restrictions adversely affect world trade, Free Ports and other Free Trade Zone systems will have considerable economic importance. In many parts of the world, they are part of an infrastructure which both reflects past patterns of historical development and present day commercial requirements. The number of such institutions is increasing. What example does Hamburg provide? What are the different systems? What advantages and disadvantages do they provide for ports in differing regions?

Questions like these will be discussed in a symposium. After a brief summary by an expert speaker, there will be discussions on specific matters between participants in the Working Session and specialists on particular aspects. The chosen method of working will make possible a broad overview and a many-faceted discussion.

- Moderator: Mr. Robert L.M. Vleugels, Director General, City of Antwerp - General Management of the Port, Antwerp, Belgium
- Main--Prof. Dr. Ernst G. Frankel, Ports and Avia-
speaker:speaker:tion Adviser, Transportation Depart-
ment, The World Bank, Washington D.C.,
U.S.A.
- Speakers: Mr. Hans Rebhan, Head, Free Port Office Hamburg, Federal Republic of Germany
 - Mr. Yahya bin Haji Abdul Ghani, General Manager, Johor Port Authority, Johor, West Malaysia
 - Dr. Dean Spinanger, Institut für Weltwirtschaft, Kiel, Federal Republic of Germany

(Other speakers will be named on the list of participants.)

- Recorder: Ms. Christel Heideloff, Institute of Shipping Economics, Bremen, Federal Republic of Germany
- Assistant: Dr. Wolf-Dietrich Eggert, Strom-und Hafenbau, Technical Port Administration, Hamburg, Federal Republic of Germany



In the middle of this metropol is the Alster broadens out into an extensive lake on which at all times of day the Hamburgers indulge in aquatic sports of all kinds.

Working Session IV

09:00/12:00, Friday, May 10

Men in Ports — Aims, Training, Working and Labour Relations

While the technical equipment of many ports becomes more and more similar, the conditions in which men work in them depend on widely differing factors. Communications and modern technology impose high requirements for qualifications on the part of the workforce. Good training gives rise to improved work opportunities, and contributes to social stability. Speed of working and safety at work are further important aspects of port work where big changes have been or are about to take place. What are the working conditions in different ports? How is training carried out today, and what qualifications will be needed in the future? What are the effects of strong technical change?

After a general introductory paper, specific questions relating to these matters will be discussed in small working groups. Each working group will have the services of a moderator, who will report on the content matter and the conclusions of the group's discussions in a plenary sitting to all participants in the Working Session.

Moderator:	- Mr. Jacques Auger, President & Chief Ex-
	ecutive Officer, Canada Ports Corpora-
	tion, Ottawa, Canada

Main – Mr. Bartolome N. de Boer, International speaker: Labour Office, Geneva, Switzerland

Working-Group I:

- Moderator: Mr. Mohamed Tijani Azzabi, Conseiller du Ministre des Transports et des Communications, Tunis, Tunesie
- Speaker: Mr. Akio Hagiwara, Chief, Port Facilities Division, Port and Harbour Bureau, Yokohama, Japan

Working-Group II:

- Moderator: Mr. Philip Okundi, Managing Director, Kenya Ports Authority, Mombasa, Kenya
- Speaker: Mr. Heiner Bögemann, Managing Director of Bremen, Training Center, Bremen, Federal Republic of Germany

Working-Group III:

- Moderator: Mr. Wimal Amarasekera, Chairman & Chief Executive, Sri Lanka Ports Authority, Colombo, Sri Lanka
- Speaker: Mr. R.T. Lorimer, General Manager, Auckland Harbour Board, Auckland, New Zealand

Working-Group IV:

- Moderator: Mr. Michael Borgwardt, Director, Hamburg Port Training Center, Hamburg, Federal Republic of Germany
- Speaker: Mr. Jürgen Stelling, Member of the Board of Executive Directors, Hamburger Hafen und Lagerhaus AG, Hamburg, Federal Republic of Germany
- Recorder: Capt. Wolfhard H. Arlt, Managing Director, Hamburg, Port Training Institute, Hamburg, Federal Republic of Germany
- Assistant: n.n., Hamburg Port Training Center, Hamburg, Federal Republic of Germany

Accompanying Persons' Programme of the IAPH Conference in Hamburg:

A Stroll through the History of Hair and Beauty Care A contribution by the firm of SCHWARZKOPF in Hamburg

Only a few weeks remain before the World Port Conference gets under way in Hamburg – for the very first time, from May 4 - 11, 1985. The City of Hamburg will be host to hundreds of delegates and those accompanying them. A pleasant but demanding task! Only if Hamburg succeds in presenting to these visitors from all over the world the beautiful, interesting and sometimes unique sides of Hamburg life (besides seeing to it that everything at the Conference goes off smoothly) will the visitors to Hamburg go home with pleasant memories of the city – something which the city does indeed deserve.

In order to achieve this goal, many helpers from the public and private sectors are needed. The Hamburg firm of Hans Schwarzkopf GmbH wants to play its part in this, too. As the official IAPH Programme shows, many of the IAPH Committees will be getting down to work during their very first weekend in Hamburg. So we thought it would be a good idea to invite all the people accompanying these delegates to join us on Sunday, May 5 for a trip out to Steinhorst, a small place around 40 km north-east of Hamburg. There, an interesting exhibition will await the party in the Mansion of Schwarzkopf.

The Mansion of Schwarzkopf

The Schwarzkopf Collection is dedicated to the beauty care of man, a sphere of daily life that played an equally important role in Antiquity as in our times. The tools of five millenia often tell more vividly of manners and customs, social and political conditions than many other objects of the heritage of our ancestors. A Roman dressing table gives evidence of the vanity of the Roman woman, the Etruscan balm vessel of the custom to deposit cosmetic articles with the corpse in a grave.

Flee traps, scent bottles and phials originate from the 18th century when body odour was covered with powder, grease-paint and perfume as people were afraid of water. Surgical bleeding bowls and cupping glasses were part of the barber-surgeon's tools. The wig-makers were also organized in guilds which became later the hairdressers' trade. Preci-



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ous combs, caricatures, wigstands and powder brushes tell of the hair fashion of ancient times. Beauty care as part of common life is an achievement of our century. Phials and toilet suites of Art Nouveau and the 20 testify to this.

All these treasures are housed in an equally remarkable building.

Built in the early 18th century, Steinhorst Mansion experienced an eventful history. As a result of its most varied utilisation, the building's condition suffered continually over 250 years. Only when the baroque mansion was taken over by Hans Schwarzkopf GmbH were the foundations laid for a comprehensive restoration, and Steinhorst Mansion regained its former attractiveness. It is now used as training and education centre, as seat of the Duchy of Lauenburg Foundation and, last but not least, as base of the Schwarzkopf Collection.

We hope that our invitation will arouse a great deal of interest, particularly amongst the accompanying ladies. We will pick up our guests from the Congress Centrum Hamburg in the late morning of May 5 and bring them back again in the afternoon.

Please register for this trip as soon as possible with the organizers of the whole event: Hamburg Messe und Congress GmbH, P.O. Box 30 24 80, D-2000 Hamburg 36. We are looking forward to your visit!



Next to the Museum of Hamburg History (where the IAPH Reception will be held on the evening of Sunday, May 5), in the gardens along Holsterwall, stands this gateway arch built in 1617. In the background the skyscraper at Millerntor, the entrance to the Reeperbahn.

"Discover Hamburg" Programs

Hamburg is a lot more than one of the world's great ports. It is one of the world's great cities as well.

Wide expanses of green provide relaxing havens amid the daily bustle and there's jewel of a lake right downtown. On fine days the glittering Alster Lake is dotted with hundreds of white sails as boats make their lazy way - a veritable feast for the eyes.

There are dozens of fascinating places to go and see.

To help all those who are accompanying delegates and participants to the 14th World Port Conference May 4-11 to discover and enjoy Hamburg, the organizers have arranged a variety of tours and programs.

These are some of the highlights:

There's a three-hour grand tour of the city. It takes visitors through the main shopping streets, along the elegant Jungfernstieg, around the Alster Lake for a look at the Rathaus (City Hall), to some of the quaint old streets where houses have been beautifully restored, and on to St. Michael's Church, the traditional landmark for seafarers as they come into port.

Then, it's off for a glimpse of the famous St. Pauli night life district. There's a coffee break at the elegant Alsterpavillon right on the Lake.

An all-day tour takes visitors to surrounding Schleswig-Holstein, where clusters of red brick houses nestle in the rolling pastures of one of Germany's most important agricultural regions. The countryside is livened by rivers and lakes. Highlight of this tour is s cocktail reception and chamber music performance in one of Schleswig-Holstein's stately old Manor houses.

For those who want a behind-the-scenes-view of the harbor, a special motor launch cruise is the thing. It takes visitors for a close-up of the giant ocean vessels, past dry docks, shipyards and warehouses, and out on the Elbe River, Hamburg's link to the North Sea. Parks line the river's banks and lovely residences perch on the sloping terrain – a very pleasing backdrop for this tour.

Those interested in history will enjoy a tour to the Kiekeberg Museum. The route there leads through the Free Port area, over the famous Köhlbrand Bridge. Kiekeberg is an open air museum with typical farm scenes of yesteryear. 13 buildings have been carefully restored. They date back to the 17th and 18th centuries.

Home-made dark bread and fresh farm butter will be served for a coffee break at a nearby rustic restaurant.

One of the most attractive ways to see Hamburg is on a leisurely cruise aboard one of Hamburg's gleaming white Alster boats. The tour starts from the Alster Lake's Jungfernstieg terminal. The boats travel the winding canals past elegant old villas contrasting with modern edifices, and perfectly groomed parks and gardens. Along many of the canals, vegetation is allowed to grow naturally, making it easy to forget that the big city is only a short step.

Here's the tour schedule:

- 1. Sightseeing Monday, May 6 14:30 to 17:30
- Schleswig-Holstein Tuesday, May 7 8:30 to 17:30
- 3. Harbor Cruise Wednesday, May 8 09:00 to 11:30
- 4. Kiekeberg Museum Friday, May 10 09:00 to 12:00
- 5. Lake and Canal Boat Tour Friday, May 10 14:00 to 16:30

Early booking is recommended by the organizers.



Mansion house of Steinhorst in Herzogtum Lauenburg constructed by a Hamburgian architect, Johan Nikolaus Kuhn, for the landlord Gottfried von Wedderkip. It is said that this is a typical example of Barroque architecture in Schleswig, Holstein.



The sculpture "Children with a Kite" by Gerhard Branders in the Alster Park.

IMO Sub-Committee on Fire Protection

The Sub-Committee on Fire Protection held its thirtieth session from 4-8 February 1985 under the Chairmanship of Mr. A.van der Wouden (Netherlands). The session was attended by thirty-three representatives from Member States and eight observers from non-governmental organizations, including IAPH.

The issues dealt with by the Sub-Committee are highly technical and often complex. The subject matter however is of particular interest to ports. The damage potential to life and property arising from defective procedures and equipment used in port operational situations, is obviously at a high level. For that reason, IAPH has been concerned to be closely involved in, and identified with, the development of safe working practices to accord with the Sub-Committee's objectives. The Sub-Committee, on this occasion, dealt with three activity areas which IAPH has regarded as being of particular importance.

IAPH has recently written to IMO's Secretary-General on the dangers of using low flashpoint cargo oil as fuel contrary to the 1974 SOLAS Convention (MSC/Circ. 347). It is therefore gratifying to report that the Sub-Committee amended the text of a draft resolution on the subject for approval by the Maritime Safety Committee and adoption by the 14th Assembly. IAPH members should be encouraged to press their respective Governments to support the text of the resolution.

Visitors (continued from page 7)

On March 26, 1985, Mr. J.C.S. Horrocks, Secretary General, International Chamber of Shipping (ISC), visited IAPH Head Office and was welcomed by the Secretary General and his staff. He was accompanied by Mr. Hideo Usami, Managing Director, Japanese Shipowners' Association.

Mr. Horrocks indicated that ICS will send a representative to the Hamburg Conference who will participate in the meetings of the Committee on Port Safety, Environment and Construction as well as the Committee on Legal Protection of Port Interests, which are scheduled for Saturday and Sunday, May 4 and 5. The representative will also attend the Opening Ceremony on Monday, May 6, in Hamburg.

Membership Notes

New Members

Associate Member

Korean Register of Shipping (Class A)

738-5, Seocho-dong, Gangnam-ku, Seoul, KoreaOffice Phone:(02) 582-6001Telex:KRSHO K27358Cable:KRS HEAD OFFICE(Mr. S.J. Kim, Chairman and President)

A great deal of time was spent by the Sub-Committee and a Working Group in discussion of standards for inert gas systems for chemical tankers and gas carriers when carrying flammable liquids other than petroleum products. It was concluded that the requirements for inerting in the International Bulk Chemical Code vary in philosophy from those in chapter 11-2 of the 1974 SOLAS Convention and that the requirements in the IBC Code should be considered separately from those of the SOLAS Convention. Furthermore, it was agreed that the requirements for tank environmental control in the IBC Code were developed around individual chemicals or substances and not around the type of ship.

These differences, in the opinion of the Sub-Committee required different solutions. An appropriate draft resolution was therefore prepared for examination at the next meeting of the Maritime Safety Committee.

The Sub-Committee also looked at the possibility of commending the use of the International Safety Guide for Oil Tankers and Terminals (ISGOTT) 2nd Edition, with which IAPH is closely identified, having regard to tank washing procedures in an uncontrolled atmosphere. It was agreed to recommend the Guide for use in association with national regulations. It was also suggested that the authors of the Guide review those parts of the current text which describe tank cleaning procedures in order to eliminate the possibility of misinterpretation and emphasize the need for the procedures to be followed without deviation. The authors agreed. The Sub-Committee then decided not to develop its own guidelines for oil tankers not fitted with inert gas systems.

Temporary Member

Port of Redwood City

475 Seaport Boulevard, Redwood City, California 94063, U.S.A.
Office Phone. (415) 365-1613
Telex: 172251
(Mr. Fred J. Di Pietro, Port Manager)

Changes

BCEOM (France)

Chairman. Mr. Lionel Odier General Manager: Mr. Philippe Segretain

Autoridad Portuaria Nacional (Rep. of Panama)

Director General: Lic. Raul P. Brostella

Aruba Ports Authority N.V. (Netherlands Antilles)

Managing Director: Mr. August Genser

Ghana Ports Authority (Ghana)

Director of Ports Services: Mr. E.A.A. Awuviri

South Louisiana Port Commission (U.S.A.)

Port Director: Capt. Robert G. Egan

The Port of Singapore takes a bow or two.



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Open forum:

The Future of the European Seaports on the Continent

By Dr. L.L. Jolmes, General Manager, Zentralverbandes der Deutschen Seehafenbetriebe

(Reprinted from "HINTERLAND" 123E)

The stimulus for development in world trade emanates from the growth in population, from economic growth and from the development of the international division of labour. In the past world trade was determined to a far greater extent by industrial development than by population trends. This can also be seen from an analysis of the structure of world trade.

World trade development forecasts

It has been extraordinarily difficult to interpret the extent of the development in world trade up to the year 2000 for a number of reasons; if one, however, would assume, that we were to succeed in trebling the world per capita gross national product by this point in time, hereby raising it to the present-day level of the average Western European, then this would mean that world trade, which in its growth to date has been clearly above that of the world economy, would increase along exponential lines.

Even if we start out from the possibility that the international division of labour, especially between the industrial nations, will not change significantly and that the extent of the development in world trade follows the development in the world economy we get a multiplication of world trade by the year 2000 lying at least between the factors of 5 and 10.

But such an explosion in growth leads us to the following questions:

- Will the developing nations themselves process their raw materials to an increasing extent? If so, the raw material fraction of exports will indeed fall, but the volume and value of semi-finished and
- finished goods will rise, so that world trade would still expand.2. Will the industrial countries, because of the inevitable,
- 2. Will the industrial countries, because of the inevitable, worldwide shortage of raw materials increasingly introduce production processes that save on raw materials? If so, the raw materials fraction of world trade will likewise decline, but as its value share is relatively small compared with its volume share, world trade by value would overall probably change only very slightly.
- 3. Will the developing countries succeed, through increased development measures, in taking a greater part in the world economic development by means of industrialisation?

If so, then the inter- and intraregional exchange of industrial products among the developing countries will increase and lead to an increased growth of world trade.

4. Are we to see sweeping strategies aiming at the limitation of economic growth, in order to prevent the collapse of the world system in the next millennium (Club of Rome?).

It is hardly imaginable – because of its sheer impossibility – that perhaps through a world government, which would share that fate of the UNO, there will come about any drastic changes in the philosophy of growth in the next decades. If, however, one would make this assumption, these measures would bring about an adjustment of living standards between the developing and the industrial nations; in this case world trade would receive a powerful stimulus from the development of the developing nations.

In 1974 the following hypotheses were still made:

- 1. The structure and development of world trade is determined predominantly by the foreign trade of the industrial nations.
- 2. As long as the economic forces and growth continue to work in the future as they have to date (status quo projection), world trade will double to treble by 1985 and expand about tenfold by 2000. In doing so, the share of industrial products compared with agricultural products and raw materials would continue to increase.
- 3. Even if the rate of growth of the foreign trade of the industrial nations were to slow down in the next decade, there remains as a possibility of some compensation through greater participation in world trade by the developing countries and those of the Eastern Bloc. Even under these circumstances the relative share of industrial goods in world trade would further rise.

Volume growth in world maritime traffic

Careful studies made in the period 1970 to 1980 assume an average volume growth in world maritime traffic of between 6 and 8%, notwithstanding the fact that the forecasts regarding tanker cargoes were unable to take into account the recent political developments. All longterm forecasts assume any way that the proportion of crude oil traffic would decline in favour of dry cargo traffic.

Some forecasts arrive for the year 2000 at a volume of maritime traffic of 9 to 10,000 m t, implying an average annual growth of 5%, and for the year 2043 a volume of maritime traffic of 35,000 m t, implying an annual growth rate between only 2 and 3%.

It is very questionable indeed when, under a cover of scientific methods, calculations are presented, according to which maritime freight traffic in the year 2003 will be exactly 6,160 m t crude oil and 4,650 m t dry cargo or

13,596 m t crude oil in the year 2043 and 21,454 m t dry cargo. Of course, one must then logically arrive at a world tanker capacity of 280 million B.R.T. in the year 2000 and of 480 million B.R.T. in the year 2040 and at a dry cargo capacity of respectively 200 million and 630 million B.R.T. If we really think that in the year 2043 considerably more than 1,000 million B.R.T. capacity will be in service and in the same year around 35 billion t will be shipped, then we would have to assume that the exchange of goods also takes place with regards to origin, nature and composition as at present. However this is only an assumption and most certainly wholly unfounded!

All estimates concerning the development of world trade by sea in the years and decades ahead are inevitably subject to considerable factors of uncertainty.

What can be done, using facts and development trends that can to some extent be checked, is to make forecasts, which exclude many of the points of uncertainty, in order to arrive in this way at to some extent reliable assertions for the next ten years.

It will not be possible to maintain in the medium and short term the unusually high rates of growth in world trade by sea of recent years. It can be assumed with great probability that world maritime trade will show falling rates of growth over the next 30 years and that the transport of certain goods will not only stagnate but will actually decline.

Those who drew up the above-mentioned forecasts for world maritime freight traffic 50 to 60 years hence also adopted this assumption. If the growth rates of recent years were to be maintained, then almost 20,000 million t of freight would have to be transported across the world's seas in the year 2000, and precisely 395,700 million t in the year 2040 ! Here one forecast only is correct and that is that this will not be so, because, to raise one objection only, 800,000 million t of freight would have to be handled, warehoused and shipped through the seaports of the world in 56 years from now.

Knowing that today more than half of total world sea freight transhipments take place in only some 100 seaports in the world and that in the whole world there are only some 30 seaports that on average in recent years have each handled more than 30 million t per year in international maritime freight traffic and that there is no good reason for any significant decentralisation in the currents of world sea freight, we must conclude that these top estimates of freight volume cannot be handled in the seaports as they are structured and organised today. We must also wonder, for whom these massive quantities of raw materials are to be ordered, shipped and processed and how in fact the already very deeply indebted developing nations in this world can earn additional hard currency for the import of finished goods, which scientists estimate at 10 to 15,000 million t at least for the middle of the next century, even if the developing nations would earn for such vast quantities of raw materials the corresponding amounts of hard currency.

Let us come back to earth!

Future world port developments

On the basis of the following assumptions we can project how world ports will develop in the future:

1. More ports have to be built including the development of the infrastructure, particularly in developing countries with increasing volumes of foreign trade, since in view of a progressing distribution of labour the growing participation in world trade by these countries is a basic condition for the further growth of the developing countries of the world.

2. The improvement or re-equipment of existing ports, including the infrastructure, is essential not only for the creation of the necessary additional capacity, but also because of the need to take into account technological change and the mutations taking place in the structure of general cargo. The improvement of existing facilities will influence the quality factor whereas the re-equipment implies adjustment to innovation as well as the creation of new port activities and diversification of services offered.

In favour of these assumptions plead the following arguments:

- the increasing importance of overseas trade for all countries, particularly for the developing and semi-developed countries although there is bound to be a slackening off of the growth rate in overseas trade, since notwithstanding a growing world population there will be a temporary drop in the growth rate of the Gross World Product.
- continuous structural changes in transportation and cargo-handling technology, not only affecting conventional general cargo with the conversion to containers, for instance, but also the trend towards cargo-handling methods and equipment specifically designed for certain products.
- a partial change in the structure of general cargo trade in an evergrowing number of trade routes and the consequent change in the cargo-handling equipment of the ports affected.
- an increasing number of supplementary port services as regards merchandise handled and equipment required due to changed distribution systems, intensified use of ≪technology≫ and a change in the cargo structure.
- a growing public demand for environmental protection and pollution prevention and the increasing importance of security measures in ports, because of the increasing amount of dangerous cargoes.
- swift changes in administration organisation and communication aimed at rationalising cargo clearance processes as well as speeding up the dissemination of information and reducing the margins of error.
- keen competition between ports in areas of high concentration of industrial activity forcing the ports increase permanently the quality of services offered. Marked technical developments in ports are rather unlikely, since present facilities have hidden away within themselves extensive possibilities for rationalisation and automation.

The infrastructure required for \ll shipping \gg as a transport system, including shipping routes, ports and cargo handling is today, as it will be for the future, inevitably linked with \ll the ship \gg . Furthermore, the following factors should be borne in mind:

- 1. The trend in volumes transported, which leads to an expansion of capacity in waterways and approaches, berths and handling facilities as well as carriers on land.
- 2. The growth in the size of ships which makes necessary a constant extension of approaches, berths and an increase in the capacity of handling facilities.
- 3. The rising demands from shipping companies to mini-

(Continued on next page bottom)

Report on the Status of the Public Ports of the United States

By Maritime Administration, U.S. Department of Transportation

(Excerpts from "A Report to the Congress on the Status of the Public Ports of the United States")

U.S. Ports: The Institutional Setting

In many countries, port affairs are centralized under the direction of a national port authority. However, in the United States, the development of landside port and terminal facilities is a State, local government or private sector function, whereas the Federal Government performs dredging and maintenance of federally-authorized shipping channels, construction of breakwaters and jetties, and provides navigation aids such as channel markers and buoys. U.S. public port agencies are created under State or local charter for the purpose of coordinating the facilities and activities of a port and to ensure its efficient operation.

Port Administration in the United States

Port administration types vary greatly. Some are admin-

(Continued from page 15)

mize days in ports and from shippers for shorter transport times and more specialised handling of the cargo.

In this respect one reaches however very soon the limits of the possibilities. Despite competition between the within ports, the growth of the size of seagoing ships has led to specialisation and hence to a division of labour between ports as to approaches, berths and handling facilities.

Although ports have tried to keep up with the development in the size of ships by deepening channels and enlarging the size of locks and canals, it still cannot be overlooked that even today only a few ports can receive ships drawing more than 28 m.

In other words: an overall economic, optimal size of ship is at present as a rule smaller than the one which shipowners have in mind from their individual economic viewpoint.

Solutions promoting very large ships and making sea voyages as long as possible because of their low cost, solutions favouring the planning of deep-water discharging sites before the coast and the use of even larger ships, solutions making use of the possibility of transhipping from large into smaller ships units in order to split up the cargo in coastal traffic, spreading large quantities over a number of smaller ships or breaking up rational cargo and transport units, all these solutions are compromises. New kinds of solution in maritime transport appear absolutely essential.

The logical further development of system solutions such as the integrated transport chain is inescapable, just as today the further development of container traffic depends upon whether one will succeed in consolidating the shipment of container cargoes by centralizing groupage traffic of the individual economic areas.

Adjusting ship and port equipment

The development of transport chains, specialisation and

istered under State departments of transportation. Some are administered as public corporations set up under State laws to develop and manage specific harbor areas. Others are administered by State port authorities with responsibility for one or more ports in a State. A number of ports are political subdivisions or independent navigation districts. In addition, there are county and municipal port departments. A few bi-State port authorities extend their jurisdictions across State boundaries. Table 1 provides a summary of the various types of U.S. port authorities represented by 80 ports in six coastal regions of the United States.

With few exceptions, inland waterway and ocean ports in the United States involve both public and private marine terminal facilities located within a harbor area. On the whole, general cargo facilities are owned by public port authorities, established as entities of State and local governments. Bulk terminals, which handle commodities such as coal, grain, ores and petroleum, are predominantly privately owned.

A port is more than just a collection of piers, wharves, docks, cranes, transit sheds, storage areas, and other cargohandling equipment and facilities. A port must be able to

the rationalisation of handling procedures require extensive adjustment of ship and port equipment. This adjustment is all the more necessary as in view of the high infrastructure costs overall, economically efficient solutions must be found.

The long-term necessary minimum utilization of capacity in view of the economic operation of large-capacity ships for bulk and general cargoes is only ensured when particularly large streams of traffic occur regularly on certain patterns. This means at the same time that maritime traffic concentrates on relatively few seaports. This development leads in its turn to considerable concentration processes in the port areas and extensive urban concentrations with unusually high social-economic costs and increasingly difficult living conditions. The economic and social erosion of periferic areas continues whereas small and mediumsized centres, trafficwise less favoured, threaten to stagnate in their development, unless within the policy on town and country planning specific measures are taken in the field of transport policy to counter those trends.

In the discussion of growth in maritime traffic one cannot overlook the fact, that, on the one hand because of competition and on the other because of the unusually high investments in ports, a definite specialisation in the traffic handled in different ports has been established. It would however be a mistaken conclusion to think that because of this specialisation ports without suitable approaches for large-capacity ships would be at a disadvantage to others. The purpose of ports is not the handling of large volumes of cargo, but to make profits through traffic operations. The superficial fetichism of large volumes must therefore give away to a more sophisticated way of ascertaining where profits can be made. Not a race for a maximum of freight, but an endeavour to reach an optimum volume of the traffic should be the goal of wise port management.

provide the services necessary for the handling of cargo and passengers. The services include not only the loading and unloading of ships, but also activities that take place beyond the piers: cargo documentation and freight forwarding of waterborne cargo; issuance of export licenses; cargo and baggage inspection; warehousing and drayage; international banking; marine insurance; inland feeder services by railroads and trucks; stuffing and stripping containers; docking and towing vessels; pilotage; and intraport carriage of goods by ship, river or lake vessels, barges or other harborcraft.

Stevedoring/Marine Terminal Operations

Port terminal operation is the transportation of goods between land and water, while stevedoring is the transfer of cargo from shore to ship and from ship to shore. A "stevedore" provides and directs the loading and unloading of vessels. In order to perform his responsibilities, the stevedore employs "longshoremen," who perform the physical work of loading and unloading ships.

Marine terminal operators and stevedores generally lease facilities from nonoperating landlord port agencies which provide the capital outlays for land reclamation, physical plant construction, and marine terminal infrastructure, including dredging approaches from federally-maintained ship channels to pier and wharf terminal berthing areas.

Some large stevedoring firms operate multiuser marine terminals under lease agreements with State or local port authorities. Others operate privately-owned terminals. Marine terminal operators provide expertise to manage systems or methods for transporting the contents of freight cars, barges, or motor trucks to or from the holds of ships, while assuring safe and proper stowage, and the securing of ships' cargo and cargo holds, prior to sailing.

Deep-draft Seaports

U.S. deep-draft ports^{1/} at the end of 1983 consisted of 183 commercial seaports located along the Atlantic, Gulf, Pacific, and Great Lakes coasts, including ports in Alaska, Hawaii, Puerto Rico and the Virgin Islands. An inventory of these deep-draft ports by coastal region is contained in Appendix C. There are 1,566 public and private terminals with 2,871 deep-draft berths for oceangoing vessels. Of this total, there are 1,396 general-cargo, 699 dry-bulk, and 776 liquid-bulk berths.

Table 2 provides a profile of seaport facilities by coastal

Table 1Types of U.S. Port Authorities by Region $\frac{1}{2}$

Region	State Dept. of Transport.	State Port Auth.	Bi-State Port Auth.	Municipal Port Dept.	County Port Dept.	Independent Navigation Districts	Municipal Port Corp.	Autonomous State-Chartered Public Corp.	No. of Ports
North Atlantic	2	1	2	3		1	1	3	13
South Atlantic ²	1	3		_	1	1	_	4	10
Gulf	1			3	1	12	-	3	20
South Pacific ³	2	_	_	5	_	6		—	13
North Pacific⁴	_	_	_	1	-	13		_	14
Great Lakes	_	1	-	2	_	2	-	5	10
TOTALS	6	5	2	14	2	35	1	15	80

1/ Based on total of 80 U.S. ports which comprise the corporate membership of the American Association of Port Authorities (AAPA).

 $\overline{2}$ / Includes Puerto Rico and the U.S. Virgin Islands.

 $\overline{\underline{3}}$ / Includes Hawaii and Guam.

4/ Includes Alaska.

Source: The American Association of Port Authorities. AAPA ADVISORY, Vol. XVI, No. 49 (Washington, D.C., December 6, 1982).

Number and Type of Berths Total General Cargo Facilities **Bulk** Cargo Facilities Number Number Region Total of of Conventional Specialized General Cargo Dry Bulk Liquid Bulk Ports Terminals LNG/LPG Other Breakbulk Container | Ro/Ro | Barge Ship Grain Coal Ore Other Petrol North Atlantic 27 322 308 54 26 5 13 23 14 47 185 6 34 715 13 116 21 30 2 26 279 South Atlantic 24 143 1 1 3 65 1 Gulf 24 358 252 12 14 6 29 9 7 51 137 2 68 587 South Pacific 37 222 189 51 21 2 8 5 29 90 23 418 -----North Pacific 43 204 142 26 9 19 8 54 76 13 347 ----_ -----Great Lakes 28 317 110 47 65 47 193 48 15 525 TOTAL 1,117 15 103 79 400 9 2,871 183 1,566 164 100 117 601 166

Table 2U.S. Seaport Terminal Facilities by Region

1/ Includes those commercial cargo-handling facilities with a minimum depth alongside of 25 feet for the ocean coastal ports and 18 feet for the Great Lakes ports.

Source: Maritime Administration, Office of Port and Intermodal Development, Port Facility Inventory, 1975-1983; and U.S. Army Corps of Engineers, Water Resources Support Center, Port Series, 1972-1983. region and terminal type. The figures reflect only those berths actively used for handling cargo. Berth types are organized by type of cargo handling activity. If a berth fell into more than one category or class, it was classified according to its principal use. Container terminals are defined as facilities with specialized handling equipment. Roll-on/roll-off (Ro/Ro) facilities also include terminals used to handle automobiles.

Inland Waterway/Riverports

There are innumerable shallow-draft inland waterway ports along 25,000 miles of commercially navigable inland rivers, lakes, and intracoastal waterways. Approximately 16,000 miles of waterways are accounted for by the Mississippi River basin, the Gulf Intracoastal Waterway, and the Columbia/Snake River system. Table 3 provides a summary of the navigable lengths and depths of the U.S. inland waterway system.

The Mississippi River basin and the Gulf Intracoastal Waterway systems account for 102 major inland waterway riverports. These shallow-draft inland ports represents 1,433 barge terminal facilities stretching along 26 navigable rivers and waterways in 18 states. They include 114 general cargo, 807 dry-bulk, and 512 liquid-bulk facilities. Their facilities are summarized by State in Table 4.

The Columbia/Snake River system includes about 465 miles of navigable waterways, about 100 miles of which are deep-draft. Shallow-draft facilities include 28 riverports^{2/} with 27 active and operating terminal facilities. These shallow-draft riverports facilities summarized in Table 4.

Table 3

Commercially Navigable Waterways of the United States by Lengths and Depths^{1/}

	Lengths in Miles of Waterways and Corresponding Depths						
waterway Groups	Under 6 ft.	6 to 9 ft.	9 to 12 ft.	12 to 14 ft.	14 ft. & Ove	r Total	
Atlantic Coast Waterways	1,426	1,241	584	938	1,581	5,770	
Atlantic Intracoastal Waterway-Norfolk, Va. to Key West, Fla.	_	65	65	1,104		1,234	
Gulf Coast Waterways	2,055	647	1,133	79	378	4,292	
Gulf-Intracoastal Waterway-St. Marks, Fla. to the Mexican Border	_		_	1,137	-	1,137	
Mississippi River System	2,020	969	4,957	740	268	8,954	
Pacific Coast Waterways	730	498	237	26	2,084	3,575	
Great Lakes	45	89	-	8	348	490	
All Other Waterways	76	7	_	1	7	91	
Grand Total	6,352	3,516	6,976	4,033	4,666	25,543	

1/ The mileages in this table represent the lengths of all navigable channels of the United States, including those improved by the Federal Government, or other agencies, and those which have not been improved but are usable for commercial navigation.

Source: U.S. Army Corps of Engineers

			•	-			-				
	Number			N	lumber a	nd Type o	f Facilities				
State	of	General		Dry Bu	lk Cargo		Liquid Bulk Cargo				Total
	Terminals	Cargo	Grain	Coal	Ore	Other	Petrol	LNG	LPG	Other	
ALABAMA	14	5	7		-	1	1		_		14
ARKANSAS	27	5	13	-		5	3	-	-	1	27
ILLINOIS	281	18	76	25	_	62	48	-	2	50	281
INDIANA	50	7	4	9	-	15	14	-	-	1	50
IOWA	66	4	16	6	_	18	12	-		10	66
KANSAS	10	-	5	_	—	1	-	_	-	4	10
KENTUCKY	66	9	6	19	2	28	25		1	6	96
LOUISIANA	175	14	18	7	- 3	51	41	-	1	40	175
MINNESOTA	62	4	16	6	_	15	15	-	_	6	62
MISSISSIPPI	41	2	11		_	13	13	-	-	2	41
MISSOURI	97	6	19	5	_	39	16	-	_	12	97
NEBRASKA	15	1	7	—	_	3		-	-	4	15
OHIO	86	6	1	24	1	13	26	- 1	- 1	15	86
OKLAHOMA	14	2	3	1	_	4	3	-	-	1	14
PENNSYLVANIA	180	20		53	3	54	30		-	20	180
TENNESSEE	128	8	16	7	1	44	33	-	_	19	128
WEST VIRGINIA	76	3	·	26		15	15			17	76
WISCONSIN	15	-	1	4	-	5	3	-	_	2	15
Sub-total Mississinni System	1,433	114	219	192	10	386	298	-	4	210	1,433
	1	1				·					1
OPECON	20	5	6	_		7	1	-		1	20
WASHINGTON	20	3	1	_	_	1	T	_	_		6
WASHINGTON	0		1			1				1	0
Sub-total Columbia/Snake System	27	9	7	-	-	8	1	_	-	2	27
Total	1,460	123	226	192	10	394	299	_	4	212	1,460

Table 4U.S. Inland Waterway/Riverport Terminal Facilities by State

Source: Maritime Administration, Office of Port and Intermodal Development, Port Facilities Inventory, 1975-1983; U.S. Army Corps of Engineers, Water Resources Support Center, Port Series, 1972-1983.

Economic and Technological Development

Port economic and technological development are inexorably bound together in the pursuit of more economical and improved marine cargo handling systems, equipment and facilities, terminal operations, and shipping services. Thus, as the volume of domestic and international waterborne commerce increases and the technology of oceanborne carriers advances, the port communities of the United States continue to adjust, rehabilitate, and develop necessary supporting terminal facilities.

Ports and the National Economy

Over 95 percent of the products moving in our international commerce pass through our ports. In 1982, the volume of international and domestic port traffic amounted to almost 2 billion short tons of waterborne trade handled by U.S. ports. Based on a Department of Transportation study,^{1/} the terminal activities required to service this trade generated a total of \$70 billion in direct and indirect benefits to the U.S. economy and contributed over \$35 billion to the gross national product.

Stevedoring/Marine Terminal Industry

A recent Department of Transportation study²/ showed that the stevedoring/marine terminal industry's share of the total economic impact of the U.S. port industry—expressed in 1982 dollars—amounted to \$8.4 billion in revenues, \$2.5 billion in wages and salaries, and employed 138,000 persons. In addition, this industry's share of total economic impact of U.S. ports accounted for \$1.4 billion in business income and was responsible for \$1 billion in Federal tax revenues.

As the stevedoring/marine terminal industry is a part of the overall U.S. port industry, the above economic impact statistics are not in addition to the port industry impact figures appearing earlier in the chapter, but represent only that portion of the total port industry impacts attributed to stevedoring and marine terminal industry activities.

Port Capital Expenditures

During the period from 1946 to 1980, public seaports invested over \$5 billion, and they anticipate spending another \$5 billion by 1990, according to the Department of Transportation's last U.S. port expenditure survey^{3/} and national port assessment report.^{4/} With an estimated capital outlay of \$4.8 billion expected to be spent by inland riverports and terminals during this decade, the total investment by non-Federal entities will be some \$9.8 billion.^{4/}

Port capital expenditures of this magnitude will be required to finance the development of an estimated 247 seaport berthing facilities, 492 mid-America riverport terminals, and 48 cargo berths along the Columbia/Snake River system during this decade.

In 1982, the cash value of marine terminal facilities at U.S. seaports alone is, according to a recent Department of Transportation construction cost update, $\frac{5}{2}$ approximately \$59.6 billion, and their replacement cost would amount to at least \$78.3 billion.

Technological Development

Technological changes, both ashore and afloat, have occurred rapidly in the past two decades. In recent years the trend has been toward specialization. Ships are now designed for specific commodity movements, often over specific trade routes.

Containerships continue to dominate the general cargo trades. Conventional general cargo ships also are increasing their carriage of containers as part of their mixed cargo. Roll-on/roll-off van ships allow for more rapid loading and discharging of containerized and other cargo. Bargecarrying vessels permit time and cost reductions at interchange points, since such vessels do not have to moor alongside a pier or wharf, but may conduct their barge "load-on/load-off" operations while at anchor in a bay or estuary.

The transport of oil in very large and ultra large crude oil carriers (VLCCs and ULCCs) normally results in reduced costs of moving petroleum. In this regard, the United States has just one offshore deepwater facility capable of handling the world's largest crude oil carriers. This facility is the Louisiana Offshore Oil Port (LOOP). Unchanged in 1982 and 1983, however, is the fact that most mainland ports in the United States are not capable of accommodating the VLCCs, the ULCCs, and the very large dry-bulk carriers in the world fleet.

The deepest U.S. onshore, terminal berthing facilities for large oil tankers are located at the Port of Valdez, Alaska, and include one floating pier having a depth of 160 feet alongside, and three T-Head piers with 75 to 87 feet alongside. The Port of Long Beach, California, has an onshore crude petroleum discharge facility with a berth dredged to 76 feet alongside and a connecting channel from the seaward approaches of 60 feet. The 60-foot channel depth will limit the berthing to 180,000 deadweight tankers untill the approach channel can be dredged to a depth corresponding to the 76-foot berthing depth at the terminal. An onshore oil transfer facility at Cherry Point, near the Port of Bellingham, Washington, has berthing depths of 65 (plus) feet. Other deepwater tanker berthing facilities are connected to shore by submerged oil pipelines located in the vicinity of El Segundo, California, in offshore depths of 60 to 65 feet.

The ports of Seattle and Tacoma, Washington, have onshore bulk grain loading terminals with berthing depths of 70 and 65 feet alongside, respectively. The ports of Long Beach and Los Angeles, California, have onshore dry-bulk terminals with depths of 60 and 51 feet alongside, respectively. Other onshore drybulk berthing facilities are located on the Atlantic and Gulf coasts, and have maximum depths of 42 to 45 feet alongside.

The U.S. coal port crisis of 1980-1981 focused attention on improving U.S. port coal-handling capability and coal storage systems at coal export terminals. As a result, the upgrading of coal terminal transfer facilities became an important goal in port planning to handle projected coal tonnages. More recently, U.S. coal exports have fallen below projections of previous years due in part to the worldwide recession, lower oil prices, large stockpiles of coal, and the strong dollar. The U.S. coal export suppliers also face strong competition from Australia, South Africa, Poland, and Canada. Coal exports from Columbia, China, and the USSR could further constrain U.S. shipments.

Although it is impossible to forecast when a coal export upturn will occur, studies and plans for channel deepening have proceeded. In the course of these studies, several alternatives to dredging have been proposed. Included are the use of large shallow-draft/wide-beam ships, coal slurrypipeline systems, floating terminal transfer facilities, including midstream loading and topping-off operations and the use of self-unloading vessels.

Some merchant vessels of the future may be larger and are almost certain to be technologically more complex. With the addition of a 3,045 $TEU^{6/}$ containership to the world container fleet in 1981, and considering there are at least seven others in the over 3,000 TEU class built since 1972, and 4,200 TEU vessels on order, $\frac{7}{}$ there are those who envision the construction of a 5,000 TEU containership by the end of the century.

Bulk vessels also are expected to increase in average size and length. The requirement for dry-bulk carriers of more than 100,000 deadweight tons (dwt) could double by 1985 and quadruple by 1990, according to recent studies. Table 5 lists the largest vessels and average vessel size in the world fleet for various oceangoing vessel types as of January 1, 1982.

One study suggests that in 1981 some 80 percent of all iron-ore was shipped in vessels of over 100,000 dwt, as was 45 percent of all coal moving in world trade.⁸/It is estimated that such large ships now account for almost 10 percent of world grain movements. According to the same report, about 72 percent of the world's oil supplies are still carried in vessels of over 100,000 dwt. By 1990, the share of world coal and grain carried by such large ships could increase to 55 percent or more for coal and to nearly 20 percent for grain. Hence, these study results appear to confirm that the trend is toward increased use of dry-bulk carriers of more than 100,000 dwt.

In 1982-1983, as they have in the past, U.S. ports continued to respond to new and advanced shipping technology. One of the results is increased automation and the need for more space in seaports. This has been initiated by port industrialization, stepped-up activity in certain bulk trades, expanded containerized cargo traffic and terminal operations, larger vessels employed in the liner and nonliner services, and the use of more efficient cargo-handling equipment. To improve their competitive edge and to keep pace with changing shipping technology, some ports will continue to plan for accommodating larger ships, increasing capacity of cargo-handling equipment, expanding storage facilities, and improving other facilities and services.

In addition to the modern containerships, dry and liquid bulk vessels, and combination bulk carriers, there are the multipurpose vessels, pallet carriers, oceangoing barge carriers, roll-on/roll-off ships, and other specialized vessels that continue to influence future port planning and shipping/terminal operations.

Among other innovations, the decade of the eighties will continue to see improvements in ship collision-avoidance systems, computerized engine room monitoring and control equipment, computers for navigation and steering, marine navigation and communications satellites, and the advancement of computerized shipboard management systems.

To cope with the complexities of intermodal transportation, the port and shipping industries are turning more and more to computers. A number of container ports have invested in automated cargo control systems and modern computer technology. These systems improve the collection, handling, and dissemination of information regarding the status of container traffic flow to and from wharfside; aid control of yard equipment such as tractors, straddle carriers, and overhead traveling cranes; coordinate movement of containers between wharf and storage facility locations; and enhance operation of other activities associated with the processing and movement of containers through a marine terminal.

During 1982, a Department of Transportation research project dealing with the development of a "Marine Terminal Automated Management System (MTAMS)"^{9/} became operational at one leading U.S. container port on the Pacific coast. The application of the MTAMS computer (Continued on next page bottom)

	Largest	Vessels in th	e World Fl	leet	Average Vessel Size in the World Fleet				Total
Vessel Type	Capacity2/ (000's)	Length³/ (ft.)	Beam (ft.)	Draft4⁄ (ft.)	Capacity ^{2/} (000's)	Length (ft.)	Beam (ft.)	Draft (ft.)	of Vessels
Breakbulk Freighter	34 dwt	603	84	37	8 dwt	391	55	24	9,924
Partial Containership	31 dwt	600	90	38	11 dwt	444	64	27	1,290
Full Containership	52 dwt	944	106	43	18 dwt	573	79	30	705
Roll-On/Roll-Off	42 dwt	599	106	39	9 dwt	453	69	23	638
Container/Ro-Ro	44 dwt	808	106	38	12 dwt	514	75	25	46
Pallet Carrier	15 dwt	552	85	33	7 dwt	374	60	23	23
Barge Carrier	49 dwt	858	107	40	32 dwt	775	100	32	32
Dry-Bulk Carrier	224 dwt	1,030	164	67	34 dwt	598	84	35	3,912
Combination Carrier	278 dwt	1,109	179	71	106 dwt	805	117	45	239
LNG Tanker	82 dwt	900	138	44	45 dwt	747	109	32	64
LPG Tanker	122 dwt	892	128	54	15 dwt	427	64	25	372
Chemical Tanker	82 dwt	833	113	46	13 dwt	405	60	25	532
General Tanker	556 dwt	1,504	226	81 ⁵	75 dwt	661	97	38	4,364
		1	1	1		1	1	1	1

		18	idle 5				
Largest	Vessels and	l Average	Vessel	Size in	the	World	Fleet ^{1/}

As of January 1, 1982, for foreign-flag vessels, and June 1, 1982, for U.S.-flag vessels.

 $\frac{\overline{2}}{\underline{3}}$ Capacity in terms of thousands of deadweight tons (dwt).

Length shown is length overall (LOA), when available, otherwise length between perpendiculars.

 $\overline{4}$ / Draft shown is loaded, or load draft.

There are three other tankers in the world fleet having a loaded draft of 94 feet, but they are designed with a lesser length <u>5</u>/

(1,359 ft.), beam (207 ft.), and deadweight (545,000-546,000 dwt).

Source: Maritime Administration, Office of Port and Intermodal Development and Office of Trade Studies and Statistics, 1983.



San Diego Unified Port District

(Extracts from "San Diego Unified Port District 1983-1984 Annual Report")

Chairman's message (extract)

Change, accomplished with care, thought and thorough planning, is the term which most accurately expresses the actions of your Port District during the reporting period, Fiscal Year 1983–1984. It often seems, however, that the greater the degree of permutation, the more circumstances remain the same.

During the 1920s young San Diegans attending schools in the San Francisco and Los Angeles areas, businessmen, attorneys, physicians and many others, traveled to their campuses, courts, conferences and meetings aboard the YALE and the HARVARD of the Pacific Steamboat Company. The passenger vessel of sixty years ago was a comfortable and convenient mode of transportation along the Pacific Coast.

While the jet age and the freeway have wrought major change in the movement of people and cargoes throughout the nation and the world, the romance of ocean-going ships and the beauty of the sea remain firmly fixed in the minds of travelers. The emergence of the cruise ship industry, particularly during the past decade, gives eloquent testimoin traveling tastes. Today, at the Port of San Diego, we are at the threshold of a cruise ship renaissance Western Cruises and Crown

ny to the remarkable degree of changelessness to be found

of a cruise ship renaissance. Western Cruises and Crown Cruises now regularly operate passenger vessels moving in and out of the Bay. Princess Cruises and Costa Cruises carefully assessed the San Diego cruise market during the fiscal reporting period and indicate firm plans to base ships here commencing in 1985. Exploration World Cruises and the Holland-America Lines, along with America-Hawaii Cruises, will have vessels calling the Port in the near future. Some ships will be placed under repair in the extensive facilities available on San Diego Bay. Prospects of similar plans and proposals by other cruise lines are bright.

While this burgeoning industry is appearing at the docks and piers of the Port District, it is notable, and certainly ironic, that little if any direct port revenues are realized by the basing or calling of cruise ships here. Handling expenses borne by the Port very nearly equal the nominal fees charged the ship operators. However, revenues generated by the ship crews and passengers flowing to hotels, restaurants, ship chandlers, growers, grocers and the vast array of supporting businesses are of enormous potential. Annual financial returns from the basing of one ship

(Continued from page 20)

software has since been adopted by other port agencies. This Maritime Administration (MARAD) cost-shared, computer-based management control system is designed to expedite the movement of containers and equipment at public, multiuser container terminals.

With the trend in international shipping toward larger and more expensive vessels, carrying more cargo and requiring a faster turnaround time in port, the port industry will experience increased use of computer technology and related management techniques in the years to come, especially in the operation of containerport terminals.

1/ This report uses a minimum depth alongside of 25 feet for the coastal ports and 18 feet for the Great Lakes ports as the definition of a deep-draft port. This is a change from the previous report for which 20 feet was used for the coastal ports. The change more realistically reflects deep-draft activity.

2 Includes several established port districts not presently engaged in commercial waterborne trade.

1/ U.S. Department of Transportation, Maritime Administration. Economic Impact of the U.S. Port Industry: An Input-Output Analysis of Waterborne Transportation, Vol. I. (Washington, D.C., 1978/update 1982).

2/ U.S. Department of Transportation, Maritime Administration. The U.S. Stevedoring and Marine Terminal Industry. (Washington, D.C., 1983). This report was undertaken at the request of the National Association of Stevedores. 3/ U.S. Department of Transportation, Maritime Administration. United States Port Development Expenditure Sruvey. (Washington, D.C., 1980).

4/ U.S. Department of Transportation, Maritime Administration. National Port Assessment 1980-1990; An Analysis of Future U.S. Port Requirements. (Washington, D.C., 1980).

5/ The seaport facility construction cost update is based on an averaging of special purpose building cost indexes for the port Authority of New York and New Jersey and general purpose building cost indexes for 20 U.S. cities, as recorded in the "Engineering News-Record" (June 18, 1981 and June 23, 1982). It reflects increases in construction costs since the last estimate, based on December 1977 cost indexes, as well as on the estimated cost of new construction, modernization, and rehabilitation for marine terminals in the United States during the period 1979-1982.

6/ Abbreviation for "Twenty-Foot Equivalent Unit" which is used as a standard measure of a vessel's container carrying capacity in terms of an 8' × 20' size marine container.

7/ United States Lines, Inc., contracted in 1983 with Daewoo Shipbuilding and Heavy Machinery, Ltd., of South Korea for the construction of 12 containerships with a container capacity of 4,218 TEUs each. Sea-Land Service, Inc. has stated that it could operate a 4,000 TEU containership as part of its various Pacific services.

8/ "Shortfall Seen for Very Large Bulkers," Seatrade, Vol. 13, No. 3 (March 1983), pp. 57-59. This data is based on a report produced by Cargo Systems Research Consultants entitled Large Dry Bulk Carriers – Employment Prospects in the Eighties. (Worcester Park, Surrey, U.K., 1982).

9/ U.S. Department of Transportation Maritime Administration. Marine Terminal Automated Management System for Public Container Terminals, Phase II System Demonstration. (Washington, D.C., 1981). are significant and are therefore an encouraging development for the communities of the District. The long-term benefits of further economic diversification are easily recognized but less given to early evaluation.

As dramatic change is being readied for the waterfront with construction of a cruise ship terminal at the B Street Pier, other plans extremely important to the entire region are progressing. Of these, certainly the most discussed and publicized has been the convention center. At the midpoint of the reporting period voters approved a measure which will allow the City of San Diego to enter into an agreement with the District whereby the Port will build a convention center on tidelands; the complex to be operated and maintained by the city. A consulting firm was retained to assist in arranging an architectural competition which was conducted in April, 1984. Formal presentation of the completed schematic plans will be scheduled for early in the second quarter of the next reporting period.

Projects and programs of less dramatic impact than the convention center, but nonetheless of major importance, were numerous. In the first month of the fiscal period, the initial proposal for development of East Harbor Island Lagoon was received. Plans for installation of a 600-slip marina are now being finalized. It was during the period that relandscaping of Shelter Island was undertaken and completed at a project cost of \$2 million.

Throughout the reporting period an *ad hoc* committee of Port Commissioners studied the problem of mooring and anchoring of vessels in the Bay. The resulting Baywide Small Craft Mooring and Anchorage Plan and Commercial Basin Mooring Regulations represent the first major effort thus far to accommodate and control the increasing number of craft moored and anchored on San Diego Bay. Significant progress has been achieved by the committee with help from boatowner groups, civic associations and tideland tenants.

During the twelve months recently concluded, a welcome increase in available boat slips has taken place on the Bay. At the Inter-Continental Hotel, 400 slips ranging from 30 to 60 feet have been placed in use. Farther south, 600 slips are now almost fully occupied at the J Street Marina in Chula Vista. Improvements in safety measures for South Bay boaters have included installation of piling-type channel markers south of National City to include solar operated marker lights.

Immediately north of the J Street boating complex, Chula Vista's Bayside Park is scheduled for expansion. As the result of plans which have been completed during the reporting period, the park's extension will include a small bayfront beach, three additional acres of park, more parking, pedestrian and bike paths.

After a long period of planning and discussion with the Coronado City Council, agreement was reached on the use of two tracts of tidelands along the shores of that community. Coastal Commission certification of a necessary master plan amendment and retention of a consulting firm to produce the landscape design for the area were steps taken at the end of the fiscal year.

> Danial N. Spurck Chairman Board of Port Commissioners

San Diego Unified Port District Balance sheets

June 30, 1984 and 1983

Assets

	1984 \$000	1983 \$000
Land, facilities and equipment, net	148,078	145,471
Current assets: Cash and short-term investments Receivables, less allowance for doubtful accounts of \$24,780 in 1984 and	96,481	71,627
\$20,297 in 1983 Inventory of materials and	4,137	3,947
supplies at average cost	345	254
Total current assets	100,964	75,828
Restricted assets: Bond construction: Cash and short-term investments Deferred charges	9,328 353	8,522 416
	9.682	8.938
Debt redemption Cash and short-term investments	3,262	3,275
Total restricted assets	12,944	12,213
Other assets, at cost less amortization	355 262,342	354 233,869
Liabilities and District Equity		
Long-term debt, excluding current portion	21,915	24,105
Current liabilities, payable from current assets: Accounts payable Accrued liabilities Deposits	1,354 1,173 	1,395 1,578
Current liabilities, payable from restricted assets: Current portion of long-term debt Accrued interest	2,190 180	2,115
Total current liabilities	5,648	5,676
Deferred income	143	169
Total liabilities	27,707	29,951
District equity: Restricted balances: Equity in land, facilities and equipment	126 163	121 366
Construction fund	9,682	8,938
Debt redemption	892	966
Available balance	97,898	72,646
Total District equity	234.635	203.918

(Continued on next page bottom)

Gladstone Harbour Board

(Extracts from "Gladstone Harbour Board Annual Report 1983-84")

Chairman's report (extract)

For many years the Gladstone Harbour Board has toiled to ensure the continued success of the Port of Gladstone. It was with a great deal of satisfaction and pride that the Board was able to celebrate 1983/84 as the year of the "20 Million Tonne Port." For the first time, cargo handled through Gladstone broke the 20 million tonne barrier with 23.4 million tonnes being handled.

The Board acknowledges all those concerned with the operation of the Port in achieving this milestone. We also salute those who in the past laboured in the interests of the Port. My Board will not allow this achievement to daunt its resolve to forge ahead and to ensure that the Port of Gladstone is always ready and able to meet the challenges of the future.

The record tonnage mentioned earlier was 26.19% higher than the previous year. Exports totalled 15.7 million tonnes and imports 7.7 million tonnes. Export coal was the largest single cargo, with 12.2 million tonnes being handled, 11% higher than the previous year. Most major cargo items showed significant increases.

Five hundred and ten (510) cargo carrying vessels of 16.4 million gross registered tonnes visited the Port during the year.

As in recent years, a major works programme was undertaken by the Board, incurring capital expenditure of 7.3 million dollars.

Construction was completed of Stockpile 7 at the Clinton Coal Facility. A further stockpile and associated facilities has been commissioned and will be operational before the end of the 1984/85 financial year.

Tenders were let for the upgrading of grain handling facilities at Auckland Point. The work involved includes a

71 m extension to Auckland Point Wharf and the installation of an additional grain shiploader of 1,200 tonnes per hour capacity. These works are being carried out in conjunction with Bulk Grains Queensland as part of a major upgrading of grain handling facilities at the Port.

Work commenced on a bridge, traversing roadways and rail lines to provide an additional access to the Auckland Point port area.

Tenders were called throughout Australia and South-East Asia for the development and operation of a marina at Gladstone. At year's end, the Board was discussing submissions received with prospective developers.

Prudent planning and sound financial management have resulted in the Board's finances remaining in a sound position. Some Port charges were subjected to minimal increases during the year.

Forward planning is essential in modern port management. During the past year the Board commissioned a major study on the possibility of future container handling at the Port.

A Port Model has been established at the Queensland Government Hydraulic Laboratory at Deagon and intensive study has been carried out during the year on tidal influences at the Port. The results of these studies will greatly assist the Board in future Port planning.

A.W. O'Rourke, M.B.E. Chairman

(Continued from)	page 22)		Income from operations	20,577	13,570
Contingent liabilities and commitments	262,342	233,869	Non-operating income (expenses): Interest income	9,444	8,909
Statements of operation changes in available based on the second	ions and alance		Grant-in-aid, Federal and state Other non-operating income Interest expense	1,178 683 (1,167)	976 604 (1,273)
Years ended June 30, 1984 and 19	83			10,140	9,217
,,, _,, _	1984	1983	Net income	30,717	22,787
	\$000	\$000	Available balance,		
Operating revenues:			beginning of year	72,646	52,785
Marine operations	4,529	4,265		103,364	75,573
Airport operations	22,402	18,818	Decrease (increase) in	·	
Property operations	19,823	17,497	restricted balances.		
	46,755	40,581	Debt redemption	74	73
Operating expenses, including depreciation:			Construction fund Equity in land, facilities and	(743)	(775)
Direct expenses	20,853	21,844	equipment	(4,796)	(2,224)
General and administrative expenses	5,324	5,167	Available balance, end of year	97,898	72,646
	26,178	27,011			

Balance sheet

Income and expenditure account

as at 30th June 1984			for the year ending 30th June 1984		
	1984	1983		1984	1983
	\$000	\$000		\$000	\$000
ACCUMULATED FUNDS: Balance as at 1st July 1983 Transfer from Appropriation	63,095		INCOME: Wharves and Cargo Handling Facilities Harbour Dues	5 693	
Account	20.521		Cargo Handling Charges	22.449	
	83 617	63 095	Tonnage Rates	1,257	
DEDDECENTED DV.			Rental	646	
Current Assats			Miscellaneous	245	
Cash at Bank and Investors	19.000			30,292	25,070
Debtors	3,221		Improved Harbour Charge	18,044	12,020
	22,221	14,720	Land and Buildings	,	,
DEDUCT CURRENT LIABILITIES:			Rental	491	485
Creditors	664		Smallcraft Facilities		
Rent in Advance	1,222		Mooring and Berthing Fees	114	96
Provision for Long Service Leave	383			48 043	27 672
Provision for Sick Leave	194			40,945	57,075
Provision for Annual Leave	357 5 210		DEDUCT DIRECT EXPENSES:		
Provision for Deferred Maintenance		(a a 1	Operation and Maintenance	8 172	
	8,031	6,354	Depreciation	5 789	
			Depresation	14.262	10 177
WORKING CAPITAL:	14,190	8,366		14,202	12,177
ADD:			Land and Buildings	222	
Non-Current Assets			Operation and Maintenance	222	
Electricity Extension Deposit	220		Depreciation	04	
Stores (at average cost)	741			286	207
Encility	53 565		Smallcraft Facilities		
Land and Buildings	14.098		Operation and Maintenance	184	
Smallcraft Facilities	540		Depreciation	44	
Administration Building and				228	151
Equipment	915			14,777	12,535
Plant and Equipment	2,503		GROSS OPERATING SURPLUS	34 165	25 137
Channels and Swing Basin	85,158		DEDUCT INDIDECT EVENSES,	51,105	23,137
Causeway and Bridge	549		Administration	1 3 1 5	
work in riogress	11,122		Interest	13.014	
	169,416	167,652	Provision for Deferred Maintenance	2,000	
	183,606	176,018		16 329	14 687
DEDUCT:			NET OBEDATING SUDDING.	17 025	10,450
Long Term Liabilities			NET OFERATING SURFLUS.	17,855	10,450
Security Deposits	34,569		ADD NON-OPERATING INCOME:	2 2 2 7	
Loan Indebtedness Treasury Loans	59,575		Sundry Income	2,327	
Inscribed Stock	4,256		Profit on Sale of Fixed Assets	217	
Debenture Loans	1,710			2695	1 260
	100,112			2,085	1,360
LESS:			SURPLUS TRANSFERRED TO	20 621	11.010
Sinking Fund	123		APPROPRIATION ACCOUNT:	20,521	11,810
	99,989	112,923			
	83,617	63,095			

Port Hedland Port Authority

(Extracts from "Annual Report 1983 – 84, Port Hedland Port Authority, Western Australia")

Chairman's report (extract)

The thirteenth year of operation of the Port Authority was based upon budgeted throughput of 31,000,000 tonnes, 14 per cent less than the 35.3 million actually achieved. This favourable cargo turnaround resulted in operating revenue being 17 per cent greater than that of the preceding year (after discounting the latter for port improvement rate income not earned in 1983/84) and with expenditure some 14 per cent greater than 1982/83. After appropriating to reserves, a modest surplus of \$49,000 was earned.

It is anticipated that iron ore throughput will continue to expand in 1984/85 and that salt exports will be slightly less than the record tonnage of 1.3 million which Leslie Salt Co. achieved this year.

In December 1983 Mt. Newman Mining invited tenders from eight top dredging companies. Simultaneously, an exhaustive coring programme was embarked upon to better define the geology of the harbour and channel bed. Subsequently the Minister for Transport, the Hon. Julian Grill, M.L.A., endorsed the Authority's request that a port deepening project be approved.

Under this contract, between Mt. Newman Mining Co. Pty. Limited and a joint venture comprising the Dutch company, Broekhoven, and the Australian company, Condreco, the channel will be deepened by at least two metres, lengthened by five kilometres, and widened in selected locations to facilitate ship handling.

We believe that these changes are timely and will place the port in a good position to take advantage of increased iron ore shipments in larger tonnage vessels.

The Authority commissioned two studies as a consequence of the dredging project. One, from Rendel, Palmer and Tritton to review the deepened channel design parameters as submitted, and one from the Netherlands consultancy, Marin. This latter may well be the best shiphandling simulation organisation in the world today. Matters to be examined will include:

The appropriate operational parameters, e.g. wind speeds, state of tide, etc. for use of the extended channel.

The optimum positioning and utilisation of the port's tugs during large vessel manoeuvres.

The effectiveness of the proposed navigational aid system.

Under keel clearance allowances.

In addition, and as importantly, the computer simulation will allow for a pre real-world use of the changed channel by our Pilots who will train with it. Thus a number of manoeuvres will be executed on different types of large vessels in different sea/weather states. As well as providing a very valuable form of training, this simulation will provide significant input into determining the vessel dimension limits for the safe usage of the new channel.

The biggest single item in our modest \$130,000 capital budget was the eighth and last house in the building project commenced in 1980. We continued with our previous policy of paying out loans as they mature and so retired a further \$400,000 of loans in the year, bringing the total since 1980 to \$800,000. Interest savings are substantial and the Authority's financial flexibility is enhanced.

Port charges were increased by 12 per cent approximately in July 1983 and will be increased by a further 2 per cent from July 1984. Should inflation slow further and throughput continue to burgeon, general rates should be capable of being held at their current levels for some time to come.

A year of solid achievement and expectations of further significant improvement are a source of sound satisfaction for the Members and I, and it is in the light of this that I once again extend to our staff our thanks for a job well done in the year just past, and join them in looking forward to a year of renewed opportunity and port development.

J.A. Haynes Chairman

1002/01

1002/02

Balance sheet as at 30th June 1984

,772) 7,395	(1,820)
,772) 7,395	(1,820)
7,395	
7,395	
331 200	57,395 281 150
97	74
8,024	57,901
5,859 3,559 3,300 234	66,812 3,241 63,571 226
3,534	63,798
2,155 <u>441</u> 2,596	1,111 455 1,567
5,131	65,365
3,293 2,664 906	3,323 3,100 653 1,654
	3,300 234 3,534 2,155 441 2,596 6,131 3,293 2,664 906 2,040

Current Liabilities

(Continued on next page bottom)

Port of Launceston Bell Bay

(Extracts from "Annual Report 1983–84, Port of Launceston Authority")

General Manager's report (extract)

With record tonnages of general cargo and improved trade across its entire commodity base, Launceston-Bell Bay has recovered more quickly and thoroughly from the recession than many Australian ports.

This broadly based growth was sparked by a 20% lift in non-bulk cargo and fuelled by the resurgence in export markets and prices for Tasmania's primary and heavy resource products.

Rises of more than 15% were recorded for seven major commodities which contribute more than 100,000 tonnes each to total throughput.

The spectacular rise in general cargo, which reinforces Bell Bay's position as the third largest interstate ANL ferry terminal in Australia, resulted from the recovering local economy and increasing centralisation for collection and freight forwarding.

More regular ANL services throughout the year also kept tonnages up during the traditionally slow December-January period.

Our position as Australia's largest woodchip port was

consolidated by a 21% increase in trade to 1.9 million tonnes.

Recovery of the alloy processing industry also brought an 85% increase in shipments of bulk manganese and sinter from the Bell Bay berth of TEMCO.

Three direct primary produce shipments to Europe contributed substantially to fruit and vegetable tonnages. The port also recorded a pleasing 37% growth in exports of the State's superfine merino fleeces which resulted from the farming sector's recovery after the 1981–83 drought.

Even with the increase in direct overseas calls, transhipment cargo through the port increased by 100%, indicating again that Bell Bay is becoming a focus for ongoing centralisation of Tasmanian cargo collection and forwarding.

With the commencement of two-year study under the leadership of Professor Doug Foster and his team from the University of New South Wales Water Research Laboratory, the PLA is actively involved in investigating means of preventing silt deposits in the River Tamar with expert assistance from the Hydro-Electric Commission and substantial financial commitments also made by the State Government, Launceston City Council and the Beaconsfield and Lilydale Municipal Councils.

Forecast

136

417

1082/83

The post second World War period has seen trade in-

Navaid Maintenance	476	346
Helicopter	172	157
Port Maintenance	332	343
Other Maintenance	238	144
Other Expenses – Marine	275	95
Other Expenses – Wharf	443	318
Other Expenses – Administration	114	101
Interest – General Loan Funds	342	315
Interest – Private Loan Funds	256	299
Depreciation	357	359
Staff Superannuation	253	135
Deferred Maintenance	400	440
	5,568	4,866
Operating Surplus	143	1,631
Non Operating Income	28	
Net Surplus transferred to		
Capital Accumulation Account	172	1,631
Appropriation Statement		
Accumulated Deficit as at July 1	(1,820)	(1,801)
Add net surplus	172	1,631
	(1,648)	(169)
LESS		
Transfers to Reserves		
Loan Renavment Reserve		1 633
Catastrophe Salvage Reserve	50	1,000
Asset Replacement Reserve	50	_
Special Reserve	23	17
	100	1 (51
	123	1,651
Accumulated Deficit as at June 30	(1,772)	(1,820)

Creditors 189 Accrued Charges 783

(Continued from page 25)

972 554 Total Liabilities 9,878 9,285 56,252 56,080

Profit and loss statement

for the year ended 30th June 1984

	1705/01	1702,05
	\$000	\$000
Revenue		
Pilotage Dues	1,027	828
Tonnage Rates	1,759	1,340
Harbour Maintenance Levy	55	37
Wharfage Charges	1,099	974
Handling Charges	355	333
Haulage Charges	74	59
Ship's Accounts	599	560
Lease Rentals	312	284
Port Improvement Rates	· _	1,633
Other Operating Income	428	446
	5,712	6,498
Deduct Expenditure		
Salaries and Wages	1,242	1,249
Employee Related Costs	253	288
Hydrographic Survey/Pilot Boat	409	270

1083/84

26 PORTS and HARBORS - MAY 1985

crease by over 1300% and the Port of Launceston has been less affected by the recession of the past two years than many other Australian Ports whose trades vacillate more widely in response to economic fluctuations.

With employment growth, industry development and trade uplift reflecting the recovery, the PLA embarked upon a \$5 million extension of its Common User Berth.

For 1984/85, the Authority expects continuing longterm growth in most commodities and the fulfilment of short-term projections.

Hedley Joyce General Manager

1984

1983

Major trade growth

		Revenue	
		Tonnes	
		1983/84	%
General cargo		524,117	+ 28
Coal and coke		139,519	+ 24
Frozen fish		1,800	+112
Fruit and vegetable	S	51,870	+ 16
Furniture		27,365	+ 22
Manganese and sint	er – bulk	142,657	+ 85
	 drummed 	16,693	+ 17
Manganese ore		240,124	+ 42
Motor vehicles (trade)		73,040	+ 49
Timber		127,011	+ 24
Woodchips		1,901,941	+ 21
Wool Exports		37,907	+ 37
Transhipment cargo		73,839	+100
	1982/83	1983/84	
Import	1,511,334	1,753,024	+ 16
Export	2,209,256	2,678,068	+ 21
TOTAL	3,720,590	4,431,092	+ 19

Balance sheet

as at 30 June 1984

	\$000	\$000
ASSETS		
Fixed Assets at Cost & Valuation		
Wharves, Jetties & Wharf Buildings	13,041	12,142
Land & Buildings	2,679	2,676
Harbour Improvements	6,023	6,017
Beauty Point Marina	431	430
R.A. Ferrall Shiplift	3,709	3,699
Navigational Aids & Facilities	555	397
Wm. Hart Graving Dock	479	479
Workshops	449	447
CoolStores & Tallow Plant	1,979	1,978
Mobile Plant & Equipment	1,152	1,117
Floating Plant & Equipment	584	479
General Plant & Equipment	2,434	2,088
Office Furniture & Equipment	151	134
	33,671	32,088
Current Assets		
Fixed Deposits	3,880	2,921
Stocks & Stores at Cost	352	290
Trade & Sundry Debtors	1,566	726
Cash on Hand	2	2
	5,802	3,940

Investments

Loan Redemption Sinking Fund	452	405
Staff Housing Loans	67	70
Floating Plant Repurchase Fund	1,500	1,500
	2,020	1,975
Total Assets	41,493	38,004
LIABILITIES	······	
Capital Funds		
Current Loans Outstanding	12,789	12.144
Redemption of Current Loans	3,898	3.760
Loans Fully Repaid	3.572	2.556
Grant – Commonwealth Government	165	77
Grant – State Government	12	12
Revenue Contributions to Capital Outlay	11,662	10,908
Less Loan Raisings Unexpended	(1,058)	_
	31,042	29,459
Reserves & Provisions		
Fixed Asset Revaluation Reserve	2.628	2.628
General Works Reserve	2,106	1.144
Plant Addition & Replacement Reserve	1.026	1,091
Unexpended Commonwealth Grant	_	87
Unexpended Borrowings	1,058	
Loan Redemption Reserve	, <u> </u>	156
Provisions for Debenture Repayment	283	732
Floating Plant Replacement Reserve	1,500	1,500
Provision for Long Service Leave	231	205
Provision for Holiday Pay	155	136
	8,990	7,682
Current Liabilities		
Trade & Sundry Creditors	391	92
Bank Account Overdrawn	611	356
	1,003	449
Trust Funds		
Loan Redemption Sinking Fund Reserve	452	405
Superannuation Provident Fund	5	7
	457	412
Total Liabilities	41,493	38,004

Income and expenditure statement

for the year ended 30 June 1984

	1984	1983
	\$000	\$000
INCOME	······································	
Charges on Ships		
Pilotage	303	290
Tonnage Rates	422	330
Port Service Fees	46	41
	772	662
Charges on Goods		
Import Wharfage	2,248	1,849
Export Wharfage	1,353	1,160
Harbour Rates	80	82
	3,682	3,092
Charges for Service Plant	648	589
Charges for Services – Other	447	491
Rentals		
Bell Bay Ferry Terminal	86	86
Transit Sheds & Offices	69	65
Misc. Land & Buildings	160	142
Containers	176	176
	492	471

(Continued on next page bottom)

Cairns Port Authority

(Extracts from "Cairns Port Authority Annual Report for the year ended 30th June, 1984")

Chairman's report (extract)

Firstly I would like to comment on the completion of the Cairns Airport Redevelopment. This has been a project without precedent in the far north of this State since the pioneer days, and has a significance which extends beyond the immediate advantages of increased international tourism.

Cairns is now the closest and most modern Australian International Airport to the markets of South East Asia and North America, and with this advantage, combined with the intrinsic richness and beauty of our region and easy access to the Great Barrier Reef, development must proceed apace.

The new International Airport is already seeing regular Qantas and Air Niugini flights, and the Authority hopes that additional scheduled and chartered overseas flights will soon be inaugurated. Any increase in international flights will, it is anticipated, flow on into increased domestic air traffic between Cairns and the South. This can only further benefit our region.

In respect of Seaport matters, the Authority was informed in September last that State Cabinet had adopted its recommendations that Trinity Point Hotel Pty. Ltd. undertake the feasibility study on the proposed Foreshore Marina development. This project, if undertaken, is likely to cost in the order of \$150 million, and will transform parts of the Cairns Foreshore into a tourist resort complex/ marina of a type not previously seen in this State. Marina facilities for in excess of six hundred (600) small boats are envisaged, together with appropriate accommodation, tourist attractions and shopping areas.

Proposals for redevelopment of the former workshop site were again invited and closed on 30th June, 1984. There was keen interest which should result in an attractive addition to the city's tourist plant.

Appropriate funding for additional facilities for commercial fishermen has been under investigation.

The coastal trade between Cairns and the Gulf and Cape

(Continued from page 27)			
Services Rendered	3,239	1,949	
Misc.	113	124	
Interest	252	290	
Total Income		7,671	
EXPENDITURE			
Interest & Loan Repayments	1,683	1,629	
Depreciation	481	465	
Administration	1,230	1,129	
Navigation & Survey Authority	79	-	
General Services	589	648	
Recoverable Expenditure	2,353	1,563	
Port Operations			
Pilot Servicing Servicing Navigational Aids Port Services & Facilities	169 123 305	108 97 248	

York ports and settlements is being advanced by means of the provision of a major covered cargo storage facility expected to cost some \$400,000.00. Completion is expected early in 1984/85.

Congratulations are extended to Cr. H. Rankine on his being awarded the Order of Australia in the recent Honours List.

This is my last Report in my capacity as Chairman of this Authority and after having served more than fourteen (14) years as Chairman and six (6) years before that as a Board Member there are naturally some regrets at this severance of my connection with the organization.

The success we have enjoyed during those years is due to the co-operation of fellow Board Members, Staff and of course the users of the Seaport and Airport. The harmony that has extended is reflected in the achievements that are now history.

> M. Borzi, O.B.E. Chairman

Income and expenditure account

for the year ended 30th June 1984

	1984	1983
	\$000	\$000
INCOME		
Wharves		
Harbour Dues	1,448	1,382
Tonnage Dues Excess of Expenditure over Income	560	562
Excess of Expenditure over income	2 000	(30)
T 1 1 T (1 D '11'	2,009	1,945
Lands and Tenanted Buildings		
Rentals Lands and Buildings	433	477
Special Dues – Container Facilities	402	105
Speemi Dues Container Fuenities	936	592
Constit Dente Harberry and Frailitian	850	562
Small Boat Harbours and Facilities		
Licence Fees etc. Excess of Expenditure over Income	66 (6)	(32)
	00	01
River Dredging	133	86
General Port Operations	27	51
	760	592
Operation & Maintenance of Plant	633	524
Operation & Maintenance of Facilities		
Ship Repair Facilities	147	194
Workshops	76	86
Tallow Plant	154	142
	413	490
Repairs & Maintenance of Wharves & Properties	115	470
Launceston & Unper Reaches	63	65
Lower Reaches – Western Shore	87	68
Lower Reaches – Eastern Shore	397	306
	547	440
Total Expenditure	8,774	7,486
Surplus	874	_ 185

Conveyor Systems		
Excess of Expenditure over Income		3
Quarries – River Sand Dredging		
Sand Dredging Royalties	28	27
	28	27
Recoverable Work		
Completed Work	220	169
Work in Progress	77	60
	297	230
Accounts written off		
Excess of Expenditure		(5)
Total Operating Income	3,237	2,850
Excess of operating Expenditure		
over Revenue	(61)	
Non Operating Income		
Sale of Assets	1	7
Interest on Investments	475	458
	476	465
Total Income	3,714	3,316
EXPENDITURE		
Wharves		
Maintenance		
Wharves	513	450
Dredging Dredging Provision - Trawler Base	622 40	483
Plant and Tools	87	112
Water Distribution	41	17
Electrical Distribution Miscellaneous	1 22	32
Oil Terminal Improvement Charge	2 - 76	77
Wharf Supervision	196	191
Channels and Swing Basins	25	38
Services to Shipping Interest	65 92	64 89
Depreciation	131	109
Insurance	48	37
Administration		2/3
	2,201	1,983
Lands and Tenanted Buildings		
Maintenance Lands and Buildings	18	30
Plant and Tools	10	2
Parks and Gardens	18	15
Interest	540 86	75
Depreciation	20	22
Insurance Administration	1	1
Excess of Income over Expenditure	(109)	(267)
-	727	315
Small Boat Harbours and Facilities		

6 73

Maintenance Berths

Dredging Provision Plant and Tools Depreciation Insurance Administration

Excess of Income over Expenditure Quarries – River Sand Dredging

Excess of Income over Expenditure

Conveyor Systems Maintenance

Sale of Assets		9
Interest on Loans	4	55
Excess of Income over Expenditure	(472)	(396)
	4	69
Total Expenditure	3,303	2,703
Excess of operating and non-operating	410	613
meome over Expenditure	3 714	3 3 16
Balance sheet		
as at 30th June 1984		
	1984	1983
	\$000	\$000
Capital:		
Seaport Operations: –		
Accumulated Funds 1st July Transfer to the Asset Replacement and	2,592	2,956
Improvement Fund	200	945
Transfer to Special Loan Redemption Fund	34	34
	2,357	1,976
Transfer from Appropriation Account	535	615
	2,892	2,592
Contribution by the Asset Replacement	2 4 5 1	1 002
and improvement i und for Capitar works	5 344	4 586
Reserves:	5,544	7,500
Asset Replacement and Improvement Fund	2,875	3,053
Long Service Leave Payments Fund	60	20
Special Loan Redemption Fund		34
Subsidies and New Demoushle Advances for Ca	3,014	
Subsidies and Non-Repayable Advances for Con	astruction 6.609	
Sinking Fund Interest	1,143	
	7,752	
Sugar Board Asset Replacement	1,077	
	8,829	7,671
Container – Roll on/Roll off Facilities		
Redemption Sinking Frond Interest	315	
Sinking Fund Interest	245	120
Pulk Malagaas Terminal Padamatian	215	215
Improvement Dredging	786	786
Regional Employment Development Projects	167	167
Wharves Conveyor Systems	292 62	288
Miscellaneous	16	16
	10,815	
Repayable Advances for Construction		
Container – Roll on/Roll off Facilities	529	611

274

14

4

(3)

293

3,299

220

5 2

(1)

229

2,633

(216)

5

Recoverable Work Direct Costs

Plant and Tools

Administration

Excess of Income over Expenditure

Allowances and Bad Debts

Total Operating Expenditure

Excess of operating Revenue over Expenditure

Non Operating Expenditure

	-	Repayable Advances for Construction	
(25)	(23)	Container – Roll on/Roll off Facilities Conveyor Systems	529 36

PORTS and HARBORS -- MAY 1985 29

36

Extensions to Smith's Creek Wharves	<u> </u>	372	Bulk Sugar Terminal and Associated Facilities Container – Roll on/Roll off Facilities	3,065 1,225	
	20,108	18,152	General	2,625 400	
Represented by: -				7,315	
Fixed Assets – Seaport	10,984	8,545	LESS Sinking Fund Balances		
LESS Provision for Depreciation	1,344	1,166	Bulk Sugar Terminal and Associated Facilities	1,820	
	9,640	7,379	Container – Roll on/Roll off Facilities	201	
Work in Progress – Seaport	241	2,301	General	202 187	
Assets provided by Lessees - Seaport	12,934			4,903	4,145
	22,816	22,229	Other Loans	,	
Fixed Assets – Airport	34,032	3,012	Bulk Sugar Terminal and Associated Facilities	2,445	
LESS Provision for Depreciation	503	25	Container – Roll on/Roll off Facilities	673	
	33,528		Airport Development General		
Work in Progress – Airport				6,152	6,274
Airport Development		10,156	Prepayment		,
	56,344	35,372	Harbour Maintenance		101
Cash on Hand and Bank Balances	224		Security Deposits		
Investments	5,620		Containerized Shipping Facilities	113	
Debtors	1,579		Passenger Terminal Facilities	133	
Stores on Hand				246	256
Harbour Fund	9	10	Provision for Maintenance		
	63,778	45,170	Dredging	225	
Deduct Liabilities: -				225	165
Creditors	241			11,769	
Suspense				52.008	34,143
Sinking Fund Loans					



Bay of Plenty Harbour Board Port of Tauranga

(Extracts from "The Chairman's Report for the year ended 30 September 1984, Bay of Plenty Harbour Board")

Chairman's report (extract)

1984 has been a successful year for the Bay of Plenty Harbour Board – Port Users have taken good advantage of the facilities and services the Port of Tauranga offers and the Board has done more, with less.

Trade

Internationally, the year was characterized by economic activity that exceeded expectations in the United States and Japan, and fell short of expectations in Europe. The United States continues to provide a strong lead to world economic recovery after the slump that followed the second oil price "shock".

The opportunity now exists for Governments to encourage the efficient working of markets and free up trade flows. Most countries employ or condone a wide variety of tariff and non-tariff barriers that insulate sectors of their economies from outside competition and world market prices. These trade policies not only affect trade flows but also adversely affect costs (and prices), distort investment, and dampen innovation.

Although the general international recovery has yet to fully benefit New Zealand, it has helped forest product exporters, manufacturers, and the horticultural industry. On the other hand, high world stocks of dairy products (especially in the EEC), depressed meat prices (as a result of competition from alternative meats), and only marginally improved wool markets have altogether resulted in mixed fortunes for primary product exporters.

Within this trading scene, total trade for the Port reached almost 3.2 million cargo tonnes for the year ending 30 September 1984 — an increase of 360,000 tonnes (or 13%) over last year and 285,000 tonnes up on our operating plan. Export trade was up 100,000 tonnes, principally in Forestry Products, while import trade was up 260,000 tonnes, which, apart from increased petroleum imports, was the result of new trade to the Port, such as steel, textiles and a variety of general cargoes.

The most significant, and also pleasing, aspects of the trading year have been:

- the three-fold increase in container movements,
- the ease with which the Port has accommodated the steel trade,
- the greater use being made of the Port by conventional reefer ships for meat and kiwifruit as well as butter, and
- a substantial increase in the average cargo handled per ship hour.

These achievements have been accomplished in addition to maintaining and improving the services offered to the Port's traditional Users in the forestry, dairy, fertilizer and petroleum industries.

Like any efficient seaport, Tauranga still has much more to offer. At a time when the impediments to trade (includ-



ing costs) can be largely external to the functioning of a Port, cost savings associated with improved cargo storage and handling, and faster ship turn-round can help shippers overcome some of these impediments and assist them to market further afield. In this respect, I am sure that the exporter, the importer and the ship-owner will take greater advantage of the container handling and specialized cargo handling (e.g. conventional reefer) capabilities of this Port in the immediate future — they cannot afford to overlook any opportunity that will improve their trading position.

For our part, we are here to look after their needs.

Financial Results

Total Port operating revenue was up 10% to \$12.5 million and with the addition of income from rentals and interest, total gross revenue was \$13.7 million.

Total operating expenditure at \$8.9 million was about 2% less than our operating plan and about \$400,000 more than last year.

After repayment of loans, the total net revenue from the Board's activities increased by \$200,000 over last year, from \$2.6 to \$2.8 million. This is being used to fund port capital expenditure which, at \$3.9 million, was the highest since 1980. This was principally due to land purchases of \$1.3 million for future Port purposes. The Board believes that one of the greatest assets of a seaport is land backing up the immediate quayside area, to provide existing and potential Port Users with the necessary space to properly plan and operate port-side activities. In this connection, the availability of appropriate back-up land has been a feature of this Port that has facilitated its efficient operation over recent years.

Total Board assets amount to \$83 million, of which the Board's equity is \$66 million. By 30 September 1984, net long-term debt was reduced by \$1.5 million to \$14 million.

The financial position of the Board is sound and places the Port in a most advantageous situation to meet the future transport and trading needs of New Zealand. In turn, these are likely to be more demanding as technology improvements are introduced into both the shipping and cargo handling sectors of the industry.

Industry Developments

In 1983, the Ministry of Transport issued a discussion document called "Towards a New Zealand Shipping Policy"

The Board participated in the discussion that followed, including a submission to the Ministry outlining its views. It is therefore pleasing to see that the White Paper released by the Government in December 1983 is very largely in accordance with the Board's views regarding competition policy, cargo reservation and restrictive sales practices, a New Zealand shipping register, and the role for New Zealand flag shipping.

The White Paper also announced an investigation by the Ministry of Transport into on-shore shipping arrangements. The objective of the study is to examine the potential for reducing the costs of moving cargoes from the point of production to the "off-pilot outside port" point. It examines selected export commodity flows as well as the procedures and practices adopted within the general port area.

My Board welcomes the "on-shore costs" discussion document. Indeed, in its submission on the New Zealand Shipping Policy Paper, the Board introduced two issues that, in its view, did not encourage ports (and others within the inland transport system) to extend their efforts to improve overall port performance. These were:

- the practice of averaging freight rates which can have a high incidence of cost subsidization, and
- freight rate surcharges (such as congestion surcharges or port service charges) which can bear little relationship to relative port performances.

It also suggested that these could be avoided by a completely transparent freight rate charging system for every link in the chain from point of production to the marketplace.

I hope that the discussion following the release of the study will focus on these issues within its overall debate.

A large part of the study is concerned with an examination of the services and facilities offered by Port Authorities, together with their costs and charges. This is not surprising because Port Authorities (Harbour Boards) are effectively the only organizations engaged in port-related activities whose total operations, including financial aspects, are available for public scrutiny.

There is a wide diversity of organization and control existing throughout the world's ports, none of them demonstrating clear benefits, and the question may well be asked as to the need for a Public Port Authority.

There are four reasons and these are all related to the minimum functions any Port Authority must provide, and are distinct from any other functions that it may perform or how it should be controlled.

- The provision of property rights there are generally no property rights connected with the area covered by water and relevant to a port... the facilities generally associated with a successful port are unlikely to be provided by anyone unless they have security of tenure.
- Planning the need for some public authority to control a port's physical development (including specialized skills such as nautical surveying, monitoring of the hydraulic regime, possibly dredging and dealing with externalities).
- The provision of "public" or "social" goods or where it is impossible to exclude users from using a facility without paying (e.g. lighthouses, safety of navigation).
- The "arm's length" monitoring of competition because ports invariably occupy valuable land and if any or all

for Port Users to suffer from monopolies or a cartel style of price-fixing. The history of restrictions to entry into many of the ports industries certainly suggests this could occur.

Only a Public Port Authority can effectively perform these four minimum functions to provide the necessary foundation for an efficient port operation.

of it was placed in private ownership then it is possible

I hope that the results of this discussion document will, in the fullness of time, be identified as the turning point within the New Zealand ports industry and related transport sectors. For our part, the Bay of Plenty Harbour Board will continue to involve itself in these issues and discussions.

I also trust that the long-awaited revision of the Harbours Act, deferred while the On-Shore Costs Study was being progressed, will allow Port Authorities more scope for commercial enterprise by the removal of some of the inhibiting clauses.

The Future

By its performance, the Port of Tauranga is proving that it qualifies for inclusion in the lowest cost transport routes for which it may not have otherwise been considered in recent years. This has increased the opportunities and options available to the Port's present and potential Users. With a continuation of sound planning, flexible policies, innovative management and competitive performance, the Board's Employees, the Port Unions and Port Employers will continue to have a major impact on reducing total future transportation costs linked with the seaborne trade of New Zealand.

Last year, my predecessor, Mr. Owens, expressed disappointment at the outcome of the Central North Island Planning Study on future Forestry processing. The Board is aware of the need for improved internal transport requirements both to and from the Port to service the projected growth and is continuing to encourage the development of these links. In addition, the Board has commissioned other studies to assist in identifying the potential of other products that will benefit by the use of facilities at the Port of Tauranga.

Finally, on behalf of the Board I congratulate the General Manager, Executive Officers and staff for their efforts during the year and for the commendable results achieved.

F.G. McKenzie Chairman

International maritime information: World port news:

Report on the nature and quantities of dredged spoils: IMO

(Excerpts from the IMO document: LDC/SG.8/INF.4)

This report summarizes the information received by the Secretariat on the nature and quantities of wastes dumped at sea over the period 1976 - 1981.

Quantities of	f waste du	mped 1976-8	1
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Table Dredged spoils

<u></u>	Quantities in tonnes $\times 10^6$						
Country	1976	1977	1978	1979	1980	1981	
Europe							
Belgium	26.9	25.7	26.9	30.4	43.4	52.5	
Denmark	0.5	0.1	0.2	0.5	0.7	6.9*	
France	NI	NI	15.7	Incomplete information	8.5**	6.8	
Germany – F.R.	8.7	12.2	NI	0	6.5	0	
Ireland	0.1	0.7	0.4	0	0.7	0.1	
Italy	NI	NI	NI	NI	NI	1.8***	
Netherlands	21.8	26.1	25.6	21.7	30.6	37.2	
Portugal	NI	NI	3.3	0.04	1.7	0.8	
Sweden	0	0.003	0	0	0	0	
United Kingdom	13.3	12.2	12.6	12.1	16.0	12.8	
North America							
Canada****	3.0	6.6	14.3	25.4	47.2	19.0	
United States of America	65.0	47.6	45.0	71.9	45.5	53.2	
Asia/Australasia							
New Zealand	6.0	2.8	3.4	3.1	2.6	2.2	
UK (Hong Kong)****	NI	6.3	7.3	8.3	13.1	7.6	
Total	145.3	140.303	154.7	173.44	216.5	200.9	

Notes

 ϕ :

Mean value

Where quantities were given in m^3 , it has been assumed that $\rho = 1.3$

 Some reports did not include information about quantities dumped, so permitted quantities used.

** Information related to 6 ports only to allow comparison with 1978 and 1981.

*** Includes part of 1980. **** All information based on permitted quantities.

**** All information based

NI No information

Dredged Spoils

The most comprehensive information available is that relating to Europe where, in addition to information supplied by the Oslo Commission, some information was provided by Italy (1981) and by Denmark on dumpings outside the Oslo Commission areas. Nevertheless the Oslo Commission has pointed out that even within its area, reporting of dredged spoil dumping is less reliable than that for industrial waste and sewage sludge, particularly in the first part of the period when some Contracting Parties were not in a position to report the dumping of dredged spoil.

Because of this incomplete reporting, Table 3 cannot reliably be interpreted in terms of temporal trends; however the Oslo Commission do note that a pattern emerges in which the Netherlands and Belgium are the main dumpers of dredged spoil in the OSCOM area.

Outside Europe, information on dredged spoil dumped was provided only by the United States and New Zealand. Information on permits issued by Canada and UK (Hong Kong) was provided and is included in the table for comparative purposes.

The United States emerges as the major dumper of dredged spoils worldwide, dumping quantities (45 - 72 million te) which are approached only by Belgium.

The total dredged spoil notified varied from approximately 140 million tonnes in 1977 to 217 million in 1980. These variations may partly reflect changing needs for dredging operations from year to year but must also include the element of less reliable reporting, particularly in the earlier years.

Amounts of Dreaging Dumped in 1981 (in tonnes)	Amounts	of Dredging	Dumped in	1981 ((in tonnes)
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Country	% of tot a l	Amount	Cđ	Hg	Organo- halogens (inc. PCBs)	Cu	Cr	Ni	Рь	Zn	Other metals & metalloids	As
Belgium	47.3	52,504,983 (8)	n.i.	11.333 (7)	1.9146 (6)	642.81 (7)	2,546.99 (8)	528.5 (8)	1,614.2 (8)	9,933.9 (6)		
Denmark	0.7	818,205 (6*)	0.010 (1)	0.001 (1)	0.002 (1)	1.304 (1)	0.328 (1)	0.174 (1)	0.421 (1)	4.970 (1)	0.021 (1)	
France	6.1	6,800,000 (6)	0.746 (1)	0.410 (1)	0.051 (1)	24.597 (1)	32.108 (1)	16.813 (1)	40.120 (1)	96.890 (1)		
Ireland	0.1	153,024 (4)	0.002 (1)	φ0.325	n.i.	0.04 (1)	0.02 (1)	0.02 (1)	φ0.145 (1)	φ0.165 (1)		
Netherlands	33.5	37,199,716 (10)	55.255 (8)	11.622 (8)	37.959 (8)	531.81 (8)	982.91 (8)	318.74 (8)	1,382.95 (8)	4,192.4 (8)	269,999.5 (8)	197.86 (8)
Portugal	0.7	788,800	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.	n.i.		
United Kingdom	11.5	12,786,112 (45)	7.1 (31)	11.3 (31)	0.2 (31)	451.7 (31)	645.4 (31)	218.8 (31)	723.4 (31)	1,923.0 (31)		n.d.
Total	100	111,050,840	63.113	35.001	40.127	1,652.261	4,207.756	1,083.047	3,761.236	16,151.325		

* One report did not include information about the amount dumped
 ** Amount indicated in m³ - presumed density 1.3

n.i. : no information n.d. : not determined

A figure between () gives the total number of reports received.

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Problems faced by developing countries in the area of ports: UNCTAD

(Excerpts from the UNCTAD document: TD/B/1013)

Port Operation and development

Due to the specific nature of ports as a modal interface it is deemed necessary to treat port problems separately from those of shipping. A country's objectives with respect to its ports are that they should: (1) handle existing traffic efficiently, and (2) develop adequately to cope with demand changes and to promote more efficient through transport. The ultimate results of failure to meet these objectives are higher costs for trade, difficulties for export expansion and for development based on imports, and a general brake on both trade and development. The problems faced by the ports in fulfilling the objectives are not all imposed from outside the country; in part they result from national influences.

A major problem affecting ports is lack of investment finance. Orderly port development requires considerable investment in civil and marine works, sophisticated equipment and manpower development. Basic finance is generally available since governments and development banks well recognize that ports are indispensable for national development. The problem concerns investment over and above the basic minimum, as required to improve service, face up to possible changes in traffic patterns, and actively promote trade development.

In this way, opportunities to accelerate development through trade are lost and risks are run that congestion will suddenly arise in adverse conditions, the consequences of which are extremely serious. Unfortunately, lost opportunities and exposure to risk are not necessarily evident and are all too easily accepted; this is the likely explanation why other economic sectors gain investment priority. The influences on this problem are both national and foreign. Responsibility rests with governments because they set the priorities, but they in turn are obliged to take unsatisfactory decisions due to the shortage of funds provided by development banks and aid agencies for specific projects.

It was pointed out in chapter II that many of the benefits of port improvements are derived by port users rather than by the port itself. Normally such benefits would reach the national economy through lower costs for shippers, feeding economic expansion. However, it is possible – especially in the liner trades where uniform charges are often made to shippers using different ports – for such benefits to be dissipated. This possibility is an evident discouragement to investment. If necessary, port pricing policies have to be designed to ensure that improvements do benefit the national economy.

Another major problem with respect to ports is precipitate technological change in shipping. Over the last 15 years, shipping has been subject to considerable technological change, in particular due to increasing ship size, with a commensurate requirement for major changes within the ports – such as deeper water, larger berths, increased cargo reception facilities, more mechanized handling and elaborate management information systems. These changes necessitate heavy capital investment, acquisition of skills and reorganization of labour, which are all extremely difficult in developing countries. Yet such change may be introduced at short notice - even on an experimental basis - and the biggest problem is lack of notice and consultation.

In general, ships are constructed with specific trades in view, but they may be displaced rapidly under commercial influences — especially towards developing countries. The problems this may cause in ports need to be appreciated by ship operators and investment authorities alike. Ship operators should consult more with port authorities and be prepared to contribute to solving technical problems; investment authorities should recognize the need to prepare for new technologies before their arrival is confirmed. In addition ports should seek to collaborate more between themselves, through exchange of technical information and skills, which would facilitate rapid adaptation.

Two further special problems may be mentioned, those of transhipment ports and of land-locked countries. A transhipment port makes investments towards serving third country traffic, but this traffic may disappear overnight by political act or if alternative facilities are constructed elsewhere. The problem for the investor, therefore, is to obtain guarantees against such loss — albeit in return for guaranteed standards of service.

Land-locked countries depend on the ports of neighboring countries. This poses problems for both the land-locked countries and the transit countries. The land-locked countries need guarantees regarding the cost and quality of service, while the transit countries need guarantees that investments made to this end will not be wasted by a sudden transfer of the traffic to alternative routes through other countries.

Analysis of the work of UNCTAD in the field of shipping services (ports)

Much of UNCTAD's work in the ports field has consisted in providing guidance to governments and port authorities on ways of improving the planning, administration and operation of seaports.

It had long been established that port costs – both direct and indirect – constituted a significant proportion of the transportation costs of international shipments. Thus increased port efficiency is an important key to the lowering, or at least the containing, of transportation costs which is necessary for the stimulation of world trade. Recognizing this, part of UNCTAD's work programme had been concerned with increasing the contribution which ports in developing countries could make towards more efficient maritime transport.

For many years, the United Nations had rendered technical assistance to governments and port authorities on ways of improving port efficiency. There had been a tendency, however, for many experts simply to catalogue a port's deficiencies and to propose a series of measures to improve the situation without necessarily giving the port authority concerned a clear idea of the benefits to be derived from the implementation of some particular sub-set of the measures proposed. The result was that, all too often, no action was taken or, at best, only those measures which could be put into effect easily were implemented. It might turn out that the measures taken, far from solving the problem simply transferred it from one part of the port to another.

The objective of UNCTAD's research was to develop a methodology for the study and solution of port problems in order to have a quantitative basis for advising governments on:

- (a) How to derive the maximum benefit from existing port facilities;
- (b) How to develop, in the most economic fashion, new facilities to cope with changing volumes and types of traffic.

Studies have been carried out to advise governments and port authorities on such matters as pricing policy, port performance indicators, how to improve the throughput of general cargo berths and the impact of unitization on port operations and planning. All these research studies involved the use of ports in developing countries as case studies in order that the results would be of real, practical value to developing countries. The results have been disseminated in developing countries through technical reports, through specially designed and executed training programmes and through technical assistance missions.

In the mid-1970s when port congestion manifested itself on a scale hitherto unseen, the effect of serious congestion and how it could strangle a national economy was brought home. Early in 1976 there were, at any one time, approximately 40 per cent of general cargo vessels steaming between ports, 40 per cent being discharged and loaded in ports and 20 per cent anchored outside ports waiting for a vacant berth. This disastrous 40-40-20 situation cost shippers over \$50 billion in a year - and a good deal of that was borne by producers and consumers in the developing countries. Many development projects had to be postponed or cancelled due to irregular or curtailed deliveries of capital equipment and materials. UNCTAD made an important contribution to the solution of port congestion by bringing influential parties together and, in a number of cases, by fielding port congestion task forces to assist local staff determine the real causes of the congestion, to propose specific action to deal with the problem and to help with the implementation of the measures required.

The universal character of the contribution of UNCTAD's work in the field of ports has to be recognized. The beneficiaries of port improvements in developing countries are not only the developing countries themselves, but the whole international community. By port improvements and developments greater port efficiency reduces sea transport costs and opens up new trading possibilities; ships (mostly operated by foreign companies) are turned around at a faster rate and reliability in trade flows is increased. Perhaps this is one of the reasons why port development has figured so prominently in the "Common Understanding" and the work programme of the Committee on Shipping.

MARAD completes development of a "Port Risk Management Guidebook"

The Maritime Administration has published a "Port Risk Management Guidebook," a 127-page "how to" reference book designed to provide ports with basic information needed to establish and maintain appropriate and costeffective insurance and risk-management programs. While written from a port's point of view and geared toward the basics of insurance and risk management, the publication is expected to be generally useful to other organizations in the maritime and shipping industries.

It was produced under a cost-shared research contract with the Wyatt Company of Washington, D.C., with assistance and guidance from a study committee comprised of representatives of MARAD and other federal agencies, trade associations and U.S. ports.

Limited copies of the guidebook are available from the Office of Port and Intermodal Development, Maritime Administration, U.S. Department of Transportation, Room 7201, 400 Seventh Street, S.W., Washington, D.C. 20590 (202) 426-4357.

Brazilian ports news in brief

- The first phase of the Port of Praía Mole (State of Espírito Santo) has been inaugurated. The Port is destined to receive raw material (coal) for the steel mill industry of the region and to be the outlet of the production which goes to the external market.
- Next year Cia. Docas da Bahia is going to invest 4 billion cruzeiros of its own resources in infrastructure works at the ports of Salvador, Malhado and Aratu.
- The Wheat and Soja Terminal of the Port of Rio Grande has resumed its operation.
- The president of Cia. Docas do Rio de Janeiro joins the project of establishment of a free zone in the Port of Rio. (Portos e Navios)

Fraser Port earns B.C. Environmental Award



Photographed after the ceremony, from left, The Honourable Robert G. Rogers, LL.D., Lieutenant Governor of British Columbia, Chris Brown, Chairman of the Fraser River Harbour Commission, holding the award with Rick Pearce, Port Manager and The Honourable Austin Pelton.

The Fraser River Harbour Commission was awarded a British Columbia Minister of Environment's 1984 Industrial Category award for its efforts in designing and implementing a unique system for controlling the quality of leachate emanating from the landfill operations at its Fraser-Richmond Port site.

B.C.'s new Environment Minister, the Honourable Austin Pelton, made the presentation to the Commission at a Government House dinner recently held in Victoria. The award was accepted on behalf of Fraser Port by Chris Brown, Chairman of the Commission, and Rick Pearce, Port Manager.

"The awards are my way of showing appreciation on behalf of the government for the positive contribution made by industry and public interest groups", Pelton said in making the presentation. "The outstanding efforts of these agencies demonstrate how much can be accomplished on behalf of the environment even in a period of belt tightening", he concluded.

"We are proud to be a leader in developing and installing this new system to clean up our environment", Fraser Port Chairman Brown said. The Commission acquired the site in 1969 for future port development. The terms of the purchase required that the site continue as a sanitary landfill until September 1986, unfortunately this resulted in the Commission inheriting a pollution problem. As soon as the problem was recognized, the Commission retained the services of the B.C. Research Council to assist in the development of a solution to eliminate the pollution.

"The system installed has proven to be the cutting edge of advance technology for pollution control. This installation has been so successful that it has attracted interest from several international pollution control agencies. Not content with this achievement, the Commission is continuing to up-grade the system as part of its on-going environmental improvement program".

New container berth to be ready in June 1986: Port of Halifax

When Cerescorp held the official opening of the Fairview Cove Container Terminal in July of 1982, at the Port of Halifax, they had one ship call a week. In 1985 they will have more than 8 calls a week, and will handle more than 150,000 TEU's (Twenty foot equivalent units) during the year. This is quite a feat, given that the terminal has only 1,100 feet (335 meters) of berth space, and two container cranes.

Klaus von Borries, the manager at the terminal, frankly admits that Cerescorp is out of the running for new customers at the present time. He says, "the company has always stressed satisfaction for existing customers over and above the pursuit of new business." Based on the evidence, it's an approach that is undoubtedly working; Atlantic Container Line works their new G3 vessels at the terminal, Hapag-Lloyd works both their deepsea and New England feeder service vessels at the terminal, and Polish Ocean Lines calls weekly. Mr. von Borries says "we're happy, our customers are happy, and we want to keep it that way".

In June 1986 however, everybody is going to be a lot happier, as this is the date that the 20 million dollar 1,080 foot (330 meter) expansion at the terminal will be ready to receive its first ship call. Cerescorp is presently negotiating for a third container crane that can be worked in conjunction with the existing two along the, then to be 2,180 feet (665 meter) continuous brow. At that time the terminal will be able to accommodate up to two G3 vessels simultaneously.

The main contract for the berth expansion of about \$12 million has already been awarded to Beaver Marine

Construction for dredging, filling, and crib work. The Halifax Port Corporation (HPC), who will construct the facility and lease it to Cerescorp, is now reviewing proposals for site services, and the contract should be awarded in the near future.

Halifax with its deep water, direct ocean access, ice free harbour can easily handle the new 3,000 -4,000 TEU capacity vessels, and the ports location within 50 miles of the Great Circle route between Europe and North America is ideal for the tightly scheduled ships. Probably the best inland container rail transport system in the world, combined with the ports' natural attributes, and extensive port infrastructure make it the premier choice to serve a hinterland of over 50 million people. (Port of Halifax)

U.S. port traffic

Waterborne foreign commerce at U.S. ports dropped in October after two months of successive gains. October cargoes were down six percent from September and trailed October 1983 by seven percent. Declines were evident in all categories except tanker imports which rose somewhat above September 1983 levels but were still lower than those recorded in October 1983. Part of the explanation may lie with the sharp drop in coal exports on the Great Lakes and at several eastern ports after a September surge. The grain trades were also flat. Nevertheless, for the year to date, January through October, total imports and exports were seven percent higher than the same period of 1983 and marginally greater than the 656.5 million tons recorded in 1982.

Among the port ranges, the greatest improvement through October (compared to January-October 1983) was registered by the Great Lakes (+31 percent), followed by the South Atlantic (+13 percent), the North Pacific (+13 percent), the North Atlantic (+ seven percent), the Gulf (+ five percent) and the South Pacific (+ four percent). A data summary is provided below.

U.S. Waterborne Foreign Commerce (1,000 Short Tons)

	October 1984	October 1983	JanOct. 1984	JanOct. 1983
United States	67,043	60,239	660,962	612,343
North Atlantic	16,707	20,557	181,792	169,783
South Atlantic	6,397	4,695	52,592	46,454
Gulf	26,493	28,330	268,347	255,404
South Pacific	4,620	5,496	51,950	49,875
North Pacific	4,910	5,668	58,206	51,352
Great Lakes	6,216	5,594	49,316	37,418

NOTE: Regional tonnages may not sum to national totals due to rounding.

SOURCE: U.S. Bureau of the Census, U.S. Waterborne Exports and General Imports, January-October issues for 1983 and 1984.

(AAPA Advisory)

Port of Houston opens new Turning Basin Wharf No.32

Located on the east end of the terminal, the new \$10.8 million wharf, with 806 lineal feet of quay and 20 acres of paved marshalling area, is designed for handling project cargoes and heavy lifts.

Project cargoes can consist of various components of a particular project, such as a petrochemical plant. These components can be staged in the expanse of the new wharf awaiting shipment.

The channel adjacent to the new dock has been dredged to a depth of 36 feet.

In addition to the completion of Wharf No. 32, the Port Authority has utilized the recessionary slowdown to implement new improvements and upgrade facilities such as the repair of Wharf No. 8, one of the oldest docks in the Turning Basin area. This wharf access and platform-type design makes it ideal for unloading LASH barges and for heavylift cargoes. (Port of Houston Magazine)

Harbor Commission approves World Trade Center site lease: Port of Long Beach



Artist's rendering of how six-square block World Trade Center site leased from the Port of Long Beach would look on completion of \$319 million project in early 1990's.

* * * *

Another major milestone toward the completion of the \$319 million World Trade Center in downtown Long Beach was met February 25 with the first reading of a lease agreement between the City of Long Beach and the Long Beach World Trade Center Associates.

The lease action, approved by the Long Beach Board of Harbor Commissioners, is an important step in the ambitious project being jointly negotiated between the Port and IDM/Kajima.

Actual construction of the center, which will be the most prestigious project ever build in the City of Long Beach, is expected to start early in 1986.

When completed, the trade center will provide headquarters for many of California's leading maritime and commerce-related corporations and world trade support activities. In addition to three multi-storied towers, the 2.2 million square foot enterprise will include a luxury hotel, restaurants, meeting facilities, museum, exhibition space, research and communications complex and a first class world trade club.

Over the past five years, the Port was successful in purchasing property and clearing site for the project on a prime 12.7-acre parcel of downtown land bounded by the Long Beach Freeway, Broadway, Ocean Boulevard and Magnolia Avenue. In the process, more than 1,300 residents relocated and some 65 structures were either razed or moved to sites in other parts of the city.

The approval of the design will be the project's next major milestone between the Port and the Long Beach World Trade Center Associates – a California general partnership consisting of IDM Corp., and Kajima International, Inc.

Oil spill conference attendees witness demonstration: Port of Long Beach



Some 1,000 attendees at the 1985 Oil Spill Conference came to Los Angeles recently from 35 countries for the bienniel meeting staged by the U.S. Coast Guard, the Environmental Protection Agency and the American Petroleum Institute.

Highlight of the event was a demonstration of the latest in containment, dispersment and retrieval techniques in an actual demonstration conducted in Long Beach Harbor waters. Containment booms were dropped by helicopter and deployed from special vessels, chemicals were sprayed from the air and from boats and imaginary spills were recovered by various means in the opening day field demonstration. It was the ninth such international meeting since 1969 when several oil spills around the world called attention to the need for such an exchange of technology.

Baltimore's foreign commerce increases 20.5%

Foreign waterborne commerce in the port of Baltimore increased 20.5 percent during 1984, according to statistical projections prepared by the Maryland Port Administration. The port handled 26,060,000 tons of foreign trade in 1984 compared to 21,623,756 tons in 1983.

Specifically, 1984 was the second consecutive year in which container tonnage at Dundalk Marine Terminal broke all previous records. It also was a record year for total tonnage at the 550-acre, 13-berth marine terminal. These records are even more astonishing than usual, especially when considering the depressed level of the global economy during the year, according to the MPA.

The cargo figures were reported recently by the MPA as a year-end compilation and were based on 10 months of actual monthly statistics, and projections for the remainder of the year.

Foreign container cargo handled in the port of Baltimore reached 4,599,000 tons in 1984, a 22.4 percent increase over the 1983 level. Foreign general cargo (including container and breakbulk) jumped 23.3 percent, reaching 5,985,000 tons in 1984 as compared to 4,852,246 tons in 1983. Total container cargo (foreign and domestic) handled in the port of Baltimore in 1984 increased 19 percent, going from 4,736,000 tons in 1983 to 5,638,000 tons. The port's containerized cargo represented a 76.8 percent portion of all general cargo in 1984.

Container cargo handled at both the port's public and private marine terminals increased during 1984. A total of 4,833,000 tons of cargo was handled by the port's stateowned terminals in 1984 compared to 3,976,000 tons of cargo handled by these same facilities the previous year. A total of 805,000 tons of cargo was handled at Baltimore's privately-owned marine terminals in 1984, an increase of 5.9 percent over the 760,000 tons of cargo handled at these facilities in 1983.

"The clear fact that these figures demonstrate is that the port of Baltimore is healthy and growing," W. Gregory Halpin, Maryland Port Administrator, says. "Every pulse beat we can find that measures port health is ringing a positive message." (Port of Baltimore)

C.Alvin Bertel elected Dock Board president: Port of New Orleans

C. Alvin Bertel, Jr., was elected president of the Board of Commissioners of the Port of New Orleans at its regular meeting of January 3, 1985, exactly 40 years to the day after his father, C. Alvin Bertel, Sr., was elected to the same office. The senior Bertel, who was employed by the Dock Board for some 30 years before he entered private industry and later became a commissioner, is credited with a major role in the campaign to "depoliticize" the Dock Board, which succeeded in 1940.

The junior Bertel filled the vacancy created when Commissioner Joseph C. Domino resigned as president.

In a prepared statement following his election Bertel pointed out that for 45 years the Board has practiced rotation in office, with each commissioner getting his turn to be president "so that there is no competing, no politicking for the presidency." He noted that both the selection of commissioners and the leadership have been removed from politics.

In his statement to the Board Bertel urged that Domino form a Past Presidents Council, which would attend all meetings of the Board and "give us the benefit of their guidance." He also expressed concern about state legislation that might reconstitute the Dock Board and "would tend to put the Port back into politics." At the same time, he advocated the creation of a statewide board whose only function would be to allocate capital funds, "leaving this and other operating boards intact." Bertel also stated that the Port of New Orleans should "redouble its efforts to work with the port commissions of other parishes, such as we are doing with St. Bernard." He also said it was time to reconsider the proposed new lock for the Industrial Canal "and perhaps abandon the project." (Port Record)

Port of New Orleans cuts fee on CBI imports

The Board of Commissioners at its regular meeting approved a 25% reduction in the wharfage rate for imported cargo from the Caribbean Basin region. The tariff of \$1.30 per ton was cut to \$1.00 per ton, effective January 15, 1985 for most commodities certified by U.S. Customs as eligible for duty-free entry into the U.S. under the Caribbean Basin Initiative (CBI) program.

By this action the Port of New Orleans has taken the lead in a concerted effort of the New Orleans maritime community, including freight forwarders, custom house brokers, and railroads, to attract more cargo from the Caribbean Basin. "No other American ports have demonstrated such cooperation with the federal government's program," said Henry Rauber, assistant executive port director.

The reduced wharfage rate is part of a planned group of incentives designed to attract exporters from the Caribbean area. It is hoped to develop attractive rates by custom house brokers, inland transportation, and particularly ocean carriers.

Dock Board President C. Alvin Bertel, Jr. pointed out that although the Port is the leader in this matter, it is up to the private sector to move the cargo. That requires a united effort by all segments of the New Orleans maritime community, he said. (Port Record)

Foreign trade valued at \$49.4 billion, highest in the nation: Port of New York-New Jersey

The Port of New York-New Jersey handled a record total of 13.1 million long tons of oceanborne foreign general cargo in 1984, Port Authority Chairman Alan Sagner announced recently. The 1984 volume was up 17.0 percent from the 11.2 million long tons of such cargoes handled at the Port in 1983.

In the annual analysis of foreign trade in the bi-state Port released recently, Chairman Sagner further noted that the Port of New York-New Jersey handled a total of 53.8 million long tons of oceanborne foreign trade, both general and bulk, valued at \$49.4 billion, highest in the nation. Of this total, \$40.9 billion represented high value general cargoes.

"The Port of New York-New Jersey's tonnage gains were heavily weighted toward the inbound side. Indeed, inbound general cargo accounted for 79.8 percent of New York's total general cargo, the highest percentage in the history of the Port," Mr. Sagner said. General cargo imports surged 23.1 percent to 10.4 million long tons while general cargo exports declined 2.2 percent to 2.6 million tons.

Port underperforms North Atlantic Ports, matches U.S. Ports

Competitively, the Port of New York-New Jersey

slightly underperformed the North Atlantic ports, but matched the performance of all United States ports.

The 13.1 million long tons of oceanborne general cargo handled at New York-New Jersey last year represented 45.5 percent of the 28.8 million long tons of such cargo handled at all North Atlantic ports. But, New York's share of North Atlantic oceanborne general cargo trade fell slightly from 46.4 percent in 1983 to 45.5 percent last year, while its United States share held firm at 10.5 percent.

The North Atlantic range of ports includes New York, Boston, Philadelphia and Baltimore, as well as Bridgeport and Providence, and extends from Portland, Maine, to Norfolk, Virginia.

General Cargo Imports

The Port's oceanborne general cargo imports rose 23.1 percent to 10.4 million long tons in 1984. This was the fourth consecutive year in which the Port enjoyed gains on the inbound side. Moreover, the 1984 import tonnage for general cargo exceeded the previous peak of 8.7 million long tons in 1968 by over 1.7 million tons.

"This continued upsurge in inbound general cargo," Chairman Sagner declared, "was a direct result of robust recovery in the national economy and the increased purchasing power of the U.S. dollar for foreign goods."

The Port of New York-New Jersey's import gains were broad-based, as virtually all commodity groups posted gains. Chemical, agricultural products, machinery and capital goods, iron and steel products, textiles, and paper products were especially strong. These six commodity groups accounted for two-thirds of New York's inbound tonnage gains.

General Cargo Exports

The Port of New York-New Jersey's outbound general cargo was depressed in 1984. Volume was 2,648,889 long tons, down 2.2 percent from 1983 and down 37.8 percent from 1980.

"The steady rise of the dollar in the past four years has been a major obstacle to the New York-New Jersey Port's outbound trade," Mr. Sagner said. "It has not only restricted the Port's bilateral trade with its major trading partners, but has impaired its ability to compete with these nations for third nation trade.

"Moreover," he added, "the strong dollar has discouraged leading industrial nations from adopting expansionary monetary policy. This has restricted their economic recovery and has in turn, further diminished their demand for U.S. goods."

The oil glut is another factor which has hurt New York's outbound general cargo. Because of lower oil prices, the OPEC nations have significantly reduced their imports.

Finally, the Port's shipments to the developing nations, principally in Latin America, have been restricted because of the debt problems of these nations.

The Port of New York-New Jersey's outbound general cargo was characterized by declines in a wide range of commodity groups, including agricultural products, machinery and capital goods, plastics, building materials, paper products, and hardware.

Bulk Cargo

The Port of New York-New Jersey's oceanborne bulk cargo trade rose 15.0 percent to 40.7 million tons in 1984.

Inbound bulk cargo climbed 14.6 percent to 37.9 million tons while outbound bulk cargo advanced 20.9 percent to 2.8 million tons.

Petroleum imports, which account for 83.6 percent of the Port's total bulk cargo, climbed 14.3 percent to 34.0 million tons. Refined petroleum product imports moved sharply higher as refining capacity in the region continued to decline.

Non-petroleum bulk cargo imports moved higher. For example, cement and lime imports surged 178.8 percent to 574,864 tons, reflecting strength in the construction industry. In addition, gypsum imports rose 22.2 percent, salt (up 19.1 percent), and sugar (up 6.7 percent).

On the outbound side, iron and steel scrap, the Port's leading bulk cargo export commodity, rose 27.5 percent to 1,603,946 tons. Residual fuel oils also moved higher. In contrast, anthracite coal exports fell 35.3 percent to 165,797 tons.

Hyundai M/M, Port of Oakland in new five year pact

Approval has been given to a use agreement with Hyundai Merchant Marine Company, Ltd. designating Oakland as the exclusive northern California port of call for vessels deployed in the line's container service between the U.S. west coast and the Far East, it was announced by H. Wayne Goodroe, president of the Oakland Board of Port Commissioners.

In making the announcement, Goodroe cited Korea's current status as the second largest trading partner of the Port of Oakland. "The Republic of Korea ranks second only to Japan in the volume of trade now passing through the Port of Oakland, both for imports and exports," Goodroe said. "In this context, it is especially significant that, with Hyundai Merchant Marine's longterm agreement in place, all four Korean flag container services serving northern California are using Port of Oakland facilities," Goodroe also said.

The new use agreement, which is for a term of five years, calls for the Hyundai trans Pacific service to use the Seventh Street Public Container Terminal, a 58 acre, four berth facility operated by Marine Terminals Corporation.

Port of Duluth-Superior impact at \$233 million

Waterborne commerce through the Port of Duluth-Superior in 1984 resulted in an economic impact on the Twin Ports of more than \$233 million, according to figures released by the Seaway Port Authority of Duluth.

A total of 32,503,203 metric tons of cargo moved through the port in overseas and domestic trade in 1984.

The formula for determining the local impact of port activity, based on a University of Minnesota-Duluth study, is updated annually at the rate of inflation used by the Minnesota Department of Employment Security.

The figures reflect only the impact of wages earned and goods and services provided directly in the movement of cargo in the port. Included are earnings by longshoremen, warehousemen, linehandlers, tugmen, pilots, waterfront inspectors and surveyors; charges for repairs, supplies and crew expenditures, and various other port services. Earnings of railroad workers, truckers, stevedoring contractors, vessel agents, freight forwarders, brokers and related ship service employees are also factored into the impact study. The actual cost of commodities is not included.

The study also provides for a multiplier formula to determine the secondary impacts across the region. Titled "The Quantitative Impact of the St. Lawrence Seaway on the Hinterland Economy", by the University of Wisconsin-Milwaukee, this study demonstrated a secondary or indirect impact of 2.57 times the direct impact. Under this formula, the secondary impact of the 1984 shipping season on the state and region would be \$599,929,782.20, or a total of direct and secondary economic impact of \$833,365,495.12.

Overseas and domestic shipments of grain through the Twin Ports created the greatest dollar impact the economy with a total movement of 5,190,170 metric tons generating a direct impact of \$109,239,735.11.

Movements of dry bulk cargoes such as taconite pellets, coal, limestone, cement and salt genearted \$98,956,158.96 of direct impact on a total of 26,601,118 tons.

General cargo imports and exports totaled 123,995 tons and created an economic impact of \$10,582,973.25, the highest impact ratio of all cargoes.

Direct Impact of Commercial Shipping in Duluth-Superior 1984

Cargo Category	1983 Per Ton Impact	1984** Per Ton Impact
General Cargo (Including Lumber and Metal Products)	\$82.07	\$85.35
Bulk Liquids (Petroleum Products and Misc. Liquids)	\$30.35	\$31.56
Grain, Oilseeds and Grain By-products Domestic	\$11.00	\$11.44
Canadian (For Transshipment) Overseas Grain	\$11.00 \$24.33	\$11.44 \$25.30
Grain By-products	\$27.15	\$28.23
Cargo Category	1984 Tonnage (Metric)	1984* Total Impact
General Cargo (Including Lumber and Metal Products)	123,995	\$ 10,582,973.25
Bulk Liquids (Petroleum Products and Misc. Liquids)	- 00 -	- 00 -
Grain, Oilseeds and Grain By-products		
Domestic	. 897,359	\$ 10,265,786.96
(For Transshipment)	. 856,277	\$ 9,795,808.88
Overseas Grain	. 2,674,135	\$ 67,655,615.50
Grain By-products	. 762,399	\$ 21,522,523.77

Total all Grain, Oilseeds, and Grain By-Products

(5,190,170) (\$109,239,735.11)

	1983 Per Ton Impact	1984** Per Ton Impact
Misc. Bulk (Includes Scrap, Woodpulp, Newsprint, Fertilizer)	\$23.98	\$24.93
Dry Bulk (Includes Iron Ore, Taconite Coal, Limestone, Salt, Coke	, ,	
Potash)	\$ 3.58	\$ 3.72
	1984 Tonnage (Metric)	1984* Total Impact
Misc. Bulk (Includes Scrap, Woodpulp, Newsprint, Fertilizer)	587,920	\$ 14,656,845.60
Dry Bulk (Includes Iron Ore, Taconite Coal, Limestone, Salt, Coke Potash)	, 26,601,118	\$ 98,956,158.96
Totals: 1983: 28.824.453 MT	\$216,156,514.68	3

1983: 28,824,453 MT \$216,156,514.68 1984: 32,503,203 MT \$233,435,712.92

- *Note: Does not include actual value of cargo or commodity.
- **Note: Impact figures based on economic impact study by University of Minnesota-Duluth and JFP & Associates with yearly revisions at the rate of inflation. 1984 rate of change in CPI set at 4.0% as determined by the Minnesota Department of Economic Security and "All Urban-CPI".

New construction, container growth highlight Port of Tacoma's 1984

Over \$40 million in new terminal construction and a 13% increase in container traffic were two of the major highlights of the Port of Tacoma's activities during 1984. The new terminal construction included the \$10.5 million terminal for Totem Ocean Trailer Express (TOTE), which opened in August of 1984 on Blair Waterway. TOTE, a major shipper to Alaska, has been at the Port since 1976, and relocated within the Port to give Sea-Land the room they needed for their new terminal.

The new \$30 million Sea-Land facility, which will be operated as Tacoma Terminals, Inc., opens in May. The two-berth facility covers 76 acres and will initially include four container cranes. A special dockside intermodal yard is being built adjacent to the Sea-Land terminal, which is expected to handle about 200,000 containers during its first full year of operation. The container activity at the new Sea-Land facility is expected to bring to Port of Tacoma into the top ten rankings of North American container ports, and into the top 25 at the world level.

M. Francois Le Chevalier re-elected Chairman of the Board: Port of Le Havre

In accordance with a series of recent laws and decrees concerning the administration of self-governing seaports and the introduction of greater democracy into the public sector, the Port of Le Havre Authority now has a new Board of Directors with 26 members. At its first meeting on December 6th M. François Le Chevalier was re-elected Chairman and M. Francis Jung Vice-Chairman, with M. Jean-Pierre Bonon elected as Secretary.

(Port of Le Havre Flashes)

Training course for container checkers: Port of Hamburg

The growing share of containers in general cargo handling has done more than change the face of the Port; it also makes greater demands on the people working in the Port. Nowadays the prime demand is no longer for physical strength; what is called for is rather technical understanding, individual responsibility and flexibility.

In order to give the individual the opportunity to qualify for these increased demands, the port economy, together with the appropriate trade unions and the Hamburg school authorities, created some time ago the port specialist school, which since May, 1982 has been domiciled in the centre of the Port.

The facility consists of a modern training building, with instruction rooms, a permanently fixed ship's section, complete with hold hatches, derricks, winches and board cranes, as well as shoreside lifting gear and dockside transportation vehicles. The training programme includes courses for crane drivers, forklift truck drivers, winch operators, deck staff etc.

Of the present 10,500 or so people employed in cargo handling in the Port, more than 1,200 have meanwhile acquired the skilled port operative's certificate. In addition there is the large number of operatives who, thanks to their vocational training and years of experience in the Port, already possess port specialist worker qualifications.

They now have the opportunity to be trained as container checkers. In handling firms container checkers carry out examinations to establish whether incoming boxes are in need of repair, they obtain the data of the individual containers and feed the information into the EDP system.

The instruction plan of the two-week course is oriented to these demands in practice. The course imparts knowledge of the internal structure of the handling terminal, the computer-related feeding of data into the EDP systems, the construction of containers, accompanying papers, frequent types of damage etc.

The number of course participants is limited to a few persons so that intensive attention to every individual participant can guarantee the best possible advanced training. The first course took place in late summer last year, and further courses began in November last.

Carrying out the instruction courses gives the Hamburg port's customers the guarantee that for all sectors of cargo handling excellently trained staff are available, whose knowledge is constantly being expanded and brought up to date. Participation in the courses gives the port workers themselves better employment prospects and more social security. (Port of Hamburg Topics)

Bonn called on to act—Deregulation urgently demanded

In company with the other German seaports, Hamburg has asked the Federal Government for a satisfactory legal

arrangement for tariff fixing as affecting the seaports' incoming and outgoing traffic.

At the present time the Belgian and Dutch ports enjoy considerable competitive advantages compared to the German ports, because goods traffic beyond the German frontier has been liberalized, and the freight rates there can be freely negotiated, while within the Federal Republic the tariffs for maritime goods are inflexibly laid down.

The German seaports would be able to attract a great deal more cargo from the Federal German interior if it were not cheaper to transport it to Rotterdam or Antwerp for shipment. For instance, one kilometer-ton in transport to the German ports costs on an average 0.21 DM, but to the Rhine estuary ports only 0.15 DM. This is a 30 per cent advantage on transport costs to the benefit of the western competition.

"The decisive step which must come now is equalisation of the inner-German hinterland tariffs for marine cargo with the system of tariff formation in frontier-crossing traffic with the Rhine estuary ports", said Helmuth Kern, President of the Association of Hamburg Port Enterprises, referring to this problem. He has frequently called for farreaching tariff liberalization in seaport hinterland traffic. In Kern's opinion, it will probably not be possible to avoid a change in current legislation. The present arrangement was tantamount to subsidisation of Rhineland traffic by German legislators, he said.

Federal Transport Minister Dr. Dollinger is hopeful, as he said, of some understanding being shown by the inland carriers; but these have so far displayed little readiness to accept liberalization of tariffs in inland traffic.

(Port of Hamburg Topics)

1984: Record year for the Port of Amsterdam

The port of Amsterdam handled a record amount of cargo in 1984. According to the figures of the Amsterdam Port Management, there was a 16% increase to 27.1 million tons in goods traffic in 1984 compared to the previous year. Until now, the record was the 24 million tons set in 1971. Cargo has increased steadily since its low point was reached in 1978 (17.1 million tons).

Year	Cargo	Number of ocean-going vessels
1978	17.1 million tons	4390
1979	19.7 million tons	4324
1980	22.4 million tons	4336
1981	21.1 million tons	4060
1982	23.3 million tons	4020
1983	23.4 million tons	4086
1984	27.1 million tons	4601

The bulk sector, with the exception of grain, increased on all fronts. The general cargo sector remained stable. The number of ocean-going vessels showed an increase also with regard to total capacity. The Port Management expects a stabilization in the bulk goods sector in 1985. It is less optimistic about developments in the general cargo sector.

Bulk goods sector

In spite of sharp swings in the past year, mineral oil

shipments increased by 1.3% to 10.5 million tons. In the last three months of the year especially, there was a clear increase due to stockpiling in the West German hinterland. The spectacular growth of 43.5% to 4.6 million tons in animal fodders/oilseeds was the direct result of the broadening of handling facilities.

Sharpest increases were seen in coal traffic which increased by 86% to a volume of 4.3 million tons. This can be attributed partly to incidental extra traffic to England and partly to a recovery of the iron and steel industry. This last was also the reason for the increase in ore traffic by 21.5% to 1.3 million tons.

The only decline seen in the bulk goods sector was in grain, which decreased by 15% to 1.9 million tons. Molasses traffic increased again in 1984 by 22.3% to about 0.7 million tons.

The category other goods (which includes fertilizers, sand and gravel) showed a total of 1.1 million tons, a 14% increase in 1984.

General cargo sector

The Port Management's figures regarding general cargo record, a growth of 2% to a total of nearly 2.7 million tons. This is the result of the fact that the 1983 cocoa season peak did not occur until the beginning of 1984. This means that 1984 had two cocoa transhipment peaks. If this is disregarded, the general cargo sector remained stable compared to 1983.

Within the general cargo sector there was a 13.9% increase in container traffic, to 816,000 tons, and a 22.7% increase in auto traffic to 237,000 tons. Other general cargo (packed, ro/ro and unpacked) grew only by 2% to nearly 1.3 million tons, largely because of the cocoa traffic for 1983 which was registered in 1984. Timber traffic declined by nearly 26% to 344,000 tons.

The number of arriving ocean-going ships increased by 515 to 4601. At the same time, total capacity of arriving ships totaled 28.8 million tons, an increase of 1.6 million tons.

Expectations for 1985

The Port Management expects that bulk goods cargo in 1985 will stay at the same level, or fall somewhat behind the level reached in 1984. An increase is expected in the grain sector as a result of the change in grain export policy from the United States to the Soviet Union.

Positive effects on the development of the dry bulk sector are expected from the mid-1985 deepening of the sea approaches to IJmuiden. Amsterdam and the region will benefit here from the availability of the vital deep water port facilities for dry bulk traffic. The first deeper coal carrier of that sort entered the port just before the end of the year. As regards general cargo traffic, the Port Management expects that in 1985 there will be a stabilization of cargo, due among other things to the regularization of cocoa traffic. In addition, it is expected that there will be a gradual increase of containers in the general cargo package.

Tilbury's European gateway

The recent appearance of five short sea cellular vessels at the Port of London Authority's common-user container terminal in Tilbury Docks underlines the growing importance of this traffic to the port.



Although Tilbury is traditionally a deep-sea port, and in 1984 there was a marked growth in this traffic, PLA believe its short-sea business will also continue to grow as shippers take more advantage of Tilbury's geographic location and improved motorway links. With motorway connections now to all the UK's major industrial centers Tilbury Docks is ideally placed to handle the increasing short-sea trade between the UK and the EEC.

A good year for Plymouth: Associated British Ports

Figures released for the Port of Plymouth, where Associated British Ports recently announced the construction of a new Roll-on/Roll-off terminal, show that the port's Ro/Ro freight traffic increased by nearly 16% in 1984.

Plymouth's Ro/Ro terminal handled over 18,000 freight units last year and vessel calls were up 12% at 599. Much of the increase was in perishable cargoes such as fruit and vegetables, of which over 40,000 tonnes were handled during the year.

"It is gratifying to see another good year for Plymouth, especially in today's economic climate" said Mr. Edward Chapman the Port Manager. "Figures like these justify ABP's decision to build a second Ro/Ro terminal here – which will more than double our capacity – and I think we can look to the future with confidence".

Garston's container terminal opens to larger ships: Associated British Ports

The container terminal at ABP's Port of Garston, Merseyside, is now open to larger ships, following the widening of the entrance to the port's North Dock.

Vessels of up to 63 ft beam will now be able to enter the North Dock, which was previously restricted to ships of 48 ft beam. The scheme was commissioned by Associated British Ports in December 1983, and has cost nearly \pounds million.

Garston's North Dock terminal can handle up to 50,000 boxes a year, and has regular liner services to destinations in Ireland and the Eastern Mediterranean.

The port is seeking new business both for the container terminal and the general cargo facilities in the North Dock. ABP are confident that the completion of the widening scheme will give a major boost to Garston's marketing drive.

Administrator Cheung Yeun-sei briefs president on 1985 KMPA projects

Administrator, Korea Maritime and Port Administration (KMPA) Cheung Yeun-sei made February 26 the New Year's report to President Chun Doo-hwan on the 1985 major programs and projects of his office.

The following are the summary of the report made available from KMPA.

Shipping companies entrusting their vessels to operating firms will be fully merged by the end of this year, five months earlier than the original schedule.

Shipping companies will be urged to dispose of their aged vessels and, to promote the project, 10 billion won in loans will be made available from its budget every year by 1987 for the annual disposal of 300,000 tons of vessels.

A consultation committee between shipping and shipper circles will be formed in a bid to prevent them from unfair dealing.

Foreign liner operators will file their schedule and freight tariffs with KMPA to keep them from unfair practices.

A container terminal will be constructed at the outer port of Pusan by 1989. The construction will start this year. Another terminal will be planned at Kwangyang Bay in Chollanamdo to meet the probable container cargo increase in the future. Basic engineering design will be completed this year. In a long-term goal, the government will increase the handling capacity of Korean ports to 192 million tons in 1991 and 354 million in 2001 from 113 million last year.

Freight revenue goal is set at \$4.7 billion in 1991 and \$8.9 billion in 2001 from \$2.3 billion last year.

To meet expected cargo increase, the Korean fleet will grow to 11 million tons by 1991 and 19 million tons by 2001 from 8 million tons last year.

(Korean Maritime News)

Additional container terminal to be built in Pusan: KMPA

Cheung Yeun-sei, administrator, the Korea Maritime and Port Administration told a new conference that the 240 billion won 3rd phase development project for a container terminal construction in Pusan will be undertaken in the later half of this year.

Mr. Cheung also said a sum of 58 billion won is earmarked for the purchase of as large land as 330,000 pyongs to set up supporting facilities including container yards, while his office plans to move the current coal terminal on Pier #7 to a remote area of Pusan.

The construction of the terminal will increase the annual container cargo handling capacity of Pusan to 500,000 TEUs and provide a spacious inner harbor for ship mooring.

(Korean Maritime News)

Record trans-Tasman trade: Port of Auckland

Australia has consistently been the leading overseas trading partner of New Zealand through the Port of Auckland, being both the largest supplier of overseas imports and, in four of the past five years, the largest customer for overseas exports from the port. Over the past four years, rapid growth in trade with Japan has threatened Australia's leading position, but in the financial year to September 1984 a combination of several factors should see Auckland's trans-Tasman trade setting a record for overseas cargo exchanged which is likely to stand for several years.

The year's trade with Australia is likely, when all shipments are accounted for, to total nearly 1.4 million tonnes – more than 35% up on the 1982-83 throughput. This should include well over one million tonnes of imports for only the second time ever, representing growth of up to 300,000 tonnes on 1982-83 imports across the Tasman.

Exports, after a two-year break from a decade of almost continuous annual increases, should post a rise of about 30,000 tonnes to threaten the 1980-81 record of 281,000 manifest tonnes for exports to any country.

In discussing trends in trade between countries it is easy to latch on to individual events but in the case of established trading partners like New Zealand and Australia, there are many factors involved. The major influences on the 1983-84 upsurge in Auckland Australia cargoes include:

- Changes in the sources of bulk imports
- Economic and currency trends
- Improvements in shipping services
- The Closer Economic Relations Agreement.

(Port of Auckland)

Board active in pollution detection: Port of Auckland

The Auckland Harbour Board has recently stepped up its activities aimed at minimizing the unnecessary and unlawful pollution of the waters bounded by foreshores under the Board's control – namely Auckland and Manukau harbours.

The Board has 950 kilometres of harbour foreshore under its control and its property department has found that to adequately monitor the more remote and inaccessible areas, inspection by helicopter is necessary. Manukau Harbour coastline has recently been surveyed.

While much of the foreshore in built-up areas has been monitored regularly, with action taken when unauthorized work or disposal of rubbish or effluent has been detected, even populated areas are often difficult of access for the Board's officers, and so helicopter reconnaissance of the Auckland harbour coastline will become a regular activity.

The recent survey of 520 kilometres of the Manukau Harbour foreshore showed that for the greater part, the foreshore is well maintained and in its natural state. But a large number of very obvious cases of unauthorized work, rubbish dumping and other pollution of the harbour were photographed and noted. About 250 sites were photographed and of these, 180 appeared to be clear-cut breaches of the law.

A wide cross-section of property types was involved, including residential, industrial, public organizations, a marae and farms. Predictably, most of the unauthorized structures were in built-up areas, while illegal rubbish dumping was more frequently seen in secluded locations not easily noticed from the land. The most serious cases of foreshore dumping were seen in farming areas where many large rubbish tips have been established on tidal land. In Asia-Oceania

one case a number of animal carcasses and skeletons were photographed. (Port of Auckland)

PSA tug fleet

Tug services in PSA began way back in 1912 when the Singapore Harbour Board was established. Its fleet of tugs consisted of 4 coal driven vessels, Magur, Sunda, Mercury and Bangkok. The first three were screw propelled while the Bangkok was fitted with paddle wheels.

When PSA took over the functions of the then Singapore Harbour Board in 1963, there were only 7 tugs in the fleet with bollard pulls of between 9 and 16 tons. Today, we have a fleet of 16 modern tugs to handle the different types of vessels ranging from small coasters and freighters to third generation container vessels and supertankers. The bollard pull range has increased to between 16-34 tons. Some of our newer tugs have bridge-controlled engines and are equipped with the latest fire fighting and anti-oil pollution capabilities. This rapid growth of the PSA Tug Section underlines the important role played by tugs in our everyday operations.

PSA's offices of the future

The curtains rise to usher in a new dimension to business addresses in Singapore with the topping-out of the Port of Singapore Authority's new headquarters on 15 Jan. 84. An office building specially designed for office automation will be ready to take centre stage in the promotion of business and trade in the Republic. Built at a cost of \$250 million, the new corporate home of the PSA consists of a 42-storey office tower rising from a 4-storey podium. Located at the junction of Alexandria and Pasir Panjang Roads, it is strategically close to the city, Port and the Jurong industrial estate.

Phase I of the PSA Building, comprising the first 15storeys of the office tower block, and the podium, is scheduled for completion in the middle of 1985. The Building will be fully completed by the end of the year.

(PSA News)

Jebel Ali Port registers 50% growth in 1984

Mr. Charles Heath, Director of Marketing, Port Authority of Jebel Ali has recently released the 1984 statistics for Dubai's Jebel Ali Port which has achieved an overall 50% increase over 1983.

Total tonnage throughput for 1984 was 4,879,968 tons compared to 3,255,639 tons in 1983. "This is the most substantial growth ever experienced at Jebel Ali and we are very excited at the prospects that this trend will continue. It is obvious that Jebel Ali has finally achieved local and international recognition as one of the premier ports in the Arabian Gulf and is accepted by shippers and receivers alike." Mr. Heath stated.

The support from the industrial tenants continues to play a major role in Jebel Ali's development and success. As the industrial zone grows so will the tonnage throughput and the close proximity of the port to the industrial customers will continue to have a positive impact." Mr. Heath said.



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