

# PORTS *and* HARBORS

May, 1982 Vol. 27, No. 5



**Port of Nantes-Saint-Nazaire**

**The Publisher: The International Association of Ports and Harbors**

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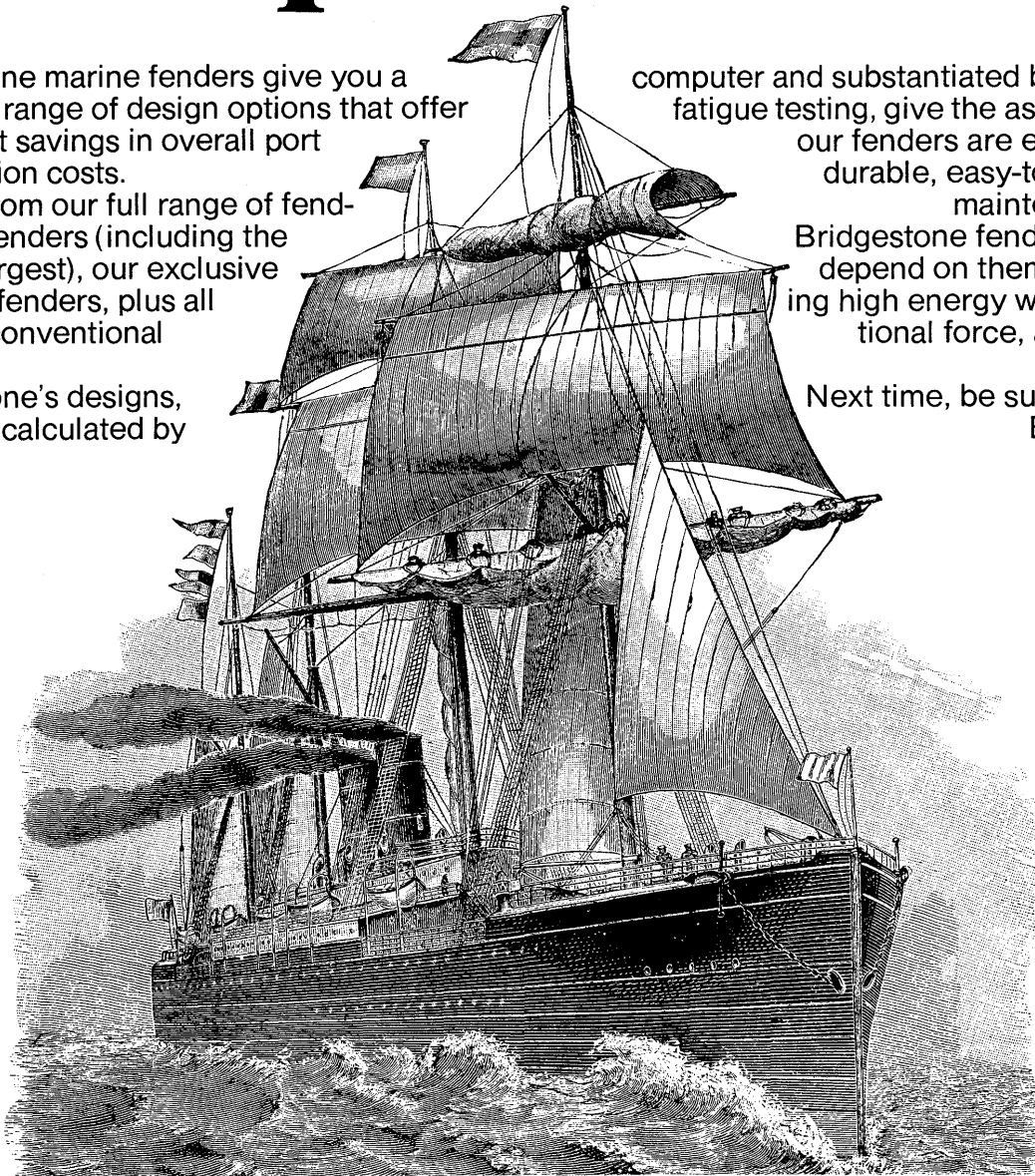
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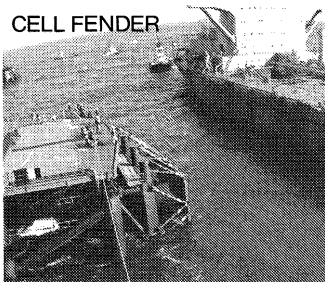
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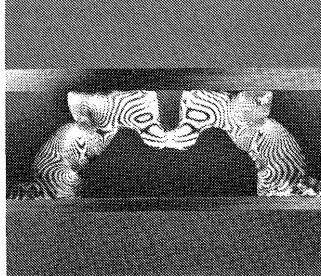
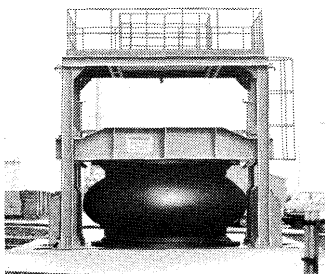
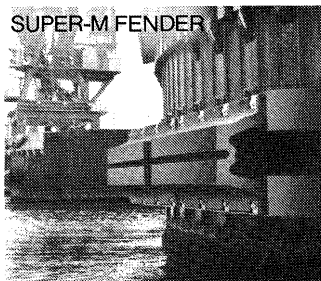
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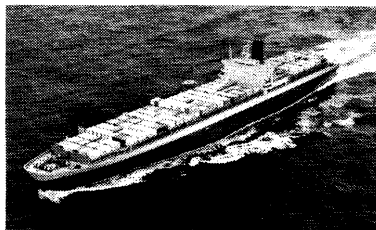


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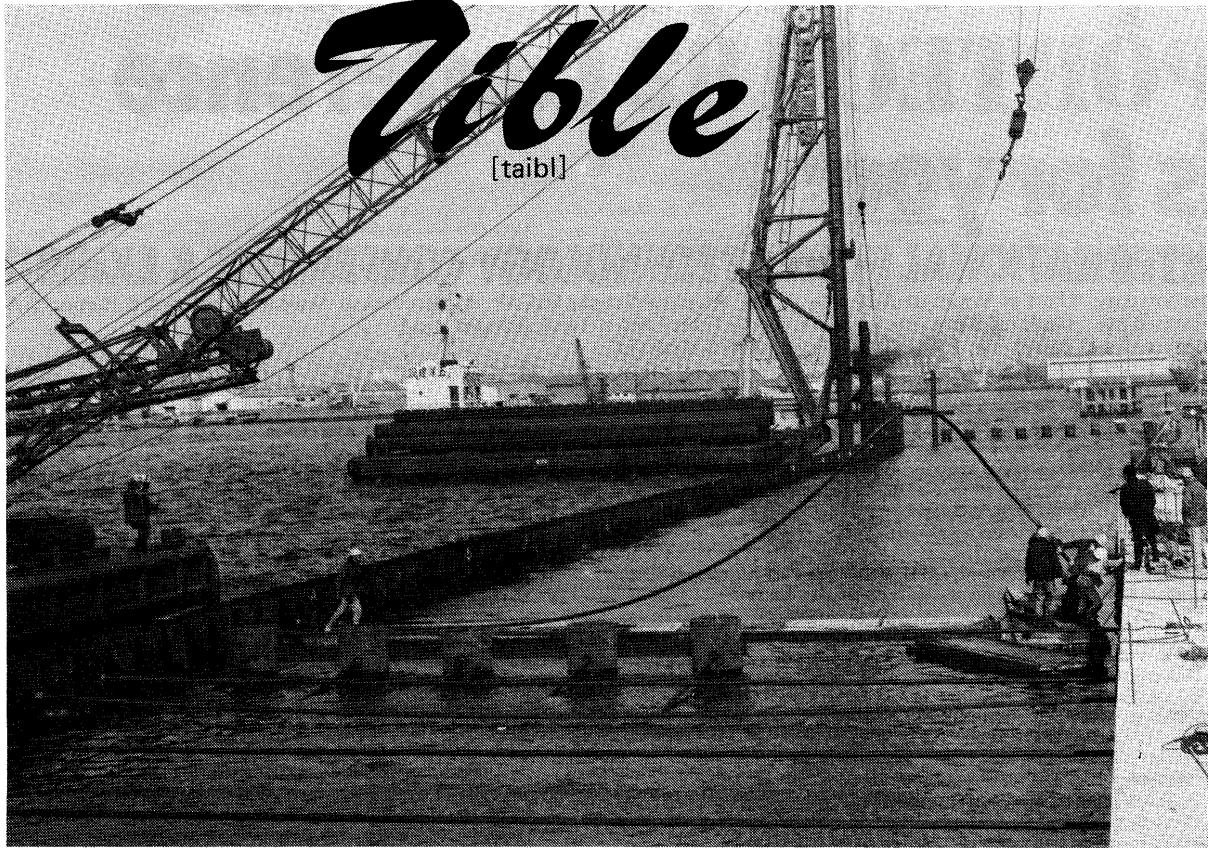


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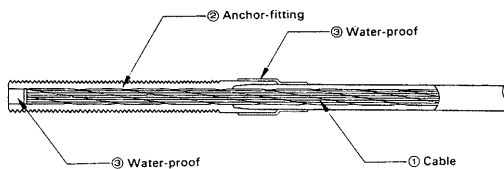
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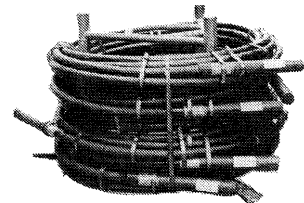
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### PAPERS PROGRAM

#### INAUGURATION

09.00 – 10.30, 22 June

#### Welcoming Address

by Wong Hung Khim, General Manager, Port of Singapore Authority

Keynote Address – 'Critical Review of Container Developments in Asia'

by H.J. Kruse, Chairman, Hapag Lloyd

#### SESSION I: FINANCE AND ECONOMICS

10.45 – 12.00, 22 June

Chairman: A.S. Mayne, President, IAPH, Melbourne Port Authority

1. 'Finance for port development, the available alternatives.'  
speaker to be announced.
2. 'The influence of port dues and basic port infrastructure on port traffic.'  
by R. Voorhamme and W. Winkelmans, Antwerp University.
3. 'Government's role and influence on port finance and economics.'  
by J.S. Faruki, United Nations ESCAP.

#### SESSION II: SHIPPING AND PORT PLANNING

09.00 – 12.00, 23 June

Chairman: Danko Koludrovic, United Nations ESCAP

1. 'Shipping trends and their impact on ports and port services.'  
by R.P.M. de Bok, Nedlloyd Ports Division.
2. 'Deep Sea Ro-Ro – the commercial and operational advantages of deep sea ro-ro and its impact on port planning.'  
by Tor J. Stensby, Barber Lines A/S.
3. 'Ro-Ro at the ship to shore interface.'  
by G.A. Stokoe, MacGregor & Co. (Naval Architects) Ltd.
4. 'The planning and development of the industrial ports of Yanbu, Saudi Arabia and Sines, Portugal.'  
by J.F. Toppler and S.J. Reeves, PRC Harris International.
5. 'ASEAN oil ports and terminals – geographical perspective.'  
by Dr. Chia Lin Sien, National University of Singapore.

#### SESSION III: TECHNICAL ASPECTS OF PORT DEVELOPMENT. PART I

09.00 – 12.00, 24 June

1. 'The use of shiphandling simulators in port development and operation.'  
by Ir. Th. Elzinga, Netherlands Ship Model Basin.
2. 'Ship hydrodynamics and the design of port approach channels.'  
by I.W. Dand, National Maritime Institute, U.K.
3. 'New simulation techniques in harbour design'  
by Dr. Ian R. McCallum, Cardiff Ship Simulator.
4. 'Hydraulic studies for Bintulu deepwater port.'  
by J. Kirkegaard and A. Hasle Nielsen, Danish Hydraulic Institute.
5. 'Hydraulic engineering in port development projects.'  
by R. Radhakrishnan et al, P.S.A.

#### SESSION IV: TECHNICAL ASPECTS OF PORT DEVELOPMENT. Part II

14.00 – 17.00, 24 June

1. 'The considerations affecting the design of a Vessel Traffic Management System.'  
by A.S. Battison, Racal-Decca Marine Radar.
2. 'Deep chemical mixing method and deepstrata chemical mixer barge.'  
by Katuya Ninomiya et al, Mitsubishi.

3. 'Container port development – P.S.A.'s experience.'  
by Wong Yew Khoo et al, P.S.A.

4. 'Upgrading quays for containerisation.'  
by J.D. Mettam & J.G. Berry, Bertlin & Partners.

#### SESSION V: PORT OPERATION AND MANAGEMENT

09.00 – 12.00, 25 June

Chairman: K.K. Uppal, President, Indian Ports Assn. Bombay Port Trust

1. 'Port management and information systems.'  
by Barry Cable, United Nations ESCAP.
2. 'Customs clearance procedures.'  
by Yang Cheong Hong, Customs and Excise Department, Singapore.
3. 'Training of port employees in the Port of Singapore Authority.'  
by J.S. Menon, P.S.A.

#### SESSION VI: CONTAINERISATION

14.00 – 17.00, 25 June

1. 'Automation and computer application in container terminals.'  
by S. Terayama et al, Mitsui.
2. 'Micro computer application for container crane maintenance and fault analysis.'  
by M. Nakajima and I. Murata, Mitsubishi.
3. 'New development in container terminal systems.'  
by Dr. I. Watanabe Mitsubishi.
4. '45-ft Containers'  
by Michael D. Morris, American President Lines.
5. 'Operation and management of P.S.A. container terminal.'  
by M.M.J. Subramaniam, P.S.A.
6. 'Computerization of container equipment.'  
by speaker from Ferranti.

#### SESSION VII: CARGO HANDLING EQUIPMENT AND METHODS

09.00 – 12.00, 26 June

Chairman: Bernard Couvert, President, International Cargo Handling Coordination Association

1. 'Container handling equipment.'  
by Don Johnson, Paceco.
2. 'Containerisation – new container handling equipment.'  
by T. Sasaki, Mitsui.
3. 'Selection, planned maintenance and repair of container handling equipment.'  
by Chan Chee Tack, P.S.A.
4. 'Application of a new type of reefer ship and its significance for cargo handling.'  
by Captain Falk Ohlig of O & K Orenstein & Koppel.
5. 'The use of mobile cranes for container handling and heavy lifts.'  
by C. Wilson, Coles Cranes.
6. 'Design and operation of port grain terminals.'  
by E.F. van Randwijck of GEM Consultants, Rotterdam.

NOTE: Other Session Chairmen invited are heads of Asean ports

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3. Light refreshments.
- \*4. Invitation to the Inaugural Reception, 22 June  
I wish/do not wish to attend.
- \*5. Invitation to the PSA Container Berth Opening, 23 June  
I wish/do not wish to attend.
- \*6. Harbour tour.  
☐ I wish to attend, on 24 June/25 June/26 June  
☐ I do not wish to attend.

\*Delete where not applicable

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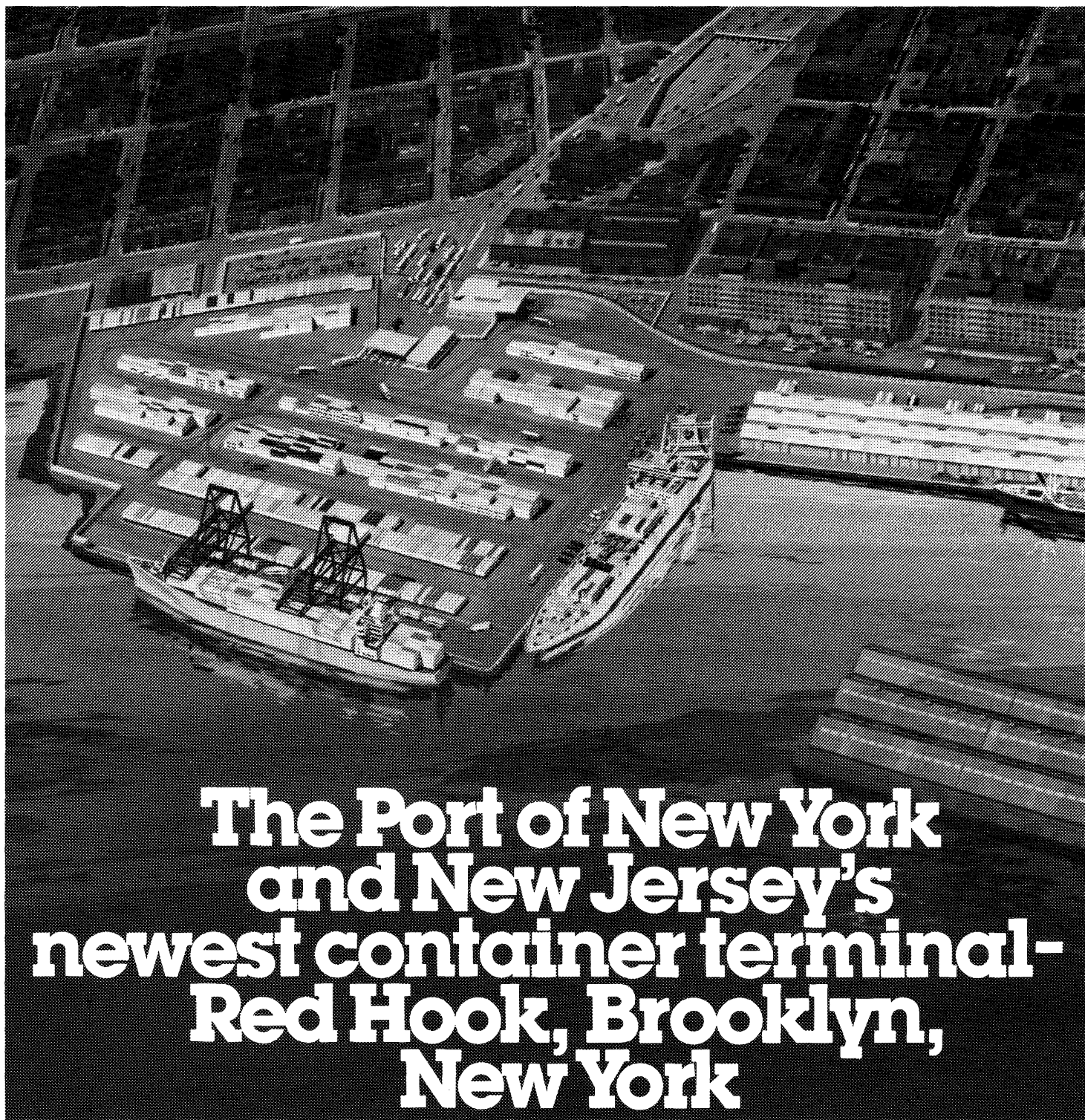
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Two berths are equipped to receive crude oil (10,000 cubic meters per hour according to the tankers) and five for forwarding the finished product (output 1500-5000 cubic meters per hour according to the tanker). These berths feed the ELF France refinery at Donges (capacity 9 million tons) which supplies all the west of France with petrol.	

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# The Port of New York and New Jersey's newest container terminal— Red Hook, Brooklyn, New York

Through the combined efforts of the State of New York, the City of New York and The Port Authority of New York and New Jersey, construction is now nearing completion on the new 1,000,000-ton capacity Red Hook Container Terminal in Brooklyn, New York, which has been leased to Universal Maritime Service Corp. This new container terminal, capable of handling Ro/Ro, as well as container and breakbulk vessels, is being completed at a cost of \$20,000,000. It will have a 1,000-foot-long container berth supported by two cranes and

40 acres of upland area. Approximately 30,000 containers are expected to move via Red Hook each year and the facility will have the capability of handling trucks on a 100 percent appointment system. The site enjoys exceptional navigational advantages since it is located along Buttermilk Channel where the Corps of Engineers maintains a depth of 40 feet.

## **THE PORT AUTHORITY OF NEW YORK & NEW JERSEY**

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# IAPH announcements and news

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## September 1st, 1982 is the deadline for entry to the Award Scheme 1982

**How could the efficiency of your port be improved?  
Your answer could win you US\$750 in cash plus an invitation,  
including travelling cost and hotel accommodation to attend the  
13th Biennial Conference of IAPH, June, 1983  
in Vancouver, Canada.**

At the interim point of 6 months after the announcement of the 1982 Award Scheme made through the November 1981 issue of the journal, Mr. J.K. Stuart, Chairman of the IAPH Committee on International Port Development, wishes to take this opportunity to remind all those concerned of the deadline for entries to the Award Scheme which has been set for 1st September, 1982.

The decision on the winner of the 1st Prize will be made no later than 1st January, 1983 in order that the individual or the leader of a winning group entry can be notified in sufficient time to allow him or her to be able to accept the invitation to attend the Vancouver Conference.

For the convenience of the applicants who have not yet completed their entries, we reprint the conditions for entry which are as follows.

### Conditions for entry

1. Suggestions regarding how the efficiency of your port (or ports in general) could be improved should be presented in English, French or Spanish, type-written, and submitted to the Secretary General, The International Association of Ports and Harbors, Kotohira-Kaikan Building, 2-8, Toranomon 1-chome, Minato-ku, Tokyo 105, Japan.
2. Suggestions may cover any aspect of the administration, planning or operations of ports, such as improving productivity or the utilization and maintenance of equipment and storage areas, reducing delays and damage to cargo, etc. An attempt should be made to quantify the benefits which would result from the suggested improvement together with the costs (if any) involved.
3. Entries which should be between 10 and 20 pages in length may be made either by individuals or small groups, and should be the original work of the entrant(s). Entries which are the result of official studies or otherwise sponsored projects will not be eligible.
4. Entries will be judged by a panel of experts appointed by the Executive Committee of IAPH. The panel will give greater merit to papers identifying and evaluating specific improvements rather than

entries covering a wide range of improvements in general terms.

5. The First Prize for the winning entry will be:
  - (i) A silver medal from the IAPH.
  - (ii) US\$750 (or the equivalent in local currency).
  - (iii) An invitation, including travelling costs and hotel accommodation, to attend the 13th Biennial Conference of IAPH, June 1983 in Vancouver, Canada.
6. In addition to the First Prize, Second, Third and Fourth prizes of US\$500, US\$400, US\$300 will be awarded to the next best entries.
7. Additional prizes of US\$100 each will be awarded to any other entries judged by the panel to be of a sufficiently high standard.
8. A winning entry may be subject to publication in the Ports and Harbors magazine.
9. At the decision of the panel, a bursary may be awarded to any one prize winner (subject to agreement of the employer).
10. The closing date for receipt of entries is 1st September 1982.

### President Mayne in Tokyo

Mr. A.S. Mayne, President of IAPH and Chairman of the Port of Melbourne Authority, was in Tokyo recently to attend the signing ceremony with a group of Japanese banks and insurance companies. According to Mr. Mayne, the agreement signed covers financial assistance for his port authority as well as funding for the construction of a world trade center in Melbourne.

President Mayne was able to include in his busy schedule in Tokyo a visit to the Head Office where he was met by the Secretary General and his staff. At their meeting, he heard about the state of preparations for the forthcoming meetings of the Executive and other Committees, in Aruba.

Mr. Mayne was satisfied with the report dealing with the Association's activities since the last Conference held in Nagoya, May, 1981, which the Head Office is now preparing for submission to the meeting in Aruba.

As of March 29, 1982, Mr. Mayne was told that there were 56 members and 18 accompanying ladies had indicated they would attend the meetings in Aruba.

## IAPH Bursary granted to a port member from Sri Lanka

Mr. J.K. Stuart (B.T.D.B.), Chairman of the IAPH Committee on International Port Development, announced on 12th February, 1982 that Mr. W.G. Samaratunga, Chief Superintendent, Operations Division, Sri Lanka Ports Authority, has been granted an IAPH bursary.

Mr. Samaratunga (33) who has been employed since February, 1977 by the Ports Authority, is attending a course, on port and shipping administration, at the University of Wales Institute of Science and Technology (UWIST), Cardiff, commencing in September, 1982.

At the instructions of Chairman Stuart, Secretary General Sato has recently completed the remittance of the bursary money (US\$3,340) to the relevant source.

Mr. Samaratunga's report, after the completion of the course, will be published in an issue of this journal as soon as it is received by the Head Office.

## Public Affairs Committee meets in L.A.

Following meetings held in London on Sep. 24, and Vancouver Sep. 29, 1981, the PACOM will meet in Los Angeles on April 29, 1982 at Executive Board Room of Port of Los Angeles, according to the Chairman Wilson's circular letter to PACOM members.

Chairman Wilson will attend the EXCO's Aruba Meeting to report on the outcomes of debates of PACOM's L.A. Meeting.

## Mr. Raven of SITPRO speaks on port and customs

In his letter to Mr. R.L.M. Vleugels, Chairman of IAPH Committee on Trade Facilitation, Mr. John A. Raven, Chief Executive of SITPRO UK Board, informed that he attended a meeting of the Customs Enforcement Committee of CCC, held at CCC headquarters (Brussels, Belgium), on December 3, 1981, and that he, not only from the SITPRO point of view but also in very general terms on behalf of IAPH, made a presentation as reproduced below.

He further informed that a joint meeting would be held in May between Enforcement experts and representatives of the CCC Permanent Technical Committee, to which, it is expected, Mr. Vleugels would attend on behalf of IAPH.

## Customs Co-operation Council — Enforcement Aspects of Containerization

By J.A. Raven, Chief Executive and Vice Chairman, SITPRO

*(Main points made in SITPRO/IAPH intervention at meeting of Working Party on Customs Enforcement in CCC Headquarters on 3 December 1981.)*

1. It would be foolishly unrealistic for people interested in promoting easier international trade to deny the legitimate enforcement needs of Customs administrations. These merely reflect important social or political needs of the communities which they have to serve.

2. On the other hand the full and frequent application of rigorous and fool-proof controls can, in practice, negate the very nature of containerisation and cancel out all its commercial advantages. It has to be remembered that this is not a completed revolution. Containerised and other through-movement techniques are still spreading and evolving.
3. If developing countries, for reasons which are well understood, apply particularly rigid controls to container movements while developed economies are able to apply easier procedures then the net result could be to widen the existing wealth gap.
4. The answer to this dilemma must lie in a sensible and sensitive set of mutual adjustments between enforcement and facilitation.
5. Some principles suggested by past experience which may help to bring about this reconciliation are:
  - (a) The overall size of the problem could be reduced by careful segregation of the potentially suspect from the clearly innocent. Every Customs authority knows of organisations which are beyond reproach and which cannot take the risk of any improper activity. Conversely there are certain currents of trade and certain organisations associated with them which will almost automatically arouse Customs suspicions. There may be a considerable area in the middle which is difficult to sift but the maximum separation of black and white sheep will certainly be a useful means of reducing the whole problem area.
  - (b) While the Customs Co-operation Council has played a most constructive part in facilitation by promoting the widest use of relaxed practices it would be most unfortunate if the same process were applied to unavoidable restrictions. Some restrictive measures operate only in exceptional circumstances or in particular countries and would be quite unnecessary elsewhere.
  - (c) It is a basic facilitation principle that detailed documents should be taken off the back of the goods so that wherever possible goods can move independently of the information associated with them. Because the international trade system which has to handle the physical movement of the goods, payment arrangements, Customs clearance and a number of other functions is sadly out-of-date it tends in any event to provide information which is out of phase with the movement of the goods themselves. This means that if someone—in this instance the Customs—insists on detailed information in a rigid form as a condition of allowing the goods to move the inefficiencies in the system are immediately demonstrated and the probability of intensive and costly delays is increased. There is therefore much to be said for shifting as much investigation and checking as possible from documents accompanying or married up with the goods to records or other information available elsewhere—usually in the exporters' or importers' offices.
  - (d) Increasing detail on documents can add costs and complications without affecting the key enforcement problem—how far do the goods inside the container actually correspond with their documentary description.
  - (e) The combination of computer-held instantly accessible information and the speed of telecommunica-

tions now place important enforcement weapons in the hands of Customs authorities. It is in this area of modern technology that the CCC might well find the best—because least oppressive and most efficient—answers to containerised smuggling.

## French version of the IAPH brochure now available

The French version of the brochure "Outline of IAPH" was published in March, 1982, for campaign purposes in French-speaking countries. The French translation was produced through the cooperation by the Port of Le Havre Authority and our immediate past president Mr. Paul Bastard. The Head Office sent copies to the members in the relevant countries as well as the next conference host, the Port of Vancouver.

Copies are available from the Tokyo Head Office upon request.

## Visitors

— On March 24, Mr. G.M. Algoud, President of Techno-expo, a French organizer of maritime related seminars and exhibitions, visited the head office. Discussed at the meeting was an IAPH cooperation with their port related seminars, in particular reference to those ones to be held in French speaking countries.

— On March 24, Mr. George A. Fraser, Head of Finance & Administration, the National Energy Corporation of Trinidad and Tobago, visited the head office. He was in Japan to observe industrial port developments in Japan, under a bilateral arrangement made through the governments concerned.

— On March 26, Mr. Alan Smith, Dy. Editor of Containerisation International magazine, London, visited the head office. He was visiting Japan to cover the recent situation of containerization, including shipping companies, manufacturers and shippers, in Japan, in particular reference to the disbanding of the two public corporations, Keihin (Tokyo Bay) and Hanshin (Osaka Bay) Port Development Authorities, effective March 31. He visited Ports of Tokyo, Yokohama, Osaka and Kobe to study about the future situation of container terminals in those ports. He also visited Port of Nagoya during his visit to Osaka area.

### CORRECTION

On page 11 of the November 1981 issue of this journal, a printing error occurred in the listing of IMCO publications.

The sales number of "Recommendations on the Safe Transport, Handling and Storage of Dangerous Substances in Port Areas" should have read 288.81.16E priced at £2.00 and not 701.81.01E, price £2.50, as printed.

## Membership Notes

### New Members

#### Regular Member

Flushing Ports Authority  
(Havenschap Vlissingen)

P.O. Box 1056, 4388 ZH Oost-Souburg, Netherlands

Office Phone: 01184-68080

Telex: 37865 haven nl

(Mr. J. van Konijnenburg, Managing Director)

#### Temporary Members

North Carolina State Ports Authority

P.O. Box 3248, Wilmington, N.C. 28406, USA

Office Phone: (919) 763-1621

Telex: TWX 510-937-0330

(Admiral William M.A. Greene, Executive Director)

Port of Delfzijl Authority

P.O. Box 20.004, 9930 PA DELFZIJL, Netherlands

Office Phone: 05960-14966

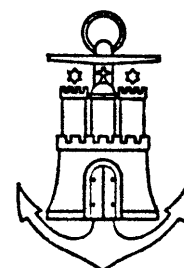
Telex: 53842 HSDDR and 53299 HSDDZ

(Mr. Ch.C. van Elderen, Managing Director)

### Change

Mr. Takao Hirota, an IAPH Executive Committee member from Japan, effective from April 1st, 1982, has been appointed Director General of The 2nd District Port Construction Bureau, Ministry of Transport. (Address: 1-2-5, Takashima, Nishi-ku, Yokohama 220, Japan). His former appointment was Director General of The 4th District Port Construction Bureau in Shimonoseki.

## A journey to Hamburg through Coat of Arms



The Hamburg Admiralty was founded in 1623 through a resolution passed by the City Parliament. Its members consisted of one burgomaster, four aldermen, six merchants and two mariners (sea captains).

"The Admiralty", as the body was mostly called, was responsible for all Hamburg shipping and port matters. It supervised pilot activities on the Lower Elbe, ensured that the navigable channels in the river were properly marked, looked after the protection of merchants against pirates and allocated berths to ship within the harbour walls.

Since 1642, the Admiralty has possessed its own flag and coat of arms: an anchor bearing a three-turreted castle on its stock.

Today, the Admiralty flag is shown at the bow of all craft belonging to the Free and Hanseatic City of Hamburg and flown on all official buildings serving the administration of the port and shipping.

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## Open forum: Port releases:

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# The Ports of the Future with an Eye to the Year 2000

**By Robert L.M.  
Vleugels, Director  
General, Port of  
Antwerp**



(Address at Propeller's Club, Tokyo, March 23rd 1982)

The year 2000 has a magic sound. It is the start of a new millenium, which seems to be far away. In fact it is very near.

Being involved in the maritime business all of us have to look into the future and try to imagine how ships, ports, trade will look like.

If personal experience would be a foothold for forecasts, I can make available somewhat more than three decenniums of practice in port management. With only that at hand I shall try to develop the subject, "with an eye to the year 2000".

### Operation of ships

Shipowners in general are faced with every heavier problems such as:

- the growing capital investments in bigger and/or more specialised vessels and expensive technical equipment;
- the increase of the cost of crews;
- the sharp rise in fuel prices;
- the continuing and not lessening flag-protectionism or priorities linked to nationality;

In order to limit their commercial risks and to lower the cost of operation they have some means at hand:

- to pool their operations with others and participate in consortia of liner services or others;
- to set up one company per ship and put it under the flag which would be the most convenient in a given traffic;
- to reduce the number of crew, thanks to adequate auxilliary equipment;
- to lower the fuel cost by bringing down the speed and installing motors with the least possible consumption.

The shipowner will hesitate to order mammoth bulk carriers unless he can make long term contracts to secure his investment. The tendency to ever bigger ships shall not continue—in fact it stopped already—because the operation of these vessels is unavoidably bound to very few ports only.

He shall prefer ships which permit a flexible operation, as well with respect to the routes they can sail on as to the choice of cargo they can carry.

Exceptions will remain the full containerships, because

of their irreversible specialisation. The operator will try anyhow to put "almost everything" in a container.

Basically the operation of ships is bound to two main factors: cost and time. When the owner—as said—is working hard on the cost and risk limitation he is ever more interested in the speeding up of ships' turnaround.

In that respect he has not anymore so much to improve on the searoute. Ships shall sail at the most efficient speed and call at a limited number of ports.

The "time in port" comes dramatically to the foreground. There are still too many ports, even modern and important ones, where expensive time is lost.

That leads me to the heart of the subject.

### Operation of Ports

As ports are essential links in a transport chain I like to refer to its definition as it is provided by the Webster's dictionary.

A chain is "a series of links connected to or fitted into one another so as to move freely, forming a flexible ligament used for various purposes and made in many forms and sizes".

In its ideal form a port has to be

- the link between all functions involved in maritime trade: exporters—importers, carriers by sea and inland transporters, etc..
- it has to offer at any time safe access and adequate equipped berths to the greatest possible variety of ships;
- it has to make available the appropriate facilities needed by most types of goods i.e. for their safe short or long term storage, for sorting, prestowage, re-shipment, sampling control, for all activities in physical distribution;
- all auxilliary services to ships must be at hand: for fuelling, repairs provisions;
- the safety and wellbeing of all crews and those who work in the port must be guaranteed (not only police, but well established welfare organizations have to function);
- the prevention of theft (or sabotage) and efficient means for fighting fire and any form of disaster are major elements in the overall picture of the "ideal" port.

It is evident that not all ports can or will be able to respond to all of these qualifications. Some will be "multi-purpose" others will be restricted to only a few functions.

Anyhow, the real qualities of any competitive port are determined by the factors "cost" and "time" equally so as they applied to the ships' operation.

The cost for building and equipping port installations to the satisfaction of its customers (owners and shippers) is enormous.

False planning and overinvestment have to be banned and the risk of the investments must be limited.



Port authorities, whatever their administrative status may be, whether they are supported or not by subsidies or compensations for capital viz. operational expenditures, are bound to limitations in the availability of funds.

It is in their own interest to develop physical infrastructures (berths, storage space, access and evacuation routes) which allow a flexible use.

Most of the infrastructural works, such as quaywalls, cannot be renewed in men's life time. They must survive many generations of ships and the often rapid evolution of goods traffics. Therefore docks, quays, jetties etc. should incorporate a built-in reserve and be multipurpose as far as possible; in a way of speaking they should be longer, deeper, greater than present calculation would indicate.

Also too narrow landsurfaces behind the berthing facilities have proved to become detrimental to the operations and, as a result, to the revenues of the port as a whole.

The economic lifetime of the equipment on land or afloat has got ever shorter.

A fifteen years old gantry has stepped into the third age, because technique brings along better outputs on shorter terms.

Port authorities cannot afford to provide all equipment needed for up to date cargo handling. If shipowners, shippers or receivers are not prepared to commit themselves to a port with long contracts covering the cost for terminal equipment, other enterprises have to come up for investments in cargo handling and storage facilities. These enterprises have to evaluate what risks or type of contracts they can accept in that field.

Between these two extreme formulas there remains a domain in which the port authority has to judge whether or not missing links (e.g. quay cranes) have to be provided by the authority and under what conditions or securities.

Cost and expenditure should produce the best financial output if the ports' infrastructure and equipment is workable and can be used as continuously as possible. That depends primarily on the labour organization, moreover on the preparedness of the labour to work during all shifts on all days of the year.

The need to limit the time in port can only be met fully if—against due remuneration—ports are able to guarantee that continuity of their services.

It is obvious that such condition has to be fulfilled at both ends of the voyage.

There is however another link which must be secured: it is the efficiency of the information flow with respect to the trade currents.

### **Administration of Trade**

So far too little attention is paid to the movement of information which is at the base of every transaction. The customs clearance of goods, their transition from one mode of transport to another, the transfer from buyer to seller, the administrative requirements towards the port authority, and many other procedures need exact information on the right spot in due time.

It is experienced regularly that the data flow lags behind the cargo movement. Delays, disorganization, congestion, poor output of ships' and port operation are some of the consequences.

Several national and international bodies are active in the simplification and coordination of the information throughput. Practical results are coming up, but there is still much work to be done.

It became quite clear that in order to overcome the "red tape syndrom" and a lot of repetitive work, also to avoid faults and to speed up the circulation of the necessary data some basic requirements have to be fulfilled, such as

- the alignment of documentation upon common standards;
- the development of real time data transfer and of a free information flow to all interested parties. The medium of the electronic interface has to be fostered

The ports occupy a central position in this necessary development. Being a capital link in the transport chain they serve their own interests by promoting the efficiency of the information transmission.

Some might already have available in-house computerised data processing systems for their own operations. They must bear in mind that the interconnection of the EDP-systems related to trade-, shipping-, customs- and port functions must be made possible in order to bring the "missing links" into existence.

With the support of E.E.C. commission ports of each of the community members are operating since a few months a pilot project which covers the automatic exchange of data concerning the movement of ships. A second and similar project relative to the movement of hazardous goods is in its tendering procedure. The organizations involved is the European Data Processing Association (known as EVHA with seat at Antwerp).

We may look forward to the generalization of the system amongst the western European ports, after completion of the trial period somewhere in 1983.

It is evident that the EVHA-system will be open to other continents and that it has in itself the potentiality of serving wider domains than only ships and dangerous goods.

The EDP systems and their interconnection will greatly influence the port economy in the future.

### **CONCLUSIONS**

The ports of the year 2000, if they want to remain in the picture of the world's maritime trade, shall have invested considerable funds in technological and infrastructural improvements. Each port for itself shall have to find the adequate formulae for bringing together the necessary capital and limiting the risks of the investment.

Most ports of developing countries will be faced, as they are now, with the problems of capacity and quality of their services and with the need for intensified training of their manpower.

The greatest challenge to cope with is to coordinate the physical movement of the goods with a simplified flow of information on the cargo and to speed up both in parallel.

The more shipowners, trading companies, public administrations and port organizations improve their technical equipment and "electrify" their operations, the more the quality and zeal of people come to the foreground.

The year 2000 will more strongly than ever require men and women who are able to secure the efficiency of the technological improvements and are willing to combine their efforts in order to achieve the best ratio between "cost" and "time". Their efforts have to result in: better ports and prosperous world trade. Would this wish become a reality?

# Usage Pricing for Public Marine Terminal Facilities

## 'Executive Report' by Office of Port and Intermodal Development, Maritime Administration, US Department of Transportation

*(The three-volume set represents a 21-month effort designed to develop a methodology, i.e., formula, for deriving reasonably compensatory prices for usage of public marine terminal facilities. Emphasis is on the determination of benchmark prices for dockage and wharfage, leased terminal facilities, and crane and equipment rental. The fundamental premise of the formula is one of achieving and maintaining economic self-sufficiency by individual ports.)*

### INTRODUCTION

Applied Systems Institute, Inc., under a contract with the Maritime Administration (MarAd), U.S. Department of Transportation, has developed a method, i.e., formula, for deriving reasonably compensatory prices for usage of public marine terminal facilities. Focus is on the determination (based on cost) of dockage and wharfage tariff rates, rental prices for leased terminals, and rental prices for cranes and equipment.

The 21-month study was conducted under the joint guidance of MarAd's Office of Port and Intermodal Development and the American Association of Port Authorities' (AAPA) Finance and Port Practices Committees.

The study was enhanced by the direct participation of 17 U.S. ports scattered about the country, and included response to questionnaires concerning current pricing practices, port visitations by an ASI traveling project team, review and comment on the draft report by individual ports, and preliminary validation of the formula at the Port Authority of New York/New Jersey and the Port of Seattle. This extensive participation by the AAPA and the ports themselves has helped ensure that the resulting formula is based on practical as well as purely economic considerations.

This Executive Report discusses the highlights of the study results and the formula and potential implementation. For a comprehensive treatment, the reader is referred to the main report and the pricing guide report (formula application). Volume I, the main report, contains background information, a detailed description of the formula and methodology for application. Volume II, the pricing guide, facilitates the application of the formula at individual ports, on a step-by-step basis.

Algebraically, the formula may be expressed as follows:

- (1)  $\text{[historical cost]} + \text{[imputed costs]} + \text{[pricing factors]} = \text{[gross revenue requirement]}$
- (2)  $\text{[gross revenue requirement]} - \text{[other usage revenues]} = \text{[net revenue requirement]}$
- (3)  $\text{[net revenue requirement]} \div \text{[forecast cargo throughput]} = \text{[benchmark tariff rate]}$

Table I illustrates how a port would apply the formula in the determination of benchmark usage prices for three lines

of port business covered in the study—usage of docks and wharves, leased facilities, and cranes.

A description of the components and the process, using a single dock and wharf facility as an example, will serve to illustrate formula content and application.

**Table 1. Application of Facility Usage Pricing Formula**

Step	Activity	LINES OF BUSINESS		
		Dockage & Wharfage	Leased Facilities	Crane Rental
1. Derive Historical Costs	<ul style="list-style-type: none"> <li>Facilities Cost                             <ul style="list-style-type: none"> <li>Depreciation/Investment</li> <li>Maintenance</li> <li>Taxes &amp; Insurance</li> </ul> </li> <li>Terminal Operating Expense</li> <li>Administrative Expense</li> </ul>	(+)	(+)	(+)
2. Calculate & Add Imputed Costs		INCLUDE WITH HISTORICAL COST		
3. Add Pricing Factors	<ul style="list-style-type: none"> <li>Return on Land Investment</li> <li>Return on Facilities Investment</li> </ul>	(+)	(+)	(+)
4. Sum Up Gross Revenue Requirement		SUM-1	SUM-1	SUM-1
5. Deduct Other Usage Revenues	<ul style="list-style-type: none"> <li>Dockage*</li> <li>First Call Berth*</li> <li>Storage Charges*</li> <li>Etc.</li> </ul>	(-)	(-)	(-)
6. Result is Net Revenue Requirement		SUM-2	SUM-2	SUM-2
7. Divide By Annual Cargo Throughput		(÷)	SEE NOTE	(÷)
8. Result is Price per Unit of Cargo		Price		Price

NOTE: The pricing of leased facilities is subject to pricing mechanisms which must, in the aggregate, recover the revenue requirement.

\* For dockage and wharfage.

### Calculation of the Gross Revenue Requirement

As shown in Table I, the gross revenue requirement for dockage and wharfage is the equivalent of the full cost to the port in providing the dock and wharf facility for public use, and consists of three components: historical costs, imputed costs, and pricing factors.

### Historical Costs

Historical costs are those incurred by the port as recorded on the books and records in accordance with an established accounting system, and include property, plant, and equipment costs (at original cost), depreciation, and operating, administrative, and maintenance costs. Historical costs used in the formula must be exclusive, i.e., including all costs chargeable to the vessel and cargo for use of the

dock and wharf facility and excluding any costs not so attributable.

### Imputed Costs

Imputed costs are costs for resources or services received by, but not paid for, by the port, and are equal to the costs which would have to be paid for by the port were they not provided by an outside sponsor. An example of imputed costs to be covered by dockage and wharfage revenue might be police and fire protection furnished by the host city.

### Pricing Factors

Pricing factors cover quasi-cost items which, under generally accepted accounting principles, may not be included as historical costs. They are included in the formula as part of the port's gross revenue requirement because it is needed for economic self-sufficiency. Two categories of pricing factors are included:

**Return on Land Investment**—The formula adheres to the practice of using the current value of land as the rate base for computing a return for the use of the land. The rate of return to be applied to the port investment in land involves judgment on the part of port management, but generally should be established at the going rate for municipal bonds, shaded upward or downward to reflect investment risk of the port enterprise as might be viewed by current or potential port debt holders.

**Return on Facilities Investment**—The formula is based on valuation of port facilities (wharf, office buildings, improvements on land, cranes, and other equipment) at **current value** less depreciation. Three alternate methods are proposed for use under the formula to calculate current value:

- **Throughput Equivalent Valuation**—Under this approach, current value or reproduction cost is calculated by facility replacement to achieve equivalent cargo throughput capacity. As an example, anticipation of eventual replacement of an old facility with a new one having four times the cargo throughput capacity would increase the value of the current facility to about 25 percent of the cost of the new facility.
- **Valuation Based on Cost/Engineering Analysis**—Under this approach, a comprehensive cost/engineering analysis would be preformed to establish current value of the facility.
- **Valuation Based on Cost-Indexing**—Using this approach, for planned facility replacement on a one-for-one basis, the estimate of replacement cost would be obtained by use of an appropriate construction index based on the year the current facility was built.

Each of these methods has advantages and disadvantages. The formula permits use of any of them or a combination of the features of each.

The same rate of return used above to calculate the dollar return on land investment would be applied to the current value of the facility to derive the dollar amount to be included as the return on facilities investment.

### Gross Revenue Requirement

Summation of historical costs, imputed costs, and the pricing factors leads to the gross revenue requirement, i.e.,

the full annual cost which must be covered by dockage and wharfage revenues if the facility is to be economically self-sufficient.

Because of the difficulties attendant to separation of costs of usage between those attributed to the vessel (recovered through dockage revenues) and those attributed to the cargo (recovered through wharfage revenues), the formula provides for a "joint-costing" approach, under which no distinction is made between the two in calculating the gross revenue requirement which forms the basis for establishing individual dockage and wharfage tariff rates.

### Calculation of Net Revenue Requirements

There are several possible sources of revenue to cover the cost of usage of dock and wharf facilities by the general public. In addition to dockage and wharfage revenues, there are charges for first call on berth, sheddage, space rental, storage charges, etc. The revenue from all of these contributes to recovery of the gross revenue requirement, and the prices set for each will determine the extent to which the revenue requirement is met.

Since wharfage revenues are the largest, most important source of revenues for most ports, the formula allows all other revenues to be deducted from the gross revenue requirement to yield the net revenue requirement to be covered by wharfage charges. Thus, the dockage and other incidental revenues (each calculated using price and anticipated volume as factors), totaled and deducted from the gross revenue requirement, yield the net revenue requirement which must be recovered from wharfage charges.

### Calculation of Benchmark Prices

In the example of a single facility, the benchmark wharfage tariff rate is determined by dividing the net revenue requirement for wharfage by the forecast cargo throughput over the wharf for the coming year. The calculation is more complex at ports where terminal facilities may consist of several kinds of cargo handling facilities (e.g., breakbulk, container, drybulk, etc.) and at which the wharfage tariff rates for each of these kinds of facilities may be different. Similarly, within a particular cargo type, there may be different wharfage prices for different items of cargo.

The formula does not rigidly define each of these prices. It places sufficient flexibility to enable the port to set them without departing from formula precepts. The single constraint is that the benchmark usage prices such that **total** anticipated revenues will equal **gross** revenue requirement.

For example, under the formula there are a number of product pricing mixes which will enable the port to recover full costs for usage of dock and wharf facilities. The formula permits manual calculations or simple computer models to be employed in which the variables of unit price and forecast cargo throughput may be manipulated in testing various alternatives, to arrive at the best pricing strategy to recover the dockage and wharfage gross revenue requirement.

### Generalization of Formula Applicability

The formula simply states that prices or tariffs must be set at levels which, if forecasts of throughput hold true, will generate revenue covering the full economic cost of usage

of the facility concerned.

In the ideal case, application of the formula at each discrete level of port activity should result in prices which recover full economic costs. In the real world, however, conditions may preclude pricing a particular unit activity at the full-cost-compensatory level. For example, wharfage and dockage rates published in the port tariff are applied **uniformly** at all of the general cargo terminals of the port, regardless of the age, throughput efficiency, sound value, imputed costs, and pricing factors which might apply at each terminal entity. It is obvious that with a single uniform tariff rate some terminals will be underpriced, below full-cost-compensatory levels, and others overpriced, at higher than full-cost-compensatory levels. In this situation, the ultimate formula criterion is that, **on the whole**, at port-wide level, total dockage and wharfage revenues must equal the total gross revenue requirements for dockage and wharfage of all of the terminals concerned.

Application of the formula has been illustrated above as it pertains to calculation of benchmark tariff rates for dockage and wharfage, but its underlying methodology may be applied in pricing usage of other port facilities as well.

### Terminal Leasing

The formula calculation of revenue requirements to cover full economic cost particularly apply to terminal leasing, because it provides a sound basis for establishing terms of the lease which permit recovery of full costs over the life of the lease. An immediate benefit is the establishment of a benchmark against which the adequacy of leases currently in effect may be measured. Most such leases, particularly those long-term leases let during pre-inflationary years, will show serious losses. Although little can be done until such leases expire, the formula may be applied in determining prices for lease renewals or in leasing new facilities. It is clear that the "current value" approach to determining return on investment requires that leases contain escalation clauses or other terms which permit periodic review and readjustment of lease prices to assure recovery of the full economic cost of the leased facility.

### Crane Rental

Calculating the gross revenue requirement by applying the formula to pricing crane usage, particularly container crane usage, is relatively simple and follows the procedure previously illustrated. The same flexibility is provided in pricing the usage of individual cranes.

In the ideal case, each crane would pay its own way, but the initial cost of this type of equipment has escalated so sharply in the past decade that hourly usage rates would show wide variance for cranes of somewhat similar efficiency. The practical approach will probably involve differential pricing such that total crane usage revenues will recover the full cost of the cranes, meaning, as in the case of marine terminal usage, some individual units will not pay their way and others will be priced to cover the losses.

### Other Applications

The formula embodies the fundamental economic principle, that for an enterprise to remain viable, the prices it receives for its products or services must cover full economic costs. Any unique aspects of the formula involves specifics in calculating what that cost or revenue should be,

and in the flexibility permitted in calculating benchmark prices.

This summary has illustrated the use of the formula in establishing benchmark dockage and wharfage tariff rates, pricing for leased terminals and crane rentals.

It is clear that the fundamental nature of the formula is to make it apply to other port activities as well although each application of the formula may involve differences, modifications in treatment of details. The formula also could serve for treatment of major revenue operations at the port and any of the peripheral or incidental revenue generating activities which are under port jurisdiction.

### Formula Implementation

The formula was designed to apply to use at all public marine terminals, regardless of size. Although designed to encompass the usage revenue activities at the largest, most complex, and financially sophisticated of U.S. ports, the formula is simple and can be employed even at small ports with minimum facilities.

Universal applicability is enhanced through the flexibility which has been deliberately designed into the formula, both at the detailed level of an individual facility and on a port-wide basis.

The need for flexibility in application of the formula cannot be over-emphasized. Because there is really no such thing as an "average" or "typical" port, there will always be limitations in the extent to which any "standard" formula can be uniformly and rigidly applied among the ports. Accordingly, the formula has been designed with the need for flexibility foremost in mind, particularly in the final step of calculating benchmark prices. At practical application levels considerable leeway may be taken during implementation of formula specifics, e.g., deletion of inapplicable portions, revision or addition to the forms to accommodate the local situation, etc. So long as the excursions are made without doing violence to underlying principles, formula results will remain reasonably valid.

Further testing of this formula is needed, although the results obtained during the validation were encouraging. A five-week test limited to two ports, both large, is not considered as a comprehensive test of the formulas principles. There are many other controversial issues in the formula and some very real barriers which hinders its clearcut use at individual ports.

Initial efforts toward achievement of reasonably compensatory prices within the port industry should include discussion, test, and modification of the formula based on exposure of the formula to port industry specialists and to the ports themselves over a period of time. It is anticipated that, although the underlying concepts will be found valid, modifications to the formula methodology can be made which will enhance its validity and utility.

With respect to actual use of the formula, it seems evident from information obtained during the study that initial effort will have to be devoted by the ports to "get their financial houses in order."

For ports without financial accounting systems, application of the formula will require establishment of a financial bookkeeping system which will contain the needed formula entries. It is also likely that, at those ports with the least amount of financial data recorded, an inventory will be

(Continued on next page bottom)



# Outline of the New Five-Year Port Development Plan of Japan (1981 – 1985)

By the Ministry of Transport

## I. Foreword

As ports are important bases for supporting traffic, industries, national lives and other activities and as they are indispensable for the sound development of the national economy and improvement of national lives, the government have drawn up on several occasions the Five-Year Plan for Port Improvement and actively promoted the development of the ports. In the latter half of '80's, a steady increase of the volume of cargo handling at ports is expected with the background of the steady growth of the economy and national lives and intensifying restrictions over transportation. Furthermore, necessity for rationalization of transportation of goods, countermeasures for severe energy situation, development of basic facilities for regional developments such as development of settlements, security of safe navigation, promotion of disaster prevention such as countermeasures for large scale earthquakes and improvements of environments of ports and waters has increased and requirements for the development of ports have increased in volume and have become more varied and urgent.

Under such situation, the government has decided to prepare a new Five-Year Plan for Port Improvement starting '81 for continuously enforcing port developments, and the cabinet has agreed on the size of port investment for the following five years on March 13, '81 as follows.

### Improvement works of Port Facilities

..... Yen 3,020 billion

Disaster related work and works executed by local government alone ..... Yen 550 billion  
Improvement works promoting port facilities  
..... Yen 460 billion  
Adjustment Costs ..... Yen 230 billion  
Total ..... Yen 4,260 billion

While partial revision of the "Law for Emergency Measure of Port Improvement" including the preparation of the new Five-year plan for Port Improvement has been enacted at the 94th ordinary diet session and enforced as at May 2, 1981.

Following this, the Ministry of Transport prepared a draft of the new Five-Year Plan for Port Improvement, hearing the opinions of the Council for Ports and Harbours and obtained cabinet decision after consultation with the related government agencies on 27th November 1981.

## II. Basic Principle of the Plan

Our nation in 1980's must aim at the stable development of the economy and implementation of the Japanese style welfare society by appropriately coping with intensifying restriction of resources and energy in international scale, emerging limitation of land, water, environments and such national resources, change of the national consciousness for qualitative improvement of the national lives and changes of other internal and external environmental conditions.

(Continued from page 14)

needed to establish current value of facilities. On the positive side, any effort to establish a financial base for application of the formula will generally be a one-time effort which, under the current and projected political and economic climate, will eventually occur.

For ports with existing financial accounting systems, use of the formula will probably require relatively simple translations of entries from the current accounts into a form compatible with the entries on the forms (contained in Volume II).

Assuming adequate data is or can be made available, initial application of the formula would provide an initial benchmark to compare recent and current rates. In many cases, the quantitative results will probably confirm current beliefs prevalent within the industry that port facility usage is seriously underpriced relative to recovery of full economic costs. **Users of the formula should not be surprised to find that formula-derived benchmark tariff rates may be**

**as much as two-to-three times higher than those currently in effect!** The difference, of course, is a measure of the extent to which the shipping public is currently being subsidized by U.S. ports.

Knowledge of the quantitative gap between current tariff rates and those which would be reasonably compensatory, i.e., which would recover full economic costs, is a necessary forerunner to any program of rate adjustment to achieve economic self-sufficiency. The formula provides that knowledge.

The formula is designed to permit achievement of economic self-sufficiency at the individual port level, based on a fairly rigid definition of what constitutes the full economic cost which must be recovered through port revenues is self-sufficiency is to be achieved. At the same time, the formula permits wide flexibility in the setting of prices so long as the revenue requirement is met. This same flexibility provides a mechanism which will facilitate achievement of a degree of uniformity in usage pricing of marine terminal facilities on a regional or even wider basis.

Reflecting such trends of our economic society, there are quite a few policies to be urgently implemented in the field of port developments.

Firstly, it is required to develop such policies to make most of marine transportation and rationalize commodity trade under the various intensive restrictions over the steadily increasing demand for transportation along with the economic development and advancement of the national lives.

Secondly, it is required to develop such policies as securing place of employment, promoting industries, securing regional traffic and developing recreational environments, etc. from the standpoint of forming integral environment for human habitation (settlement plan) along with the even use of the national land.

Thirdly, it is required to develop such policies as steady supply of energy which is necessary for maintaining long and stable development of our economy and development of the bases for basic industries, etc. Amongst those, the policy to develop the bases for basic industries is strongly desired also from the standpoint of reinforcing weak economic foundation in local areas and for relocating the industries.

Fourthly, it is required to develop policies necessary for enhancing safety, stability and security of marine transportation by coping with the increasing demand for marine transportation.

Fifthly, it is required to develop policies necessary for improving environments of ports and waters and actively producing comfortable environment and further solving environmental problems in the surrounding areas through these measures.

In addition to these policies, redevelopment of ports for reorganizing coastal regions where the land use has recently become complex and effective functioning of each area has become more difficult, promotion of regional disaster prevention such as countermeasures for large earthquakes, and development of necessary technology for promoting smooth development of ports under increasing severe conditions of marine climate and soil, etc. are made basic policies for the 6th Five-Year Plan for port Improvement.

### III. Scale of the Plan

#### 1. Cargo Traffic through Port

The volume of cargo handled at ports nationwide in '85 is estimated about 4.1 billion tons based on the economic forecast given in the new seven-year plan for the economic society.

**The Projected and Actual Volume of Cargo Handled in Port**

(unit: million tons)

	Actual for '79	Estimate for '85	Annual average growth rate '79 ~ '85
Total cargo	2,885	4,100	6.0%
Foreign trade	815	1,210	6.8%
Export	133	230	
Import	682	980	
Domestic trade (excl. ferry)	1,225	1,690	5.5%
Ferry	845	1,200	6.0%

#### 2. Amount of Investments

For the above projection of the cargo volume, Yen 4,260 billion (including adjustment costs of 230 billion) will be invested for 5 years from '81 to '85, of which Yen 3,020 billion excluding the amount appropriated from the adjustment costs will be wholly or partly borne by the government, subsidized, loaned with no interest or invested as improvement works of port facilities costs, Yen 550 billion as disaster related work costs and works executed by local government alone costs and Yen 460 billion as port function and improvement works promoting port facilities costs.

### IV. Content of the Plan

Based on the basic policies of the plan, the content of the plan is decided as follows:

#### 1. Development of ports for rationalizing international and domestic commodity trade

Ports as bases for foreign trade and ports as bases for domestic trade to form networks of trunk routes will be developed to cope with the growth and trend of foreign trade and the expanding role of marine transportation in domestic commodity trade.

(1) At 60 ports including Niigata Port, large wharves and 147 berths will be developed to cope with the expanding foreign trade, diversification of trading nations, spreading demand for domestic, export and import trade, advancing rationalization of loading work, stable imports of grain, timber and mineral products, etc. As part of the plan, facilities of foreign trade liners will be developed at 9 ports including Tokyo Port and at container terminals of Tokyo, Yokohama, Osaka and Kobe Ports, the development will be carried out by corporations designated by the Minister for Transport under the provisions of the law related to the dissolution of the Osaka Bay and Tokyo Bay Port Development Authorities and succession of its business and at the container terminal of Nagoya Port, the development will be carried out by respective container terminal companies.

Also for imports of foreign trade tramp cargo, special terminals by commodity will be developed as required with a view to efficient operation of loading/unloading work. The cost of these investments will amount to about Yen 730 billion.

(Name of Ports)

Muroran, Tomakomai, Hakodate, Otaru, Kushiro, Rumoi, Wakkanai, Tokachi, Ishikari-wan Shin, Abashiri, Aomori, Hachinohe, Miyako, Shiogama, Akita, Sakata, Onahama, Hitachi, Chiba, Kisarazu, Tokyo, Yokohama, Kawasaki, Niigata, Naoetsu, Fushiki-Toyama, Kanazawa, Fukui, Shimizu, Omaezaki, Nagoya, Mikawa, Kinuura, Yokkaichi, Maizuru, Osaka, Sakai Senpoku, Kobe, Himeji, Amagasaki, Nishinomiya Ashiya, Higashi Harima, Wakayama-Shimotsu, Tottori, Hamada, Sakai, Hiroshima, Takamatsu, Komatsujima, Matsuyama, Kochi, Shimonoseki, Kita-kyushu, Karita, Hakata, Karatsu, Nagasaki, Oita, Kagoshima, Shibushi, Naha.

(2) 68 ports of domestic trade will be developed for making bases for trunk routes for marine transportation to appropriately cope with the expanded role of marine transportation in domestic trade.

As part of the plan, development of ports as bases for domestic trade will be made in the surrounding areas and change of trade routes will be advanced to ease the

congestion of marine and land traffic in Tokyo Bay and Osaka Bay, etc. and for rationalization of commodity trade. Also appropriate port facilities will be developed for medium and long distance ferry transportation in view of its advantages as through-transportation of sea and land and in consideration of the trend for transportation demand.

For developing ports as bases for domestic trade, achieving high operation rate throughout a year, effective loading operation and securing smooth movements of cargo to hinterland, etc. are specially considered.

The cost of these plans will require about Yen 380 billion.

(Name of Port)

Same as given above.

## **2. Development of ports for promoting settlement plan and reorganizing coastal sectors**

Ports will be developed as a foundation for industrial development, for stable supply of goods in localities and remote islands, securing means of transportation for daily lives, and for fostering local industries. They are also developed as bases for increasing demand for marine recreation and also they are redeveloped to achieve proper and effective display of various functions in the port space.

(1) To stabilize population through securing place of employment in localities and through advancement of income level, ports will be developed for fostering regional industries and as bases for introducing new industries. At 47 ports including Funakawa Port, large wharves and 69 berths will be developed. Also with regard to ports in localities and remote islands, as they share the role of bases for waterways for living, for fishery, regional industries and for overall support of production and living of regional population and other activities, detailed developments will be promoted at 503 ports.

Further as part of fulfilling leisure environments, 21 ports including Osaka Port will be developed as bases for pleasure boats and sightseeing vessels to meet the increasing demand for marine recreation.

The cost required for these plans will be about Yen 854 billion.

(2) From the standpoint of reorganizing coastal regions for congested land use arising from production, living and other activities and where many difficult problems are being caused, effective and rational use of port space which is located in a nucleus position is promoted and 43 ports including Kobe Port will be redeveloped to achieve proper and effective display of various functions including port function in this space.

The cost required for these plans will be about Yen 42 billion.

## **3. Development of ports for building foundations for stable economic development**

Port facilities which will be required for the stable development of economy overcoming restricted supply of energy will be developed in consideration of safety and disaster prevention and basic industrial ports will be steadily developed.

(1) In order to overcome restrictions of energy supply and achieve stable economic development, harbour facilities and protective facilities will be developed as designated port work required for location of power sources, etc. to enforce saving of oil, steady imports of coal, LNG, LPG and other

substitute energy and to depart from dependence on oil and other required works executed for the special enterprise will be carried out.

(Name of Ports)

Tomakomai, Hachinohe, Noshiro, Soma, Kajima, Mizushima and Aokata.

(2) Ports as bases for industries of basic industries as nucleus will be developed for establishing foundation for long range stable development of the economy and to carry out relocation of industries and to strengthen the weak local economic foundation.

The cost required for these plans will be about Yen 76 billion.

## **4. Development of ports and waterways for securing safe navigation of vessels and regional disaster prevention**

In order to secure safety of vessels' entering and leaving ports and navigation in coastal waters, the improvement of breakwaters, development and maintenance of waterways to be developed and preserved and development of harbour of refuge will be carried out and port facilities will be developed to secure emergency transportation by waterways in case of large earthquakes and to concentrate handling of hazardous objects at safe spots.

(1) Breakwaters, waterways and mooring basin and other port facilities will be developed at 49 ports including Ishinomaki Port for securing safety of vessels entering and leaving ports, berthing and unberthing and loading and unloading. Also at 14 bay entrances including Tokyo Bay where there is congestion of vessel traffic, development and maintenance of waterways will be carried out to secure safety of vessels navigating in the coastal waters and harbour of refuge will be developed at 11 ports including Wajima Port to safety shelter small ships in case of sudden change of weather, storms and abnormal weather conditions.

The cost required for these plans will be about Yen 295 billion.

(2) Mooring facilities with high earthquake resistance will be developed at 24 ports including Omaezaki Port to secure emergency transportation by water routes in case of earthquakes from the standpoint of local disaster prevention in area where large earthquakes are liable to occur like Tokai earthquake. Mooring basin for small tankers will be installed at 6 ports including Chiba Port to concentrate handling of hazardous objects from the standpoint of local disaster prevention where oil and other dangerous goods are mostly handled.

The cost required for these plans will be about Yen 23 billion.

## **5. Promotion of work for realizing comfortable environments for ports and sea**

In order to improve environments around ports and sea, waste disposal facilities: Dikes for waste dumping area at ports will be developed, and port and harbour environmental protection facilities such as greens will also be carried out as well as port pollution control work will be carried out and recovery of floating debris and floating oil and cleaning of bottoms will be carried out.

(1) Dikes for waste dumping area will be carried out at 20 ports where reclaimed area are urgently required on the waters to smoothly dispose wastes. Also the Interprefecture Coastal Area Environment Improvement Center will carry

out the development of coastal area (waste disposal sites on the waters which require a large area for disposal) with safety of ports and the surrounding areas in mind. Also waste oil disposal facilities to dispose waste oil discharged from ships and marine waste disposal facilities to dispose wastes from ships and marine facilities will be developed at 30 ports including Chiba Port. Further, for securing comfortable working environments at ports and creating marine recreation sites, green areas for rest, symbol green areas and

other environmental facilities will be developed at 180 ports including Osaka Port. Also for preventing pollution and securing environments at ports, sludge dredging and other port pollution prevention work will be carried out at 29 ports including Tokyo Port pursuant to the provisions of the law related to the special budgetary measure of the government for businesses related to pollution control and

(Continued on next page bottom)

**Table 1: Comparison between the New Five-Year Plan and the Former One**

Class	Former Five-Year Plan (1976-1980)			New Five-Year Plan (1981-1985)		
	Amount of investment	Share (%)		Amount of investment	Share (%)	
	one hundred million			one hundred million		
Improvement works of port facilities	22,800	78.6	73.5	30,200	74.9	70.9
Disaster related work, works executed by local government alone	3,400	11.7	11.0	5,500	13.7	12.9
Improvement works promoting port facilities	2,800	9.7	9.0	4,600	11.4	10.8
Subtotal	29,000	100.0		40,300	100.0	
Reserve cost	2,000		6.5			
Adjustment cost				2,300		5.4
Total	31,000		100.0	42,600		100.0

**Table 2: Five-Year Plan for Port Improvement by Class**

(One million yen)

Port by Class		Former Five-Year Plan (at the time of the cabinet decision) (A)		New Five-Year Plan (B)		Difference Incr./Decr. (B) - (A)	Ratio (B) / (A)
		Work Cost	Share (%)	Work Cost	Share (%)		
Specially designated major ports		691,631	33.7	742,659	26.6	51,028	1.074
Major ports		858,396	41.9	1,270,665	45.6	412,269	1.480
Local ports		343,445	16.8	553,012	19.8	209,567	1.610
Others	Harbour of refuge	8,138	0.4	33,413	1.2	25,275	4.106
	Waterways	69,965	3.4	83,507	3.0	13,542	1.194
	Marine environments	9,600	0.5	16,500	0.6	6,900	1.719
	Execution/design/study			3,865	0.1	3,865	—
	Industry related	3,818	0.2	1,089	0.0	△ 2,729	0.285
	Local improvements	35,907	1.7	52,440	1.9	16,533	1.460
	Workboats, etc.	20,000	1.0	22,030	0.8	2,030	1.102
	Study cost	9,100	0.4	10,820	0.4	1,720	1.189
	Total others	156,528	7.6	223,664	8.0	67,136	1.429
Total share		2,050,000	100.0	2,790,000	100.0	740,000	1.361
Reserve fund		230,000		230,000		0	1.000
Total		2,280,000		3,020,000		740,000	1.325
Disaster related work, works executed by local government alone		340,000		550,000		210,000	1.618
Improvement works promoting port facilities		280,000		460,000		180,000	1.643
Reserve cost		200,000				△ 200,000	—
Adjustment cost				230,000		230,000	—
Grand total		3,100,000		4,260,000		1,160,000	1.374

1. Public corporations are included in the specially designated important ports and loans for the port development fund, designated port facilities work, oil polluted seawater, pollution control work and greens and included in the respective port classes.



**Table 3: Breakdown of the Source of Funds for the Five-Year Plan for Port Improvement** (One million yen)

Port Class		Work cost	National expenditure	Port management body	Financial investment and loans	Beneficiaries
Specially designated major ports		742,659	331,129	324,397	37,561	49,572
Major ports		1,270,665	765,195	479,843	423	25,206
Local ports		553,012	344,750	206,823	0	1,439
Others	Harbour of refuge	33,413	26,849	6,564	0	0
	Waterways	83,507	83,507	0	0	0
	Marine environments	16,500	16,500	0	0	0
	Execution/design/study	3,865	3,865	0	0	545
	Industry related	1,089	272	272	0	0
	Local improvements	52,440	20,330	32,110	0	0
	Workboats, etc.	22,030	22,030	0	0	0
	Study cost	10,820	8,740	2,080	0	0
	Total others	223,664	182,093	41,026	0	545
			47,400	△ 47,400		
Total		2,790,000	1,623,165	1,052,089	37,984	76,762
Share (%)		(100)	(58.2)	(37.7)	(1.4)	(2.7)
Reserve fund		230,000				
Total		3,020,000				
Disaster related work, works executed by local government alone		550,000				
Improvement works promoting port facility		460,000				
Adjustment cost		230,000				
Grand total		4,260,000				

- Public corporations are included in the specially designated major ports and loans for the port development fund, designated port facilities work, oil polluted seawater, pollution control work, wastes and greens are included in the respective port classes.
- A breakdown of fund sources is somewhat different according to the execution of work.
- The top line in the total shows outside figure, showing a different of subsidizing rate for bodies to which the developing area special law is applicable.

(Continued from page 18)

the Port and Harbour Law. Further, cleaning boats will be built at 8 ports including Kawasaki Port which will require cleaning of the water face in the port.

The cost required for the work will be about Yen 296 billion.

(2) In order to actively eliminate water pollution and secure marine environments, floating debris and oil will be recovered at 3 water zones including Tokyo Bay which is heavily polluted.

#### 6. Development of technology, etc. for the smooth promotion of port developments

For carrying out smooth port development, various studies will be made as well as development and maintenance of workboats and other technology is undertaken.

The cost required for the work will be about Yen 33 billion.

#### 7. Reserve fund

Yen 230 billion will be budgeted as reserved for adjustments and additions to the plan which are expected to arise during the course of carrying out the Five-Year Plan for Port Improvement.

**Table 4: Estimate of the amount or cargo handled at ports throughout the nation**

(Unit; 1 million ton, %)

Class	Actual for '79	Estimate for '85	Annual average growth rate ('79-'85)
Total cargo (excl. ferry)	2,885	4,100	6.0
Foreign trade	2,040	2,900	6.0
Export	815	1,210	6.8
Import	133	230	
Domestic trade (excl. ferry)	682	980	
Ferry	2,070	2,890	5.7
	1,225	1,690	5.5
	845	1,200	6.0

# Wellington Harbour Board

## Chairman's address (extract)

(Extracts from the Wellington Harbour Board Annual Report)

I have pleasure in reviewing the operations of the Board for the year ended 30 September 1981.

Shipping Arrivals for the year totalled 7,869,246 net register tons, a decrease of 252,290 tons or 3.1% from last year's figure of 8,121,536 tons.

The Manifest Tonnage of cargo passing through the port totalled 5,513,083 tons, a decrease of 61,615 tons or 1.1% from last year's tonnage. An increase of 153,392 tons or 3.5% in General Cargo was more than offset by a decrease in Bulk Cargo of 198,928 or 17.6%. The major decrease being in bulk petroleum products which fell by 161,700 tons or 16.5%. Thorndon Container Wharf throughput decreased from 70,510 TEU to 67,720 TEU, or by 4% but a significant increase of 74,000 tons or 35.7% (from 207,000 tons to 281,000 tons) in conventional ship cargo demonstrated some success in efforts to retain a reasonable share of residual conventional ship services.

Although the total manifest tonnage is 1.1% less than the previous year improved trade during the second half of the year under review resulted in an encouraging increase from the forecast total of 5.3 million tons.

The ANNUAL ACCOUNTS which will be formally presented to the Board for adoption following the completion of Audit show a balance of \$1,373,475 in the Working Account as compared with \$1,832,428 last year. However, after meeting loan repayments, payments to Sinking Funds and contributions to Special Funds, there was a deficit of \$938,205 in the Appropriation Account compared with a deficit of \$896,879 last year. Notwithstanding increased charges and improved efficiency these deficits represent a contribution by the Board to the restraint of port and transport costs in the present difficult trading and economic circumstances through which New Zealand is passing.

Income rose to \$21,894,214 (last year \$19,866,230), reflecting a full year of higher charges from 1 October 1980.

Working expenditure rose to \$13,090,787 (last year \$11,302,064). Expenditure on repairs and maintenance \$3,523,763 (last year \$2,879,448) reflects the escalation in costs of wages, materials and services necessary to maintain the Board's assets.

The Board's total wages and salaries inclusive of capital works increased by \$2,042,627 (18.25%), making the total cost \$13,236,093 (last year \$11,193,466).

No loan money except for Renewal Loans was raised during the year and loan liability now stands at \$41,918,057 (last year \$42,557,867).

Capital expenditure totalled \$563,778 of which \$189,930 was provided from loan money, and \$373,848 from depreciation.

The principal items of capital expenditure were:

Kaiwharawhara Stream Culvert	\$187,002
New Pile Driving Equipment	\$ 47,066
Refuelling Depot	\$ 46,302
CNG Equipment	\$ 40,977

No Local Authorities Loans Board sanctions were granted during the year other than for Renewal Loans.

The local elections held early in October 1980 resulted in five new members being elected to the Board. Their ready involvement has been welcome during a busy and difficult year.

Continued and alarming increases in all costs but most significantly in wage costs have more than offset improved productivity and economies in operations. Following extensive reviews undertaken throughout the year container crane and tug hire charges were increased from 1 April 1981 and other dues and charges on ships and goods (with the exception of the harbour improvement rate on inward cargo) were decided to be increased by approximately 16½% from 1 October 1981. Licence fees and charges for the use of recreational facilities were also decided to be increased with effect from 1 January 1982.

The Board required an extensive examination of port facilities and services to be undertaken in order to ensure the most effective, efficient and economic port operations appropriate to existing circumstances. That examination proceeded over a period of four months and has resulted in a number of decisions intended to improve the port's trading and financial position. Other consequential matters have been identified and remain under action.

It was decided to appoint an officer having responsibility for marketing functions and he is expected to facilitate improved liaison with port users and a more direct response to their problems.

The New Zealand Institute of Economic Research has been engaged to review and update a previous report assessing the future trade of the port in 1985 and 1995. That work has not yet been completed.

Following extensive investigation of future rail ferry terminal requirements by a joint technical study team of officers of the Board and of New Zealand Railways and after consideration by the Board I was pleased to make a public statement in September 1981 that agreement had been reached between the Board and New Zealand Railways both on the immediate berth requirements for the new and larger ship proposed for the Wellington/Picton rail ferry service, subject to a decision by the Government to approve the Railways proposals, and that future terminal development be planned at the existing location.

The Chairman and Members of the New Zealand Ports Authority accompanied by its Chief Executive Officer and Secretary in pursuance of the Authority's policy of making regular visits to New Zealand ports and in response to an invitation extended earlier visited the Board on 8 July 1981. The visit provided the opportunity for informal discussions to be held on current problems and for the Board's views on future development proposals to be outlined.

High and consistent performance in the turn round of container ships has been maintained and a notable record achieved in November 1980 when 'Remuera Bay' commenced work on Saturday 15 November and completed discharging and loading on the next day, Sunday 16 November 1980. 1,484 containers were exchanged at a gross

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# Kenya Ports Authority

## 1981 Port Operation Review

The traffic handled at the port of Mombasa in the year 1981 was the highest ever handled in a single year in the history of the port. The port throughput for the year was 8,435,944 deadweight tonnes. The total export traffic was 2,805,549 tonnes while the imports constituted 5,627,017 tonnes and, transshipment was 3,378 tonnes.

The performance for the year was an improvement over the preceding year, 1980, which had broken all the previous records. The 1980 throughput was 7,511,253 deadweight tonnes. Thus last year's figure was more by 924,691 tonnes representing a rise of 12.3%.

The imports throughput for 1980 amounted to 5,470,745 tonnes and the exports accounted for 2,036,383 tonnes while the transshipment cargo was 4,125 tonnes.

Compared against 1980 the imports tonnage through the port for 1981 was higher by 156,272 tonnes, a rise of 2.9 per cent. The exports cargo also reflected an improvement and was 769,166 tonnes higher in 1981 than in 1980 or 37.8% rise.

The import breakdown for 1981 as compared to 1980 was as follows (shown in deadweight tonnes):

Cargo	1981	1980
Dry general cargo	2,125,752	2,210,677
Dry bulk cargo	1,465,522	1,230,634
Petroleum oil & Lubricants	3,491,773	3,487,190
Other bulk liquids	70,807	79,987

(Continued from page 20)

rate of 56.39 TEU per hour. That represented 6,165 tons of imports and 9,674 tons of exports—a total tonnage of 15,839 at a rate of 588.8 tons per hour.

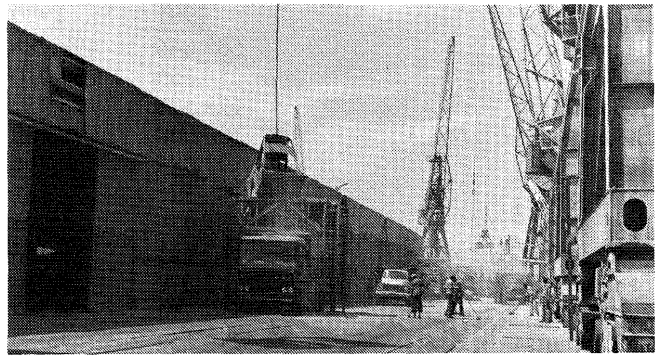
On Thursday 21 May 1981 at 0300 hours the Liberian registered general cargo ship 'Pacific Charger' (10,242 gross tons) with a cargo of steel and motor vehicle parts and on her maiden voyage from Japan grounded outside harbour limits at Baring Head in severe weather.

With the assistance of the Board's tugs she was refloated on 5 June and berthed at King's Wharf. After temporary repairs she was shifted to Glasgow Wharf to discharge her cargo and sailed, after further repairs, for Japan on 31 July 1981.

The emergency which arose on her grounding and the subsequent events leading up to her successful refloating necessarily involved the Harbour Master and other Officers and staff of the Board, all of whom demonstrated a skill and competence which I was pleased to acknowledge publicly in reporting to the Board in June.

The Court of Enquiry which was set up to investigate the circumstances of the ship's grounding has not yet brought down its findings.

Steady progress has been maintained in the preparation of a Wellington Harbour Maritime Planning Scheme. The Board as the Maritime Planning Authority has considered, with the advice and recommendations of, the maritime planning committee, the submissions received on the Preliminary Statement published during the previous year and the preparation of a draft scheme is proceeding as the next stage in the statutory planning process. The constitution of the Wellington Regional Council in October 1980



Unloading of Maize in bulk at Berth No. 11, Mombasa

Like in 1980, the country (Kenya) continued to import food grains which was a contributory factor to the record performance in the port throughput. Some of the main import commodities for the years 1981 and 1980 are shown below in deadweight tonnes.

Commodity	1981	1980
Maize	396,042	487,511
Wheat	163,950	85,366
Fertilizers	205,259	151,812
Raw salt	61,219	29,311
Agricultural & other machinery	22,793	23,404

As indicated earlier there was an improvement in both the exports and imports performance last year when com-

and the progress of its Regional Planning Scheme Review, more particularly in respect of the scheme's coastal and maritime section, will provide the opportunity for the integrated development of the Maritime Planning Scheme and regional planning.

I record that the Board's General Manager, Mr. J.F. Stewart, was appointed on the nomination of the Harbours Association of New Zealand, as the deputy member representing maritime interests on the Transport Advisory Council. Mr. Stewart was also elected by the New Zealand members of the International Association of Ports and Harbors to be the New Zealand alternate director of the Association. In recognition of the Board's continued involvement in the affairs of the international association and its work on behalf of ports Mr. Stewart has also been appointed Chairman of the association's Constitution and By-Laws Committee and re-appointed to the Legal Protection of Port Interests Committee.

During the period the major overhaul of Container Crane 'B' was completed and the crane brought back into service in October. The refuelling depot building situated at Fryatt Quay and the installation of the necessary equipment was also completed. Other works completed during the year included, the Wellington Sea Rescue Service ramp and building, re-boiling of the floating crane 'Hikitia', and two burners of the ships garbage incinerator were converted to natural gas. The fitting out of a new pile driving rig is in hand as is the renewal of fendering at Aotea Quay. Work on the repacking of the container crane rails has commenced and a contract has been let for the construction of a work boat.

J. KING,  
Chairman.

pared to 1980. The export traffic for the main commodities for the two years is tabulated below. The figures are in dead-weight tonnes.

Commodity	1981	1980
Cement	567,046	498,988
Coffee	256,156	234,010
Soda ash	123,528	196,350
Flourspar	106,040	97,460
Tea	91,087	90,796
Molasses	106,551	78,781
Sisal	39,975	4,025
Tinned fruit	42,921	51,246
Beans & Peas	2,520	9,210
Pyrethrum	2,744	4,267
Cashewnuts	9,159	7,989
Raw cotton	3,762	342

Dry bulk exports for 1981 accounted for 747,619 dead-weight tonnes, petroleum oil and lubricants 937,537 tonnes, bunker oils 230,094 tonnes and other bulk liquids 106,551 tonnes.

Some of the other export commodities that passed through the port in 1981 were wattle extract 11,458 tonnes, hides and skins 14,100 tonnes, timber 9,016 tonnes, fruit juice 11,319 tonnes.

The container traffic through the port in 1981 was 44,028 twenty foot equivalent units. This was higher by 13,368 TEU's an equivalent of 43.7% as compared to the year 1980 when 30,660 TEU's were handled.

The container traffic has been rising year by year since 1975 when containers started being handled at Mombasa.

The container traffic since 1975 is as under

1975	1976	1977	1978	1979	1980	1981
1,298	3,319	4,499	8,959	15,147	30,660	44,028

Meanwhile, some additional container handling equipment has been received at the port and more are due to arrive in the course of this year. Two container handling fork lift trucks (front loaders) were commissioned at the end of January and this brought the number of front loaders, of 35-ton capacity each, to five.

Another 10-ton empty container handling forklift trucks will be arriving later this year, while nine 40-ton capacity container handling cranes are expected towards the end of the year. Three of the latter trucks will be ship to shore and six of the container stacking cranes. Twenty tractors and 40 skeletal trailers for movement of containers are some of the other container equipment on order and hoped to be at the port during this year.

The Roll-on/Roll-off vessels which started coming to the port for the first time in 1980 also saw good improvement although this traffic has remained low key. During 1981 approximately 29 RO-RO ships as compared to 13 ships in 1980 called at the port. RO-RO vessels have hitherto been handled at berth No. 18 but there are plans to provide facilities for this type of traffic.

Development works in the port continued and good progress was made with a number of projects completed and others initiated while other works were still in different stages of completion.

One of the main projects to be completed in 1981 was office Block III. Block III which is part of the headquarters complex composed of four blocks was completed in October and is mainly occupied by Finance and Engineering departments. All the main port departments are now

housed at Kipevu.

Phase II development of Bandari College consisting of 70 hostel units and a new office block at Dockyard were also completed in the course of last year.

On the development of harbour facilities, rehabilitation of berths was continued with work on modernisation of southern lighterwharf and berth No. 5 completed. The dredging of the harbour which had commenced in October 1980, and carried out by a Dutch firm was also completed early in the year (1981). More dredging of the port by an American company was started this year (1982).

The year under review saw the delivery of new equipment at the port. 16 mobile Jones cranes were acquired and handed over to the Minister for Transport and Communications, Mr. Henry Kosgey by the British High Commissioner, Mr. John Williams. The cranes were bought through a British aid and cost shs. 25 million.

The port also received 24 towing tractors, 60 roll trailers and 12 skeletal trailers at the beginning of last year.

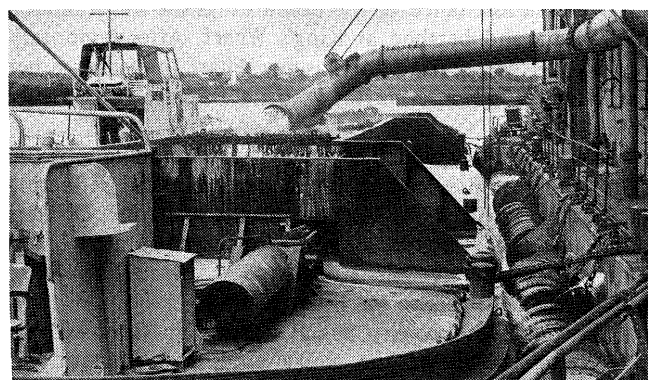
On the side of housing, phase II development of Kilindini High level houses was completed and officially opened by Mombasa Mayor, Coun Rajab Sumba in March 1981.

A social centre at Makupa was completed, while construction of more housing units consisting of 138 classes D to G houses was started along Dedan Kimathi Street and are making good progress. A new guest house whose construction was started at Kizingo last year is also making good progress.

Other highlight events in the year under review included the twinning up of ports of Mombasa and Rotterdam, handling of 100,000th container, which was marked ceremoniously; installation of a new PABX telephone exchange, and graduation ceremony at Bandari college.

The Authority also participated successfully in Nairobi and Mombasa shows, and the Kenya Communications Sports Organisation games which were held at Eldoret.

All together the year 1981 was a very successful one for the port which saw good progress in all areas of development. Notwithstanding the inflationary trends, we look forward with optimism and with hope that the services offered at the port will be of satisfaction to every user.



A dredger in action deepening the entrance channel, Mombasa



# Cyprus Ports

(Extracts from Fourth Annual Report 1980,  
Cyprus Ports Authority)

## Port development and efficiency

### Quay extensions

1. According to the initial time schedule, quay extensions at Larnaca and Limassol ports should have been completed by the end of 1980.
2. For various reasons, these projects are now expected to be completed by autumn 1981 for Larnaca and by autumn 1982 for Limassol.
3. Until the end of 1980, the following amounts were expended for the quay extensions:  
Larnaca port : £2.4 million  
Limassol port: £1.2 million

### New storage areas

4. Due to the spectacular increase in the number of containers, and, furthermore, due to the fact that a large part of these containers were empty, an open area of 40,000 sq.m. was paved and fenced during 1980 for the stacking of empty containers at Limassol port. This is a temporary arrangement until the container stacking area at the eastern side of the port is completed.

### Equipment

7. For the strengthening of the pilotage services two pilot launches, one for Larnaca and one for Limassol ports were bought from France.
8. Each of these pilot launches is 10 m. long, has 240 h.p. and can reach a maximum speed of 18 knots.
9. For better communication between the old and the new port areas at Limassol, and generally for the exercise of a more effective control and supervision, the Authority purchased a number of motorcycles.
10. During the period under review, five for lifts (three of 3-ton and two of 2-ton capacity) and a tractor were added to the equipment of the Larnaca Licensed Porters' Association. During the same period the Limassol Licensed Porters' Association acquired two fork lifts of a lifting capacity of 8-tons.

### Other works

11. During they year under review, the asphaltting of an area of 40,000 m<sup>2</sup> at Limassol port was completed at a cost of £87,000. The asphaltting, as well as the floodlight illumination of open stacking areas at Larnaca port were, also, completed at a cost of £22,000.
12. During 1980, a number of minor works, including auxiliary buildings, were carried out for the better functioning of certain services.

### Paphos Port development

16. The subject of the development of the Paphos port became the concern of the Authority, when the port installations were vacated by the Government at the beginning of 1980.
17. As a result of interest expressed by a foreign company to turn the port of Paphos into a marina, several meetings took place between this company on the one hand, and the

Authority, the Cyprus Tourism Organization, Government Services and the local Authorities of Paphos on the other. No final decisions have so far been taken on this subject.

### Efficiency

18. The decision of the Trade Unions not to allow work on Sundays hampered the efforts of the Authority to increase productivity at the ports.
19. This decision was taken in October and in spite of the efforts made by the Authority as well as by the Government and other interested parties, it did not prove possible to convince the labourers to resume work on Sundays. This development had an adverse effect on trading activities in Cyprus.
20. The Authority, deeply conscious of the need for work to be resumed in the ports on Sundays, even on a relatively reduced basis, continues its efforts in this direction.

## Traffic

### Cargo

1. As it is known, after the Turkish invasion, great efforts were made by government to reactivate the economy of the country. As a result, total imports, volumewise, reached the pre-invasion levels in 1979 whereas by 1975 exports surpassed the 1973 levels.
2. These efforts, though successful, resulted in high levels of inflation with an ever-increasing gap between imports and exports, and the reduction of foreign currency reserves.
3. Consequently, Government policy, during 1980, aimed at dampening this acceleration and at reducing the level of imports, promoting, at the same time, exports.
4. During 1980 the volume of imports decreased by 2%. The decrease in the volume of traffic, excluding transit and coastal deliveries, was 5%, totalling 1,851,000 tonnes, compared to an increase of 16% in the previous year. If petroleum imports are, also, excluded, which maintained the same level as that of last year, then the general cargo, and mainly consumer goods, have fallen even more (by 9%) reaching 962,000 tonnes compared to 1,052,000 in the previous year.
5. The reduction in imports was, basically, due to the fall of raw materials by 18% to 40,000 tonnes, and of the manufactured goods by 14% to 529,000 tonnes. More specifically, timber decreased by 18%, iron and steel by 39% and fertilizers by 45%. It should, however, be noted that the fluctuation in the level of imports of timber and iron and steel is greatly affected by speculative actions, and neither 1980 nor the year before can be considered as representative of the level of imports for these items.
6. The total volume of exports increased to 1,722,000 tonnes, or by 7% and if transit cargoes and coastal deliveries are excluded, exports increased by 3%, only, reaching 1,387,000 tonnes, compared to an increase of 8% in the previous year. Exports of agricultural products, totalling 294,000 tonnes, remained almost at last year's levels. This was mainly due to adverse weather conditions and the difficulties, which certain commodities, still, face in the EEC market. On the other hand exports of manufactured goods increased by 13% to 927,000 tonnes, this being due to the increased demand of our products in foreign

markets. Only minerals showed a decrease falling to 166,000 tonnes as against 232,000 in 1979, but this is considered normal and is due to the depletion of known reserves.

7. The only substantial increase in both imports and exports was that of transit trade, which increased from 271,000 in 1979 to 419,000 in 1980 or by 55%. Most of this trade was destined for Lebanon but was directed to our ports due to war conditions prevailing in the area.

8. Overall, in the course of 1980, the level of seaborne traffic through Cyprus ports and terminals showed generally an increase of only 2%, compared with an increase of 18% during 1979, reaching 3,905,000 tonnes. Despite the measures taken, both years were affected by speculative transactions. In this connection, the fear of increase in prices and customs duties led to an overstocking in 1979, whereas during 1980, a depletion of those stocks was observed.

### Ships

10. In spite of the very small increase in cargo traffic during 1980, ship traffic increased considerably, with the number of ships and their net registered tonnage increasing by 12% and 10%, respectively, over last year. This change is contrary to the trend observed during the last 3 years, according to which fewer ships with larger n.r.t. called. This increase was observed wholly at the Limassol and Larnaca ports, whereas ship traffic through the terminals showed a decrease of 15% both in number and n.r.t.

11. With berth occupancy at both Limassol and Larnaca ports above the generally accepted maximum level, the increase in the number of ships, especially the conventional ones, which have a slower rate of loading/discharging, aggravated the problem of berthing, particularly for those ships which are not entitled to priority.

## Balance sheet as at 31st December 1980

	1980 C£	1979 C£
Assets employed		
Fixed assets	17,675,646	15,086,524

### Current Assets

Cash	139,921	110,448
Investments	3,700,000	3,850,000
Sundry Debtors	77,992	96,885
Stock at cost	94,207	53,847
Deferred Expenditure	74,315	—
	<u>4,086,435</u>	<u>4,111,180</u>

### Less Current liabilities

Bank Overdrafts	—	—
Creditors	728,762	346,875
Sundry Accruals	1,000	1,340
	<u>729,762</u>	<u>348,215</u>

### Net current assets

	<u>3,356,673</u>	<u>3,762,965</u>
	<u>21,032,319</u>	<u>18,849,489</u>

### Sources of finance

General Fund	7,527,237	5,815,901
Borrowings	13,505,082	13,033,588
	<u>21,032,319</u>	<u>18,849,489</u>

## Revenue accounts for the year ended 31st December 1980

	1980 C£	1979 C£
<b>Income</b>		
From operations	4,097,209	3,854,447
From other sources	214,312	207,810
	<u>4,311,521</u>	<u>4,062,257</u>
<b>Expenditure</b>		
Operating	1,369,646	1,010,188
Administration	221,871	171,408
Depreciation	364,953	350,834
Loss on Disposal of Assets	—	—
Remuneration of the members of the Board of Management	3,780	2,520
	<u>1,960,250</u>	<u>1,534,950</u>
<b>Operating Surplus</b>	<u>2,351,271</u>	<u>2,527,307</u>
Interest on long-term loan	636,588	620,398
	<u>1,714,683</u>	<u>1,906,909</u>
<b>Surplus for the year</b>	5,815,902	
Surplus brought forward		
Net Income/(Expenditure) relating to previous years	(3,348)	<u>5,812,554</u>
Surplus carried to General Fund	7,527,237	<u>3,908,992</u>
		<u>5,815,901</u>

## Technological Change in Ports — The Israeli Experience

(Continued from page 30)

port work in the future. Greater versatility and adaptability—mechanical and otherwise—may be demanded of the new operator, as is already the case today with maintenance engineering and marine, financial, and administrative skills. These developments will place a greater reliance on outside educational and vocational training institutions. (See Table 4.)

### The Technology of Training

Training clearly must move with the progress of the technology it assists to bring about. This may require a basic review of training techniques as well as the retraining of instructors; or assuring the right skills in new instructors in the use of computerized simulation models, video, films, and slides, as well as the practical application of newly acquired skills on models or the machine itself.

Finally, the discussion here has focused on problems

faced by ports in developed countries, as these have been the kind that in the main face Israel today (though with some time-lag). In some of the less-developed countries, however, the gap between the technology foisted on them by modern vessels plying a route between disparate technologies creates an entirely different set of problems for trainers (and managers), and there may well have to be compromises with regard to the capital-intensive port operations. Trainers will then have an entirely new role to play in the solution of these problems.

# Yemen Ports

(Extracts from Port of Aden Annual 1980, Yemen Ports Authority)

## Director General's review

It is more than pleasing for me to report that the Yemen Ports Authority has enjoyed a successful and progressive year.

During the year 1980 the Port of Aden has seen a number of changes in the overall activities of the Port in the field of cargo handling and bunkering services whereby the responsibility of rendering these services to customers in the Port has been handed over or transferred to other organisations in the Port. These changes affected the following services:—

- 1) The handing over of B.P. (Aden) Ltd. Bunkering Services to the Petroleum & Minerals Board as a result of which a new company known as Aden Bunkering Co. have been established by Law No. 2/1979 with effect from 1.4.1979 which comes under the structural organisation of the Petroleum & Minerals Board.
- 2) Cargo handling operations and stevedoring services were transferred from the National Shipping Co. to the Yemen Ports Authority with effect from 1.10.1978 under the Law No. 43 of 1978.

These changes aimed at the improvement and efficiency in the services rendered in this sector. Among the major development programmes of the Port within the Republic Development Plan was the arrival and commissioning of all equipments purchased under the Port of Aden Rehabilitation Project. The major part of this was the arrival and commissioning of the two Voith Schneider tugs namely "26th September" and "30th November" received during the last quarter of 1978 which coincided with the celebrations of two of our glorious National Days i.e. 15th Anniversary of the 14th October Revolution and the 10th Anniversary of Independence on 30th November. These Tugs have undoubtedly added to the strength of the existing fleet of harbour tugs servicing the Port and the new techniques available in these two Voith Schneider Tugs makes manoeuvrability of ships in the harbour more convenient and safe.

In addition to these tugs, the Yemen Ports Authority received three new fast pilot launches and four mooring launches aimed to achieve and increase in the number of these crafts to speed up ships handling in the harbour.

There has been a considerable amount of workshop equipments, machinery and other items introduced within the "Port of Aden Rehabilitation Project" in our maintenance Workshop aiming at improving the execution of maintenance programmes to the optimum level for the upkeep and efficient running of our harbour craft.

Among other projects, the Yemen Ports Authority has completed the construction of two new Workshops in the Chief Engineer's Department and Maalla Wharf to enable the organisation to cope with the maintenance programme for the increased number of equipments particularly those newly introduced cargo-handling systems such as forklifts, tractors, trailers, grain evacuators and elevators. These were among the Civil Engineering Department projects including the maintenance of the breakwater.

In the field of training, the Yemen Ports Authority has been active in training Deck Officers and Marine Engineers

abroad and has been executing an extensive programme for training staff and tradesmen in various fields within available means in the Republic such as the College of Technology, the Technical Institute and Tradesmen's Training Centre.

## Port of Mukalla

During the year 1980 the Port of Mukalla has seen a tremendous increase in shipping and cargo handling trends and despite the difficulties faced by this Port in view of its limited capacity, yet operations were reported to have been satisfactory. One of the major projects in the Fifth Governorate for the Yemen Ports Authority in the Government Five Year Development Plan is the construction of a new harbour with two general cargo berths to accommodate ships with 10,000 dwt within a complex which included fisheries & power generation projects.

It is unfortunate to report that the Contractors who were entrusted to execute this project went bankrupt and the Yemen Ports Authority supported by the Government and administration of the Fifth Governorate have taken over the upkeep of the executed civil works and the maintenance of equipments on site. On the other hand the Yemen Ports Authority is presently working with concentration on the employment of a new contractor to accomplish the work left for the completion of the project.

From contracts made, there has been responsive offers from Consultants and Contractors around the world. These are being studied to reach a final decision in closing contractors.

## Participation in international conferences

The Yemen Ports Authority has been active in participating in a number of International Conferences and Seminars by virtue of its membership or close relationship with worldwide International Organisations such as IAPH, ICHCA, UNCTAD and IMCO.

I wish to express my thanks and appreciation to the Chairman and members of the Board of Administration of the Y.P.S.C. who have given me sound support throughout the year. I would also like to thank the executive officers and employees of the Yemen Ports Authority for their assistance together with the users of the Port's facilities.

**Mr. Zubair Ali Idd**  
**Deputy Director General**

## Shipping and cargo movements

The number of vessels calling at the Port of Aden for 1980 totalled 2,436, which is more than those which called during 1979 and 1978 by 13% and 10% but less than those which called during 1977 by 6.5%.

Due to the increase in the number of vessels calling during 1980 in comparison with those during 1979 and 1978, the total registered tonnage for vessels have also increased to 20,949,835 tons which is more than that achieved during 1979 and 1978 by 25% and 30%.

## Dry Cargo

**Cargo Imported:** The dry cargo discharged in the Port of Aden for the year 1980 totalled 666,736 tons, which is

(Continued on next page bottom)

# New Orleans—The Total Port

(Extracts from 1981-82 Annual Directory)

For more than 260 years the Port of New Orleans has been a major port. Its continuing contribution to the industrial and agricultural livelihood of America is assured by its location at the end of a gigantic transportation funnel consisting of 19,000 miles of inland waterways created by the Mississippi River, its tributaries, and other systems. Through this network shippers located as far north as St. Paul/Minneapolis, as far east as Pittsburgh and Charleston, West Virginia, and westward to Tulsa, Oklahoma, and Omaha, Nebraska, have direct access to world markets via the Port of New Orleans.

In that vast American heartland 60% of the nation's farm products are grown, half of all manufactured goods are produced, and 90% of the country's motor vehicles, transportation equipment and other types of machinery are built. Forty percent of the nation's consuming public live and work in this area served by the Port of New Orleans.

In 1980, New Orleans confirmed its vital role in the world transportation of goods. Total foreign waterborne commerce amounted to almost 43.5 million tons, an increase over 1979. Value of the cargo was nearly \$25.2 billion, a 22% increase over 1979. Imports dropped sharply led by a decrease in crude oil imports as in ports all over the

world, but exports rose from 18.5 million tons in 1979 to 24.1 million tons in 1980, an increase of 30%. General cargo was at 7 million tons, up 2% from 1979, and the Port handled 36.4 million tons of bulk cargo.

Heading the list of export commodities with substantial increases in 1980 was coal, which finished the year with a total of 3.3 million tons, compared to 1.3 million tons exported in 1979, for a rise of 142%. Grain exports were up 45%, rising from 7.8 to 11.2 million tons. Other major export commodities were petroleum products, fertilizers, animal/vegetable oils and fats, and refined sugar. Import cargoes that rose were coffee, up 12% to 320,000 tons, and iron and steel angles, up 9% to 225,100 tons. Principal import commodities were crude petroleum at 10.6 million tons and iron and steel manufactures at 2 million tons.

Container tonnage continued to rise in 1980, when a record level of 2,119,310 tons was reached, topping the two million mark for the first time. This represents a 10% increase over the 1,923,369 tons handled by the Port in 1979, almost twice the increase recorded in 1979 over 1978. The 1980 figure is also more than double the container tonnage reported for 1975, confirming a long-term growth trend.

(Continued from page 25)

more than that achieved in 1979, 1978 and 1977 by 39%, 15% and 8%.

**Cargo Exported:** The dry cargo exported in the Port of Aden for the year 1980 totalled 74,192 tons, which is more than that achieved in 1979 by 42%, but less than that achieved in 1978 and 1977 by 16% and 6%.

## Liquid Cargo

**Crude Oil Imported:** The amount of crude oil imported during 1980 totalled 3,763,378 tons, which is more than that achieved in 1979, 1978 and 1977 by 3%, 108% and 99%.

**Refined Oil Exported:** The total amount of refined oil during the year 1980 was 3,268,991 tons, which is more than that achieved during the years of 1979, 1978 and 1977 by 16%, 153% and 114%.

## Bunker and Fresh Water supplied

**Bunker Supplied:** The amount of various types of bunkering to vessels during 1980 totalled 657,322 tons which was more than that achieved during the years 1979 and 1978 by 61% and 41%, but is equal to that achieved during the year 1977.

The increase in the amount of bunker supplied during the year 1980 could be attributed to the increase of vessels calling at the Port of Aden.

**Fresh Water:** The total amount of water supplied to vessels during the year 1980 totalled 233,136 tons, which is more than that achieved during the year 1979 by 11%, but less than that achieved during the years 1978 and 1977 by 19% and 22%.

## Abstract of accounts receipts & expenditure

From 1st January to 31st December 1978

Receipts	Budget Estimate Y.D.	Actual Receipts Y.D.
<b>Sources of revenue</b>		
Wharves	1035420	2105199
Marine department	426465	536585
Engineering department	42510	129206
General miscellaneous	122670	90275
<b>Total revenue</b>	<b>1627065</b>	<b>2861265</b>
Payments	Budget Estimate Y.D.	Actual Expenditure Y.D.
<b>Total expenditure (Depreciation)</b>	<b>1818380 (203914)</b>	<b>2884740 (1514194)</b>

Details	1977		1978	
	Y.D.	Y.D.	Y.D.	Y.D.
Accumulated surplus		1398137	3316300	
Plus:				
Transfer from capital works depreciation & renewal fund		570091		
Less:				
Transfer to pension fund 75			576718	
Accumulated surplus		1968228	2739582	
Transfer to legal reserve			(2739582)	2739582
Actual revenue	2570409		2861265	
Less:				
Actual expenditure	1222337	1348072	2884741	
Not less before appropriate			(23476)	
Less: (to appropriation)				
Income tax 37%				
Price fund 5%				
Republic treasury 25%				
Development fund 50%				
Balance of net loss				23476
		3316300		2716106

As might be expected, the Port of New Orleans is the center of the nation's barge activity. More than 100,000 barges pass through the Port annually. In 1978, barge-carried cargo handled in the Port totaled more than 79 million tons, an increase of 500,000 tons over 1977. New Orleans is also the LASH and Seabee barge capitol of the world. In 1980, nearly 3,700 of these barges were loaded and unloaded in the Port with a total of 1.4 million tons of cargo. There are four lines operating LASH or Seabee ships in the Port.

In 1980, Japan continued as the biggest trading partner of the Port of New Orleans, with a total of 4.6 million tons. Nearly 80% of that amount was export tonnage. Large crude oil imports from Nigeria placed that country in the No. 2 position, followed closely by the United Kingdom, Italy, and Mexico. Appearing in the top ten for the first time was the People's Republic of China in No. 6 position, based principally on grain exports to that country. Total exports to China were 1.6 million tons, third in export tonnage after Japan and Italy. Others in the top ten were the Federal Republic of Germany, Algeria, Libya, and Venezuela.

Nearly 5,000 ships operated by more than 100 steamship companies call annually at the 101 berths of the Port of New Orleans, which is in reality two ports. The traditional Mississippi River wharves stretch along 12 miles of river waterfront. A 40-foot channel is maintained in the Mississippi River up to Baton Rouge. A newer tidewater port area is located along the Inner Harbor Navigation Canal completed in 1925 to connect the river and Lake Pontchartrain. Better known as the Industrial Canal because of the major industries that have developed along it, it is also the junction of the Mississippi River-Gulf Outlet (MRGO) built in the 1960's to provide an alternate route to the Gulf of Mexico. This 36-foot deep, 500-foot wide waterway is 76 miles steaming distance to the Gulf, which is 44 miles shorter than via the Mississippi River. The MRGO also provides oceangoing vessels with a channel free from variations in tide and the fog experienced on the river.

In order to maintain its position as one of the world's great ports, New Orleans is investing millions of dollars each year for renovation and construction of facilities both on the Mississippi River and in the tidewater area served by the MRGO. The Port is currently spending \$100,000 each working day on capital improvements. By the year 2000 the Port of New Orleans will have spent more than \$500 million in a 30-year period.

Already completed in the tidewater area are four berths of the France Road Container Terminal, served by four container cranes. Two more berths are planned for France Road. In the same area construction has started on the Jourdan Road Terminal, a multipurpose facility. Plans call for the building of six berths by 1991 at a cost of \$100 million, with two scheduled for completion by 1983. Four more berths may be added later. This facility will handle containers, general cargo, and ro/ro vessels. Also planned for the France Road area is an intermodal exchange facility to handle trailer-on-flat car and container-on-flat car (TOFC/COFC) movements.

The impact of these new facilities on the Port is indicated by the record 9.4 million tons of cargo that moved through the MRGO in 1978. That was a 7% increase over 1977 and a 34% increase over the 7 million tons recorded in 1976 compared to the 4 million tons reported in 1970. During fiscal year 1978-79 more than 30% of the Port's

total tonnage passed over public facilities in the tidewater area.

Located on the MRGO is the Port of New Orleans Bulk Terminal, which has a capacity for sorting and loading up to 4 million tons of coal per year. The Bulk Terminal is also equipped to handle barites, ores, and other bulk commodities. Bordering the MRGO and adjacent to the future Jourdan Road Terminal is the site for the planned major industrial park known as the Almonaster-Michoud Industrial District to be developed by the city of New Orleans in conjunction with the Port. Comprising 7,000 acres of industrial land, the area will be served by rail, a nearby interstate expressway, and a deep water port facility.

On the Mississippi River a new four-berth heavy duty terminal combining the Seventh Street and Harmony Street wharves was completed in 1980 at a total cost of \$20.8 million. The two wharves are joined by a wide front apron that has rail service for heavy lifts, and between the two wharves is a 1.5-acre marshalling area. The new facility can accommodate the largest roll-on/roll-off vessel built today as well as container, barge-carrying, and conventional breakbulk ships. Added to the capacity of the adjacent Louisiana Avenue Wharf, which handles nearly 2 million tons of steel and general cargo annually, the upriver area of the Port's activities is expected to contribute greatly to efficient movement of general cargo through New Orleans.

The Port's new Hines Lane Wharf ship repair facility on the west bank of the river has also been completed. In addition to replacing the original timber structure built in 1926, a new 450-foot section was added to create space for an additional ship, providing a 2,000-foot reinforced concrete facility. The extension also allowed the installation of a third floating drydock for the facility.

Presently under construction in the downriver area is new multipurpose wharf at Alabo Street scheduled for completion in 1983. Adjoining the wharf is a 26-acre tract acquired by the Port to serve as a major marshalling area. Future plans for the downriver side of the Port call for the removal of the present Desire, Pauline, and Congress Street wharves, to be replaced by a completely new Desire Street wharf. Upriver the present Washington Avenue and Third Street wharves will be torn down, and a new Washington Avenue wharf will be built.

A special feature of the Port of New Orleans is its Foreign Trade Zone No. 2, second oldest zone in the U.S. after New York. In fiscal year 1979-80, FTZ #2 handled merchandise valued at nearly \$70 million, a 60.8% increase over the previous year, making it third in the country in value of goods handled. During the past year the New Orleans zone processed more than 70 commodities from some 40 countries, with over 120 firms utilizing the zone. Products or materials imported into the zone are duty free until the company receiving them accepts them for delivery to a U.S. destination or converts the materials into goods for sale in the U.S. In the latter case duty is paid only on the imported material in the product. Principal commodities handled include cameras, casein, galvanized chain, lumber, steel wire and fittings, and synthetic and wire rope. A new location for the foreign trade zone that will permit expansion is under study.

The Board of Commissioners of the Port of New Orleans is committed to keeping the Port one of the most modern and productive centers of maritime activity in the world. As the 21st century approaches, the Port of New Orleans will

**(Continued on next page bottom)**



# Technological Change in Ports—The Israeli Experience

by Zvi Raanan, U.N. Consultant on Ports

(Reproduced from SAPANUT, Journal of the Israel Shipping Research Institute)

In the two decades of its existence, the Israel Ports Authority (IPA) has changed its modes of port operation almost beyond recognition. In this relatively short period, it has come all the way,

- from the development of a standard port pallet for the handling of general cargo by separate ship and shore gangs, with the aid of ship's gear or 3-5-ton shore cranes . . . to operating the most sophisticated, "third generation," electronically controlled equipment for container handling;
- from the use of grabs and skips for the handling of minerals in bulk . . . to using mechanized continuous loaders with an 800-ton-per-hour capacity;
- from the classic separation of ship and shore gangs—through the integrated gang . . . to the lonely operators on bridge or gantry crane and on towing vehicle.

These developments in a way have been a microcosm of what has occurred in most Western ports over a somewhat longer period. They have been a part of that revolution which has entirely reversed the handling concept from that of Men handling Cargo with the aid of Machines, to that of Machines handling Cargo with the aid of Man.

These two decades have witnessed an uneasy progress, which has also included the buying out and absorbing of three stevedoring companies (two in Haifa and one in Eilat); the closing of the two lighterage ports of Tel-Aviv and Jaffa, with the consequent pensioning off of many veteran port workers who did not want to transfer to the new southern Mediterranean port of Ashdod; the construction of and running-in of two new ports—Eilat and Ashdod—

and their manning, equipping, operating, and developing. The construction of container-handling facilities and the training of the requisite manpower to operate them.

Perhaps the only constant elements during this period of rapid change have been those which have remained in the hands of private operating concessionaires: the bulk grain-handling facility and the old bulk chemical terminal, both in Haifa port. These were capital-intensive from the start.

The period has taken its toll of managers, in the ports themselves and at the Authority. Above all, it has kept the industrial relations pot almost constantly on the boil, which, when one looks back now at the changes wrought, seems not at all surprising.

## Effect on the Labor Force

### QUANTITATIVE EFFECT

The obvious outcome of such a speedy process of mechanization would naturally have been a depletion of the labor force of the ports and a need to retrain the remainder, were it not for the constant growth—with the odd hiccup—of Israel's cargo volume. In fact—as may be seen from Figures 1 and 2, and Table 1—the growth of cargo volume has been such as to offset such a redundancy effect almost entirely, except for natural wastage. Whereas 3.5 million tons (excluding grain and oil—not handled by port labor) were handled in the Authority's three ports in 1965/66 by an all-inclusive force of 3,879 employees (with the aid of some machines), 9.6 million tons were handled (aiding the machines) in 1979/80 by only 3,719 employees. Per-capita handling thus rose from 902 tons to 2,400 tons. Going further back, to 1961/62, the first year of the Authority's operation, 4,028 employees (including the operating contractors and the two old ports) handled 1.9 million tons, or 471 tons per employee; i.e., there has been a five-fold increase since then with an almost unchanged (quantitatively) work-force.

(Continued from page 27)

continue major investments in new facilities that will maintain its worldwide reputation for efficient service and meet the needs of a changing and expanding industry.

## Administration

The Board of Commissioners of the Port of New Orleans (known locally as the Dock Board) sets all policies and makes all major decisions affecting the administration of the port.

### Board Composition

The Dock Board is made up of seven commissioners, who are unsalaried and who serve staggered five-year terms. All members of the board are appointed by the governor of Louisiana from among nominees selected by 18 local business, civic, labor, educational, and port groups.

These nominating organizations are: Chamber/New Orleans and the River Region, New Orleans Board of Trade, Ltd., New Orleans Steamship Association, International Freight Forwarders and Customs House Brokers Association of New Orleans, Inc., International House, Maritime Trades Council of Greater New Orleans and Vicinity,

Metropolitan Area Committee, Louisiana Farm Bureau, New Orleans Commodity Exchange, International Trade Mart, Xavier University, Dillard University, Urban League of Greater New Orleans, Harvey Canal Industrial Association, East Jefferson Council of the Chamber of Commerce, West Bank Council of the Chamber of Commerce, St. Bernard Council of the Chamber of Commerce, and St. Bernard Port, Harbor and Terminal District.

The seven-man board reflects the three-parish (county) jurisdiction of the Dock Board, with four members selected from Orleans Parish, two members from Jefferson Parish and one member from St. Bernard Parish.

### Board Staff

The board's decisions are carried out by the executive port director-general manager, a salaried executive. He is assisted in the administration of the port by port assistant executive directors and port deputy assistant port directors and by a staff of trade development, engineering, construction, planning, financial and administrative professionals.

The various port executives supervise an employee contingent worldwide of approximately 700 men and women.

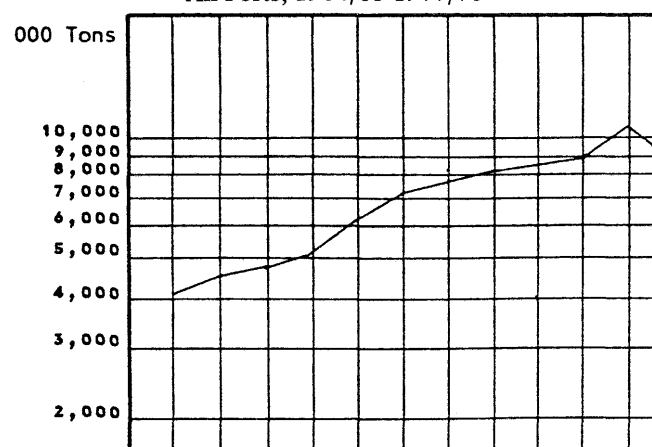
This higher efficiency was largely due to the different capital/labor ratio (i.e., the new machines), though the improved human element clearly played its part also. If, however, the total number of IPA workers has hardly been affected, the composition of skills within the ports' labor force has had to change considerably. This has largely been accomplished by careful manpower planning and appropriate training policies.

#### QUALITATIVE EFFECT

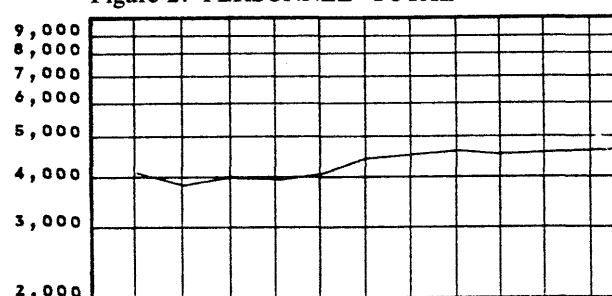
The readapting to new handling modes is not an easy process; fortunately, the IPA has been able to do it fairly slowly because the enormous jump in individual productivity—when an IG member turns into a machine operator—is such as to require relatively few personnel to meet even the fairly rapid growth in containers, ro/ro, unitized cargo, and bulk. As for the remainder—and here the experience in Israel may be different from that of ports in developed countries—the previously mentioned sufficient growth in conventional cargo (in which citrus exports are still mainly included) absorbed workers with lesser skills and aptitudes.

The changing ratio between ordinary IG workers and machine operators may be seen from Table 2, which shows the relative percentages of the two within the total number of cargo-handling personnel. Whereas ten years ago the machine operators made up 28.9% of the total, they comprised 41.2% of the total in 1979/80, and their proportion is still growing.

**Figure 1: CARGO TRAFFIC—TOTAL**  
All Ports, 1964/65-1977/78



**Figure 2: PERSONNEL—TOTAL**



A problem that arises with machine operation and its context within the new system is that of aptitude. It is no less than a social revolution which has accompanied the transition to mechanized handling methods. Previously, the individual gang-member worked within a social group, in

**Table 1: Annual Cargo Handling and Number of I.P.A. Employees, 1970/71-1979/80**

YEAR	CARGO HANDLED* (000 tons)	I.P.A. EMPLOYEES	RATIO 000 TONS/EMPLOYEES
1970/71	6,110	4,476	1.4
1971/72	6,472	4,562	1.4
1972/73	6,877	4,633	1.5
1973/74	6,825	4,681	1.4
1974/75	7,993	4,731	1.7
1975/76	6,469	4,753	1.4
1976/77	6,834	4,574	1.5
1977/78	7,525	4,160	1.8
1978/79	8,583	3,899	2.2
1979/80	9,639	3,719	2.6

\* Except for bulk grain handled at the Dagon Silo at Haifa and oil.

which there was constant, direct, physical contact and communication among fellow-workers; here his horizon could be limited by the gang-boss or foreman. A somewhat weaker worker could often be "carried" by the rest of the group.

The machine-operator, on the other hand, whether on gantry-crane, straddler, or towing vehicle, must work for many hours in relative social isolation within a much broader, highly interdependent system. His horizons—and this must be the concern of the port training establishment—must encompass almost the entire cargo-handling system. Because of this individualistic status, the operator's relative importance within the system is far greater and the tolerance for human error or weakness far less than is the IG member's. This makes the need for careful aptitude testing crucial.

If, as has been the case in the IPA, worker representatives have looked upon training as the key to advancement, it is of critical importance for industrial peace that the question of aptitude testing and screening should be understood and agreed upon beforehand with the unions.

**Table 2: Cargo-Handling Workers, 1970/71-1979/80**

YEAR	% MECHANIZED	% NON-MECHANIZED
1970/71	28.9	71.1
1971/72	41.1	58.9
1972/73	40.0	60.0
1973/74	36.9	63.1
1974/75	41.0	59.0
1975/76	39.4	60.6
1976/77	39.7	60.3
1977/78	39.9	60.1
1978/79	40.0	60.0
1979/80	41.2	58.8

#### TRAINING

When the IPA was established in mid-1961, its primary concern in the training sphere had to be with the preparations and plans for the opening of the new port of Ashdod. Little training had previously taken place in the existing ports of Tel-Aviv, Jaffa, and Eilat, and there was little consciousness of the importance of training.

Following a survey commissioned by the Institute of Productivity, the initial aims of IPA training were declared

to be as follows:

- inculcating training consciousness in the ports and other units;
- improving labor relations;
- organizing a training framework;
- raising the level of planning, organization, and work supervision in the operational and administrative sectors;
- improving work-safety levels.

Pilot training projects took place with the port foremen, including those of the operating contractors. The latter had come under IPA control in the hope that it would create both upward and downward pressures from this key group on the others. Indeed, this was the case.

An operational training establishment (called the Training Berth in the IPA) was set up in Ashdod while the port was still under construction. It included a life-size ship's hold, shore-crane, sheds, and handling gear, as well as classrooms and working models of ship-gear, etc. The labor force for the new port was drawn from two sources: workers from the ports of Jaffa and Tel-Aviv (to be closed in 1965, with the operation of Ashdod) and new workers from the Ashdod area, some of whom had been engaged in the construction of the port and had no idea at all of port work. In preparation for this big effort to train hundreds of workers simultaneously, a carefully selected and prepared group of veteran foremen were sent to Rotterdam, where, with the aid of Thomson's and the Stevedoring School, they underwent the necessary training programs for the basic port skills required. This nucleus then trained other trainers so that in 1964 the Training Berth at Ashdod could accept its first trainees.

The four subjects initially taught were stevedoring, ship's gear operation and signaling, mechanical equipment operation, and storekeeping.

In 1968, after the IPA's acquisition and absorption of Haifa's Operating Contractors, a training center was also set up in the port of Haifa, which began organizing courses, particularly for the operation of various new (and old) mechanical equipment. Achievements to-date in the training field are best summarized by the cumulative figures of trainees for these years, as presented in Table 3.

#### Some Training Problems

#### WORKERS VS. MANAGEMENT ATTITUDES TO TRAINING

Whereas management would like to see the development

**Table 3: I.P.A. Trainees—Cumulative Figures, 1962-1980**

TYPE OF TRAINING	PARTICIPANTS
Internal Courses at Ports and Head Office	18,381
External Courses	1,232
Study Days—Internal & External	4,369
Study Grants	3,882
Study Courses Abroad	221

of skills through training as the primary condition for advancement and promotion, the workers committee has always looked upon seniority as the decisive criterion. Inevitably, some compromises have had to be made, with the consequent undermining of managerial principle.

Workers committees have seen training in a positive light only in so far as it has led to salary and wage increases. Where this cannot be guaranteed *a priori*, there is often lack of cooperation.

Aptitude testing, more important today than ever, is seen by workers as a way of exerting a managerial selection prerogative, and therefore is opposed *per se*.

With productivity incentive schemes applied to most port operations, workers participating in courses may have to take a cut in their incomes by foregoing productivity premiums during the course. This creates objections to participation.

#### OTHER PROBLEMS

Line managers have often been reluctant to participate in training programs, despite the importance of such participation for keeping such programs "live." Some sort of financial incentive is required (even if symbolic) for the additional effort demanded of these supervisors.

Seasonal work pressures have often interfered with training programs, by withdrawing training personnel, equipment, or even partially trained labor in mid-course.

Manpower and skill requirement forecasts may (and often do) prove inaccurate, with a consequent disparity between actual needs and available skills. This creates problems of either shortage or overqualification, and consequent frustration.

Internal training faces a diminishing role. As the more sophisticated machines often require greater pre-training, a higher educational-level candidate might be required for

(Continued on page 24)

**Table 4: I.P.A. Operational Training Courses, 1961/62-1980/81**

	All	62-67	68-70	70-71	71-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81
Stevedores (Including Seasonal Workers)	2126	586	585	703	60	65	100	—	—	—	—	27	—	—
Winch Operators	320	129	81	44	22	—	7	15	—	—	—	22	—	—
Signallers	139	47	—	—	22	—	12	23	—	—	—	24	—	11
Tractor & Forklift Operators	863	190	168	71	126	61	31	91	29	27	—	26	25	18
Shore Crane Operators (Including Mobile)	807	52	60	82	273	64	32	107	42	23	15	18	20	19
Heavy & Specialized Forklifts	775	—	—	21	54	51	28	41	112	70	28	273	58	39
Straddle Carriers	58	—	—	—	5	32	6	15	—	—	—	—	—	—
Transtainers	92	—	—	—	—	11	5	17	6	13	15	9	8	8
Portainers	66	—	—	—	—	—	6	6	7	8	15	12	7	5
<b>TOTAL</b>	<b>5246</b>	<b>1004</b>	<b>894</b>	<b>921</b>	<b>562</b>	<b>284</b>	<b>227</b>	<b>315</b>	<b>196</b>	<b>141</b>	<b>73</b>	<b>411</b>	<b>118</b>	<b>100</b>

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## International maritime information: World port news:

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### High stakes on the high seas ; Data bank proposed to combat maritime fraud : International Maritime Bureau

A leading expert on maritime fraud wants the shipping industry to modernise its communications in order to combat what has become a multi-million dollar racket with relatively easy pickings.

Eric Ellen, Director of the International Maritime Bureau (IMB) of the Paris-based International Chamber of Commerce (ICC), also urges victims to overcome their embarrassment at being duped and act quickly when suspicions are aroused.

The former Chief of the Port of London police is working on plans to set up "one helluva data bank" to collect information on dubious operators, missing ships, diverted and over-due cargoes.

Files are swelling fast at the IMB's headquarters in the south-east London suburb of Barking after just over a year of operations but Mr. Ellen believes even more information should be reaching him.

Mr. Ellen told a group of correspondents recently; "We hope banks and insurers will be more ready to cooperate. They do tend to clam up when their own problems are involved. We need a two-way system of preventive information, one that traders can key into to keep themselves out of trouble."

Another IMB suggestion, based on a lively first year's experience, is that the shipping industry should set about modernising its communications to achieve the same level of sophistication taken for granted in aviation.

It would be relatively easy and inexpensive to set up a tracking system to monitor ship movements based on communication satellites and "black boxes" aboard ship. Such a system is already in use on super tankers and some other vessels loaded with particularly valuable cargoes.

The IMB has no powers of law enforcement, nor does it seek any. It provides an intelligence service that gives early warning to shippers in danger of running into fraud, or conversely reassurance that a prospective partner has a clean record. IMB officers cooperate closely with police forces around the world, and have identified several major fraudsters, now behind bars or out of business.

Reported incidents suggest about 200 million dollars annually is lost through maritime fraud, although the true sum could be much higher since so many cases go unreported.

Mr. Ellen said: "We have certainly made people aware of the problem, but the task is never-ending. We did detect a decrease in maritime fraud after alarming expansion in the late seventies, but now the trend is upwards again."

The IMB has 13 major shipping organizations among its members, a recent addition being London's Baltic Exchange, and 47 individual companies. It has also won the formal support of the United Nations' Inter-governmental Maritime Consultative Organization (IMCO).

A resolution passed by the IMCO assembly in November urges "all interests and organization concerned to cooperate fully with the International Maritime Bureau, in taking effective measures for the further prevention of maritime fraud."

IMCO also urged governments to offer "all appropriate cooperation" including the exchange of information.

A useful endorsement, certainly, but in Mr. Ellen's view governments are still far from being able to take effective counter measures against international economic crime. "This is a whole new ball-game, and we need something more than the passive pooling of information that Interpol can provide," he said.

"Too often, law enforcement agencies fail to take economic crime seriously enough, and when they do they lack the resources to take action and are handicapped by their inability to cross national borders."

The IMB is concerned at evidence that legitimate business is increasingly being penetrated by criminal elements who start on the fringes, but use the enormous rewards from undetected frauds to establish credentials in the shipping industry.

Mr. Ellen estimates that the IMB has already saved clients about 60 million dollars by issuing timely warnings. One broker "targeted" recently in a confidential alert to members was advertising space available on three ships out of European ports for the Middle East. The ships did not exist.

Unwary shippers will be persuaded to part with freight charges in advance, only to find that the broker has disappeared with their money. Fraudsters are adept at "laundering" frauds, so there will be little chance of finding out where the money goes.

This characteristics of maritime fraudsters is one pointer to the existence of powerful crime syndicates behind the more spectacular cases. One such was that of the scuttled tanker Salem, whose oil cargo was stolen and sold illegally to South Africa in a classic example of the so-called "rust bucket fraud", when crooked shipowners or charterers load a vessel with cargo worth more than the hull, discharge the cargo at an unscheduled port and sink the ship—or dispose of it under a new identity. Sometimes they even have the gall to claim insurance.

The men behind the huge Salem fraud are still at large, and the 50 million dollars in proceeds are so far untraced. "The money just vanished into thin air," Mr. Ellen said, "and an operation like that takes some organization."

Much of the bureau's work concerns the detection of false documents, phantom companies, and bogus shipments, a battle of wits with essentially "white collar" criminals in which rapid and reliable collection and dissemination of information is the main weapon.

But that is far from the whole story. The Bureau has carried out several detailed surveys of port security, including Lagos and Freetown in West Africa, Hong Kong, and Bombay. An IMB operative sent to the Jordanian port

of Aqaba established that constant 1.5 per cent shortages in bagged cargo were caused by an incorrectly calibrated weighbridge.

Physical as well as white collar piracy is a real threat in some waters. Ships off Lagos have been employing security men armed with bows and arrows to repel boarders. In South East Asian waters, according to an IMB report, there is urgent need for inter-government cooperation on anti-piracy measures.

Meanwhile, the dubious sinkings and disappearances continue, and IMB investigators detect a clear pattern in the cases that come to their notice.

Most involve smaller, older vessels—generally 15 years or older. They are usually run by “singleton” operators.

Problem areas remain the Eastern Mediterranean and the Far East. Off Lebanon, maritime criminals run floating warehouses of ill-gotten goods, and it is possible to have items stolen to order.

According to Bureau estimates, over a period of two years 28 to 48 ship sinkings reported in Far Eastern waters proved to be fraudulent. “Acts of God happen much too frequently in the shipping business for the Deity to be responsible for them all,” Mr. Ellen said.

## Tanker Casualty Investigation

(Report of the Tanker Accident Working Group to ICS, OCIMF and INTERTANKO)

### Executive summary

In view of the considerable concern about the number of serious tanker casualties in the recent past, and in particular the apparent increase in fires/explosions resulting in the loss of lives and ships (including ships fitted with inert gas systems), ICS, in conjunction with OCIMF and INTERTANKO, asked a group of experts to investigate these casualties.

The Group has encountered difficulties in gaining access to detailed information on some of the casualties which appeared to be relevant to its investigations. The Group nevertheless believes that sufficient information has become available to confirm that there is no evidence to indicate the existence of a hitherto unknown technical deficiency or mode of operation which can be identified as the cause of any incident.

Furthermore, on the basis of the information available, a clear pattern has emerged which has enabled the Group to offer a number of findings and conclusions which are set out in its Report.

The cause of each casualty stems from a lack of appreciation of the hazards and of the precautions to be taken to ensure safe operations. This applies not only to ships' personnel but to some shipowners and ship managers.

The Group has already issued cautionary advice on the use of recirculated water when tank cleaning.

The findings of the Group are summarised in the twelve recommendations for corrective action which are as follows:—

### Recommendations

1. Shipowners and ship managers should be strongly urged to review their operations so as to ensure that the necessary attention to safety is given at all times. This includes the need to ensure that line management is properly trained for

its particular areas of responsibility.

2. International and national shipowners' associations and administrations should review their arrangements for communicating information to shipowners in order to ensure that all are fully involved in, and aware of, the continuing needs relating to safety matters.

3. Shipowners should ensure that the personnel in their employ are properly trained. As a minimum shipowners should, as soon as possible, and in co-operation with their national shipowners' association and their administration, operate to the standards set down in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978.

4. Recognising that a trained seafarer must, if serving in a key position on board a ship, also have the necessary experience, shipowners should ensure that the personnel they appoint are properly qualified and not expected to assume positions, particularly at short notice, unless they are suitably experienced.

5. The arrangements for disseminating safety-related information should be examined by administrations, international organisations, national shipowners' associations and shipowners to ensure that such information is reaching all ships' personnel and that the quantity and quality of the information is appropriate to the need.

6. Safety information supplied to ships should be in a form language which will be easily understood by the personnel on board.

7. When the International Safety Guide for Oil Tankers and Terminals is revised, the advice it contains should be made explicit in order to avoid the possibility of confusion or misunderstanding.

8. ICS and OCIMF should strengthen their communications with terminal operators with a view to ensuring the safety of ships in ports. Terminal operators should be fully aware of the way in which tankers are operated, particularly insofar as such operations may be affected by internationally agreed standards.

9. Maximum efforts should be given to promoting the use of the Check List developed jointly by ICS, OCIMF and the International Association of Ports and Harbors (IAPH), and adopted by IMCO, thus setting a uniform and international standard of safety in ports.

10. As structural stress and corrosion problems, particularly in larger ships, could increase unless the potential risks are fully realised, there is a need to disseminate advice throughout the industry, including the classification societies, drawing attention to the problem and the need for prompt remedial action where necessary.

11. Shipowners should institute regular safety inspections, both by management and ships' personnel.

12. It is strongly recommended that IMCO and administrations should concentrate their efforts towards the implementation and enforcement of existing conventions and defer, for the time being at least, the development of new requirements.

## ICHCA appoints new chairman of council

Christiaan Overhoff, president of Gateway Consultants BV (The Netherlands), has been appointed chairman of the International Cargo Handling Co-ordination Association

(ICHCA). He succeeds Bernard Couvert of France, who steps down after two years.

Chr Overhoff has enjoyed a long association with ICHCA, formerly serving as vice-chairman of Council and chairman of the ICHCA Air Cargo Committee.

## **ICHCA XVIth biennial conference 1983**

The XVIth Biennial Conference of the International Cargo Handling Co-ordination Association (ICHCA) will be held in Bordeaux from 24–27 May, 1983. This international event, which is expected to attract 500 delegates from all areas of the world, will have "Methods for Cargo Movement" as its theme.

The conference will be organized by the Bordeaux Congress Bureau, with the support of the City of Bordeaux, the Chamber of Commerce and the Bordeaux Port Authority. It will be the first ICHCA Biennial Conference to be held in France, following on from recent meetings in Helsinki (1979) and Edmonton (1981).

Conference details from: Marie-Christine Desardurats  
Press Officer  
ICHCA, Bordeaux-Congres  
33300 Bordeaux  
France.

## **Brazilian ports & waterways news in brief**

- Portobrás has a 66 billions cruzeiros budget for 1982, of which 30 billions shall be destined to investments, 23 billions for the acquittance of financing debts, 10 billions for cost expense and 3 billions cruzeiros for the purchasing of new equipment for the ports.
- The expansion of the industrial market of the Free Zone has been conferring to the Port of Manaus a yearly growth of about 8%. In 82, about 2.5 million tons of cargo are to be handled by the port.
- There is still no decision of the government with respect to the privatization of the Brazilian Dredging Company (Companhia Brasileira de Dragagem). The sale of the company, favored by the Ministry of Transportation, has been criticized by Portobrás, who controls C.B.D.

## **Port's biggest dock job nearly done: Nanaimo Harbour**

One of the biggest marine construction jobs in Port of Nanaimo's history is nearing completion.

The \$10 to \$11 million expansion program for B.C. Ferry Corporation at Departure Bay is now heading into its final phase. The new No. 3 berth is expected to be in full operation for the summer traffic but it may be October before the new \$2 million passenger building will be ready for use.

To date, wingwalls and dolphins are completed for the third berth and the steel and concrete vehicle-loading ramp with towers, overhead beams, counterweights, etc. has reached the point where the new berth is now usable. It is expected to go into use early in March so that reconstruction of No. 2 berth's wingwalls and dolphins can go ahead.

The entire project is one of the biggest and costliest to date in Nanaimo Harbour. Cost of building Nanaimo Harbour Commission's phase 1 at Duke Point is the only major marine construction approaching the size of the ferry

job.

When finished, the third berth will enable the jumbo ferries to handle two levels of traffic. It will also have a covered upper level walkway for pedestrians.

It is expected that No. 2 berth will be out of commission for several weeks while reconstruction of dolphins takes place. Existing dolphins, suffering from the battering of continual use by the big jumbo ferries are tilted and twisted.

A foot passenger loading facility is also to be constructed at No. 2 berth.

The expansion program at Departure Bay will double the facilities required by the newer, larger ferries such as two-level vehicle loading and overhead foot passenger loading.

## **Agreement with producers clears way for terminal: Port of Prince Rupert, National Harbours Board**

An agreement reached in December between coal shippers and terminal operators cleared the way for the construction of a \$275 million coal exporting facility on Ridley Island.

After a prolonged and intense series of negotiations involving the NHB, Federal Commerce and Navigation Ltd., Teck Corporation and Quintette Coal Ltd., the deal removed the last hurdle to the estimated \$2.5 billion development at B.C.'s north east coal reserves.

Part of the agreement was the formation of a new company called Ridley Terminals Incorporated. It is a joint venture between Federal Commerce and the NHB to build and operate the coal terminal.

Phase one of the coal terminal will be built on a 48 hectare site on Ridley Island and will handle up to 12 million tonnes per year. It will include the construction of a ship loading berth that will handle vessels ranging from 50,000 to 250,000 tonnes.

Joe Scott, the chief executive officer for the Port of Prince Rupert, says there is no doubt in his mind that by the time phase one is completed in late 1983, plans will be afoot to construct phase two. "Once the facility is in place, it will generate demand from other coal producers".

Phase two calls for the doubling of throughput capacity to 24 million tonnes per annum and the construction of a second loading berth.

## **Port of Vancouver statistics 1981**

The Port of Vancouver, in its year-end review, reports that total tonnage through the Port in 1981 was 49,495,000 metric tonnes, a 0.5 per cent increase over the 1980 tonnage.

This modest increase represents a new Port record and was achieved despite generally poor market conditions for a number of Western Canada's products in international markets.

A review of some of the major components of the Port's tonnage and a 1981/1980 comparison is as follows:

### **Exports**

**Coal & Coke**—This commodity continued to dominate the Port's tonnage with a 4.1 per cent increase in throughput to 15,622,000 tonnes in 1981 from 15,002,000 tonnes in



1980.

**Grain**—Recorded a significant 14.2 per cent gain over the previous year, rising to 9,093,000 tonnes from 7,960,000 tonnes, establishing a new record for throughput and was clearly the largest individual growth commodity.

**Sulphur**—With a gain of 7.8 per cent, sulphur tonnage rose to 5,515,000 tonnes from the 1980 figure of 5,112,000 tonnes.

**Potash**—After several years of continuous growth, poor overseas market conditions, foreign government restraints and tight money supplies resulted in a 14.2 per cent decline in shipments from the 1980 tonnage of 3,448,000 tonnes to 2,955,000 tonnes in 1981.

**Lumber**—In continuation of the down-turn reflected in the 1979/1980 figures, a labour dispute coupled with poor market conditions for lumber produced a 19.5 per cent decline in this commodity's performance with 1,984,000 tonnes in 1981 against 2,467,000 tonnes in 1980.

**Woodpulp**—The levelling trend of pulp shipments continued with a 0.7 per cent decrease recorded in 1981 to 756,000 tonnes from 815,000 tonnes in 1980, again reflecting the troubled market conditions for forest products.

**Pulpwood Chips**—Tonnage declined by 15.8 per cent to 1,072,000 tonnes in 1981 from 1,274,000 tonnes in 1980.

#### Imports

**Phosphate Rock**—1981 imports declined by 12.2 per cent to 835,000 tonnes from 952,000 tonnes in 1980, due to a weak domestic and export fertilizer market.

**Other Cargoes**—Some interesting comparisons for other import cargoes are as follows:

**Salt**—327,000 tonnes in 1981, down from 401,000 tonnes in 1980.

**Iron & Steel Products**—171,000 tonnes in 1981, an increase over the 1980 tonnage of 110,000 tonnes.

**Sugar**—Imports decreased to 80,000 tonnes in 1981 from 102,000 tonnes in 1980.

#### General cargoes

General cargoes decreased slightly in 1981, reflecting unfavourable exchange rates and import restrictions, to 3,553,000 tonnes versus 3,790,000 tonnes in 1980, a decrease of 6.2 per cent.

#### Containers

The total number of containers handled in the Port increased 6.0 per cent in 1981 to 132,697 TEU's from 125,149 TEU's in 1980, with an overall increase in tonnage of 0.4 per cent to 1,139,000 tonnes from 1,095,000 tonnes in 1980. Foreign container movements were as follows:

1980—114,017 TEU's containing 990,000 metric tonnes compared with 1981 totals 122,201 TEU's containing 1,038,000 metric tonnes, an increase of 7.1 per cent and 4.8 per cent respectively.

After the deduction of container tonnage from the overall general cargo figures, breakbulk cargoes accounted for 2,413,000 tonnes of cargo, which figure represents a 10.4 per cent loss over the 1980 tonnage of 2,695,000 tonnes.

### Users fees — A painful reality : MPA Traffic Manager Ziolkowski

*Maryland's Governor Hughes has stated that we seek the best workable formula for our port, with the least increase*

*in shipping costs for our shipping customers.*

Shippers and receivers of cargo who use the port of Baltimore as a gateway for their cargoes should be aware of the cause and effect of the recent flurry of user fee legislation. By the end of November, there were in excess of 30 bills pending in Congress. These bills would change the relationship of ports to the federal government, their process of operations and their means of financing development and operations.

The foremost issue addressed by the proposed legislation is how ports will fund channel deepening projects, and how long it takes for them to become an operational reality. The form the legislation will take has divided the nation's ports into groups or coalitions which seek either more government participation, less government participation, or retention of the status quo.

Baltimore's 50-foot channel is the only authorized deepening project in existence at this time. Authorized by Congress in December 1970, it has been repeatedly delayed by community and environmental considerations, and finally by withdrawal of federal funding. The federal government, under the Reagan administration, seeks to have all port deepening and development projects funded locally by the assessment of port user charges or by the private sector, with some consideration for maintenance dredging.

Baltimore recognizes that there will no longer be 100 per cent federal funding of port dredging, but hopes that Congress will pass a bill providing an equitable funding formula. A bill providing such a formula is H.R. 4627, providing a 50-50 formula of federal and local funding. Representatives Barbara Mikulski (D.-MD) and Mario Biaggi (D.-NY), chairman, Subcommittee on Merchant Marine, have worked to insure that Baltimore was covered by this formula by amending the original bill.

Shippers need not worry that Baltimore will no longer be cost competitive, as it is our intent to stay cost competitive regardless of what federal system is imposed.

The nation's ports are in a very unsettled period, faced with many major uncertainties. But some certainties can still be listed for the port of Baltimore.

1. Construction of the Hart-Miller Island dredge retention site is underway at a cost of \$60 million to the State of Maryland.
2. Baltimore's project has congressional authority, Corps of Engineers permits and is pressing for financing for a 1982 start of construction.
3. The Corps of Engineers has already decided that Baltimore is to be "Fast Tracked" and completed within 4 years.

We hope equitable legislation for the port development will be passed and dredging of Baltimore's channels begin this year. Baltimore is in a unique position. While other ports need authorization and fast tracking, Baltimore already has them and only needs the money to begin.

Change is certain to occur. The only question is what form the change will come in. Maryland's Governor Hughes has stated that we seek the best workable formula for our port, with the least increase in shipping costs for our shipping customers. (*Port of Baltimore*)

## Seagirt underway ; New marine terminal development begins : Port of Baltimore

Bold and imaginative disposal of harbor dredge spoil into a Canton land fill is creating the foundation for a new marine terminal which will increase the port of Baltimore's annual container cargo capacity by some 2.25 million tons.

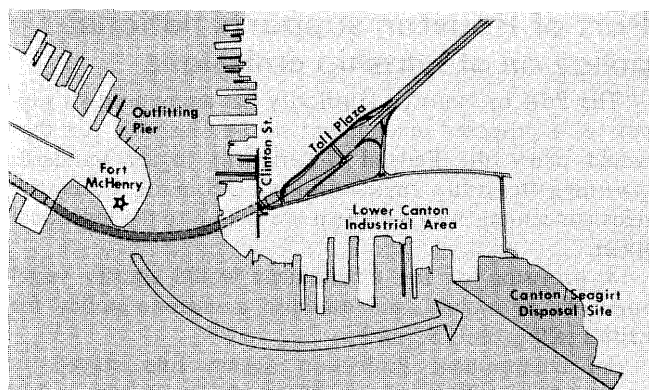
Spoil from the excavation of a vehicular tunnel between Fort McHenry and Lazzaretto Point is being discharged daily by pipeline behind a steel bulkhead at a containment site adjacent to the north shore of the Patapsco River.

The spoil, 3.3 million yards of which will comprise the site, is expected to settle in 1984. Construction of a three-berth marine terminal on the site will begin at that time. The terminal is scheduled to be in operation within three years of the actual start of construction.

The \$123 million project, known as the Canton-Seagirt Disposal Area, solves the immediate problem of disposing of dredge spoil from the tunnel excavation while creating long-term enhancement of the port's cargo handling capacity. The location, magnitude and timetable of the project make it ideal for construction of a major marine terminal, according to a Maryland Port Administration development report.

"The site is located at an exceptional convergence of active linkages to water, rail and highway elements of transportation," the report states. "The Seagirt terminal berths, once constructed, will be immediately adjacent to the Sea-Land access channel. This factor alone will allow connections to existing channels, thereby substantially reducing the amount of channel dredging and disposal.

"In addition," the report says, "the Canton railyards are parallel to and bordering on the northeastern perimeter of the site, and would facilitate immediate access. Last, but perhaps paramount in consideration, the entrance gates to the marine terminal will be less than one mile from the access ramp of the I-95 Interstate Highway, using upgraded, primary arteries for transit."



Map shows path of pipeline dredge spoil disposal into Canton land fill. Some 3.3 million yards of spoil will comprise the site.

Because the need for container facilities will increase gradually over time, the Seagirt terminal will be developed in phases. Each phase will include one berth, two cranes, one consolidation shed, entrance facility, container inspection garage and maintenance building, marine service building, and appropriate offices. The paved area for each

phase would extend from the apron of the complete berth to the terminal as access roads. The railroad facilities will be installed as needed.

The Seagirt Marine Terminal is expected to add 2.25 million tons to the port of Baltimore's annual container cargo traffic when full capacity is reached. Based on that increase, the terminal would create 1,350 additional directly-related jobs in the state, half of which will be in the city. Value added to the state economy would be \$38,616,750. Value added to the city's economy would be 47 per cent of that amount, according to the MPA projections.

Economic impact will be further realized through proposed extension of the terminal's neighboring Sea-Land bulkhead to 1,000 feet. It is likely that the Sea-Land facility would handle at least 930,000 tons of cargo per year as a result of the extension, a 310,000 ton increase. This tonnage volume would create 186 jobs and add \$5.2 million annually to the state's economy, the MPA says. (Port of Baltimore)

## Police computer combats port crime : Maryland Port Administration

A program combining computer technology with police investigative work is making it more difficult to ship a stolen export vehicle through the port of Baltimore.

The Export Vehicle and Equipment Inspection Program is said by MPA police officials to be the only one of its kind in the world. It uses a system of computer checks on serial numbers of vehicles entering the port's terminals for exports as supplemented by on-site police vehicle inspections.

The program led to the recent arrests of three men allegedly involved in exporting stolen automobiles to South America. Eight cars valued at \$88,800 were seized and a woman accomplice was arrested in New York when she tried to pay export fees. Another three stolen cars worth more than \$40,000 were recovered in Ecuador.

Since the program's inception last year more than 1,000 vehicles have been checked. Besides cars, the port police also check the serial numbers of export motorcycles, aircraft, small boats, and construction equipment that do not come direct from factories.

The program is now operating at the Dundalk and North Locust Point Marine Terminals. Port facilities at Clinton Street and South Locust Point are expected to be converted this year.

"The program is a study in manpower coordination, terminal traffic management, and operational procedure," says Maj. Frank Mazzone, director of the MPA police. "Its success is a tribute to the caliber of our port police force."

About 100 export vehicles not coming direct from factories enter the port of Baltimore each month, primarily at the Dundalk Marine Terminal. Police officers inspect the vehicles while serial numbers are run through a computer linked to state and national law enforcement data bases.

Each vehicle's computer check and police inspection take less than 30 minutes to complete. About 14 vehicles are inspected daily, according to First Lt. William Kerner, commander of the MPA police Operations Bureau. The program also includes a procedure for periodic computer

checks to ensure that vehicles are not shipped and later reported stolen by owners working in collusion with automobile thieves, Kerner says.

Twelve specially-trained police officers work the computer on rotating shifts. On-site inspections are assigned to any of the police force's 64 remaining officers who are in proximity to an export vehicle at the time of its arrival in port.

The Dundalk Marine Terminal, the port of Baltimore's largest facility has 550 acres. About 250 acres are assigned to export vehicle awaiting shipment. This makes the on-site police inspection a vital part of the program's success, according to First Sgt. Lawrence Harmel, commander of MPA police operations at Dundalk.

"The computer is only as good as the police inspections which are done outside in the field," Harmel says. "The computer isn't infallible. There is always the chance that a vehicle could be stolen and not yet listed on the data base."

First Lt. Walter Ellison commands the MPA police Administrative Services Bureau. His bureau's investigative unit, led by Det. George Vasquez, made the two-week investigation which culminated in the Ecuador arrests. Ellison says the program makes quick apprehension of suspects possible.

"If the program runs properly, the case is virtually made," Ellison says. "All the investigator has to do is establish that the theft was in fact made and gather the witnesses he needs to prosecute."

Some 1.2 million export vehicles were reported stolen nationwide last year amounting to \$4 billion in losses. Of that total, about 19,000 vehicles were reported stolen in Maryland. (*Port of Baltimore*)

## Sea-land executive predicts 5% growth rate

A five percent average annual growth rate over the next five years for four of the world's six largest and most developed oceanborne container shipping trades has been forecast by Charles I. Hiltzheimer, chairman and chief executive officer of Sea-Land Industries Investments, Inc.

"The Assumption of slow trade growth in the developed trades in recent times is not borne out by the facts—if anything, the opposite is true," Hiltzheimer added. "Average growth for the full 12-year period from 1968 to 1980 was five percent for the four major trades involving the U.S. In fact, the average annual growth rate of these four trades prior to the energy crisis, from 1968-1973, was 6.5 percent. For the post-energy crunch recovery period, 1975-1980, it has been over 9 percent."

Identifying the six largest and most developed container trade routes as those between Asia and North America, Europe and North America, and Europe and Asia, Hiltzheimer said, "these six routes account for almost half of the world volume of containerizable trade. The value of container traffic that transits these routes is even more significant."

Focusing on the four major North America container trades, Hiltzheimer projected that the fastest growing over the next five years would be the North America/Asia trades, with growth for U.S. containerizable exports to the Far East expected to average as much as 6.5 percent between 1980 and 1986. "Asia's industry should continue its rapid growth," he pointed out. "Since 70 percent of

containerizable exports to Asia are in industrial supplies and materials, the benefit to trade should be very direct."

Projecting a five percent annual growth rate for the world's largest container trade route—U.S. imports from Asia, Hiltzheimer said the link between U.S. gross national product (GNP) and imports is particularly good. He characterized consumption goods as dominant and capital goods a strong second, feeding into the two segments of the U.S. economy where growth in the 1980s is expected to be highest.

On the Europe/North America container trade routes, U.S. imports from Europe historically have been the slowest growing of all the big, developed trades involving the U.S., Hiltzheimer said. "Nevertheless, for the upcoming period, the stronger U.S. dollar should be a major spur to this trade route. The expected average growth rate of five percent will only bring 1986 volume to about seven percent above the peak established in 1978."

Of the big, developed trades, Hiltzheimer characterized U.S. exports to Europe as being in the middle of a marked decline, forecasting that a strong recovery would not take place until at least 1983. "This trade lane will probably achieve the lowest average growth—about two percent—between 1980 and 1986."

Any Discussion of the developed trades should not create the impression that developing country trades are separate and distinct, Hiltzheimer pointed out. "Trade between North America and Asia involves a mix of both developing and developed country trade, serving as a classic example of how modern transport systems can efficiently serve developing nations."

The Sea-Land Group chief executive officer predicted that in the United States, the current Administration will take a moderate approach to maritime regulatory reform—preserving the principle of free, but fair trade as a cornerstone for American policy. The Congress will probably recommend modifications, he said, but "we anxiously await changes that should help improve the environment for carriers operating in U.S. foreign commerce. (*Port of Houston*)

## Port of Houston supports national policy on steamship emissions

The Port of Houston Authority has announced its support of a proposed amendment to the Clean Air Act that would allow the Federal Government to set standards governing steamship emissions in all U.S. ports. Currently, rules concerning such emissions are left up to the individual states.

A provision of the amendment would classify vessel emissions as mobile, and establish a uniform policy for vessels calling on U.S. ports.

An Environment Protection Agency rule, stayed by court action in September, 1981, had classified steamship emissions as stationary, for which individual states were empowered to adopt standards. Under this ruling, vessel emissions would be counted as off-sets against the construction of marine terminals. Port development and growth could be severely hampered in those states which chose to adopt strict standards.

A uniform national emissions policy would allow our nation's ports and airports to continue providing the necessary facilities for the movement of goods and people.

# Tennessee-Tombigbee Waterway nearly 70 per cent complete

The most ambitious, costly and significant waterway development project in the history of the United States is now nearly 70 per cent complete.

Despite seemingly endless legal battles instigated by the unlikely alliance of railroad executives and environmentalists, work continues along the fabled Tennessee-Tombigbee Waterway as a centuries old dream moves ever closer to reality.

U.S. Presidents and stevedores, bank executives and truck drivers—concerned people from all walks of life—have fought for the waterway which will connect the Tennessee and Tombigbee Rivers. They've written letters, held parades and used other methods to demonstrate their strong support of the Tenn-Tom. Throughout the region, the mostly silent voice of America's middle class has been heard time after time, speaking out for continuation of the project.

When it is completed in the mid-1980's, it will stand as a vital monument to the hundreds of leaders in government and business who simply would not quit fighting. The potential for prosperity too great. The dream was too strong.

Indeed, the Tenn-Tom will be their legacy to future generations.

Actually, the idea of connecting the Tennessee and Tombigbee Rivers is older than the United States itself. A map drawn in 1760 for Sieur de Bienville, the founder of Mobile, conveyed to the King of France the advantages of a link to connect the Tennessee and Tombigbee Rivers.

And while the start of Tenn-Tom construction was dedicated by President Richard Nixon, many of his predecessors—including President George Washington have gone on record as being in favor of the project.

Early American settlers recognized the advantages of the shortcut. Residents of Knox County, Tenn., approached Congress in 1810 with a proposal to connect the two rivers.

James O. Crumb, a Huntsville, Ala., merchant, is quoted in the 1817 *Western Gazetteer* as saying, "European goods could reach the Tennessee River from Mobile in 30 days, when it would require 100 days by ascending the Mississippi."

One of the first acts of the new state of Alabama in 1819 was to request a survey for a possible connecting link. The first survey was made by the Army Corps of Engineers in 1827 but it was more than 100 years later, in 1938, that the waterway was considered economically justifiable. Congress formally authorized the project in 1946—but without funding any construction money.

The breakthrough came in 1967 when a favorable re-evaluation was completed, prompting Congress to appropriate some \$485,000 recommended by President Lyndon Johnson for pre-construction planning. President Johnson recommended another \$500,000 in his 1970 budget to complete planning and engineering.

President Nixon followed with a recommendation of \$1 million for construction in his 1971 budget and the start of construction was officially dedicated at the Port of Mobile on May 25, 1971. Following an 18-month delay due to an environmental suit which was dismissed with prejudice and

upheld by the appeals court, construction finally began in December, 1972, on the Gainesville Lock and Dam at the southern end of the waterway. Construction on the northern terminus began in July, 1974.

The 232-mile-long Tennessee-Tombigbee Waterway starts at the Tennessee River near the juncture of the Tennessee, Alabama and Mississippi state lines and proceeds south along Yellow Creek to the topographic divide between the Tennessee and Tombigbee basins. There, a 27-mile-long divide cut will connect the waterway with Mackey's Creek and the east fork of the Tombigbee River which flows south to Demopolis Ala., where it merges with the Black Warrior River and continues along the heavily used navigable river system to the deepwater Port of Mobile and the Gulf of Mexico.

When completed, the Tenn-Tom will provide low cost barge transportation to industry, agriculture and space and defense installations; it will be a vital element in meeting future energy needs; it will open up a vast new area to economic and industrial growth; and it will provide an extensive refuge for fish and wildlife as well as numerous outdoor recreational centers. Some 23 states in the southern and central regions of the country will be affected, encompassing much of the Southern Appalachian area. The waterway will join 12 rivers and form a key link in a 16,000 mile navigable waterway system, saving hundreds of miles, millions of dollars and untold energy annually. River systems that will benefit from completion of the Tenn-Tom include the Alabama-Coosa, Warrior-Tombigbee, Tennessee, Cumberland, Upper Mississippi, Illinois, Ohio, Muskingum, Green, Kentucky, Monongahela, Kanawha and Allegheny Rivers.

In 1975, the A.T. Kearney Co. conducted a thorough analysis of transportation savings. The firm examined over 250 movements and found that 118 movements would derive significant savings if shipped on the Tenn-Tom.

The latest projection is that 28 million tons will move during the first full year of operation at a savings of \$93 million. Kearny also found that traffic would grow to more than 40 million tons before the year 2000, with savings in transportation costs averaging about \$137 million per year. The savings are the difference in costs of shipping commerce on the Tenn-Tom as opposed to shipping by the alternate mode.

Coal and agricultural products are expected to be the major commodities moving down the waterway while chemicals and allied products and metallic ores are projected to comprise a majority of the commodities moving up the Tenn-Tom.

However, Tenn-Tom is much more than a navigation project. It is also a regional economic development program for one of the most economically deprived sections of the nation. A study done for the Appalachian Regional Commission projects that the Tenn-Tom will cause the creation of as many as 135,000 jobs in a 167-county section of Alabama, Kentucky, Mississippi and Tennessee by the year 2000.

This projection is in addition to normal growth which is

expected to occur. The shorter route to new markets, availability of cheap water transportation, and the energy crunch will result in extensive development along the waterway. Studies have shown this development will be primarily new business, not industry relocating from another area of the nation.

More than 132 miles of the 232-mile navigation channel is virtually complete. Of that, 115 miles is already opened to limited navigation from Columbus, Miss., to Demopolis, Ala., where the waterway joins the existing Warrior-Tombigbee river system.

According to Corps spokesmen, about 81 per cent of the estimated amount needed to complete the waterway has been committed, and about 61 per cent already expended. Thus far, a total of 77 contracts amounting to more than \$1.1 billion has been awarded. Of that amount, 56 contracts are underway with a total value of \$643.7 million. The overall estimated cost of the Tenn-Tom is placed at close to \$2 billion. Construction of the major navigation structures is involving more than 3,000 workers.

The Gainesville Lock and Dam, southernmost on the waterway, was completed in 1977. Since that time, work has proceeded steadily and with the award of a contract last April to build Lock E in the canal section, all major navigation structures along the waterway are now under construction.

Actually, construction is running slightly ahead of schedule and Corps officials are cautiously optimistic that the entire project may be complete as early as 1984.

While major attention has been focused on Federal expenditures and efforts to construct the Tenn-Tom, the project's impact on the Port of Mobile as well as on various communities and states involved has overshadowed all other economic developments as they prepare to take full advantage of the waterway's completion.

And that's another story that needs telling. (*Port of Mobile: Alabama State Docks Department*)

## **\$294 mil. plan for Jack London Square, Business Park : Port of Oakland**

Two plans for the \$294 million development of commercial areas operated by the Port of Oakland have been presented to the Oakland Board of Port Commissioners.

One calls for a dramatic new development at Oakland's Jack London Square and the other for development of an addition to the Oakland Airport Business Park for "high-tech" industries.

The Jack London Square project envisions construction of 800,000 square feet of new office space, a new waterfront hotel and food and specialty shop. Cost of this development is estimated at \$173.7 million.

The plan was presented by the American City Corporation, the Port's planning consultant. ACC had been asked to determine how best to utilize a vacant 10.5-acre waterfront parcel southeast of the Square and a three-acre area on the Square's northwest corner that currently houses a meeting hall and the former studios of television station KTVU.

ACC proposed a two-phase development of the larger site.

Phase One would involve development of a 12-story office tower with 300,000 square feet of space, a 300-room

hotel, and two levels of parking for 1,000 cars under the office building.

Phase Two would be the development of a second 12-story office tower, with 300,000 square feet of space, expansion of the hotel by 100 additional rooms, and another two-level parking facility for 900 cars under the second office tower.

For the smaller site, the company proposed a 12-story office tower with 200,000 square feet of space and a separate five-story parking structure that would eventually have 1,000 parking stalls.

The proposal also calls for the development of a food-oriented market place in the Square, containing about 32,000 square feet, similar in concept to Quincy Market in Boston, and Harbor Place in Baltimore.

To tie the Square together, it was proposed that there should be a continuous pedestrian mall, stretching the length of Jack London Square.

The three office towers, which will be able to accommodate a total of 4,000 people, will cost an estimated \$114 million, and the 300-room hotel will cost an estimated \$15 million.

The development, if approved, would take place over an eight-year period.

The Oakland Airport Business Park plan was presented by Reel/Grobman and Associates, a planning consulting firm which had been asked by the Port to study the potential for converting the area into an office and high-technology center.

The value of the 90-acre area, when fully developed for high-tech or office uses, is estimated at \$120 million. The area could provide employment for as many as 8,000 people. Development is expected to take place over a 10-year period.

The site, located near the Oakland International Airport, had been reserved for businesses relating to air cargo, warehousing and distribution industries.

With a view to increasing employment potential, the city of Oakland has been investigating the high technology field. In support of this approach, the Port of Oakland decided to determine whether the distribution center could be adapted to this type of use.

In presenting its findings, Reel/Grobman and Associates recommended flexible land use development.

It recommended that the Port set aside 17 acres for high technology development over a three-year period, with the balance of 73 acres reserved for future development.

At the end of the third year, the Port would re-evaluate market conditions, and decide a course of development for the remaining acreage.

Reel/Grobman told the Port that, should high technology development have only limited success, the Port might want to develop remaining land as a mixed-use business park. Should high technology development be highly successful, the Port would capitalize on that potential.

## **Port of Seattle proposes national partnership to grapple with customs delays**

On an average day more than five hundred international passengers arriving at Sea-Tac International Airport must stand in cramped lines for up to one hour while waiting to

clear U.S. Customs. On the Seattle waterfront the situation is even worse, with expensive ships and cargoes paralyzed by the severe shortage of Customs inspectors.

Affecting more than just Seattle, Customs delays are slowing the flow of vital international commerce and the movement of travelers at virtually all U.S. ports of entry.

Because these delays present a national problem that promises to deteriorate further in the face of federal budget cuts, Port of Seattle Executive Director Richard D. Ford is proposing the formation of a broad-based partnership within the transportation industry to seek solutions to the Customs problem.

On March 30, 1982, Ford has called a meeting in Washington D.C. with other international transportation industry leaders, representing marine ports and airports, steamship lines, airlines, travel agents, customs brokers and freight forwarders. The purpose of this initial gathering will be to form a Steering Committee, decide on an organizational structure and the best course of action to combat Customs delays.

"The goal of this national coalition is to reach a consensus on how to provide an adequate level of Customs service to allow the free flow of international commerce," Ford said. "We must work to eliminate the costly delays in the processing of international passengers and cargo at our nation's gateway airports and maritime ports."

## News from the Port of Antwerp

### Cargo traffic

Data on nine months of cargo traffic, provided by the General Management of the Port confirm the trends outlined earlier this year.

Traffic of general cargo continues to show a positive trend and increased by 7.9% compared to last year. This resulted in a general cargo traffic of 23.3 million tons for the first nine months of 1981. 17 million tons of this total (7.17 million of which iron and steel products) were shipped overseas from Antwerp; while 6.3 million tons of it concerned incoming general cargo.

Ro/Ro traffic increased by c. 5%. For containers, a positive evolution of the traffic similar to the one for conventional general cargo can be noted with regard to 1980.

Since bulk cargo traffics, however, continue to decrease, the overall result for the first nine months remains 4.4% under the 1980 figure.

In all 59.61 million tons of goods were handled in the port during the January-September period.

### Data processing system for navigation

In the Antwerp computer centre a data processing system for navigation has been installed which creates many opportunities for data processing in a near future. Main purpose of this data bank is to follow every ship, 24 hours on 24, from its signalling (up to one month before the arrival) until it has left port again.

Once completely operative (i.e. 24 hours on 24) this system will give any information on ship and cargo to harbour services and cargo interests.

At present the system provides data on the signalling of the ship, for which matter the Harbour Master's Office introduced a new formular; furthermore on the berthing number, the draft at the lock, time of locking upon arrival

and departure and on stay and shifting in the port (inclusive of some data with regard to harbour dues).

The Data Processing System for Navigation is also connected with the computer network which under the name of European Association of Port Data Processing, has been established recently between several European ports.

### Fourth Dock on left Scheldt bank in expansion

Construction works at the second phase of the Fourth Dock of the port's new development area on the left Scheldt bank will be started in January 1982. This phase of construction will see the building of another 580 m of deepwater quay walls and the lay out of a 27 ha site behind the quaywall.

The berth will be suitable for handling bulk cargo as well as for containers and conventional cargo. It will be built adjacent to the quaywall of the first phase, under construction since several months now.

By the end of 1983 the port area on the left Scheldt bank, will include 1,650 m of deepwater quays (waterdepth 18 m), 1,500 m of ordinary quays (waterdepth 7 m) and more than 4,000 m of sloping walls for the transshipment of liquid and gaseous products by means of jetties.

## New handbook spotlights 19 UK Ports : BTDB

Facilities and services at 19 British ports, spread from Humberside to the west coast of Scotland, are spotlighted in a new handbook published recently titled "BTDB Ports '82".

Produced by the British Transport Docks Board—the UK's leading port authority—in collaboration with Charter Publications, the 112 page handbook contains comprehensive information on the ports of:—

Hull, Crimsby, Immingham and Goole on Humberside.

King's Lynn and Lowestoft in East Anglia.

Southampton and Plymouth in the south and southwest.

Barry, Gardiff, Newport, Swansea and Port Talbot in South Wales.

Garston, Fleetwood, Barrow and Silloth in the northwest.

Ayr and Troon on the west coast of Scotland.

This group of ports handles about a quarter of Britain's seaborne trade and had a joint cargo throughput in excess of 75 million tonnes during 1981.

The new handbook includes a descriptive introduction to each port, followed by a comprehensive guide to the facilities available. Subjects covered include berthing and navigational information, quayside equipment, cargo storage accommodation and specialised facilities for container, ro/ro and bulk cargoes.

A separate listing of local firms providing shipping-related services such as freight forwarding, stevedoring and bunkering is shown at the end of each port section.

Details of the 125 shipping lines operating scheduled cargo liner services linking BTDB ports with 92 countries world-wide are set out in a special directory section towards the back of "BTDB Ports '82".

The handbook has been produced in a compact size—(8" × 5") for ready reference and ease of storage in desk drawer or briefcase.

Copies of "BTDB Ports '82" are available free of charge



from any of the 19 ports or from:—The Commercial Department, British Transport Docks Board, Melbury House, Melbury Terrace, London NW1 6JY. Telephone: 01-486 6621.

### **The port — Esbjerg's greatest asset**

The Port is, without question, Esbjerg's biggest asset in attracting new enterprises to the area. For import and export enterprises alike, the Port's ideal location and Esbjerg's position as a major transportation centre with well developed rail and highway connections are major considerations when a new enterprise is considering locating in this area.

Holger Brinch-Pedersen, Esbjerg's development manager, made this clear in an interview with the PORT OF ESBJERG. He also emphasized that Esbjerg enjoys the important advantage of having come through a fast development process with the demands this places on quick adaptation to new conditions. Flexibility is a characteristic of the city and port alike, making them well equipped to welcome new enterprises with a dynamic growth potential. There is also a considerable labour reserve in the community.

One of the Port's most important features is that it is sufficiently large to provide necessary equipment and facilities; while it is at the same time small enough to maintain its flexibility and ability to offer customers a simplified service, said Leif Søeborg, Esbjerg's economic development adviser. »Put another way, our customers don't risk drowning in red tape when they use the Port.

Also important are of course the very elementary advantages of ice-free waters and an ideal location in relation to major market areas, with an ability to expand in pace with demand.

Esbjerg and other west coast development areas had earlier experienced a very considerable influx of industry from eastern Denmark. This development has largely stopped, but Esbjerg is once again enjoying an increase in the number of new enterprises, said Mr. Brinch-Pedersen.

»This is happening first and foremost as a result of the big oil and gas activities in the North Sea, which are entirely due to Esbjerg's excellent location for such activities. This has had a positive effect on Esbjerg's income base and is attracting new residents to the community. Esbjerg is becoming the place where there's always something happening,« added Mr. Brinch-Pedersen.

He also expected additional enterprises to come to Esbjerg in pace with the city's development. New industries will inevitably mean growth for already existing enterprises in the community. »But Esbjerg is obviously more than just an offshore base,« continued Mr. Brinch-Pedersen. »Such activities account for only a small fraction of the total annual goods turnover of four million tons moving through the Port of Esbjerg. Commercial shipping, agricultural exports to Britain, grain and fodder industries and other traditional users still form the foundation of the Port's activities. Fortunately, too, fishing also exhibits the same pioneer spirit and the fantastic let's-do-it mood that characterize the rest of the Port's activities.

»This also holds true for the shore-based fish processing industries,« said Mr. Brinch-Pedersen. »Two of Denmark's largest consumer fish industries and one of the world's largest fishmeal plants are located in Esbjerg. All are increasing production and seeking new foreign markets.«

(Port of Esbjerg)

### **''Port terminals for general cargoes'' study course : IPER & ENPC**

The Port Study Centre of Le Havre (IPER) and l'Ecole Nationale des Ponts et Chaussées (ENPC) organize jointly with UNCTAD a four-week course from 21st June to 16th July 1982 devoted to the study of Port terminals for general cargoes.

The programme will take place in Le Havre and is aimed at all port executives who have responsibilities in cargo handling.

It will include many visits of port facilities in Le Havre, Rouen and Sète.

The working language will be French.

All information can be obtained from:

IPER

1, rue Emile-Zola

76090 LE HAVRE CEDEX

FRANCE

Tel. (35) 42 09 23

Telex: CHAMCOM 190091 F

### **IPER — A real success story: Port of Le Havre**

The Teaching and Research Institute for Port Affairs, known by its French initials, IPER, was set up jointly by the Port Authority and the Havre Chamber of Commerce in 1978 and ranks as an institute of higher education.

One of its main aims is to enable both those who design and build ports and those who manage and use them to meet together in a common study centre. Each year it holds refresher courses for engineers and executives engaged in marine works and in the everyday running and management of port-related companies.

At the end of its first three years it has an excellent record of achievement, having organised 17 seminars and three long-term courses, with a total attendance of over 500 people, one third of them (170) from abroad. They came from 17 different countries: Algeria, Belgium, Benin, Brazil, Cameroon, Congo, Gabon, Haiti, Ivory Coast, Lebanon, Morocco, Netherlands, Portugal, Senegal, Spain, Tunisia and Zaire.

178 lecturers have so far taken part in the seminars, which are greatly valued by all who attend them. Many further courses are already programmed or in preparation.

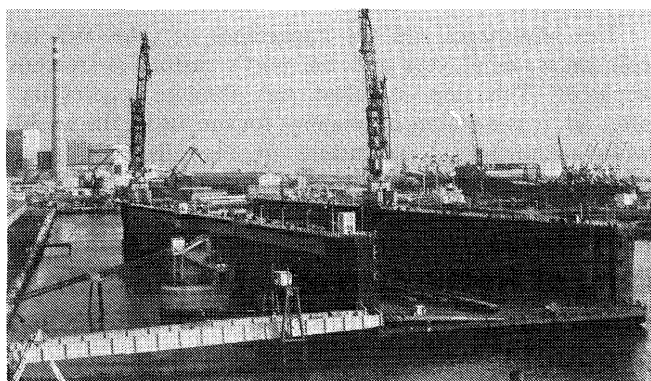
### **Investment programme for 1982-1986 : Port of Le Havre**

The Board of Directors considered the financial forecasts for the period 1982-1986. They are based on the assumption of a gradual increase in traffic until 1986, with the fall in imports of crude oil (30% between 1980 and 1990) made up for by the increase in solid bulks (apart from a temporary drop in 1982 and 1983), non-petroleum liquids, and general cargo, which is expected to rise at about 6% a year. Petroleum products, which accounted for 65% of the total traffic in 1980, could drop to only 56% in 1986.

Capital investment over the 5 years covered by the plan is likely to be around 1,625 million francs (at 1981 prices) and is expected to include the beginning of work in 1984 on a second lock, to relieve the pressure on the François I

Lock, the building of a multipurpose bulk terminal (due to be started in 1982 and come into service early in 1984), the continued extension of our container-handling facilities, a road improvement programme, and various new facilities for specialised traffics, not to mention the reorganisation of the old docks.

## Le Havre doubles its ship repair facilities



### The new repair yard— another major asset for Le Havre

- A technical maintenance centre in a port lying right on the world's busiest shipping lane.
- A yard fully equipped for major repairs and alterations.
- Close to the Paris area and backed by an extensive industrial and commercial hinterland.
- The Havre area has always been a shipbuilding and repair centre.
- The labour force is highly qualified and fully conversant with the latest techniques.

### Dry docks

- The floating dock
 

Overall length	310 m/1,017 ft
Useful length	290 m/951 ft
Useful width	53 m/174 ft
Draught over blocks	9,70 m/31 ft 11 in
Lifting capacity	50,000 tonnes
submersion time	2 hours
emersion time	3 hours
for a vessel requiring a lifting capacity of 50,000 tonnes.	
- Graving dock 7
 

Overall length	319 m/1,047 ft
Useful length	313 m/1,027 ft
Useful width	38 m/125 ft
Draught varying from 8 to 16 m/26ft 3 in to 52 ft 6 in.	

### Repair wharves

- Joannès-Couvert wharf (400 m/1,312 ft long)  
This wharf can accommodate vessels of up to 300,000 dwt and is dredged to 11 m/36 ft below datum.
- Mazeline wharf (500 m/1,640 ft long)  
This wharf can accommodate vessels of up to 250,000 dwt and is dredged to 9.5 m/31 ft below datum.

## 1982 markedly good start for Bremen & Bremerhaven

A good start has been made to the year 1982 by the Bremen ports with nearly 5 million tons being handled in the first two months; about 3 million of which consisted of general cargo, according to the Bremen Senator for Ports, Shipping and Traffic, Oswald Brinkmann.

This encouraging prelude is furthermore confirmed in the most recent IFO-Institute prognosis which foresees a 1982 yearly handling volume of 26.8 million tons for the Bremen ports (25.7 million tons in 1981), 11 million tons of which will be general-cargo exports (+6%) and 7 millions in general-cargo imports (+3%) and 8.8 mil. tons in bulk cargo (+2.5%).

## Data Communications System (DAKOSY) accelerates data flow

The Port of Hamburg took an important decision which will guarantee its reputation as a fast port also in the future. The various bodies of the biggest German port decided to introduce the Data Communications System (DAKOSY) which is intended to ensure the fast and widely automated flow of information within the Hamburg port and traffic economy. The advantages will benefit all the firms involved in transshipment, and thus also the clients of the Port of Hamburg, without any intervention in the inner operating organisation of the participants.

The chairman of the Port of Hamburg Enterprises Association ex-Senator Helmuth Kern remarked in this connection: "Outsiders might gain the impression that Hamburg has only now discovered data processing. Naturally, this is not the case. A major potential in EDP systems has existed in the Hamburg port economy for a long time. What has so far been lacking was a combined data system taking in all firms." According to Helmut F.H. Hansen, General Representative of the Port of Hamburg, DAKOSY is a typically Hamburg solution. "On the one hand it takes into account the private business enterprise structure, and on the other contributes towards flexible adjustment to the technical and organisational trends becoming increasingly apparent on the EDP market."

Building up on the foundations of past development work, the Gesamthafenbetriebs-Gesellschaft GHBG instructed an independent project group to take DAKOSY a step further. Following conclusion of the overall development phase, DAKOSY will be operated by a company currently in the process of formation.

### Step towards the information chain

The General Representative of the Port of Hamburg and GHBG representatives recently explained details of the project to specialist journalists. "In the past few years transport techniques and transport rationalisation have undergone extremely rapid development", Helmut F.H. Hansen explained. This was particularly evident from the worldwide acceptance of container traffic, which in turn had advanced the formation of transport chains. The situation was different with regard to the projected information chain. Although in this sector there had already been significant changes, due to the emergence of new data processing techniques, the exchange of information among firms involved in transport was still in most cases being

done with the classical methods of the written letter, the teleprinter and the telephone.

With DAKOSY the Port of Hamburg will offer a service which, with its integrated information form, simultaneously helps to get an important step closer to the goal of establishing information chains. DAKOSY thus brings with it a significant contribution towards further improving efficient service in the organisational sector.

#### Inter-company data

Volkhard Erdelbrock, head of the DAKOSY project group with GHBG, emphasised the decisive innovation aspect of the data communication system: "At present the same data are in many cases being processed manually by the firms involved in transshipment, or are being fed into inner-company EDP systems, which is not only non-rational and expensive, but logically also increases the frequency of errors. In future, information details will be recorded only once, and distributed further by way of DAKOSY." The data will be kept available in the DAKOSY storage system for all parties "entitled to call them up". Erdelbrock added: "DAKOSY is thus an information junction, an inter-company integrated data system which secures the ability to compete in the organisation sector."

In Erdelbrock's opinion, developments in modern communications techniques compel the adoption of a system such as DAKOSY. In the "initial realisation phase" it was envisaged that the shipping and loading documents important for handling outgoing traffic would be communicated by way of teleprocessing between all companies concerned with the cargo handling, such as seaport forwarders, quayside operators, tallymen, stevedoring firms or liner agents.

#### Free company decision

The fact that many firms concerned with goods traffic and transshipment (especially also the shipping economy) have their own data processing facilities of the most varied manufacture and programmes is the starting position of DAKOSY. Accordingly, every firm is free to make maximum use of the data provided by DAKOSY in accordance with the company's operational concepts. It goes without saying that the competitors' data are protected.

Similarly there is no provision for a connection with a central calculating account with the latter's programmes. As a data communications system, DAKOSY retains the EDP technical independence of the connected firms, which in turn, not only from an individual company point of view, but also in the form of user groups, can communicate in the dialogue as a partner with DAKOSY. This is where the decisive difference lies compared with systems already practised in other seaports, and with the development of a Data Bank Port of Hamburg known as "COMPASS", operated up to 1975 in Hamburg and then halted. "The system itself is open to every form of co-operation for innovations and supplementations", Erdelbrock stressed. The important thing was that always the multiple data recording necessary today was avoided.

Chairman ex-Senator Helmuth Kern emphasised that one of the most important factors of DAKOSY was, in fact, that nobody could compel the users to go farther in their programme concepts than they have to vis-a-vis their

customers or farther than they consider reasonable. With full retention of individual company concepts and wishes it would be possible, thanks to DAKOSY, to effect superimposed communication in the dispatch of ship and cargo. To this extent, compared to a large-scale accounting centre, which of course accords with the development of modern data techniques, it is a step forward into a flexibly arranged future.

#### Port's advantages retained

The advantages and the importance of DAKOSY for companies, employees and the port's customers are thus apparent. This step, as taken, was absolutely necessary: after all, it is a matter of retaining for the future the worldwide acknowledged advantages of the biggest German seaport, such as speed and reliability, not least of all in the interest of the people working in and with it. (*Port of Hamburg Topics*)

### Port of Rotterdam expects more dry bulk, containers, less oil and oil products

Prognostications made by the Port of Rotterdam for the coming twenty years predict a rise in landings of dry bulk, especially grains, ores and coal, and of general cargo, notably containers, but a drop in oil and oil products. Overall transshipment from and into seagoing vessels will be between 260 and 440 million tonnes in the year 2000.

The Port of Rotterdam made these prognostications with the aid of a so-called freight flows model. It was the fourth time that the future of the port of Rotterdam and other Rijnmond ports was scanned in this way. But unlike on the previous occasions, six possible developments instead of one were forecast, ranging between two extremes—a future with accelerated growth, especially after 1990, and a future with little or no growth.

The Port of Rotterdam believes that the most likely development is one of moderate growth, somewhere in between the two extremes. The other prognosticated developments indicate the financial limits and requirements as to the port's future infrastructure. A number of infrastructural plans have to be carried out for the growing commodity groups if the port is to remain competitive. They include a deepening of the approach channel, construction of a new vessel traffic management system and removal of the Hartel Canal locks. Moreover, providing facilities for a coal and container terminal at Maasvlakte, extension of the quays of the ore terminals on the Caland Canal and Mississippi Harbour, and expansion of grain transshipment facilities.

Finally, a restructuring of the old ports seeks to anticipate coming freight flow developments.

The scenario which the Port of Rotterdam considers to be the most likely to come true, predicts that an aggregate of 302 million tonnes of cargo will be transhipped from and into seagoing vessels in the year 2000 (versus 297 million tonnes in 1979). This volume will comprise 99 million tonnes of crude oil (against 139 million tonnes in 1979), 47 million tonnes of ores (42 million tonnes in 1979), 45 million tonnes of grains, animal feeds, oilseeds, oils and fats (26 million tonnes in 1979), 34 million tonnes of general

(Continued on page 44 bottom)

# The Port of Trieste

**Trieste** is located in the northernmost corner of the Adriatic, where the sea reaches up to the hearth of Europe.

Trieste, once the port of the Austrian monarchy, is again attracting the attention of European economic circles for its important role in international trade.

The birth and development of the Port of Trieste, in the modern sense, dates back to 1979, when a decree of Emperor Charles VI of Austria granted the city rights and status as a **free port**.

The creation of the Suez Canal, in the middle of the last century, accelerated the development of the emporium and the port. By 1883, it had grown from the small Mandracchio wharf area situated right at the threshold of the town, into the Old Foreign Trade Zone as we know it today.

As early as 1898, however, the need for new landing places and a larger surface led to the construction of the present-day **New Foreign Trade zone**, an engineering accomplishment that was avant-garde for those times.

The great stimulus afforded by the opening of the Suez Canal can be explained by simple geographical measurements: ships bound for the Middle and Far East save more than 2,000 miles when leaving from Trieste instead of from a port in Northern Europe.

That is why over a **hundred regular shipping lines** (of which at least one fourth are served by modern container ships, roll-on/roll-off and multipurpose vessels) link the port of Trieste to all overseas geographical areas. Trieste is one of the Mediterranean ports of call for the Med-Club Container conference route (Lloyd Triestino, the Lauro Fleet, Mitsui OSK, Nippon Yusen Kaisha and Chargeurs Reunis) for the Far East.

**The pride of the port of Trieste is Pier VII.** It measures 230,000 square meters and has over 1,700 meters of operational docks, with a sounding depth of between 16 and 20 meters. Because of the modern tendency to reduce costs and delays in ports, specialized equipment for loading and unloading has been installed. **More than 200,000 containers a year** can be transhipped in Trieste, thanks to three 42-ton portainers used.

In three minutes' time; this kind of crane loads a 40-foot container and unloads another. The Port Administration has invested almost 47 million dollars in this technologically advanced wharfing system.

Pier VII can also make use of three ramps for mooring **Roll-on/Roll-off** vessels, while other moorings of the same kind are being outfitted in the New Foreign Trade Zone.

These docks, endowed with more than 60,000 square meters of loading area for trailers stowage and transshipment, will allow this means of transportation to become even more widely accepted: it has obtained surprising prominence in the last few years, after the reopening of the Suez Canal and the boom in trade between Europe and the Middle East. In fact, the number of regular Roll-on/Roll-off links between Trieste and Middle Eastern countries has more than doubled in the last twelve months.

**The Commercial Free Port** (Old Duty-Free Area, New Duty-Free Area, Timber Duty-Free Area) with its 500,000 square meters of warehouses, 13 kilometers of docks served

by 131 cranes and bridge cranes, 25- to 150-ton floating cranes and over 500 smaller facilities for conveying goods and forming cargo units, is the vital center of the city's economic activity.

Along the Commercial Port's docks, which are all equipped with railway facilities, merchandise of every kind is handled in a system of **customs extraterritoriality**: in fact, 90% of goods loaded and unloaded in the Port of Trieste comes from abroad and is bound for other foreign countries.

Over 5,000 employees are engaged daily in the multifarious activities of the Port Authority, the port workers' associations, forwarding agencies, shipping agencies and auxiliary services.

In order to facilitate transport employing highways-railway facilities and the unification of customs procedures, the **Ferneti Truck Terminal** was recently set up behind the port itself. The Terminal has 300,000 sq.m. of parking space, 60,000 of which are reserved for the customs area.

When the entire project has been implemented, the terminal facilities will include an Assistance Center for drivers and vehicles, an area equipped for removing and reassembling cargoes (200,000 sq.m. total, of which 65,000 will be sheltered) and all other essential services.

Numerous national and international airlines land at the **Regional Airport** in Ronchi dei Legionari, 32 kilometers from Trieste.

Shipbuilding companies for naval construction and repairs are located in the **Industrial Port**, as are dry docks, factories for the construction of marine Diesel motors (Grandi Motori Trieste), steel mills, cement manufacturing plants, refineries for mineral and vegetable oils, mechanical and chemical industries, and various food industries, etc., all of which give work to 10,000 employees. Some of the plants have their own docks for loading and unloading raw materials and finished products. The area also includes an **Industrial Free Zone** that encourages the installation of industries for the manufacture and processing of goods bound for abroad.

**The Oil Port** includes the mineral Oil Free Zone and TAL area (Transalpine Pipeline Terminal), with an annual capacity of 50 million tons of crude oil.

The pipeline links Trieste to refineries at Ingolstadt (north of Munich) and at Schwechat (near Vienna). It boasts moorings for tankers of up to 160,000 deadweight tons. There is also a plan for a new pier to accommodate tankers of 200,000 deadweight tonnage. The pipeline's tank-farms in the Industrial Port area have a capacity of 2 million tons of crude.

## Plans for Development

The prospect of an increase in trade has led to new plans for important improvements and structures, in the framework of the coordinated plan for the development and integration of the regional port system in Friuli-Venezia Giulia (Trieste-Monfalcone-Porto Nogaro), which was set up by the Regional Administration (Council for Industrial and Trade Planning).

This program envisages, among other things, the con-

struction of a new terminal (which will be larger than 60,000 square meters) for roll-on/roll-off shipping, the doubling of Pier VII-container terminal and the remodernization of docks in the Old Foreign Trade Zone with new, specialized depots.

These projects, which will necessitate considerable financial investments on the part of the Port Authority and the Public Administration, will permit Trieste to maintain and make increasingly good use of its natural role as pivot for the flux of trade between Europe and the rest of the world, a function which has had such profound influence on the historical, economic and cultural evolution of the city and its inhabitants.

## **Kenya hosting UNCTAD/SIDA/UNDP training course in port management**

The ninth in a series of international training courses in port management, cofinanced by a grant from the Swedish International Development Authority (SIDA) and by the United Nations Development Programme (UNDP), is being organized by the United Nations Conference on Trade and Development (UNCTAD) in Mombasa, Kenya, from 29 March to 15 May 1982.

Previous courses have been conducted in Sweden, South-East Asia, East and Western Africa, and Central America. On this occasion, the Government of Kenya will act as host for the six-week residential part of this Course to be held in Bandari College, Mombasa, Kenya's port training college jointly run by the Kenyan Ports Authority and Kenya Cargo Handling Services. The Saudi Ports Authority will act as host for the one-week study tour to Jeddah Islamic Port to be undertaken in the middle of the Course.

Twenty-five English-speaking participants holding senior management positions in the port industry of eleven countries of Africa and the Middle East have been invited to attend. They will come from: Egypt, The Gambia, Ghana, Kenya, Libya, Malawi, Namibia, Nigeria, Saudi Arabia, Somalia and Tanzania.

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(Continued from page 42)

freight (24 million tonnes in 1979), 27 million tonnes of solid fuels (9 million tonnes in 1979), 19 million tonnes of oil products (33 million tonnes in 1979), 17 million tonnes of chemical products (13 million tonnes in 1979), 13 million tonnes of other bulk (11 million tonnes in 1979), and 2 million tonnes of liquefied gases.

Under this scenario transshipment from and into inland vessels will reach an aggregate 108 million tonnes in the year 2000 (against 92 million tonnes in 1979). Increases are anticipated chiefly in the river transport of grains, animal feeds, oilseeds, oils and fats (from 11 million tonnes in 1979 to 19 million tonnes in 2000) and of solid fuels (from 6 million tonnes in 1979 to 14 million tonnes in 2000). Feeder and onward transport by rail and road will be up on 1979 in the year 2000, rising from 9 to 18 million tonnes.

The prognosed prepared with the aid of Freight Flows Model IV have been laid down in a report, a summary of which has just been published under the title "Between Full Speed and Stop".

## **Port of Haugesund**

The seaport of Haugesund, situated roughly half-way between Stavanger and Bergen, is ideally located in relation to North Sea oil activities, besides being the natural centre of the northern part of the County of Rogaland, a region with a population of about 100,000. Founded 125 years ago, Haugesund today has 28,000 inhabitants and benefits from excellent communications by road, sea and air. The airport is only 15 minutes from the city centre.

### **Centre for the expanding Norwegian oil industry**

The Haugesund district is on the threshold of an extremely interesting period of development, particularly in connection with the landing of North Sea gas by pipeline to Kårstø, which is within the district of the Haugesund Harbour Authority. The enormous capital expenditure on this project is expected to bring extensive chain effects to the whole district and will promote the establishment of new businesses.

### **The Kårstø area**

Kårstø, 30 km from Haugesund, will be the landing point for rich gas from the Statfjord field. It is expected that several gas fields including the Gold Block will be connected to the new pipeline. At Kårstø the rich gas will be separated, the dry gas going by another pipeline from Kårstø to Ekofisk whence it will be carried by the existing pipeline to Emden.

It is expected that the wet gas will go to the Norwegian petrochemical industry. The total cost of building the pipelines from the North Sea and the installation at Kårstø has been estimated at 13.7 thousand millioner kroner.

### **Killingøy**

Killingøy is a new deepwater offshore base in the port of Haugesund. Located 1 km north of the city centre, it is less than 2 nautical miles from the open sea. The northern approaches to the base have no draught restrictions. The total quay length is 400 metres whereof 160 metres with a water depth of more than 15 metres. The depth off the rest of the quay is about 10 metres. The total developed area available at the base is about 24,000 square metres and in addition there is an area of about 50,000 square metres available for development adjacent to the base. It is planned to install a travelling crane with a working load of at least 50 tons to cover the whole quay. The whole facility is designed to carry loads of 10 tons per square metre.

### **The Port**

The approaches to the harbour are very good and vessels may enter in any weather. Besides good quays and generous space for storage and other activities the harbour offers excellent anchorages at Bøvågen and in Haugesund roads.

For many years shipping has been Haugesund's biggest and most important industry, and the port has three large shipyards and one of Europe's biggest dry docks. Otherwise, the city has extensive and efficient commercial and service enterprises which offer excellent facilities to shipping and offshore activities.

## New Vessel Traffic Management System in Gothenburg : "teleplan", Sweden

The Port of Gothenburg is the leading port in Scandinavia. The approach to the port is complicated and several serious collisions and groundings have occurred. In order to improve the safety and the economy of port operations, governmental and local authorities have decided to install an advanced radar-based Traffic Management System with a Traffic Control Centre (TCC), located in the former terminal building of the Sessan Tor Line. A pilot station will also be located in the TCC building.

Radar coverage in the Traffic Area will be maintained by means of three radar stations. The information will be sent to the TCC where it will be processed before displaying it in the TCC on daylight type displays. Automatic tracking of selected vessels and of buoys will be provided.

VHF will be used for communication between vessels and TCC and the communication information will be continuously recorded for further analysis, should an accident occur.

The vessel traffic will be supervised and assisted by one duty port operations officer and one assistant. Vessels entering the Gothenburg Traffic Area or leaving from quay will be obliged to report at prescribed waypoints. During these VHF contacts the duty officer informs the vessel traffic about the general traffic situation in the area. The duty officer may also on request give detailed navigation information. The master of the ship, however, is always responsible for the navigation.

The Harbour Office utilizes a computer based system for operations planning. In the TCC there will be provided terminals to the computer system to assist the traffic control function. The assistant is the link between the TCC and the Harbour Office.

The system will be designed to minimize the risk of technical failures.

Step-by-step improvements shall be possible, e.g. in terms of additional radar stations as well as narrow-band radar information from external sources.

Identification of vessels will be made by means of VHF and radar. However, the system will be so prepared that VHF Direction Finding, radar transponders, hyperbolic navigation systems or other similar systems can be added. Such systems may also be used to increase the accuracy of position and speed measurements.

The system will be procured in 1981 and is expected to be operational by the end of 1982.

## Saudi ports 15 per cent up

Saudi Arabia imported 53.3 million tons of goods through its main ports during the year 1981 (which ended 27 October, according to an official report).

The figure represents a 15 per cent increase over the previous Hijra year during which imports amounted to 46.3 million tons.

Imports of foodstuffs were up by 26 per cent to 10.66 million tons and of construction materials by 11 per cent to 22.66 million tons.

Fifty-two per cent of the goods passed through Jeddah port and 36 per cent through Dammam. The three relatively

smaller ports of Jubail, Yanbu and Jizan handled the remaining 12 per cent. (*Gulf News*)

## Port of Launceston news

(Extracts from the Port of Launceston Authority's newsletter on some activities over the last six months and forward developments proposal)

### Port trade

Cargo handled through the port for the six months to December 31st was 1.97 million tonnes, which was slightly down on the previous period, due largely to the waterfront industrial unrest. Following settlement of the strikes, a significant amount of cargo backlog has been made up and it is hoped will be back to normal figures within the foreseeable future.

During the period Bell Bay continued to be the major terminal for A.N.L. vessels servicing Melbourne, Sydney and Queensland ports and averaged normally sixteen vessels per month.

The thrice weekly Melbourne and weekly east Australian coast A.N.L. regular service we believe, has been greatly appreciated and achieved continued support from shippers and this, together with the cargoes generated by Temco, Comalco, B.H.P. Steel and the woodchip companies, permit the regular import and export of the following commodities: Aluminium, bulk alumina, bulk coal, bulk coke, bulk manganese ore, calcium carbide, F.E. & F.I. Manganese, fertiliser, firebricks, fresh fruit and vegetables, frozen fish, frozen meat, frozen vegetables, furniture, hides and skins, iron and steel, livestock, machinery, motor vehicles, petroleum products, scrap metal, tallow, textiles, timber, waste paper, wheat, and wool.

### Tugs

In line with common port practice through the rest of Australian the Authority has now handed over its ship handling tug service to the North Western Shipping and Towage Co., the Manager of which is Mr. D. Wilson, with that firm to continue to supply the same service with the tugs "Wybia" and "Yorktown" as existed in previous years. Bookings for tug services will continue to be made through the P.L.A. Harbour Master, Phone (003) 82 1222.

The General Manager of the Authority would appreciate receiving any comments on the new service.

### Australian Maritime College

This College is continuing to grow and this year will provide education and training for a total of over 300 students. In addition, it is expected that up to 800 students will attend short courses in Launceston and in centres around Australia.

Compus development is continuing. A communal centre and auditorium are scheduled for completion by the middle of 1982; a survival centre should be in operation by the end of this year. A fishing technology building, incorporating a net-testing flume tank is due for completion in 1984.

### Bell Bay Industrial Mutual Aid Group

The Authority has taken a keen and active part in the Bell Bay Industrial Mutual Aid Group, which is chaired by the Harbour Master, Captain Barber. All participating



organisations and companies in this voluntary group were involved in a mock air crash in the Bell Bay area during December. The "disaster" plans were successfully put into operation and the group's expertise enhanced by the exercise.

#### General Port Developments A.N.L. Terminal Bell Bay

Prior to Christmas Stage I of the terminal widening was completed increasing the marshalling area by 0.61 hectares. The contract has been let for the steel sheet pile driving being the commencement for the second stage of the widening, which when completed in 1983, will increase the total marshalling area to 4.72 hectares. The contract has also been let for a new gatehouse and staff office, which will be completed in the next two months. This will be occupied by both A.N.L. Terminal Staff and Websters the Cargo Agents.

#### Port Weighbridge

A port weighbridge will be installed in the next few months in place of the private one at the A.N.L. terminal.

#### Port security patrols keep channels clear : Port of Melbourne

Ships, Masters and shipping companies have commented favourably on the effective policing of the main entrance channel to the Port by the Port Emergency Services' "Sharkcat" patrol boat.

As part of the Authority's campaign during the summer months to keep shipping channels clear of pleasure craft all

ships leaving or entering the Port are escorted by the "Sharkcat" along the main channel from the river mouth to Fawkner Beacon.

These escort duties, in addition to increased patrolling of Port waters, have been introduced because of the hazards to shipping being created by small craft anchoring in channels.

In April last year the *Australian Venture* ran aground off Elwood. An inquiry found that small craft obstructing the approaches to the Port of Melbourne channel were the prime cause of the vessel having to take evasive action which led to the grounding.

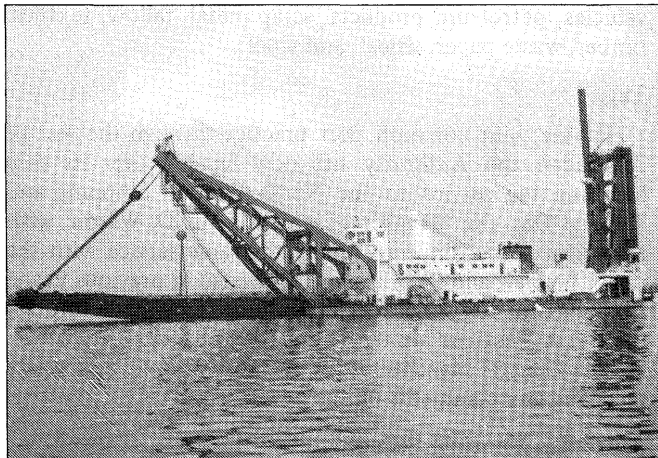
In addition to the patrol watching for recreational craft in shipping channels or moored to navigation beacons, it was policing Port regulations and was also available to go to the assistance of craft in distress. This latter part of the patrol's duties was in response to a safe boating campaign promoted extensively by the Public Works Department, boating industry associations and other organisations interested in boating and recreation.

The necessity for the watch for vessels in distress is instanced by the fact that between 27 December and 22 January the Port Security Patrol assisted fifteen small craft in distress. Of these eleven signalled that they needed assistance and four were found during the patrol.

#### Engine Failure

In most cases the craft were without power due to engine failure or they had run out of fuel. The majority of the craft in distress were towed to the St. Kilda Marina by the "Sharkcat."

During the same period (27 December to 22 January)

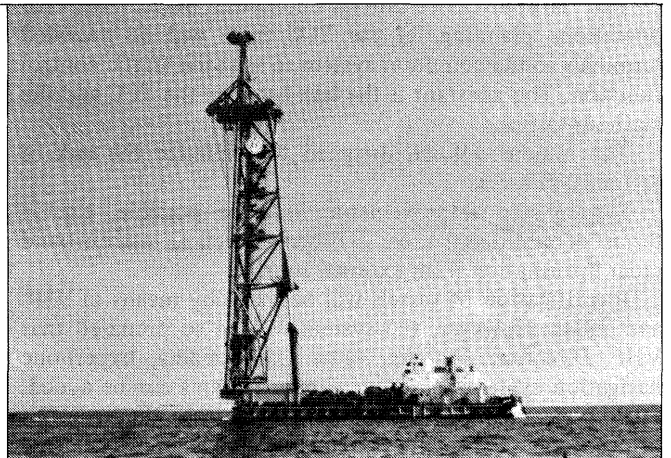


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the Port Security Patrol moved 27 boats from shipping channels; escorted 117 ships; intercepted three craft speeding in the river; assisted the PES First Aid section in attending one call and rescued two people, a father and his son, who were drifting into Hobsons Bay on a rubber raft.

### Regular Patrols

Regular patrols will be continued by Port Security to ensure Port Waters and Shipping Channels are kept clear of small craft. (*Port Gazette*)

## Increased shipping in busy Port: Hong Kong

Hong Kong's position as one of the world's busiest ports was maintained last year, when another increase was recorded in all spheres of port activity.

A total of 10 667 ocean going vessels entered the port and discharged and loaded a total of 31.9 million tonnes of cargo, a 4.2 per cent increase on 1980.

Kwai Chung container terminal throughput was 1.5 million TEUs (Twenty Foot Equivalent Units), an increase of 6.5 per cent on the 1980 throughput, with some 52.4 per cent of all general cargo handled being containerised.

Transshipment TEUs accounted for 31.5 per cent or 0.4 million TEUs of the total throughput, an increase of 2.9 per cent.

There was a marked increase in river trade during 1981, with 103 525 vessels having entered and cleared, a 14.8 per cent increase on 1980. These vessels discharged and loaded 3.65 million tonnes of cargo, a 22.7 per cent increase on 1980.

A total of 7.7 million passengers travelled to and from the nearby Portuguese enclave of Macau, compared with 7 million in 1980, an increase of 10.26 per cent.

## Shri K.K. Uppal elected president of IPA

Shri K.K. Uppal, I.A.S., Chairman, Bombay Port Trust, was elected President of the Governing Body of the Indian Ports Association at its Sixth Annual General Meeting.

Shri Uppal is the Chairman, Bombay Port Trust, from July 1980. Earlier from 1973 to 1978, he was holding charge of the post of General Manager and then Deputy Chairman, Bombay Port Trust.

Indian Ports Association is an Association of the ten Major Ports of India viz. Bombay, Calcutta, Madras, Cochin, Mormugao, Kandla, Paradip, Visakhapatnam, New Mangalore and Tuticorin.

## New idea in disposal of ships' garbage : Northland Harbour

The disposal of garbage from ships in port has become a matter of considerable environmental importance to harbour authorities throughout the world.

NHB Deputy Harbour Engineer Ian Brewer attended a Harbour Engineers' Conference in Adelaide at which this common problem was given prominence.

In his report to the Board, Mr. Brewer outlined a disposal method which is being promoted by the Australian Commonwealth Department of Health. It comprises size reduction of the garbage, followed by sterilisation by heating with added water.

Afterwards, the sterilised slurry is disposed of at a local dump. After being ground in a macerator which handles bottles and cans, the garbage is electrically heated to 120 degrees Celsius under pressure and held for 20 minutes.

The chief advantage of the equipment over incineration is that it uses much less energy and thus is cheaper to operate.

A figure of about \$4 worth of electricity for each batch was given and the \$80,000 units claimed to be able to handle the waste from four ships a day at each 'cook up'.

But there were still problems to be solved, reported Mr. Brewer. Plastic and fibrous material could block the macerator and the stirrer, while the occasional bolt or piece of solid metal was also liable to cause a problem for the macerator.

However, the basic idea would be watched with interest as it was developed. (*Points North*)

## Containers change Wharf Police role : Wellington Harbour

The container revolution and other developments in shipping and wharf procedures have changed the nature of the work of the Wharf Police.

Senior Sergeant John Tutt of the Wharf Police described how their role has changed. "In the 1950's the Wharf Police were a big squad. We had to deal with a lot more ships, cargo and seamen. But containerisation has changed all that."

He said that their primary role is the ensuring of security at the wharf and therefore can be seen as crime prevention.

"Handling methods have changed with the introduction of containers but there's still a lot of cargo and thefts continue."

Snr. Sgt Tutt said with extra staff the Wharf Police could be more effective. "Unfortunately we can't expect any more, for the same is true for all Police operations."

He said most American and Australian naval vessels have their own shore patrols which for the length of their stay in port are based at the Wharf Police headquarters. "We have a 24 hour patrol and beat service but it's not possible to prevent all offences."

### Conditions

Snr. Sgt said in recent years conditions on board ship had improved vastly and they were now seldom required to investigate ship desertions.

"The seamen are also not such "hard nuts" as they were and give us less problems."

He said they were occasionally required to pursue enquiries on foreign vessels. "We don't find this presents any particular problems—we always take interpreters or embassy staff."

Snr. Sgt Tutt said they had never been refused permission to board a foreign vessel. "If we have good reason to believe an offence has been committed on any ship in New Zealand waters we are empowered to board her. The officers are usually very helpful."

### Launch

Probably the best known aspect of the Wharf Police work is their launch service. It is also the main difference between their work and that of ordinary "land" stations.

The police manning the Lady Elizabeth II are required to have Launch Masters qualifications and first-aid skills. "The work is critically important and can be very dangerous so the crew need to be highly trained," said Snr. Sgt Tutt.

The launch makes daily patrols checking for boats which may have slipped their moorings, enforcing boating and water skiing regulations, taking Fisheries Officers to ships to give clearance and of course making rescues.

The police work closely with other groups including the Sea Rescue Service and local fishermen.

They are also part of the Wellington Airport Rescue Plan and only last October took part in a successful simulated exercise—coping with a Friendship that had "crashed" into Lyall Bay.

Snr. Sgt Tutt is concerned that despite intensive publicity some members of the boating public still take unnecessary risks or are ill-prepared. "The level of demand for our rescue service is not getting any lower".

Snr. Sgt Tutt said if more money was available an additional or faster launch would be advantageous but said the Lady Elizabeth was in excellent condition and had proved a good all rounder.

"In times of emergency she can leave within two minutes of our being alerted—day or night".

#### Investigations

Another task of the Wharf Police is the investigation of all industrial accidents and deaths occurring within the wharf or harbour area.

"Sometimes a wharfee will ring and say he's seen a body floating in the harbour. For all suicides and accidental deaths that have to come before the Coroner we are required to make a thorough investigation and may have to give evidence at the inquest."

The Wharf Police are required to investigate possible drug offences and if anything significant is discovered it is immediately passed on to the Drug Squad.

A few years ago they were heavily involved in handling cases of illegal arms traffic but Snr. Sgt Tutt thinks the decline in the visits of passenger ships has "almost put a stop to that". However, they do assist the Customs Department with "rummages" of suspected ships.

"We also assist the Department of Agriculture and Fisheries and the Wellington Harbour Board with the enforcement of their regulations."

The Wharf Police also have the task of handling immigration offences—however, this work is done outside the wharf area and bears no relation to their location. (*'BEACON' Wellington Harbour*)

#### World Bank's director visits Karachi Port, lauds KPT's development efforts

Mr. Michael H. Wiehen, Director, South Asia Region, World Bank, Washington, visited Karachi Port, on Friday, the 4th December 1981. Mr. Wiehen had detailed discussions on KPT on-going Development Projects financed by I.D.A. under interest-free credits. Mr. Wiehen expressed complete satisfaction on KPT's development plans & the systematic manner in which the projects are initiated, processed, developed and implemented. He also expressed satisfaction on the high quality of the construction works.

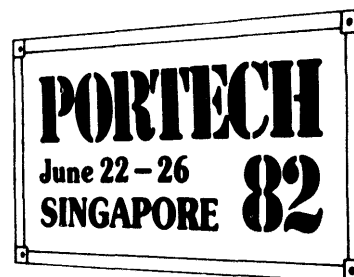
Mr. Wiehen visited the Railway Yard and Container Complex at M.I. Yard, the new Container Marshalling & Storage Complex at Keamari Groyne and commended KPT for their improvisation plans for handling containers from self-sustained vessels & new parks at minimum investment costs. He also visited the new Road Bridge over the Chinna Creek and the Four Shipping Berths construction and requested that NCC should be further pressed to complete the balance work without any delay.

Mr. Wiehen also inspected KPT's Hydraulic Model and discussed the planning process with Chairman and the General Manager (P&D).

The KPT have during the last 12 years constructed 14 shipping berths and deepened & widened the entrance approach channel & lower harbour for the handling of large tankers upto 75,000 D.W.T. capacity. The KPT have increased oil handling capacity from 5 to 10 million tons per annum and provided container parks for the handling of 100,000 TEUs of container traffic.

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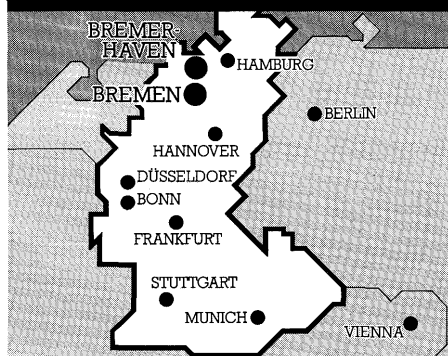
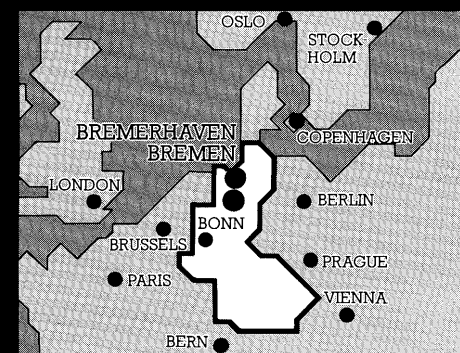
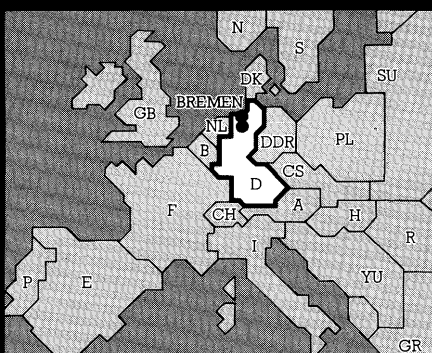
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