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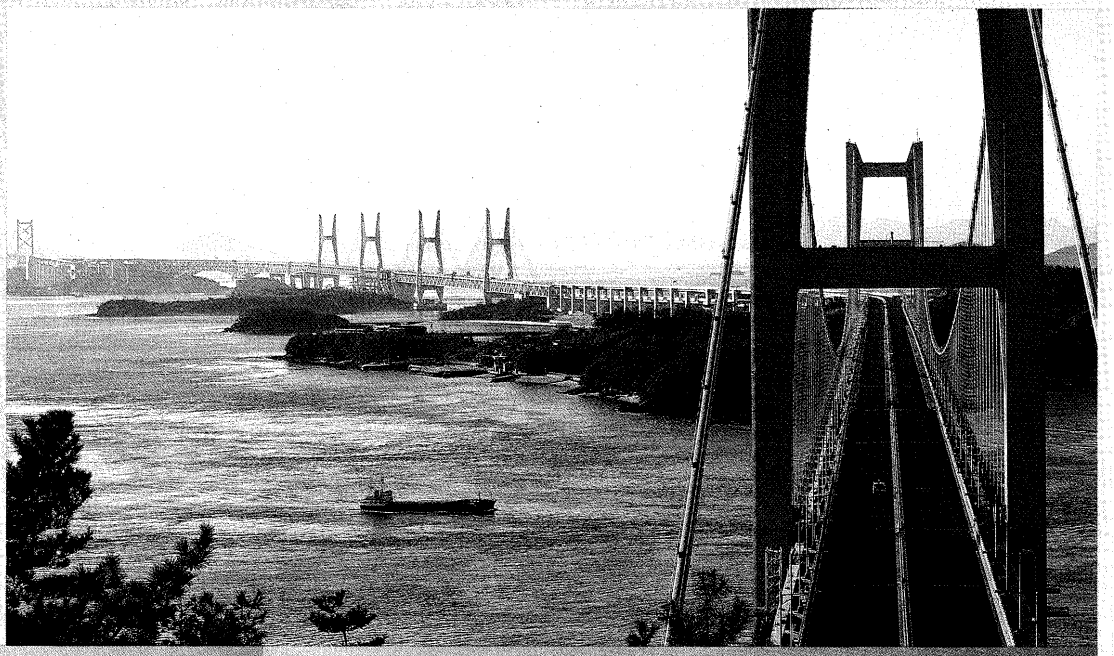
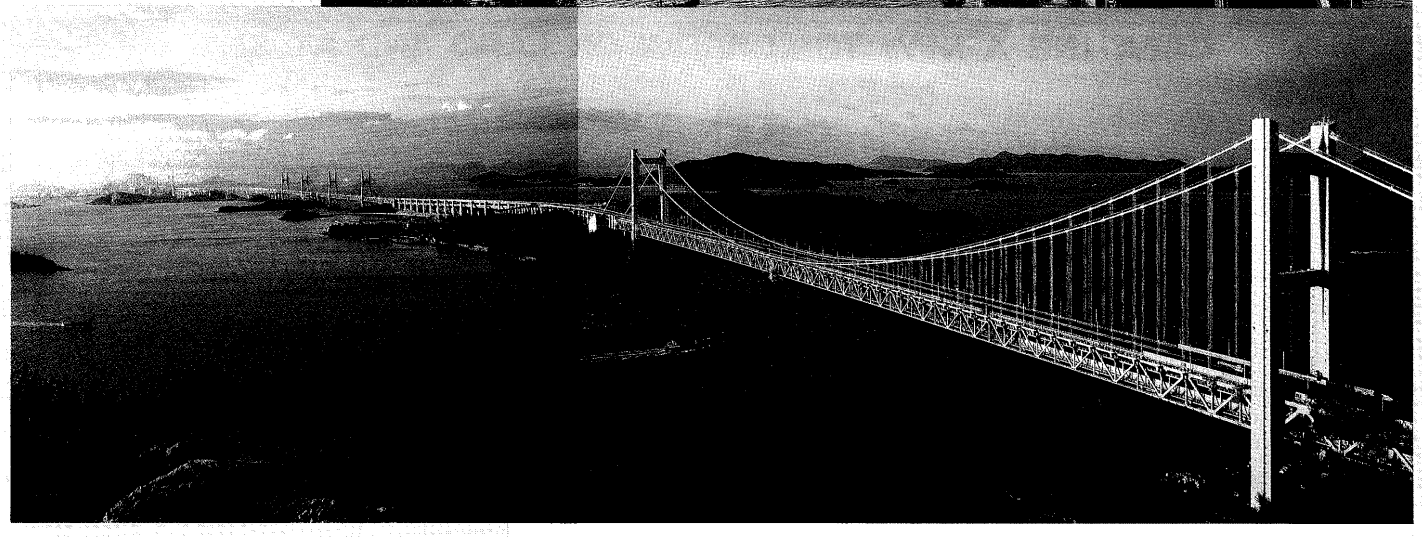
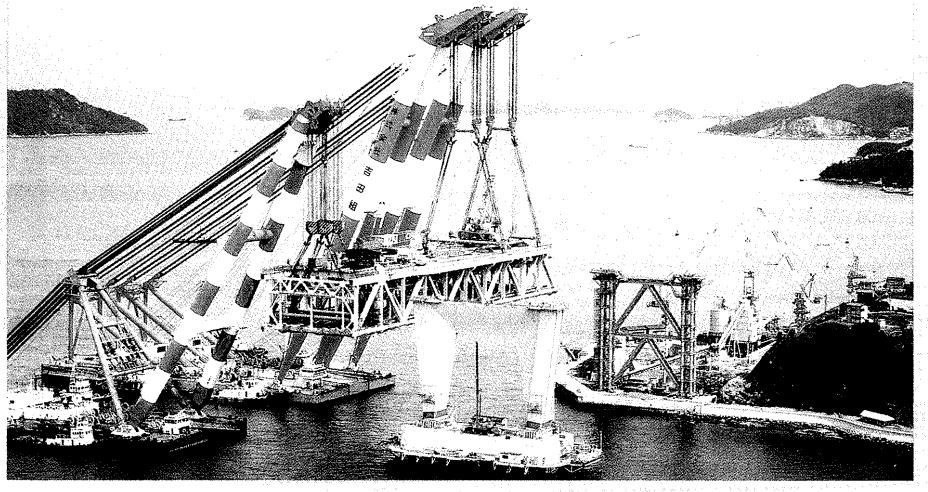




The Publisher
The International Association of Ports and Harbors

Great Seto Bridge
Japan's new Great Seto Bridge links two of the country's main islands, Honshu and Shikoku. The bridge is actually a network of bridges spanning smaller islands in the Inland Sea. (Top and Center) Two shots of the bridge taken by S. Sueyasu with Shikoku in the distant background. (Bottom) Gigantic floating cranes, each having a capacity of 3,500 tons, lift prefabricated blocks to form the side spane of the Iwakurojima Bridge, part of the bridge network. (Photo courtesy of the Honshu-Shikoku Bridge Authority)



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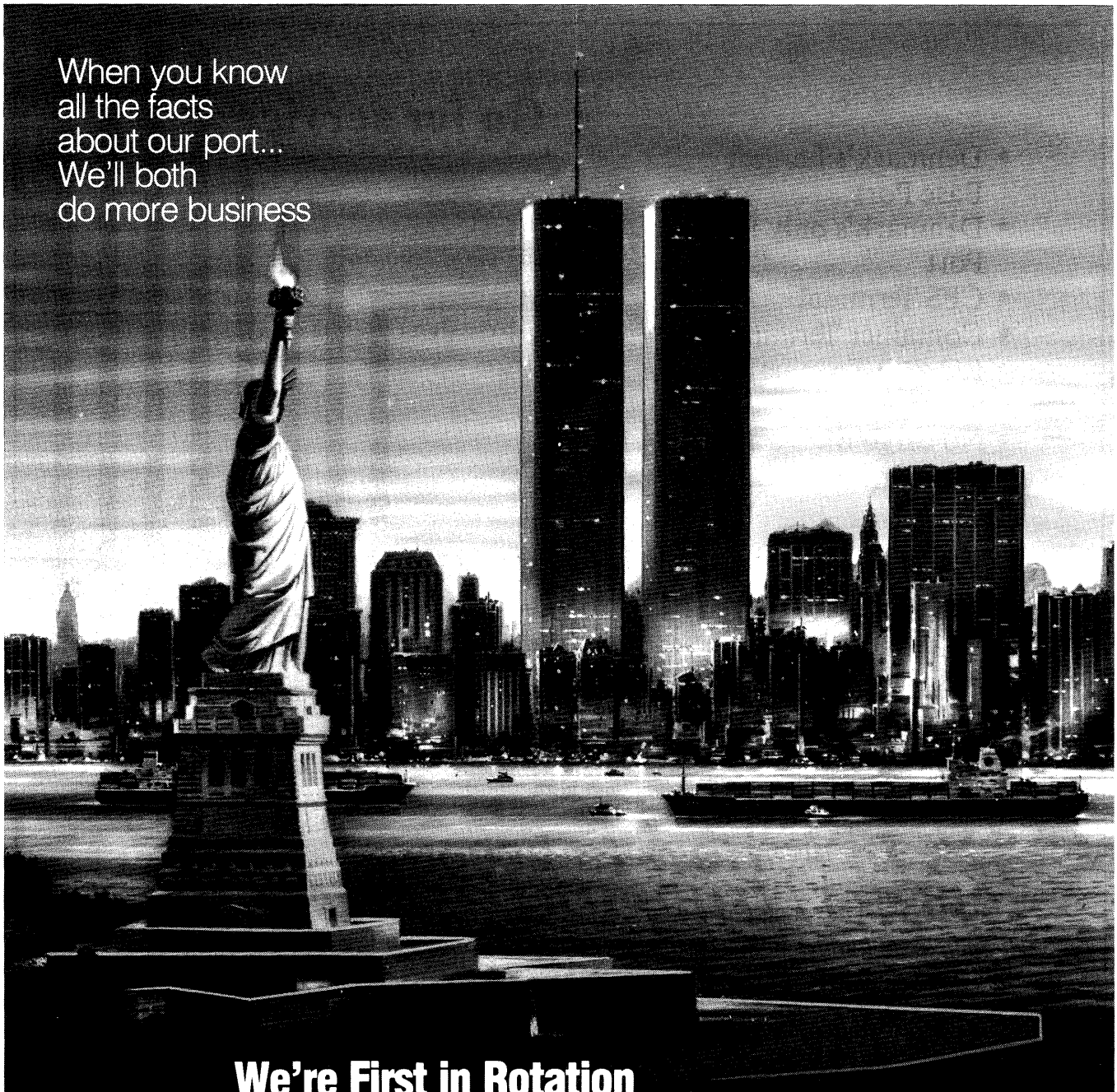

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IAPH ANNOUNCEMENTS AND NEWS

EXCO Votes for IAPH Participation in IMO Workshop

The EXCO, at a meeting by correspondence held on March 27, 1988, voted for a motion related to IAPH participation in the suggested "IMO Workshop on Environmental Impact Assessment (Port Development)", which IMO was planning to convene in October/November 1988 in cooperation with interested organizations. The potential financial burden that the EXCO was asked to consider was US$25,000. The matter will be further discussed at the forthcoming EXCO meeting in Abidjan.

The IMO Workshop, according to the letter of invitation of January 21, 1988 addressed to IAPH by Mr. K. Voskresensky, Director of IMO's Marine Environment Division, will form part of IMO's programme of technical assistance to developing countries funded by the Swedish International Development Authority (SIDA) with certain limited funds from IMO. Mr. Voskresensky said the IMO recognizes that the subject matter of the Workshop embraces the fields of interest of a number of other organizations such as the World Bank, PIANC and IAPH and wishes to obtain the widest possible support for the Workshop.

The matter was referred to the Finance Committee and, further, to the attention of President Wong for his endorsement in placing the matter before the EXCO by organizing a meeting by correspondence.

Subject to further confirmation, however, a preliminary list of topics which could be addressed at the Workshop is as follows:

1. The Nature and Value of Environmental Impact Assessment
2. Is Environmental Mitigation Only for Rich Ports?
3. The Role of Port Planning
4. Dredging Technology and Projects
5. New Techniques for Bioassaying Dredged Material
6. Solutions to the Problems of Providing Waste Reception Facilities in Ports, as Required by Annex I (Oil), Annex II (Noxious Liquid Chemicals) and Annex V (Garbage) Of MARPOL 73/78
7. An Evaluation of the Dust Problems in Small Ports
8. Can We Control the Contamination of the Air by Petroleum Vapor from Tank Barges during Cargo Transfers?
9. How to Deal with the Ozone Problem — Ozone from Photochemical Reactions of Volatile Hydrocarbons and Nitrogen Oxides
10. The Economic Dependence of the Local Community on Port Functions
11. Prevention, Control and Cleanup of Accidental Releases of Hazardous Materials

Although the venue is also subject to further confirmation, the IMO document says that the organization's Secretariat is currently having discussions with interested government and industry organizations and port authorities in the United States on the possibility of holding the workshop in one or more ports in the United States in October/November 1988.

60% of Member Dues Received as of March 31

By the end of March 31, 1988, 138 of the 230 Regular Members and 79 of the 129 Associate Members had completed their 1988 dues payments in accordance with the invoices dated December 10, 1987. The figures represent approximately 60% of the total revenues receivable from the annual membership dues. According to the chief accountant Mr. Onso, the pace of payment by members is similar to that in previous years.

Nevertheless, through this column the Secretary General requests all those whose IAPH dues remain outstanding to complete the payments as soon as possible.

All members concerned are requested to remit the dues to the Head Office through either of the following banks.

1. The Fuji Bank Ltd., Marunouchi Branch, Account No. 883953
2. The Bank of Tokyo, Uchisaiwaicho Branch, Account No. 526541

As for the exchange rate to be applied for payments after February 1, 1988, please quote the rates existing on the day of the remittance to the Head Office. Please also note that the cost of the remittances should be borne by the members concerned.

Gambia Ports Authority Becomes IAPH Member

One of the most exciting duties for the Head Office staff in preparing articles for this announcements section is to introduce newly-joined members. This is particularly so when we can announce the acquisition of new members from new countries. Thus we feel most pleased to be able to convey the news that the Gambia Ports Authority (the Port of Banjul) has been enrolled as a Regular Member of IAPH. With the addition of Gambia, the number of IAPH member countries has now increased to 80.

1989 IAPH Directory: Cooperation Asked

An entry form to the 1989 edition of the IAPH Membership Directory will be sent out to all IAPH members from the Tokyo Head Office towards the end of May, 1988.

Upon receipt of the form, all members are requested to check the attached information and to make the necessary corrections and changes. The completed form should be returned to the Head Office by the end of July, 1988. Members are also invited to run their advertisements in the Directory at reasonable rates: ¥72,000 for a full page (152mm x 75mm) and ¥44,000 for a half-page (75mm x 75mm).

The Secretary General urges all members not to waste this once-a-year opportunity to acquaint the world ports and port-related businesses which receive the Membership Directory with up-to-date details concerning members' organizations.

Visitors to the Head Office

On March 8, 1988, **Ing. Henri Vanderverlden,** Secretary-General, the Permanent International Association of Navigation Congresses (PIANC), visited the Head Office and was received by Mr. Hiroshi Kusaka, IAPH Secretary General, and his staff. They discussed the current situation surrounding the two organizations and exchanged views on the possibilities for further concerted action and coordination between the two sides.

Ing. Vanderverlden and Mr. W.R. Murden, representing the Water Resources Support Center, U.S. Corps of Engineers, were visiting Japan to discuss the forthcoming general assembly of PIANC to be held in 1990 in Osaka, Japan, hosted by the City of Osaka. Mr. Murden is an Observer of the IAPH Dredging Task Force. On March 2 in Tokyo and on March 4 in Osaka, they delivered lectures at functions organized by the Japan Faction of PIANC and other institutions involved in the Osaka Congress.

On March 14, 1988, **Dr. Elizabeth Müller,** Executive Director, Lloyd's of London Press, visited the Head Office and met Mr. R. Kondoh to exchange views on the recent state of development of port-oriented data exchange systems. On the same day she visited Mr. Hideo Kawashima, Chief, Business Operations Section, Tokyo Port Management Office, with whom she discussed the Tokyo Port Information System which is being developed and tested by the Port of Tokyo.

On March 25, 1988, **Dr. Klaus D. Fischer,** Marketing & Public Relations Officer, the Port of Hamburg, together with **Dr. Hans Ludwig Beth,** Head of Central Division Marketing, HHLA, and **Mr. Lutz Ehrhardt,** Buss Stevedoring Company of Hamburg, visited the Head Office where they were received by Mr. Hiroshi Kusaka, Secretary General, and his staff. The two sides exchanged views on the current status of ports and the changing trading patterns in Hamburg and in Japan.

They were visiting Japan as members of the Hamburg Economic Mission, headed by Mr. W. Rahlfs, Hamburg Minister for Economics, Transport and Agriculture. The Mission's other purpose was to introduce Miss Iris Goy, the 15th Queen of Hamburg Cherry Blossoms. An evening function featuring Miss Goy in Tokyo was widely covered by the media.

On March 29, 1988, **Mr. R.J.M. Grey,** Editor, Fairplay International Shipping Weekly, London, U.K., visited the Head Office and met Mr. R. Kondoh, Dy. Secretary General, with whom he exchanged views on the current shipping and port situation in Japan as well as the Association's recent activities. Mr. Grey was visiting Japan for 10 days to visit those ministerial agencies, research institutions and private firms involved in shipbuilding and shipping. On March 25, he visited the Port of Tokyo.

Membership Notes:

New Members

Regular Member

Gambia Ports Authority (Gambia)
Address: B.P. 617, Banjul
Mailing Addressee: Mr. M.O. Gaye, Managing Director
Cable Address: GAMPORTS BANJUL
Telex Number: 2235 GAMPORTS GV
Phone Number: 27266, 27267, 27268

Associate Member

Prof. Frederick J. Smith [Class D] (U.S.A.)
Address:207 Ballard Extention Hall, Oregon State Univ., Agricultural & Resource Economics, Corvallis, OR 97331-3601
Telex Number: 592717
Phone Number: (0482) 224121

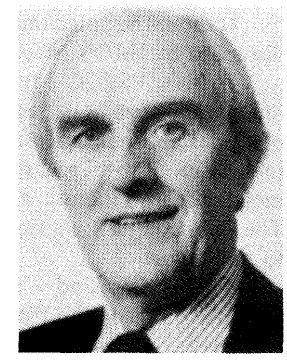
Changes:

Port of Brisbane Authority [Regular] (Australia)
Phone Number: (07) 833 0833
Fax Number: (07) 839 3591
* They have been located at "Port Centre", Cnr. Wharf and Ann Streets, Brisbane 4000 recently. Their postal address remain unchanged as G.P.O. Box 1818, Brisbane 4001.

IMO REPORTS

By A.J. Smith

IAPH European Representative
London



Mr. A. J. Smith

Sub-Committee on Ship Design and Equipment

The Sub-Committee held its 31st Session in London from 7th to 11th March 1988 under the Chairmanship of Prof. J. W. Doerffer (Poland).

31 Member States were represented, together with Hong Kong as an Associate Member, and 13 non-governmental organisations including IAPH.

As would be expected, the agenda was wholly ship-related. It is an inescapable fact, however, that issues arise within discussions which have a distinct bearing on, and could materially affect port operations.

In dealing with ship manoeuvring standards, for example, on which IAPH's Ships Sub-Committee have provided guidance to ports for some years, and continue to do so, the Sub-Committee was concerned to establish whether it was opportune to revise the 1985 (MSC/Circ 389) Interim Guidelines taking account of information received to date from Member States. The Sub-Committee did not, in fact, initiate immediate action in this regard. A decision to take action could well be taken, however, at the next but one session, tentatively scheduled for September 1989. In the meantime, therefore, IAPH's Ships Sub-Committee will wish to reflect on whether there are specific port-related aspects of manoeuvring standards guidance which should be drawn to the attention of IMO for incorporation in any review of standards.

IAPH Member Ports which are operationally subject to icy conditions will note with particular interest the Sub-Committee's preparation of a draft MSC Circular on the design and construction of sea inlets under slush ice conditions. The draft circular, a copy of which is attached, has taken full account of submissions from Canada, Finland, Poland and the United States.

Much attention was given by the Sub-Committee to issues stemming from the tragic loss of the Herald of Free Enterprise.

Ports will clearly be supportive of efforts to improve safety standards for ro-ro passenger ships. IAPH's Ships Sub-Committee is therefore looking closely at recommendations made by the UK's Court of Formal Investigation to determine whether and to what extent those which are port-related can have general applicability.

What concerned the Sub-Committee in its specific regard to the mainly ship-related recommendations and, more particularly, the UK Government's proposals to IMO arising therefrom, is their unilateral application to passenger ro-ro vessels calling at UK ports, including foreign flag vessels. The Sub-Committee took the view that, though there could be support in principle for the proposals, it was unsatisfactory to deal with them outside normal IMO procedures. Emphasis was placed on the need to secure international agreement before implementation to avoid the creation of "unwanted" precedents.

The UK's proposals for detailed amendments to the SOLAS Convention were discussed by the Sub-Committee and generally agreed upon, though certain reservations were expressed by some Member States on particular aspects.

The Sub-Committee did not agree that there was need for a new regulation to require television monitoring of loading doors. It was superfluous in that it duplicated other requirements. The Sub-Committee also took the view that proposals dealing with emergency lighting and means of escape needed further research before inclusion within SOLAS.

On the question of including a new SOLAS chapter specifying operational procedures and the role of management ashore, the Sub-Committee did not generally feel it would be appropriate to do so. Further, it was felt that while shore-based management had a part to play in securing marine safety, this should not detract from the Master's responsibilities for the safety of his vessel.

It should be noted that the UK's proposals will be further discussed by IMO's Maritime Safety Committee.

IAPH's PSECC Members will wish to note that the Sub-Committee, in its regular implementation status review of Codes and relevant Assembly Resolutions, will examine the position with regard to IMO/IAEA Safety Recommendations on the use of ports by nuclear merchant ships. The Sub-Committee's revised work programme is annexed to this report.

The next — 32nd — Session of the Sub-Committee will take place in London from 5th to 9th December 1988.

ANNEX

Draft MSC Circular

Guidance on Design and Construction of Sea Inlets Under Slush Ice Conditions

1. Casualty records indicate that ships which are not designed to classification rules for navigation in ice and which operate in slush ice conditions are prone to blockage of the sea water cooling intakes and related air vents by slush and/or spray ice. Such blockage has resulted in loss of cooling water to the ship's main engine and/or generators as well as structural damage to air vents or tanks upon continued operation of water pumps after vent blockage. Incidents have ranged from minor vessel delays to complete power failures which in some cases have resulted in groundings.

2. It is common practice to provide a supply of low pressure steam or compressed air to maintain clear cooling water intakes. However, experience has shown that such arrangements will not maintain clear inlets on ships operating in anything but the lightest ice conditions.

3. The following guidelines provide a suitable method to ensure that cooling water flow is maintained to the ship's engine and/or generator under such conditions:

.1 The ship should be provided with at least one sea bay from which pumps supplying cooling water to essential machinery can draw.

.2 The sea bay should:

.2.1 be supplied with water from at least two sea inlet boxes;

.2.2 be connected to the sea inlet boxes by pipes, valves and strainers with a cross sectional area at least equal to the total area of the suctions served by the sea bay; and

.2.3 be vented to atmosphere by a valved pipe of sufficient size to prevent tank over pressurization or under pressurization.

.3 The sea inlet boxes should:

.3.2 be as deeply submerged as possible;

.3.3 have an area open to the sea of at least five times the total area of the pump suctions served by the sea bay;

.3.4 be fitted with a strainer plate at the ship's side having perforations approximately 20 mm in diameter to prevent ingress of large ice particles;

.3.5 be fitted with a low pressure steam connection for clearing the strainer;

.3.6 have the vent pipe from the sea inlet sized to prevent ice blockage in the suction piping. On small installations, the cross sectional area should be at least equal to that of suction piping. In the case of larger installations, the ratio may be reduced, but the minimum diameter recommended is 150 mm. The valve fitted should be of a full flow type; and

.3.7 have the valves meet the requirements of SOLAS regulation II-1/48.3, protection against flooding, when used in unattended machinery space applications.

.4 Diversion valves and piping should be provided at overboard cooling water discharges to permit warm water to be returned to the sea inlet boxes preventing ice blockages, and also to the sea bay to permit circulation in the event of total sea box blockage by ice.

4 Certain operating areas are noted for heavy spray ice accumulation during winter and precautions should be taken to avoid structural damage due to blockage of air pipes by spray ice. Air pipes serving cooling systems should be positioned in protected areas or heat traced as a preventive measure.

5 The attached sketch illustrates the layout of a recommended system.

ANNEX

Revised Work Programme of the Sub-Committee on Ship Design and Equipment

		Target completion date
1	Development of a comprehensive code on alarm systems; investigation of alarm provisions in all IMO instruments and those not covered in IMO instruments	1988
2	Manoeuvrability of ships. Manoeuvring standards	1990
3	Review of the MODU Code	1988
4	Helicopter facilities offshore (IMO/ICAO co-operation)	Continuous
5	Operating mechanisms and procedures in service for watertight doors	1988
6	Materials other than steel for pipes	1989
7	Below-deck openings into cargo tanks	1988
8	Review of implementation status of resolutions related to the work of the Sub-Committee	Continuous
9	Design and construction of sea inlets under slush ice conditions	1988
10	Requirements for purpose- and non-purpose-built ships dedicated for the carriage of irradiated nuclear fuel	1989
11	Amendments of regulation II-1/41, 42 and 43 of SOLAS 1974 as amended	1989
12	Ventilation of vehicle decks during loading and unloading, surveillance of vehicle spaces, spaces, warning lights and operational procedures covering vehicle spaces	1989

OPEN FORUM

Great Seto Bridge

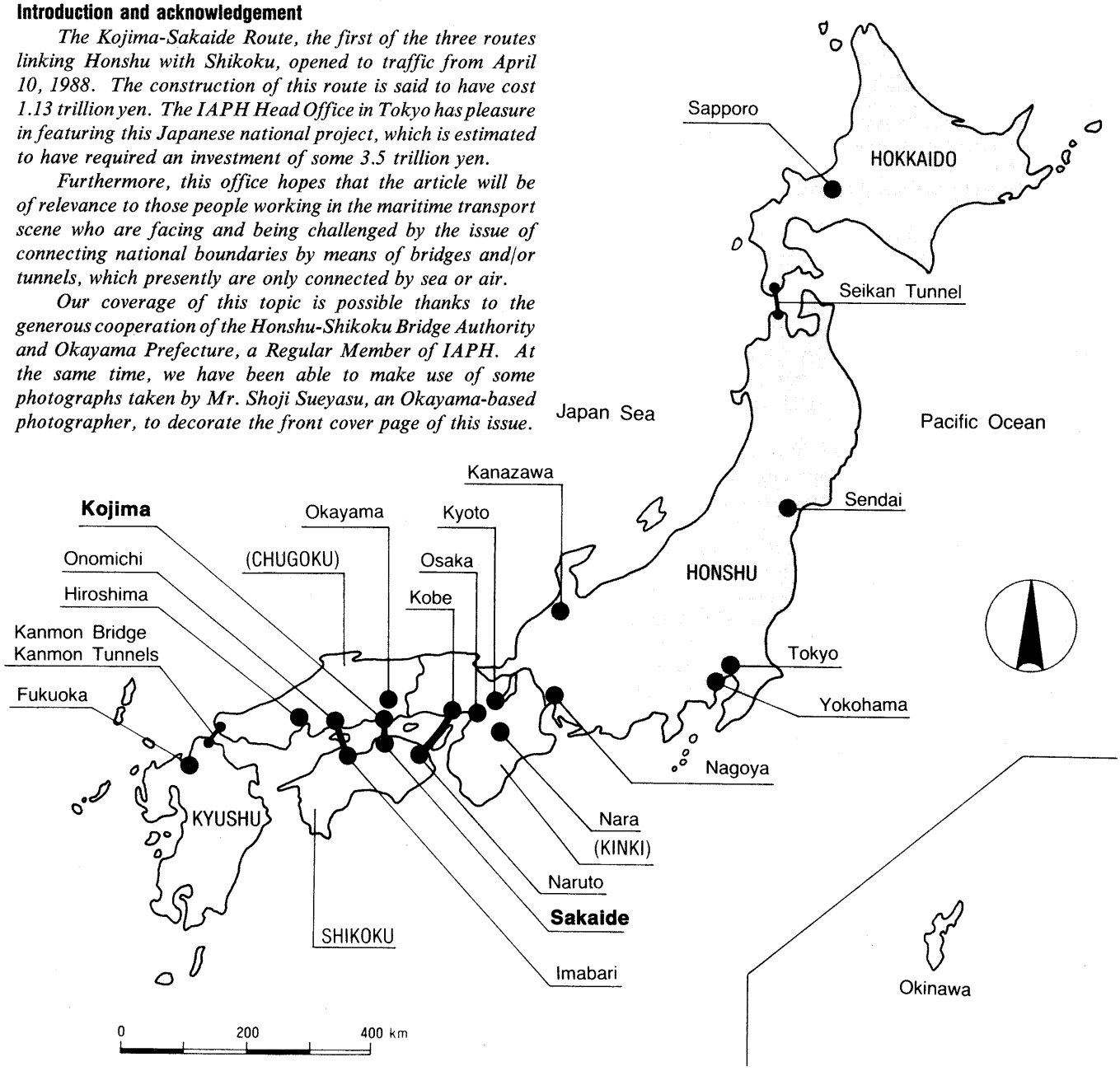
Kojima-Sakaide Route Links Honshu and Shikoku on April 10

Introduction and acknowledgement

The Kojima-Sakaide Route, the first of the three routes linking Honshu with Shikoku, opened to traffic from April 10, 1988. The construction of this route is said to have cost 1.13 trillion yen. The IAPH Head Office in Tokyo has pleasure in featuring this Japanese national project, which is estimated to have required an investment of some 3.5 trillion yen.

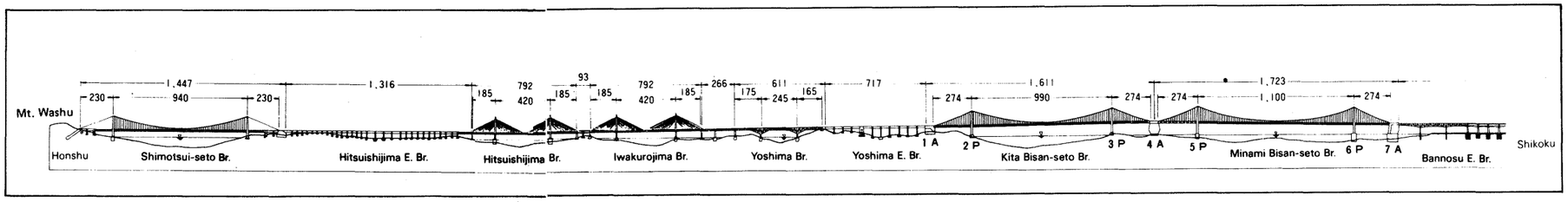
Furthermore, this office hopes that the article will be of relevance to those people working in the maritime transport scene who are facing and being challenged by the issue of connecting national boundaries by means of bridges and/or tunnels, which presently are only connected by sea or air.

Our coverage of this topic is possible thanks to the generous cooperation of the Honshu-Shikoku Bridge Authority and Okayama Prefecture, a Regular Member of IAPH. At the same time, we have been able to make use of some photographs taken by Mr. Shoji Sueyasu, an Okayama-based photographer, to decorate the front cover page of this issue.



1. Outline of the Overall Project

Japan consists mainly of four big islands: Honshu, Shikoku, Kyushu and Hokkaido. The western part of Japan — that part of Honshu Island bounded by the cities of Osaka and Shimonoseki and including such cities as Kobe, Okayama and Hiroshima — faces Shikoku across a stretch of sea spanning some 500 km east-west and 30 to 70 km north-south. The sea is known as the Seto Inland Sea. The geographical and economic significance of this area of Japan in 1980 was as follows:



Items	Kinki*	Chugoku**	Shikoku***	Total
Arable space (km²)	8,193	8,253	4,886	21,332
Ratio to national total (%)	6.8	6.9	4.1	17.8
Population (1,000)	19,522	5,586	4,163	31,271
Ratio to national total (%)	16.7	6.5	3.6	26.7
Agricultural output (Bil.)	6,231	6,282	5,571	18,084
Ratio to national total (%)	6.1	6.1	5.4	17.6
Industrial output (Bil.)	41,124	17,298	6,120	64,542
Ratio on national total (%)	19.2	8.1	2.8	30.1
Production revenues (Bil.)	35,097	12,339	5,981	53,417
Ratio to national total (%)	17.1	6.0	2.9	26.0
Production revenue index per 1000/person	1,798	1,627	1,437	1,708
Index against national ave.	102.5	92.8	81.9	97.4

*: Prefectures of Shiga, Kyoto, Osaka, Hyogo, Nara & Wakayama
**: Prefectures of Tottori, Shimane, Okayama, Hiroshima & Yamaguchi
***: Prefectures of Tokushima, Kagawa, Ehime & Kochi

The Seto Inland Sea has been known for centuries for its calm picturesque scenery dotted with islands. However, the physical communications between the two islands until today have only beem possible through sea and air services and have been subject to the vagaries of the weather in the form of strong winds, waves and fog. Consequently, Shikoku has perhaps lagged behind other areas in terms of the tempo of its economic life and the sophistication of its social infrastructure.

In order to help solve such inconvenience and to promote the balanced development of their livelihoods, it has been a long-held wish of the people of Shikoku Island that a bridge or tunnel linking them with Honshu Island be built.

The rail and road transportation systems connecting Honshu with the other two major islands of Kyushu and Hokkaido have already been established. Kyushu was connected with Honshu by a 3.6 km. under-sea railway tunnel in 1942 and by a road bridge with a 1.6 km. span in 1958, a national highway under-sea tunnel and further by yet another tunnel for the bullet train system. The northern island of Hokkaido has finally been connected with Honshu by a 53.85 km. under-sea railway tunnel (of which 23.3 km is actually under the sea at a maximum water depth of 140 m.), across the Tsugaru Strait. This link, called the Seikan Tunnel, was commissioned as recently as March 13, 1988. This office plans to feature it in a forthcoming issue.

2. Honshu-Shikoku Bridge Authority Established in 1970

The first feasibility study was made in 1955 by the Japanese National Railways. Since then, various studies have been conducted under the auspices of both the Japanese National Railways and the Ministries of Construction and Transport. A plan involving the construction of 3 routes was formally incorporated into the New Comprehensive National Development Plan announced in 1969. Moreover, to implement and manage the project the Honshu-Shikoku Bridge Authority was established in July 1970 as a public corporation authorized by law and under the direct control of the government. The newly-established corporation took responsibility for all the preliminary work and undertakings then being carried out by the various agencies.

Although the plan was officially approved, the construction work did not proceed smoothly. Due to the tightening of the government's public spending policy in 1973, the construction work was partially suspended in various sectors. In 1977, a political compromise led to the opening of the Kojima-Sakaide Route being given first priority.

3. Outline of the Three Routes and the Current Status

3.1 Kobe-Naruto Route (partially operable since 1987)

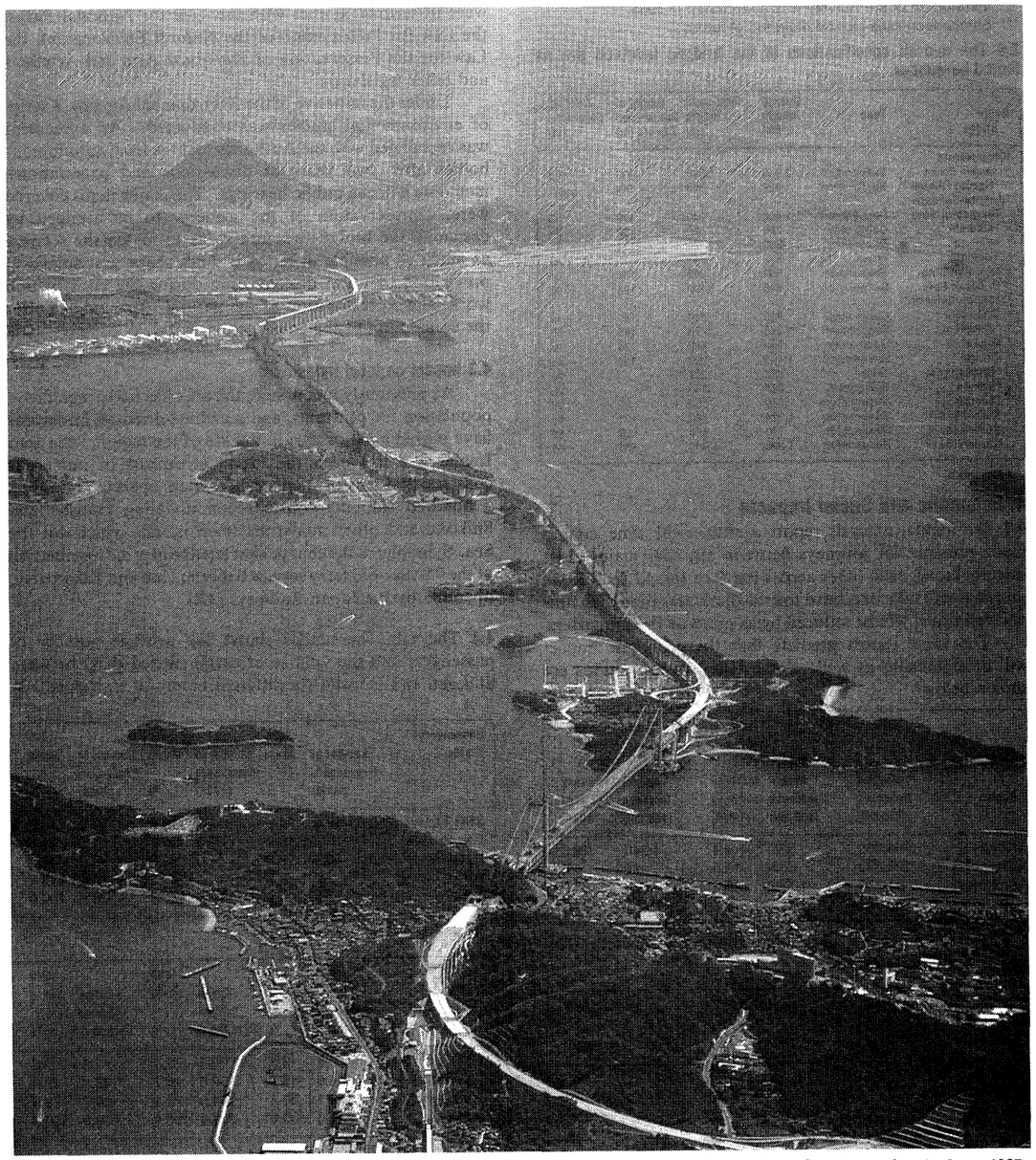
Originally, this route was intended to provide both a highway and railway link. However, the railway element was shelved in 1981, and left open for future consideration. The route crosses Awaji Island, the largest island in the Seto Inland Sea. The total projected highway length is 81.1 km. At each end of the highway there is a bridge. The two bridges are 4.2 and 3.5 km. in length, respectively. That linking Shikoku and Awaji Island was completed and commissioned in 1987, construction having been started in 1976. The remaining portion linking Awaji Island with Honshu — including a 4.2 km. span bridge — is now being constructed and is scheduled to be opened in 1998.

3.2 Kojima-Sakaide Route (Completely operable from April 10, 1988)

This route is made up of bridges carrying both highway and railroad. The railroad tracks on this route are arranged in a double layout for ordinary (non-superexpress) trains. The length of the highway totals 37.3 km. The system consists of six bridges spanning the Inland Sea and linking some of the small islands scattered in the narrow straits. The bridges comprise a total of 13.1 km., while the access roads on both sides have a length of 24.2 km. Construction was started in 1978.

3.3 Onomichi-Imabari Route (partially operable since 1983)

This route is designed for highway use only. It comprises a total projected length of 60.1 km., of which the road section covers 51.9 km. and the bridge section — embracing 9 bridges connecting six comparatively large islands inhabited by tens of thousands of people — accounts for 8.2 km. The construction work for some 40 km. has been completed, but only from the Honshu side. This section was commissioned in December 1983. The work on the remaining portion, including 3 bridges on the Shikoku side, has been underway since 1986.



Aerial view of the Kojima-Sakaide Route seen from the Honshu side (photo taken in June, 1987)

3.4 Hereunder is a summary of the whole project.

Items	Kobe-Naruto Route	Kojima-Sakaide Route	Onomichi-Imabari Route
Highway (km)	81.1	37.3	60.1
Classification	Expressway	Expressway	Expressway
Design speed (km/h)	100	100	100
Number of lanes	6	4	4
Railway (km)	89.8	32.4	—
Classification	Shinkansen *	Ordinary **	—
Number of tracks	2	2	—
Total construction costs (1982 estimates) (¥ billions)	1,566	1,056	534

*: Installation of the railway was abandoned in 1985.
**: Shinkansen rails can be installed in future.

3.5 The overall specifications of the bridges involved are as tabled hereunder.

Route Bridge	Type	Overall length (m)	Mid-span length (m)	Height of Suspension Towers (m)	NHHWL Clearance (m)
Kobe-Naruto					
Akashi Strait	Suspension	3,910	1,990	333	65
*Naruto Ohashi	Suspension	1,629	876	144	41
*Kojima-Sakaide					
Shimotsui Seto	Suspension	1,400	940	149	31
Hitsuishi	Cable stay	790	420	152	32
Iwakuro	Cable stay	790	420	161	41
Yoshima	Truss	585	245		45
N. Bisan Seto	Suspension	1,538	990	184	65
S. Bisan Seto	Suspension	1,648	1,100	194	65
Onomichi-Imabari					
Onomichi	Cable stay	380	210	87	45
*Innoshima	Suspension	1,270	770	145	50
Ikuchi	Cable stay	790	490	120	26
Tatara	Suspension	1,490	890	147	45
*Ohmishima	Arch	328	297		26
*Hakata	Box girder	325	145		26
Oshima	Suspension	840	560	97	26
Kurushima 1	Suspension	1,324	860	161	64
Kurushima 2	Suspension	770	550	129	65
Kurushima 3	Suspension	1,520	1,000	180	65

*: Operable

4. Economic and Social Impacts

4.1 The impact analysis report examines the time savings made possible for journeys between any two major cities directly facing each other across the Seto Inland Sea. Road journeys will take one-third to two-thirds less time than now and rail travel will be reduced by as much as three-quarters.

The same report predicts that the economic impact will be significant as well. Some tentative projections are shown below.

Region	1982 Production Revenues (100 mil)	1 route 4 bridges Opened (1990) Annual increase (100 mil)	Increase per head (1,000)	Akashi-Naruto Commissioned (2005) Annual Increase (100 mil)	Increase per head (1,000)
Kinki	368,260	500	2.4	4,340	19.3
Chugoku	128,830	780	10.8	70	0.8
Shikoku	61,280	1,770	40.2	3,070	67.6
Total	558,370	3,140	9.3	7,480	21.1

The demographic situation will also be affected. The report predicts as follows:

Region	Figures in 1985 (1,000)	Increase by 1990 (1,000)	Increase by 2005 (1,000)
Kinki	20,080	24	118
Chugoku	7,749	40	2
Shikoku	4,228	78	83
Total	32,057	142	203

The same report forecasts that maritime accidents will be greatly reduced, as ferries and other forms of maritime commuter traffic will be reduced or withdrawn entirely. The amenities for the islanders, the report continues, will be greatly improved as well, particularly as regards schools and commuting, firefighting and medical facilities.

4.2 Environmental Impacts

As almost the whole of the Seto Inland Sea area has been designated as a national park, and more importantly the area is abundant in places preserved for their historical and cultural value, the construction of the three bridge systems aroused considerable controversy. Some aspects were in serious conflict with the Law for National Parks, the Law for Preservation of the Natural Environment, the Law for the Preservation of Historical Arts and Artefacts and other legislation.

Under the initiative of the Environment Agency, a series of environmental studies was conducted. An agreement was exchanged with the Authority and the local autonomous bodies after two years of discussions and negotiations, including a dozen public hearings. The major items covered were: 1)preservation of the scenery (to be attained by designing the bridge structure so as to match the scenery as much as possible in terms of both shape and color); 2) prevention of water discoloration during the construction work; and 3) restoration of the natural surroundings after the completion of the construction work.

4.3 Impact on local industries

As previously mentioned, the area has had a significant population for centuries, and maritime-oriented businesses have played a major part in the life of the region. The Seto Inland Sea has been the literal birthplace of numerous coasters, and tens of small-scale carriers operate more than a hundred shipping routes accommodating Honshu and Shikoku and other numerous small islands which dot the Sea. Symbolic of the change that lies ahead is the termination of the 75-year-old ferry service between Uno and Takamatsu, operated by the Japan Railways (JR).

4.4 The table hereunder shows the average number of passengers and the volume of cargo carried daily between Shikoku and Honshu via different modes of transport.

Passengers Traffic	1975 Number of Passengers (1000)	Share %	1980 Number of Passengers (1000)	Share %	1985 Number of Passengers (1000)	Share %
JNR Ferry*	19.2	24.8	14.7	18.5	11.3	14.8
Car ferries	12.6	16.2	20.0	25.2	1.7	24.5
Passenger ships	38.6	49.8	34.0	42.8	33.8	44.4
Air	7.1	9.2	10.7	13.5	12.4	16.3
Total	77.5	100.0	79.4	100.0	76.2	100.0

*: Train-Ferry-Train connection

Cargo Traffic	1975 Cargo Volume (1000 t)	Share %	1980 Cargo Volume (1000 t)	Share %	1985 Cargo Volume (1000 t)	Share %
JNR Ferry*	7.8	3.5	5.5	2.1	2.0	0.8
On chassis	34.8	15.7	62.0	23.7	68.1	28.4
Coasters	179.1	80.8	194.5	74.2	169.7	70.8
Total	221.6	100.0	262.0	100.0	239.8	100.0

*: Cargo wagons loaded on ferries.

4.5 The emergence of the bridge systems has been a direct threat to many businesses operating in their vicinities. It has been estimated, for example, that when the bridge system at the Akashi-Naruto Route is completed, the ferry services will lose as much as 82.3% of their passenger- and car-ferrying business to the bridge.

4.6 In some localities, however, the damage to the shipping industry can be considered devastating. According to a report of the Authority in November 1979, the impact on coaster operators alone was assessed as tabled hereunder.

No. of Operators	Routes directly affected	No. of Ships Operated	Number of Employees			
			Administrative	Crew	Land staff	Total
63	95	256	109	4,754	1,490	6,353

Ship Type	Number
Ferry boat	256
Passenger ship	35
Hydrofoil	25
Speed boat	36
Passenger/Freighter	1
Tug	1

From an early stage, how to settle trade problems was one of the key issues. In 1975, the first impact report was prepared by the special council on problems related to passenger services which had been established in 1974. Also, in 1983 the council for employment opportunities related to the construction of the bridges announced guidelines for the harbor transport business and its employees.

The above councils formulated some guidelines containing a number of points in common, including calls for the following measures to be enacted by the central government as well as the local governments concerned: 1) rationalization (including termination) of ferry service routes or harbor transport businesses; 2) amalgamation of such industries; 3) financial assistance towards ship and equipment costs when such operators were to amalgamate; 4) financial aid when such operators were to change to other types of business; 5) financial and vocational rehabilitation services for those individuals who had to change their occupations.

Over the years since then, a council for securing employment has been established in each prefectural government: Osaka, Hyogo, Tokushima and Kochi (for the Akashi-Naruto Route), Okayama and Kagawa (for the Kojima-Sakaide Route), and Hiroshima and Ehime (for the Onomichi-Imabari Route).

5. Technical Features

5.1 Overall design criteria

Taking the case of the soon-to-be-commissioned South Bisan Seto Ohashi (Great Seto Bridge) (a suspension bridge of 1,648 m. comprising two end portions each of 274 m., and a 1,100 m. span mid-portion and 194 m.-high suspension pillars), the design criteria were: 1) wind velocity: 70 m/sec (the highest recorded in the region being 53 m/sec); 2) tremor resistance: 180 gal (or magnitude 8, which is the value estimated to occur once every 100 to 150 years in the area and at points up to 100 km. away in the Pacific Ocean).

5.2 Deflection of suspended portion

Due to the weight of vehicles or other types of loads, the suspended portion of the bridge deflects. The bridge is designed to deflect as much as nearly five meters when the maximum load is applied.

The need for trains to run over the bridge causes added difficulties. Two trains, each running at 100 km/h., may well cross at the middle of the bridge. Both trains might have to apply emergency brakes and halt at that point. The standard length of the trains is 370 m. for the conventional type and 320 m. for Shinkansen trains respectively.

The movement of the trains exerts varying kinds of pressure on the rails and wire-suspended bridge structure. As a result of this, at the point where the suspended rail section meets the fixed rail section, the two sections become out of alignment by as much as 1 m., which causes the rails to bend. The guiding wheels of train have to negotiate the curved rails. A special mechanism has been devised to enable trains to pass the point without reducing their speed.

5.3 Metal fatigue

The utmost care is given to monitoring, detecting and dealing with fatigue in the structure. About 60 scheduled trains are expected to cross the bridge every day, on top of an estimated daily average of 25,300 road vehicles. All the data on each component will be stored in a computer for constant monitoring. A major inspection with a supersonic wave device is due to be conducted in 10 years' time.

5.4 Rusting

This is another major concern. When the total surface of the steel structure of the six bridges is converted to linear dimensions, it is said that the whole surface amounts to as much as 2.5 million square meters. To be resistant to salty air and spray, the entire steel structure is painted six times with a specially prepared anti-fouling paint. The maintenance plan provides that 20% of the surface will be repainted every 8 years so that the whole structure will undergo repainting once every 40 years. The anchoring portion of the 1 m. diameter main suspension cable will be protected by keeping the humidity at 70% throughout the year. The cable is composed of 234 strands of 127 wires each of 5.18mm. in diameter, and all 29,718 wires are galvanized.

5.5 Protective measures against ship collision

As the strait is one of the busiest channels in the Seto Inland Sea, more than 1,500 ships of varied types pass the strait under the bridge every day.

On top of providing markers in the channel and installing a lighting system on the structure, for protection each pillar exposed to the main channel is surrounded by buoys composed of 10 iron pipes 4 m. in diameter and 10 m. long, and further circled by 12 rubber buoys 4.5 m. in diameter and 10 m. long. Moreover, any one of the un-protected pillars is still capable of stopping a 10,000-ton vessel, the report says.

6. Financial Prospects

6.1 Basically, the project is being funded through capital investment and funding by the Central Government and the local autonomous governments in the prefectures concerned,

as well as through government and private sector loans. Nonetheless, a major portion is derived from central government-guaranteed bonds issued by the Authority, and subscribed to by local autonomous bodies and private sector organizations.

6.2 The Bridge Authority is in a position to recover the total cost of the construction and maintenance of the facilities, as well as the costs of servicing the debt, by and through the revenues to be derived from the use of the facilities over a period of about 30 years. Looking at the currently operated facilities and the newly operable Kojima-Sakaide Route (1 route, 4 bridges), the report says that so far the overall prospects seem sound in view of the smooth development of traffic volumes.

6.3 Charging systems

The National Council for Roads, in its "Recommendations on the Cost Recovery and Charging Systems of the Honshu-Shikoku Road Network", laid down in 1978 the cost recovery term of 30 years as well as guidelines for charging procedures. The major principles are: 1) the pooling of revenues; and 2) the guideline that the users costs concerning a particular facility shall not exceed the commonly acceptable limits of the benefits to be generated by the facility.

In view of these guidelines, a charging system based on distance is being directly employed for the Kojima-Sakaide Route. As to the other routes, where the road system has yet to be completed, the level of charges has been decided in relation to the charging levels of existing ferry services as a temporary measure, until the whole route is completed.

6.4 Assessment of traffic volume

Based upon the actual situation prevailing in 1980 (4.4), the volume and the change in traffic patterns between Honshu and Shikoku in 1990 have been assessed as tabled hereunder.

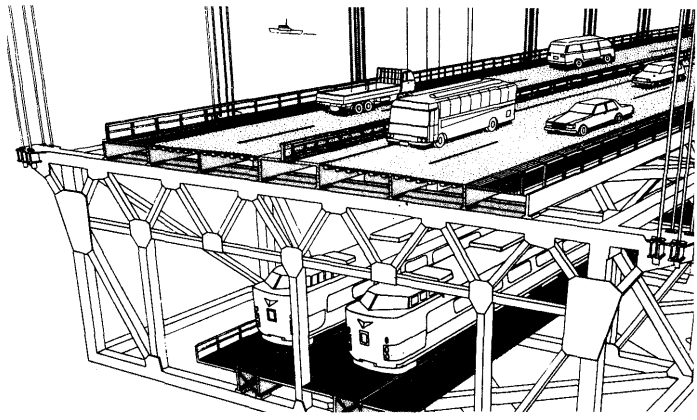
Passenger Traffic	1980		1990		
	No. of Passengers (1000)	Share %	Prospective No. of Passengers (1000)	Share %	80/90 Rate
JNR Ferries*	14.7	18.5	20.3	17.3	1.4
Cars	20.0	25.2	50.6	43.1	2.5
(by ferry)	(20.0)	(25.2)	(17.4)	(14.8)	0.9
(by bridge)			(33.2)	(28.3)	
Passenger ships	34.0	42.8	32.7	27.8	1.0
Air	10.7	13.5	13.9	11.8	1.3
Total	79.4	100.0	117.5	100.0	1.5

*: Train-Ferry-Train connection

Cargo Traffic	1980		1990		
	Cargo Volume (1000 t)	Share %	Prospective Cargo Volume (1000 t)	Share %	80/90 Rate
JNR Ferries*	5.5	2.1	7.3	1.9	1.3
On chassis	62.0	23.7	102.8	27.0	1.7
(by ferry)	(62.0)	(23.7)	(49.0)	(12.9)	0.8
(by bridge)			(53.8)	(14.1)	
Coasters	194.5	74.2	271.3	71.1	1.4
Total	262.0	100.0	381.4	100.	1.50

*: Wagons are loaded on the ferries.

Thus, the daily volume of traffic at each of the operable facilities has been assessed as follows:



Route	Interchange Sector	When opened Cars/day	In 1990 Cars/day
Kobe-Naruto	Seitan/Okejima	7,200	
	Tsuna/Naruto		9,700
Kojima-Sakaide	(There are 5 sectors)	25,300	28,600
Onomichi-Imabari	Mukoujima/Innoshima	4,900	6,200
	Ohmishima/Hakata	400	1,800
	Hakata/Oshima	2,200	2,300

A trial calculation predicts, according to the report, that the total costs (1.3 trillion yen in 1982 terms) might be recovered over the 30-year operating period if a debt service rate of 6% is applied.

6.5 To give some idea of the level of toll rates for cars, the tariff list for the Kojima - Sakaide Route is reproduced below:

(ORDINARY)					(Yen/Crossing)
6,300	6,200	3,200	800	450	Hayashima
6,000	5,900	2,900	500	Mizusihma	700
5,600	5,500	2,500	Kojima	800	1,200
3,100	3,00	Yoshima	3,800	4,400	4,800
/	Sakaide N.	4,500	8,300	8,900	9,300
Sakaide	/	4,700	8,400	9,000	9,500
					(HEAVY: I)
(HEAVY: II)					(Yen/Crossing)
17,900	17,700	9,000	2,200	1,300	Hayashima
17,200	17,000	8,300	1,400	Mizushima	350
16,400	16,200	7,400	Kojima	350	600
9,100	8,900	Yoshima	1,800	2,100	2,300
/	Sakaide N.	2,100	3,900	4,200	4,400
Sakaide	/	2,200	4,000	4,200	4,500
					(LIGHT)

Ref: Classification of vehicles

Items	Body from	Weight to	Cargo Passenger from	Weight Capacity to	Axis
ORDINARY					
Passenger cars (regular/compact)					
Trucks		8 t		5 t	≦3
Mini Buses		8 t	11 p	29 p	
Tow + Towed (LIGHT)					≦3
HEAVY: I					
Trucks	8 t		5 t		≦3
Trucks		20 t			4
Tow + Towed					3
Scheduled buses					
HEAVY: II					
Trucks					≧4
Unscheduled buses					
Tow + Towed					≧4
LIGHT					
Passenger cars (less than 550 cc. engine volume)					
Motor bikes (more than 250 cc. engine volume)					

Special discounts are made for: 1) vehicles belonging to inhabitants of the localities served; 2) frequent use; 3)

scheduled bus services; 4) round trips; and 5) vehicles exclusively used by disabled people.

7. Conclusion

The report emphasizes that the bridge system will surely serve the establishment of the long-waited "constantly available and always reliable" means of transportion.

It conclusively highlights the prospects for: 1) on improvement in the amenities provided for and the standard of living enjoyed by the people; 2) the rationalization of existing distribution systems; 3) enhancement of the social and economic development of the region; and 4) the promotion and creation of resources rich in their potential to attract tourism.

Outlook '88

The Port of New York and New Jersey Responds Creatively to Volatile Environment

By James J. Kirk
Director, Port Department
The Port Authority of New York and New Jersey

(Reprinted from Via Port of New York-New Jersey)

Ports around the country are responding in creative ways to volatile conditions in the maritime industry. With imports declining due to a weaker dollar, ports are now focusing increased energies on the export side of their operations. In addition, many ports are lobbying against protectionist provisions in the omnibus trade bills Congress that would lead to significant declines in imports, and possibly in exports, if other countries decide to retaliate. Ports are also preparing for further rationalization and other operational changes by steamship companies as they continue to take advantage of opportunities created by the 1984 Shipping Act, and to reduce their costs in order to combat the combination of overcapacity and low rates now plaguing the industry.

The Port of New York and New Jersey is building on its strengths during this turbulent period. Despite intensive competition, the New York-New Jersey Port handles more steamship lines and more general and containerized cargo than any other port in the United States. In terms of value, the port handles more than one-sixth of the U.S. total oceanborne foreign trade.

In order to maintain its preeminence, the port has set itself on an intensive course of action. Port management believes that more auspicious days lie ahead, and that the port must be ready to make the most of them. We are responding to technological changes in the industry, such as the increased computerization of data, the need for channel and terminal accommodations for larger ships, and the movement from breakbulk to palletization of containerization for handling certain commodities. We are also focusing energies on potential growth commodities, such as automobiles, and on meeting the differing needs of tenants.

Central to the port's efforts to retain its number one ranking is the five-year, half billion dollar capital improvement program currently underway. 1988 will usher in a new phase for the New York-New Jersey Port. While 1986 and 1987 were years dedicated primarily to the planning and design of various projects, in 1988, many of the major projects that have been under development will come to fruition.

Intermodal improvements are a key part of the port's capital program. A vast network of expressways and railway connections makes it a primary distribution center for consumer goods and industrial supplies, and the port is wording closely with its tenants and with the trucking and rail industries to make these connections even more efficient. Among the projects planned are the renovation of the Portside railyard which serves the Port Newark and Elizabeth marine terminals and improvements that will facilitate the movement of doublestack railcars at those facilities.

The $31 million Port Authority Auto Marine Terminal presently under construction in Jersey City and Bayonne will become operational in 1988. This facility for the loading, unloading and preparation of imported automobiles is urgently needed to meet the demand for auto processing space. The New York-New Jersey Port is presently the number one auto import port in the country, with the number of imports expected to grow to over 800,000 vehicles by 1955.

1988 will also witness the opening of a gypsum wallboard manufacturing plant, marking the return after many years of a major industry to the New York-New Jersey metropolitan area. In addition, work will continue on the deepening and widening of the Kill Van Kull and Newark Bay channels, and the improvement of three major container terminals by the removal of buildings near berths, the installation of new crane rails, and the modification of entry complexes. We will also unveil three new buildings at the Elizabeth-Port Authority Marine Terminal, each having eight 5,500-square-foot office/multi-use modules designed to accommodate the kinds of small port-related businesses that will enrich our marine cargo operations base. Substantial improvements will also be achieved in 1988 by rehabilitating

and upgrading to modern standards older infrastructure and buildings at our New York and New Jersey facilities.

Another facility, the Port Authority Fishport in Brooklyn, opened in December 1987 and will go into full swing in 1988. Construction of major buildings will completed during the year. The $30 million Fishport, is a modern center for the landing, processing and distribution of fish and seafood products.

Several new programs and services will commence during 1988. The port's new Automated Cargo Expediting System (ACES) will become operational, helping to reduce costs and increase service efficiency for port users by electronically transmitting cargo status information among steamship companies, custom house brokers, and terminal operators. The port's public awareness program will also be put into full gear with widespread airing of our "Did You Know?" audiovisual program among various groups in the port region, including schools, chambers of commerce, local officials, legislators, community organizations and environmental groups.

The New York-New Jersey Port is also taking further steps to increase its exports. One mechanism to achieve this is The Port Authority of New York and New Jersey's trading company, XPORT, which is designed to create jobs and promote port commerce by introducing small and medium-sized firms in the region to exporting. Through XPORT the port is actively working to market and sell products with high international appeal. Last, but by no means least, the Port Authority is forging a strong, cooperative alliance with shipping management and labor to reduce the cost of doing business in the New York-New Jersey Port. This effort is expected to develop new business and encourage the expansion of existing operations in the port.

1988 will be a *YEAR OF ACHIEVEMENTS* for the Port of New York and New Jersey — a year in which many of the port's plans will be translated into operational realities. We believe strongly that the future holds great opportunities and that we must continue to improve our facilities and services if people of the port region are to continue to realize the over 200,000 jobs and $14 billion in economic activity that the maritime industry generates. The volatile times facing the industry today challenge the port to be prudently optimistic, and well prepared. Here in the Port of New York and New Jersey, we are striving to bring these qualities to our efforts to maintain our port's preeminence among the nation's port.

SE Asia — A Region Of Opportunity for US

By Maggie Brown

(Reprinted from TRADELINES, Port of Seattle)

Southeast Asia represents a region of opportunity for the United States, in general, and the State of Washington, in particular, says Philippines Ambassador to the United States Emmanuel Pelaez. "We believe the Pacific Rim is going to the venue of trade and development in the future. And our region is developing the fastest. Seattle, and the State of Washington, will continue to play a leading role in development of Pacific Asian countries because Seattle is the closest port on the West Coast of the United States."

Pelaez, as well as ambassadors to the United States from Brunei, Indonesia, Malaysia, Singapore and Thailand's deputy chief of mission, recently were in Seattle for a three-day stop that included visits with business and government leaders, several speeches on the future of U.S.-ASEAN relations, and tours of The Boeing Co. and the Port of Seattle.

The diplomats represented the six countries which comprise the Association of Southeast Asian Nations or ASEAN, which was established 21 years ago to accelerate economic growth, social progress and cultural development in the region, promote regional peace and stability, and foster active collaboration and mutual assistance on matters of common interest. Pelaez is chairman of the group.

In an interview and during a speech at a dinner sponsored by the World Affairs Council and the Washington Council on International Trade, Pelaez pointed out, "The six member-countries of ASEAN straddle vital air and sea lanes in Southeast Asia and border the Pacific Rim. They have a combined population of nearly 300 million people or 6 percent of the world's population, a total agricultural land area of 295.5 million hectares, and a total GNP of almost $200 billion.

"The individual ASEAN economies are rich in natural resources and strategic materials — petroleum, natural gas, timber, tin, nickel, copper, agriculture — rice, rubber, sugar, palm oil and coffee, and produce an increasing number of manufactured products — textiles and graments, chemicals, electronics, food processing and wood products. More than 80 percent of the world's rubber and palm oil and 60 percent of its copper, tin and copra originate in ASEAN. ASEAN possesses a large skilled human resource base competent in English and willing to work at competitive wage rates."

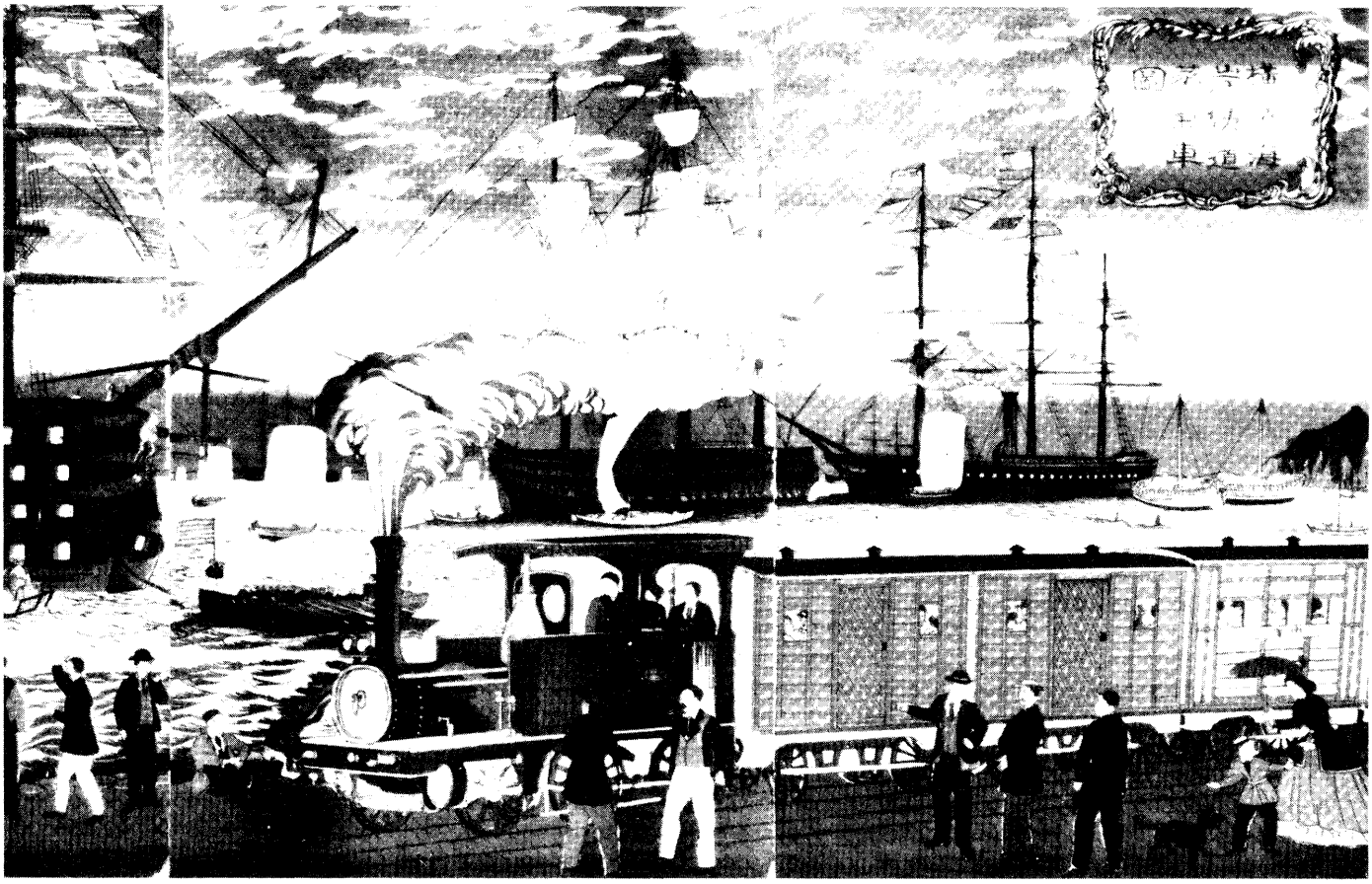
All this combined should make Southeast Asia an attractive place to do business, Pelaez says. "Washington businesses would find a big welcome waiting for them in ASEAN nations. We have structured our economies so as to move them closer to the free enterprise system.

"In fact, enhancing economic relationships with other countries and regions is a major goal of ASEAN. We believe U.S. investors must gain a greater awareness of the business opportunities in our region, and overcome their reluctance to invest in culturally unfamiliar areas. The ASEAN-U.S. Business Council is taking a major part in promoting ASEAN-U.S. private sector activities, and the ASEAN governments support their efforts in this regard."

Pelaez also urged Washington politicians and citizens to fight trade protectionist measures in Congress. "I wish to stress that we recognize the urgent need for the United States to redress its budget and trade deficits; but we believe protectionism is not the solution. It only postpones and makes more costly the inevitable adjustment process from sunset to sunrise industries necessitated by dynamic comparative advantage and competition.

"In the final analysis, we must rely on the wisdom of the American people in influencing their elected officials. Particularly, we hope the people and business community of the State of Washington, who have historically espoused a free and liberal trading regime, will continue to support free trade and thereby enable the United States to continue its leadership role of the free world economy. The great Port of Seattle attests to the importance of free and growing trade to the people of the State of Washington and the Pacific Northwest."

PORT OF YOKOHAMA



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Coverage:
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* Capacities and limitations of ship lifting systems
* Efficient use of cargo handling gears and aids
* Cargo handling methods for different types of break-bulk cargo
* Resource allocation systems and procedures
* Documentation procedures for break-bulk cargo handling operations
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For Whom:
Port officers responsible for management and supervision of break-bulk cargo handling operations.
Frequency: Once a year
Duration: 2 weeks
Fee:
S$1,300 per participant
Date:
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Coverage:
* Concepts of containerisation
* Container handling methods
* Components of a modern container terminal
* Container handling systems
* Ship stowage planning
* Container ship operations
* Quay transfer operations
* Container yard storage management & operations
* Container receipt/delivery operations
* Container freight stations operations
* Equipment and manpower allocation
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For Whom:
Senior and middle-management officers who are involved in the management of container operations.
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* Port tariff
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For Whom:
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Coverage:
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* Benefits of QC activities
* QC problem solving tools
* Case studies of selected projects
* QC presentations
* Rewards/recognition system for QC

For Whom:
Senior and middle-management port officers.
Frequency: Once a year
Duration: 2 weeks
Fee:
S$1,600 per participant
Date:
20 Jun - 01 Jul 88; 19 Jun - 30 Jun 89

For further information, please write to:
TRAINING MANAGER
TRAINING DEPARTMENT, PORT OF SINGAPORE AUTHORITY
7, KEPPEL ROAD, #02-28, TANJONG PAGAR COMPLEX,
SINGAPORE 0208,
REPUBLIC OF SINGAPORE

IIPM Training Programmes for '88-'89

The Indian Ports Association (IPA), a Society set up by the Major Ports of India for coordinating activities among themselves and the Government of India, established the Indian Institute of Port Management (IIPM) in 1977 (converting the then Institute of Port Management of the Calcutta Port Trust functioning since 1965). This decision was taken by the IPA, in the light of the felt needs for an Institution on national level for imparting managerial inputs to the growing port sector which was planned to play an increasingly important role in the country's eco-

nomic development.

A national institution, it was felt, will be more meaningful for training and development activities specific to the Port Sector in India. It was also foreseen that the IIPM could eventually grow into an International Institution with regional bias.

Based on the goals set by the parent Institution, the IIPM concluded that the activities in the coming years of the Institute should be concentrated in the following three areas of the Maritime Sector:

A: Training of Managers, Supervisors & Workers;

B: Research relating to planning and management with a view to increasing efficiency and productivity in Ports;

C: Consultancy in the areas of planning, operations, organisation and management of Indian Ports.

Calendar of Programmes

1. Management Control Systems for Ports (two weeks): 18-29 April, 1988
2. Manpower Planning for Ports (two weeks): 9-20 May, 1988
3. Port and Its Users (one week): 30 May — 3 June, 1988
4. Course Developers Workshop (two weeks): 6 — 17 June, 1988
5. Computers in Port Management (two weeks): 20 June — 1 July, 1988
6. Dredging (two weeks): 4-15 July, 1988
7. Supervisory Development (two weeks): 18-29 July, 1988
8. Port and Harbour Engineering (two weeks): 25 July — 5 August, 1988
9. Port Planning (four weeks): 8 August — 2 September, 1988
10. Computers in Port Management (two weeks): 12-23 September, 1988
11. Symposium on Commercial Use of Port Lands (two Days): 10-11 November, 1988
12. Estate Management (two weeks): 14-25 November, 1988
13. Personnel Management (two weeks): 28 November — 9 December, 1988
14. Materials Management (two weeks): 5-16 December, 1988
15. Information as Management Resource (two days): 8-9 December, 1988
16. Management of Port Crafts (two weeks): 12-23 December, 1988
17. Quantitative Methods for Port Management (two weeks): 9-20 January, 1989
18. Seminar on Marketing for Ports in Developing Countries (two days): 23-24 January, 1989
19. Tanker Terminal Operations and Management (two weeks): 6-17 February, 1989
20. Computers in Port Management (two weeks): 13-24 February, 1989
21. Personnel Management (two weeks): 20 February - 3 March, 1989
22. Seminar on Industrial Relations at Major Ports (two days): 9-10 March, 1989
23. Estate Management (two weeks): 6-17 March, 1989
24. Materials Management (two weeks): 20-31 March, 1989

For further information, please write to:
Indian Institute of Port Management
40, CIRCULAR GARDEN REACH ROAD
CALCUTTA-700 043

Hamburg Symposium On Liner Shipping

Hamburg from 1st to 3rd of June this year will be the place where the five international maritime institutes of Brgen, Bremen, Gdansk, Tokyo and Hamburg are going to organize their fourth International Symposium on Liner Shipping. Previous events in this series have been fully booked with participants from up to 50 countries. The 1988 event again is expected to deal with the most actual problems of liner markets and international liner policy matters and so will be most interesting for liner industry, shippers, agents and forwarders as well as for governments and international institutions.

The chair in the symposium will be taken by Dr. J.H. de la Trobe, President of the German Shipowners Association and chairman of Hamburg-Sud/ Columbus Line, and by Mr. J. Kruse, chairman of CENSA and chairman of Hapag-Lloyd AG, while Dr. J. Warnke, Minister of Transport of the Federal Republic of Garmeny, is patronizing the event.

Among the topics to be dealt with one may mention that again a U.S. Shipping Panel with prominent speakers from the U.S. Government as well as from the industry is to be organised, that furthermore Mr. Kornilov, newly appointed head of Foreign Department in the Soviet Shipping Ministry will explain the impact of "Perestroiyka" in Soviet shipping.

Part of the programme will have to deal with international liner policy with respect to the Code Review Conference scheduled by UNCTAD for later this year. The Hamburg symposium may serve as a stage for presentation of ideas and discussions in this respect. The selection of representative speakers will guarantee that positions of important parties involved, a.o. shippers, liner industry, developing countries, UNCTAD and EEC, will be explained.

Another number of presentations will deal with analyzing the market situation and future developments or will cover micro- economic aspects of operation resp. investment.

Another highlight is expected from ESC formulating its request to the shipowners address. The European Shippers' Councils taking an active role in the symposium on occasion of the event will have their 25th aniversary.

Participants in the symposium will have the opportunity also to pay a visit to the International Transport Exhibitiona (June 1-12). Programmes and Registration forms for the symposium are available from Dr. H.L. Berth, c/o HHLA, D-2000 Hamburg 11, Bei St. Annen 1.

Material on Container Equipment Available

The World Bank and UNCTAD recently commissioned Portrain U.K. Ltd. to carry out an investigation into the operating and maintenance features of container handling equipment. The material which has been produced will be used primarily by World Bank and UNCTAD staff in advising governments and port authorities of developing countries on the development of container handling facilities. It will also prove valuable for policy makers and port management involved in the preparation and appraisal of port development projects and the selection of container handling equipment.

The material comprises a technical

paper of some 90 pages together with a 2-hour video and covers all major types of equipment used on dedicated container terminals, namely, quayside cranes, straddle carriers, rail-mounted and rubber-tyred gantry cranes, tractor-trailer units and "front-end loaders." Both the written and audio-visual materials are organised as a sequence of separate sections, each dealing with one type of equipment. Within each section the information is organized into seven sub-sections as follows:

- an introductory description of each major type of container-handling equipment and its application, origin and development;
- the equipment specification;
- the operating features of the equipment including manning and deployment;
- equipment performance, including estimates of asset life and annual operating costs;
- maintenance facilities and costs, component reliability and required engineering manpower skills;
- features to look out for in procuring that type of equipment, including safety considerations and required driver skills;
- a review of future equipment trends and developments.

The final chapter of the text reviews the major features of each type of equipment and system and offers a series of tables and comments to assist in evaluating equipment selection.

These materials, available only in English, may be obtained from UNCTAD at a cost of $200 for organizations in developed countries and $100 for those in developing countries. Additional copies of the text are available at $25 each. Applications should be made to:

Director, Shipping Division, UNCTAD
Palais des Nations
CH-1211 GENEVA 10, Switzerland

Catalogue of Studies in the Field of Transport 1987 (Extracts)

Department of International Economic and Social Affairs
United Nations

Multimodal, Maritime Shipping and Ports

Development and recommendations of model rules for multimodal container tariffs: elements of model rules for multimodal container tariffs

TD/B/C.4/AC.6/2
14 October 1985. 40 p.
Distribution: General
UNCTAD, Geneva, Switzerland

The report has been prepared by UNCTAD at the request of the Committee on Shipping for discussions by the Group of Experts on Model Rules for Multimodal Container Tariffs. Among other things, it takes into account container carriage on trade routes to and from developing countries. It covers various degrees of containerization and provides frameworks both for relatively simple and detailed model rules for multimodal container tariffs that are consistent with principles previously recommended by the Group of Experts.

Multimodal transport and technological developments. National policy measures concerning multimodal transport operations and containerization

TD/B/C.4/278
12 September 1984. 18 p., annexes
Distribution: general
UNCTAD, Geneva, Switzerland

The note provides information on policy measures adopted in different countries in relation to institutional aspects of international multimodal transport operations and containerization, but not on technical aspects of containerization. Chapter I gives a summary of submission by 49 States of which 38 are from developing countries. Chapter II contains an analysis of national regulations or legislation; in chapter III, some observations on the adoption and harmonization of national measures are made, together with suggestions for action by the Committee on Shipping.

Distribution: general multimodal transport and containerization. Review of developments in standardization of containers and related activities

TD/B/C.4/270
11 September 1984. 9 p., annexes
UNCTAD, Geneva, Switzerland

The note, prepared by the UNCTAD secretariat with the collaboration of IMCO and the International Organization for Standardization (ISO) reports on the general development in container standards in relation to safety, optimum economic use of containers and the need for intermodal containers and for larger containers and describes recent works of ISO in the area of "packaging" and "pallets" for unit load method of material handling. It also reports on a set of amendments to the international convention for safe container introduced by IMO and the entry into force of the provisions of the convention.

Multimodal transport and technological developments: adaptation to multimodal transport and containerization in developing countries

TD/B/C.4/274
5 September 1984. 18 p.
UNCTAD, Geneva, Switzerland

The report, prepared by the UNCTAD secretariat, is based on the results of case studies on the situation of containerization and multimodal transport in Senegal, Zambia, the United Republic of Tanzania, China, Bolivia and Peru. The report summarizes the major findings of the case studies by concentrating on problems commonly encountered and identifies possible areas of action at the global, regional or national levels. Chapter I discusses containerization and the level of container operation in those countries and the administrative measures they had to take, as well as the technological change they had to make in their ports and terminals, in order to adapt to containerization. Chapter II discusses the material problems of adaptation of multimodal transport of containers, including the inland movement of containers, container depots, the customs treatment of multimodal containerization cargoes and the particular problems of land-locked countries.

Co-operation between ports

TD/B/C.4/AC.7/4
11 December 1985. 10 p., annexes
Distribution: general
UNCTAD, Geneva, Switzerland

The report has been prepared for discussion by the *Ad hoc* Intergovernmental Group of Experts. It identifies and analyses different areas of possible North-South as well as South-South

co-operation among ports, namely, (a) development of transshipment ports which, because of the technological developments that have taken place in recent years, have created a situation where international shipping requires *inter alia,* specialized cargo handling equipment, and where increased ship sizes can significantly reduce the overall costs of marine trade; (b) harmonization of port statistics which, among other things, would allow government planners and port authorities to evaluate port capacities and performance and would permit the development of appropriate facilities to serve a given region; (c) harmonization and simplification of port tariffs, particularly at the regional level; (d) joint dredging and marine salvage operations which would reduce the cost of both capital and maintenance dredging and salvage operations; (e) technological expertise exchange in all fields of port management and operation that would be particularly beneficial to small port authorities which have limited staff and expertise; (f) training — where there exists considerable scope for collaboration between ports, they could share the cost of joint on-the-job training, formal training and seminars that would be developed and adapted to the regional environment and needs.

Development and improvement of ports; transshipment ports

TD/B/C.4/293

30 December 1985. 16 p., annexes

Distribution: general

UNCTAD, Geneva, Switzerland

The report studies the implications for port development of recent trends in transshipment which are becoming of increased importance in container trades. It presents a theoretical review of transshipment and the scope for agreements from the point of view of port development. Because of the significant reduction in costs of carrying containers in very large vessels and the relative ease with which containers can be transshipped in well-equipped terminals, the attention to feeder and transshipment services in the report concentrates on container traffic.

Development and improvement of ports: port financing

TD/B/C.4/291

14 November 1985. 13 p., 5 annexes, 6 tables, 1 graph

Distribution: General

UNCTAD, Geneva, Switzerland

The report, prepared on the basis of information provided by Governments and port authorities and prepared by international financial institutions, contains an analysis of resources necessary for the development of ports in developing countries. It also reviews the availability and conditions of financial resources and other arrangements for these countries for the development of their ports for the periods 1978-1982 and 1983-1987.

Development and improvement of ports. Port congestion surcharges: underlying principles

TD/B/C.4/279

October 1984. 17 p., annexes

Distribution: general

UNCTAD, Geneva, Switzerland

The paper presents the consequences of port congestion in foreign trade and economic development and describes and analyses the principles guiding the application of port congestion charges applied in liner shipping as an incentive to the avoidance of congestion. It contains recommendations to national Governments, ship operators, ship owners and port authorities for the levy of port congestion surcharges with the principal objective of deterring recrudescence of congestion.

Development and improvement of ports: port data bank: a pilot study

TD/B/C.4/272

20 September 1984. 8 p., 2 annexes

UNCTAD, Geneva, Switzerland

The development of containerization and specialized handling techniques is reaching developing countries. Although for many of them the investment costs of container terminals are too high and funds could perhaps be better spent on other urgent development programmes, developing countries have been forced to gradually adapt to the new technology. The report analyses replies to questionnaires that were sent by UNCTAD to 50 terminal operating companies in developing countries requesting information on equipment and operation of container terminals such as throughput, area requirement, equipment, financing and tariffs, as well as computer use. It shows development trends in the field of containerization in developing countries and points out how the information provided in the study may be useful to government agencies and port authorities considering the development of specialized facilities for container handling.

Development and improvement of ports. Development of bulk terminals

TD/B/C.4/292

30 December 1985. 35 p.

Distribution: general

UNCTAD, Geneva, Switzerland

The report was prepared by the UNCTAD secretariat in response to Conference resolution 144 (VI). It is an in-depth study of the development, physical characteristics, management and operation of bulk terminals. It examines various port facilities and their equipment to handle different varieties of bulk cargo such as crude oil, iron ore, coal, grain, bauxite, rock-phosphate etc. The report is divided into four chapters. Chapter I describes the need and the development of bulk terminals; chapter II presents the physical characteristics of various types of bulk terminals; chapter III discusses the utilization, management and operation of bulk terminals and chapter IV gives the conclusion and certain recommendations for the optimum development and operation of bulk terminals.

Review of activities in the field of shipping, ports and inland waterways: ports and port management — the port management informa- tion system

E/ESCAP/STC.8/14

19 November 1984. 6 p.

ESCAP, Bangkok, Thailand

Short note by the ESCAP secretariat is a review of activities of the Commission for the implementation of the port management information system, which was approved by the Commission in 1978 and was part of the 1979-1980 work programme. It describes the activities for implementing the project at the port of Kelang in Malaysia, after it was decided in 1982 that the model should be implemented at a port in the region to demonstrate its practical applicability. The note also relates training activities and interest of other countries in implementing several of the system's packages.

Corpus Christi FTZ Spurs Industrial Growth

The Port of Corpus Christi Authority Foreign Trade Zone has made steady progress since acquiring zone status two years ago, and has become one of the strongest and most diverse zones in the United States.

While many South Texas companies were laying off employees in an effort to weather the area's recent economic storm, companies within the Foreign Trade Zone were hiring personnel. One manufacturing company nearly doubled its exports since joining the program while substantially increasing its number of employees.

According to the owner of the Bullwinkle Project — the world's largest offshore drilling platform — the Foreign Trade Zone status available at Gulf Marine Fabricators' Ingleside yard was a decisive factor in having the platform built in the United States rather than overseas. As a result, more than 600 jobs have been created by the three-year project.

The Corpus Christi Foreign Trade Zone currently consists of fifteen approved sites, of which eight are active, with three additional applicants awaiting approval.

Throughout 1987 the staff at the Port of Corpus Christi has been working diligently to increase community awareness of the zone and its benefits by answering inquiries and making presentations to interested parties around the South Texas area.

(Port Book 1987, The Port of Corpus Christi Authority)

4 Broad Goals Set For Greater Houston

The Steering Committee for Visions for Greater Houston has presented its first report, outlining a plan for town hall meetings and task forces to collect citizen input. In January of 1986, Mayor Kathryn Whitmire announced a plan to create Visions for Greater Houston. At that time she appointed a steering committee, chaired by Mr. Gerry Pate, president, Pate Engineers Inc., to establish a process for the entire community to participate in setting goals for the city's future.

The four broad goals set forth by the steering committee are to ensure provisions for personal and family enrichment, community livability, new urban forms and economic innovation. Four task forces have been appointed to define each of those broad goals further, and town hall meetings will be held early in 1988 focusing on each goal.

The Task Force on Personal and Family Enrichment will look at cultural affairs, community unity and diversity, primary and secondary education, and recreation as factors affecting the quality of life in Houston. The Task Force on Community Livability will focus on basic services in the community, including environmental protection, social services, transportation and public safety. The Task Force on New Urban Forms will address the aesthetic environment of the city, and the Task Force on Economic Innovation will be concerned both with the internal economy of the city and the external perception of Houston. Each task force will seek public participation on subcommittees addressing particular aspects of these broad areas.

"I am very excited about this opportunity for every Houstonian to help create the vision for our future," said Mayor Whitmire. "Houston is a diverse city; we want every point of view included in the development of a consensus for tomorrow."

(Port of Houston)

'Future Bright for Tug and Barge Industry'

The U.S. barge and tug industry will be shaped in the years to come by three factors: shipper demands, competition and technological development, the president of The American Waterways Operators says.

Shippers and competition — which is now more fierce than ever — have always had great impact on the industry, Mr. Joseph Farrell, the organization's president said. But a new factor — technology — has affected all sectors of American life, and the barge and towing industry is no exception.

CHANGES: "Our own ingenuity and this technological development, coupled with shipper demands and keen competition, are what will drive the changes in our industry over the next 20 years," Mr. Farrell said. "And I look for those changes to occur largely in the areas of information exchange and processing, cargo handling and vessel controls.

"Barge lines will provide marketing information. Shippers will shop their cargoes. Quotes and bids will fly about. Scheduling decisions will be vastly more efficient. The makeup of cargoes in large tows will be more innovative. Feeder barge operations will be more efficiently integrated into major line haul operations. Communications between the vessel and the shoreside supervisor are also likely to be changed dramatically."

Mr. Farrell discussed the future of freight transportation during a recent panel discussion. Panelists spoke as part of the Transportation Research Board's annual meeting in Washington.

COMMUNICATIONS: Dramatic changes will take place in the barge industry because of technological developments in communications, he predicted. "A whole host of information will be exchanged with the speed of light," he said. "Already we can see the leading edge of this development as computer terminals and facsimile machines are installed in towing vessels."

But the most exciting changes to take place, he said, will be the result of a wholly automated vessel operation system on U.S. rivers and along the country's coastlines. "Tows will be directed automatically so that the spacing and time intervals between tows will be kept fixed in a system operated by a single command and control center," Mr. Farrell explained.

COMPETITIVENESS: As for competitiveness, the tug and barge industry will remain a transportation force because of its ability to offer economical service, he said.

"That is what makes barging so attractive, and that is what will keep barging in business," he said. "Since the fierce competition in this industry is what shields us from complacency, we are always seeking ways to improve productivity. I look to a bright future for this efficient, innovative and service-oriented industry of ours," Mr. Farrell concluded. "We have been a

major player in the development of this nation since early in the 19th century, and we should continue in that role well into the 21st century."

(Port of Houston)

JAXPORT to Improve Terminal Facilities

The Jacksonville Port Authority (JAXPORT) recently approved a letter of intent to issue up to $50 million in revenue bonds to finance maritime facility improvements at its Blount Island Terminal.

The list of improvements includes a myriad of infrastructure items that will catapult the facility into a modern intermodal maritime terminal.

Projects covered by the bond issue include: $4 million in improvements to 70 acres for Sea-Land Corporation's operations (including construction of administrative offices, container storage areas, and warehousing), which have moved from the Authority's Talleyrand Docks and Terminals to Blount Island at the end of February; the acquisition of a right of way along Hecksher Drive that will allow an overpass and lead-in roads to be built to feed the new four-lane Blount Island bridge; purchase of three container cranes at a cost of $11.5 million with the height and reach to unload the largest container ships in the world (which Sea-Land, P & O Containers and Nedlloyd Linjen B. V. will use under a joint operating agreement); a 550-foot wharf extension; a new four-lane roadway system and landscaping; a security station and truck plaza; and a 50-acre rail intermodal yard.

"The actions of the Jacksonville Port Authority Board of Directors on this $50 million bond issue mark a historic turning point for the Port of Jacksonville. By their actions they have taken the first giant step in restoring the authority's maritime facilities to their rightful place in the South Atlantic. Jacksonville has become a load center," commented Mr. Paul D. deMariano, managing director of the Jacksonville Port Authority.

JAXPORT officials expect Sea-Land to increase its Jacksonville business by at least 40% to more than 860,000 tons a year.

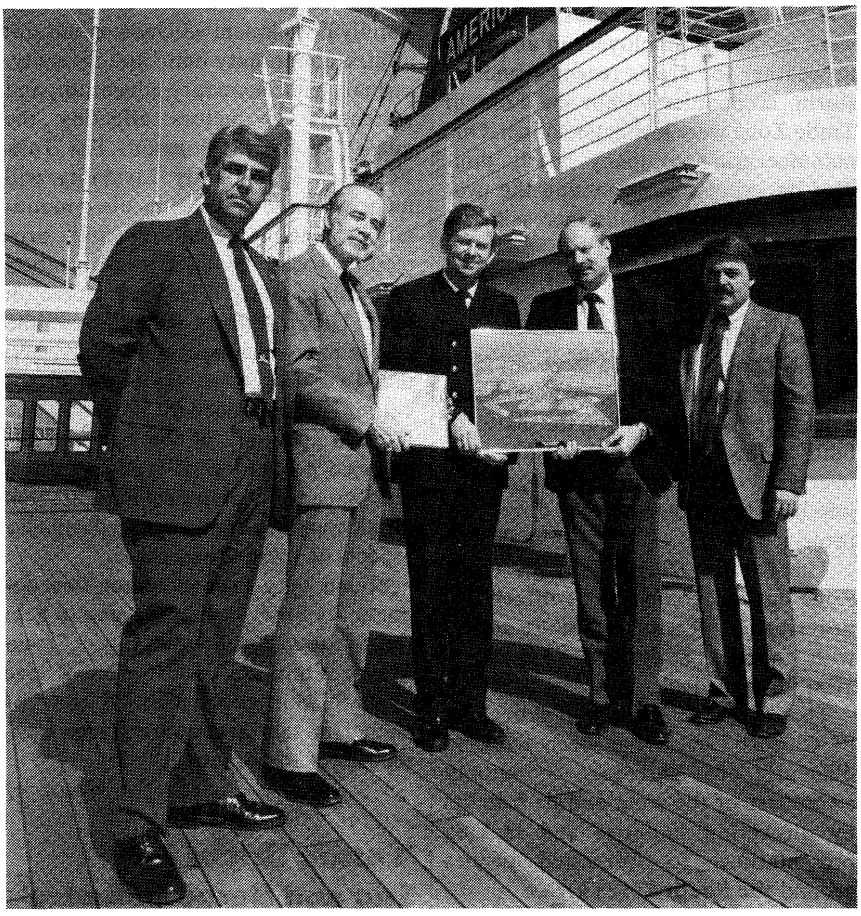
The new business is expected to generate 200 new jobs and provide an economic impact to the community of $83 million, according to the Authority.

The increased revenue to JAXPORT is expected to finance the debt service payments of the $50 million bond issue, according to their financial advisors.

Under terms of Sea-Land's agreement with the JPA, the company will lease the Blount Island and offices for five years and have two additional five-year options on the lease. If, for some reason, Sea-Land were to leave the island, the company would pay the unamortized portion of the port authority's $4 million investment in the property.

Sea-Land does not intend to lease the actual docks or cranes, which means other carriers will be able to use them, Mr. deMariano said. However, he said Sea-Land would receive preferential treatment for ships that must keep to tight sailing schedules.

The first Atlantic-class vessels, the largest container ships in the world, are scheduled to start arriving in Jacksonville in mid-March.



Container/Passenger Vessel Calls at Long Beach

First call on its maiden voyage found the *M.V. Americana* stopping off at the Port of Long Beach recently en route to inaugurate regular container cargo runs between New York and other U.S. East Coast ports and Brazil. What makes the 1200 TEU capacity vessel unique is the fact that it will also carry up to 100 passengers in cruiseship luxury. Built in Korea, the Norwegian-flag cargo-liner will be operated by Ivaran Lines, established in 1902. The 15-port round trip voyage also calls at Uruguay and Argentina in a 46 to 48-day itinerary. Additional combination ships will be added if the service proves to be as popular as Ivaran expects. Pictured at welcome ceremony aboard in Long Beach are, from left, Mr. Tom Underhill, Port marketing manager; Mr. James F. DeChant, Ivaran executive vice president in New York; Captain Knut Olsen, the Master; Mr. Stanley R. Westover, Port operations director; and Mr. Jens Jensen, operations manager, Interocean Steamship Corporation.

New Downtown Heliport Dedicated in Manhattan

The all-new Port Authority Downtown Manhattan Heliport has been officially opened via a dedication ceremony attended by New York City, State, Federal and Port Authority officials. Located at Pier 6 on the East River, the facility features the latest in electronic and visual landing aids. To enhance the safety of operations at night and in poor weather conditions, microwave landing and advanced communications systems have been included, along with a semiautomatic foam fire protection system.

Mayor Edward I. Koch of New York City indicated, "Downtown Manhattan is the financial capital of the world. It is a community that employs half a million people in banking, brokerage, insurance and real estate. These activities generate more than 90,000 pounds of checks, drafts and other important financial documents every month — documents that must be moved as quickly as possible to our metropolitan airports. An all-weather heliport in Downtown Manhattan is vital to the commercial activities of New York City."

Port Authority Chairman Philip D. Kaltenbacher indicated, "This new heliport is not only an example of state of the art technology, it is also extremely important to the commerce of this region. The movement of people and paper freight by helicopter in this region is expected to double by 1990." Mr. Kaltenbacher also described the facility as "a high-tech operations center for the vertical-lift aircraft of the future."

(Via Port of New York-New Jersey)

ITS Adds 2 Cranes at Port of Long Beach

International Transportation Service (ITS) in the Port of Long Beach has just taken delivery of two new generation IHI container cranes to supplement the terminal's four original cranes.

With a clear lift above water of 106 feet, and boom outreach of 137 feet, the new cranes will be able to work vessels with containers stowed five high on deck. Earlier generation cranes can work ships with four levels of containers on deck.

The fully erected cranes made the transpacific crossing on board the *M.V. Sunrise,* a special heavy-lift and project carrier vessel. Designed by IHI of Japan, the construction of the cranes was done by China Shipbuilding Corporation in Taiwan.

Total cost of the cranes, including transportation and insurance, was approximately $7 million. According to ITS officials, the cranes will be operational on April 1.

Port of Long Beach Photo

Floating Crane Put Into Service at Wando

The Port of Charleston's newly certified floating crane has just been put into service at the Wando Terminal. The crane lifts loads up to 67.5 tons. It recently unloaded an overweight box from the "K" Line vessel *Ambassador Bridge*. The 58 metric-ton box was discharged from the vessel onto a barge and, then onto a truck destined for Arkansas.

The floating crane at Charleston allows steamship lines calling there to bid for oversize cargo which 50-ton container cranes cannot lift.

The *Ambassador Bridge* was making its maiden call to the Port of Charleston's Wando Container Terminal. The vessel is 791 feet long and has a gross weight of 41,797 tons. It can carry 3,029 TEUs. "K" Line, the first Japanese flag container line at Charleston, operates a space-charter agreement with Neptune Orient Line and Orient Overseas Container Line. The agreement allows the three lines to serve the Far East and Japan on an east-bound, round-the-world service.

2 Cities to Share 2020 Master Plan Costs

The Board of Harbor Commissioners approved agreements between the Cities of Los Angeles and Long Beach to share costs for environmental consulting services and hydraulic model testing for the implementation of Phase I of the San Pedro Bay Ports' 2020 Master Plan.

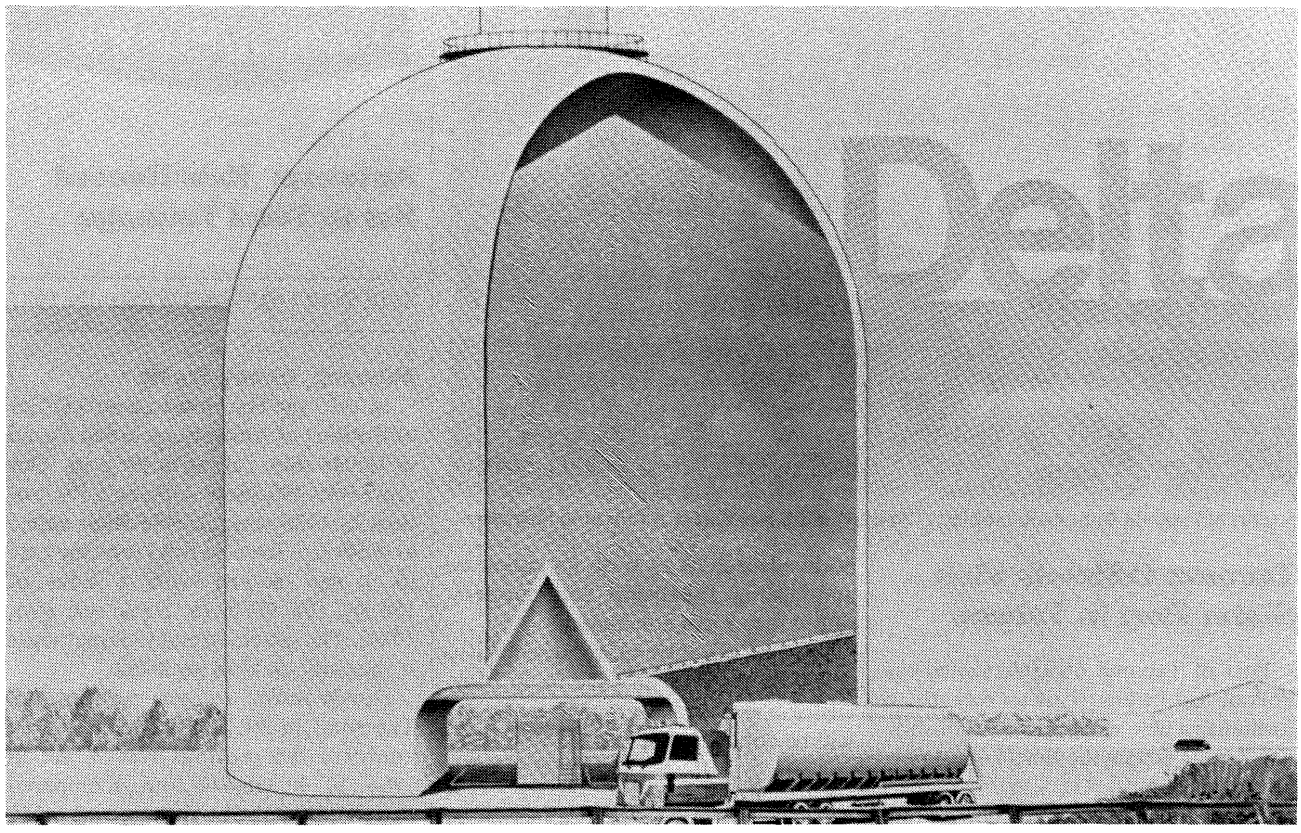
A Model Upgrade Program of Los Angeles/Long Beach Harbors by the Corps of Engineers Waterways Experiment Station will determine the effects of harbor expansion on the marine environment.

Port of Los Angeles Sets New TEU Record

The Port of Los Angeles, already the West Coast leader in container traffic, garnered still another record with an unprecedented 1,579,657 TEUs moving through the Port in calendar year 1987. This number is 255,110 more than the previous year, an over 19 percent increase.

According to Mr. Al Fierstine, Assistant Director of Marketing at WORLDPORT LA, the increase is attributable to a general rise in export traffic on the West Coast, particularly in computer and auto parts. In addition, Mr. Fierstine cites busier intermodal traffic of consumer goods to midwest markets as a reason for the upward trend.

The Port of Charleston's newly certified floating crane is in service at the Wando Terminal. It is unloading a 58 metric-ton box from the "K" Line vessel, Ambassador Bridge.



This artist's rendering shows how Delta Cement Corporation's bulk cement storage and distribution terminal at the Port of Georgetown will appear when it becomes operational.

Tacoma: Healthy Growth In Containerized Exports

Healthy growth in containerized exports, increased throughput, and the commencement of construction on a new $30 million container terminal were among the Port of Tacoma's major accomplishments for 1987.

The Port reported record tonnage of 10.1 million short tons, up 8% from 1986, with international containerized export tonnage up 18% from the previous year. Total TEUs rose 5% to 696,800.

Other significant figures included a 4% increase in automobile imports at 174,914 vehicles, and a 25% hike in intermodal lifts in the Port's North Intermodal Yard.

In addition, the Port reported a 16% increase in lumber exports, a 19% increase in fish exports and a 300% jump in machinery exports. Plywood exports doubled in 1987.

"What those export figures reflect overall is the devaluation in the dollar, which has made U.S. products more affordable overseas," said Port of Tacoma Commission President Robert Earley. "Lumber shipments, which are up all over the West Coast, are going to support a strong Japanese housing market. Fish export increases signify that more U.S. fishermen are involved in the Alaskan fishing industry. And the Port's huge growth in machinery exports reflects an upturn in the Australian agriculture sector."

In 1987 the Port started construction on a new $30 million container terminal. Located adjacent to the Port's existing Terminal 4 and the North Intermodal Yard, Terminal 3 will be among the most modern and efficient container facilities in North America when completed in March, 1989.

Combined, Terminal 3 and Terminal 4 will provide three berths and over 65 acres of back-up storage space. Two new "post Panamax" cranes will enable the new terminal area to handle the largest containerships afloat.

"The Port finished 1987 with a lot to be proud of and a lot to look forward to," said Mr. Earley. "With new customers, new ships on line and a new terminal to handle them, Tacoma is ensuring its growth for many years to come.

New Cement Terminal at Georgetown

Georgetown's skyline has a new silhouette.

It's the new, 117-foot-tall primary structure of Delta Cement Corporation's state-of-the-art bulk cement storage and distribution terminal at the Port of Georgetown.

Under construction at Georgetown Terminal, the Delta Cement terminal will be a totally enclosed system that will deposit cement from a ship into the top of a silo.

Expected to be completed in June, the Delta Cement Corporation facility will have a capacity of 20,000 tons and a discharge (or peak design) rate of 700 tons per hour from vessel to silo.

Port of Tacoma Commissioner Pat O"Malley addresses Port of Kaohsiung reception.

Tacoma Officials Visit Sister Port in Taiwan

Port of Tacoma officials visited the Port of Kaohsiung, Taiwan recently to formalize a new sister port relationship. Kaohsiung is now the third largest port in the world.

During ceremonies to commemorate the event, officials from both ports spoke of the many similarities between Kaohsiung and Tacoma.

"Our two ports share many of the same goals, such as the continued expansion of container trade, the building of new terminals, and the challenges of new technology," said Port of Tacoma Commissioner Pat O'Malley. He also mentioned both ports' excellent highway, air and rail connections, as well as an emphasis on personnel and teamwork.

Taiwan is currently the Port of Tacoma's second largest trading partner. Trade between the two areas dates back to the 1850s, when Tacoma first started receiving shipments of tea and silk from Taiwan.

"The close relationship between the Port of Tacoma and the Port of Kaohsiung is based on the traditional freindship of our two countries and the trade between our two ports," said Kaohsiung Harbor Director C.Y. Yuen. "Because the Port of Tacoma is a fully-equipped and well-managed port, there are many lessons Kaohsiung can learn from Tacoma.

"The establishment of the sister port affiliation will assist the exchange of technical information and promote the further development of trade between both sides, so as to form an enhanced and lasting friendship and cooperation," Mr. Yuen concluded.

Port of Kaohsiung representatives will visit the Port of Tacoma in May, where a similar sister port ceremony will be conducted.

"K" Line to Start Service Through Tacoma

The Port of Tacoma announced recently that "K" Line*, a major container shipping line, will move its Pacific Northwest service to Tacoma in mid-July.

In making the announcement, Port of Tacoma Commission President Robert Earley said, "We are very pleased to have "K" Line come to Tacoma. This increases our stature as a major container port, as well as confirming our position as the intermodal leader in the Pacific Northwest. We believe our facilities are best-suited to meet "K" Line's long-range needs, which assures that they will maintain a strong presence in the Puget Sound."

"K" Line, one of six major Japanese steamship lines which serve the Pacific Northwest, has been operating jointly with MOL in Seattle since April, 1986. According to an official statement issued by "K" Line in Japan, this relationship will be terminated in June. "K" Line will then start a fixed day weekly service independently through the Port of Tacoma.

The service will utilize five ships with a 35-day turnaround time.

**An Associate Member of IAPH*

Africa/Europe

Antwerp: New Record Set in Total Tonnage

THE PORT OF ANTWERP IN 1987

Shipping, Goods Traffic

In 1987 the Harbour Master's Office of the Port of Antwerp recorded a total of 16,046 ships calling in the port. This represents 400 fewer ships, or 2.4% less, than in 1986 when 16,446 ships called at Antwerp. Even so total tonnage rose to a new record with a total of 130,187,199 GTR (a 2.5% rise over 1986). The general trend to larger units is thus still making itself felt.

Goods traffic set new records too. The total of 91,101,015 tons slightly improves the previous record, set in 1984, of 90,338,446 tons. Compared to 1986 (90,203,501 t) there was a 1% rise. Behind these general figures lies an increase in general cargo of 9.5% (39.5 million tons compared to 36.1 million tons) and a 4.7% decline in bulk cargo (51.6 compared to 54 million tons).

The rising trend in general cargo traffic is accounted for by increased shipments of bagged fertilizers, larger incoming cargo of wood, wood cellulose, paper and fresh fruit. There were significant falls in the arrivals of iron and steel and in grain shipments.

In the bulk goods sector coal and grain showed declines, particularly for outgoing cargo. On the other hand there was a sharp rise in fertilizers, while ores remained more or less unchanged.

There was a 26.8% rise in ro/ro traffic, while containerized goods rose by 16%.

Finally we can report that the overall maritime goods traffic in the Port of Antwerp in 1987 can be broken down into 53,046,898 t incoming (—1.2%) and 38,054,117 t outgoing cargo (+4.2%).

Port Administration

1987 was a milestone year for the administrative structure of the port on the Right and Left Banks of the Scheldt.

After all, on 1 April 1987 the City

of Antwerp first became fully responsible for that part of the port located on the Left Bank. This puts both Right and Left Banks under the same authority and means that Antwerp Port Regulations become applicable to the Left Bank and the exploitation of its facilities can be intensified.

Another significant change came on 21 October when the Municipal Port Service was transformed into a separate Authority. As of 1 January 1988 the Authority became independent of the town's other services. It is hoped that this will lead to a cleared articulation of policy, improved financial insight into port activities, greater management flexibility and consequently faster decision-making.

Infrastructure

In 1987 a number of important phases in the works on the Berendrecht Lock were completed. This lock, which will be the largest in the world (500 x 68 m), is scheduled for completion by September 1988. On the Left Bank the works on the Vrasene Dock were completed. All that remains to be done is the partial dredging of the dock so that the entire 4,500 metres of quay becomes available for cargo handling.

Another major step in the development of the Left Bank came on the 3rd of June with the groundbreaking ceremony for the construction of the Liefkenshoek Tunnel. This third link under the Scheldt will be 1,374 m long, and will comprise two twin-lane shafts. Each lane will be 3.75 m wide. The Liefkenshoek Tunnel represents a major contribution to the further development of the Left Bank port area and will play a vital role in improving communications between the Port of Antwerp and Northern France and the Netherlands.

Scheldt Container Terminal

Early in 1987 the Antwerp City Council granted the concession for the Scheldt container terminal, located just south of the Zandvliet and Berendrecht Locks, to N.V. Hessenatie-Neptunus. On the 4th of June contracts were signed for the construction of the required infrastructure. This will include a quay 1,406 metres long, 1,180 m of which will be capable of being used by shipping.

The first 800 m of the quay will be delivered in late 1989, while the entire project is scheduled for completion by 1 April 1990.

Inland from the quay the terminal operator will build a 55.4 ha container terminal with an annual container capacity of about 600,000 TEU.

The first phase of the construction of the terminal will make 250,000 m² available, and four container gantries will be installed.

Computerization

The projects aimed at advancing computerization in the port which got off to a start in 1986 were continued in 1987. These projects include SEAGHA, which is an electronic data transmission system aimed at all firms active in various aspects of port operations. It will be ready for presentation to prospective customers mid 1988. Another major project is APICS, an initiative of the municipal authorities, which aims at the automation of shipping traffic control. This system should become operational on 1 January 1989.

APICS: Improved Info Processing System

(Extracted from "Hinterland," Antwerp)

For some time now ways of facilitating and optimizing shipping movements have been under study in the Port of Antwerp.

The Port Authorities have also felt the need to introduce more efficient methods of organizing shipping traffic in the docks.

Parallel with this development is the awareness that the information systems currently employed are a good ten years old and that they are chiefly employed for the ad-hoc registration of data and do not offer any operational traffic control functions.

In late 1985 a start was made with an intensive search for remedies and a renewed approach to the problem.

In doing so the intention was not the study and modification of existing systems but the realization of improvements in the present organization, procedures and resources used for this purpose.

In early 1986 the Coopers and Lybrand consultancy was called in to supervise the project. This choice was influenced by the fact that Coopers & Lybrand had already carried out a number of similar tasks on behalf of the City of Antwerp.

During 1986 a project dossier describing the functions of the new information handling system was compiled by the project group, which was made up of key users from the Harbour Master's Office, specialists from the Chief Computerization Control Centre (HCI) of the City of Antwerp, and advisers from Coopers & Lybrand.

The system is to form part of a whole package of proposals and measures aimed at improving the service offered by the Port of Antwerp.

In the meantime the project was given a permanent name, and is now known as the Antwerp Port Information and Control System or APICS. In the following we will examine the scope, functions, main benefits and further implementation of the APICS project.

The purpose of the APICS project is the design, construction, and implementation of an information processing system which will act as an operational tool for planning and following up shipping in the Port of Antwerp.

Shipping traffic in Antwerp's port is made up of both seagoing and inland vessels. The seagoing component represents roughly 97% of revenues although the inland component generates about five times as many movements.

Even so seagoing traffic has a greater share in the operational control of the port.

Benefits of APICS System

The main advantages of the APICS system lie primarily in the following areas:

1. The enhancement of service in the port by improving the quality, speed and completeness of the distribution of information between the various services and parties involved.
2. The introduction of efficient management of traffic forecasting and traffic planning (including improved anticipation of traffic peaks).
3. The introduction of an integrated information system offering greater reliability and ease of use than the system currently in use.
4. The establishment and application of efficient procedures in order to put methods, planning, and decision-making on a more systematic footing.

Achievement of more efficient and effective use of available resources.

5. The provision of a database to back up commercial decision-making in the port.

6. Responding to various initiatives and projects in the port in order to improve port activities and promote cooperation between these initiatives.

7. Achievement of more efficient shipping traffic, which will help to increase the safety of port operations.

Further Planning

The Board of Burgomaster and Aldermen, the Antwerp City Council, as well as the Superior Authorities have already given their approval to the start which has been made on the realization of the APICS project.

A functional design dossier has been supplied to a number of candidates with a view to soliciting tenders. A project group specially created for this purpose, consisting of specialists from the Port Authorities and HCI, assisted by the Coopers & Lybrand consultancy was responsible for selecting the candidates. At the end of May last the Antwerp City Council granted the contract for the first stage of the APICS project to the software company Errpege (Bruges).

Work on implementing the APICS system started in September 1987.

It is expected that the system will become operational in the course of the last quarter of 1988. The project group referred to above will be responsible for coordinating supervising, and following up the entire installation and introduction of the APICS system.

Conclusion

The purpose of the APICS system and the involvement of the various port companies and government services should therefore help to bring about a marked improvement in the service, safety, and competitiveness of the Port of Antwerp.

The APICS and SEAGHA systems will put Antwerp in the forefront of port information technology, rivalled only by the COMPASS and DAKOZY systems of the German ports and Rotterdam's INTIS system.

Port of Bordeaux Made More Competitive

During its meeting on the 21st March under the chairmanship of President Jean-Henri Schyler, the Port of Bordeaux Authority's Administrative Board approved the provisions of a plan to improve handling and make it more competetive.

This plan is the result of an agreement (contracted between the Maritime Federation, the Stevedores' Union, the Paid Holidays Fund and the Port Authority), following the signing of a Protocol of Agreement between the Stevedores' Union and the Dockworkers Union.

Dockworkers Reduced

The plan is to become effective as of the 5th April 1988. It will reduce the global dockworker force, from 375 to 250 as well as enabling alterations in gang strengths to be made.

The estimated cost is 28 MF. To ensure that they can pass on maximum benefits to customers, the stevedores have contributed 11 MF to the scheme, while the remaining 17 MF is to be provided by the Port Authority. This major contribution will lead to new operational costs, which, spread over several years, because of their exceptional nature, will, however, be compensated by a reduction in financial expenses connected with an injection of capital (*).

Transit Costs Lowered

The new working conditions will lead to a drop in transit costs for all freight. Savings will be in the region of 3 to 5% for bulks and 8 to 16% for unit load cargo and containers.

The whole of the Bordeaux port community in this way has contributed to making the port more attractive to customers. In another context, the Port's Administrative Board affirmed Port objectives and directions, as well as defining its commercial policy and plan of action, during the same meeting. This plan of action centres round two main priorities: the reduction in transit costs (see above, together with the recent decision to peg port dues and cranage costs at their 1987 levels), and a more vigourous marketing drive, among both shipowners and shippers.

(*) Having taken into account the Port Authority's Company Plan, the Minister of the Economy, Finance and Privatisation confirmed the attribution of a capital injection of 137.2 MF, on the 22nd February, 1988. Local Public Services have been asked to provide further investment participation amounting to 6 MF, while the Maritime Federation, for its part, has called on the Bordeaux Chamber of Commerce and Industry, for assistance.

Prime Minister of France Visits Le Havre

— Main Points of Speech —

Ports: The modernisation of the French port system is a matter of unanimous agreement, exceptional in an area where responsibilities and interests have too often and for too long been divided, and sometimes opposed.

Road communications: The modernisation and development of our infrastructures and transport systems, begun 18 months ago, is being carried out with ports very much in mind. Current insufficiencies will be remedied by the general motorways and highways plan approved on April 13th, which calls for new motorway links between Le Havre, Rouen, Amiens and St-Quentin, and between Rouen and Le Mans, together with the modernisation of the main north-south Calais-Rouen road, linked to the building of the Channel Tunnel. All this will be complemented by the future Normandy Bridge and its approaches.

With regard to road haulage, and particularly road haulage tariffs, Le Havre has moved quickly. The road hauliers have agreed to do their utmost over tariffs, while the port has provided them with reception facilities and services which boost their productivity.

The government has decided to put an end to one distortion of normal competition and has drawn up a timetable which by 1992 will make VAT on Diesel oil fully deductible.

Rail communications: The government is studying ways of improving rail communications with the port of Le Havre. We cannot let the North European ports have a monopoly of wide-load routes! The widening of the tunnel gauge to B† on the Paris-Le Havre line is essential for the carriage of the new maxi-containers and in due course the various local authorities will

be called upon to share its financing.

Investments: The Rapid Turnround Terminal is the right answer to the risks of a decline in our market share of the container traffic along the Channel seaboard between Le Havre and Hamburg. Government aid for the first phase has been arranged and further finance will be made available without delay for later stages, in conformity with the overall plans adopted by the port community.

Cargo handling: The Prime Minister welcomed the spirit of responsibility shown by the different sides in Le Havre in a field where negotiation was far from easy. The result has been to reduce idle time among the dockers to a bearable level and to bring down the cost of cargo handling, thereby contributing to the maintenance or recovery of general cargo traffics.

Financial Grants for Self-Governing Ports: Strengthening the financial structure of the self-governing ports is the sine qua non of success. They must have the means of carrying out their policies. The government has therefore decided to make capital grants at the beginning of 1988 totalling about one thousand four hundred million francs for all the self-governing ports combined, so as to enable them to carry out specific programmes chosen by themselves in the light of their own individual needs.

The National Council of Port Communities has recently been set up and will provide a forum for ideas and proposals.

Shipbuilding: A local firm, ACH, has already given proof of its technological prowess by building the first sail-liners in the world. A new project of the same type, for the largest sail-liner ever built, is at present being studied by the shipyard, the operator and the authorities. The government will see that it can be ordered from the Havre shipyard as soon as possible. The government has also decided to provide the financial aid necessary to enable a St-Pierre-et-Miquelon company to order two trawlers from Le Havre.

The order was confirmed to ACH a few days later.

(Port of Le Havre Flashes)

Asia/Oceania

Cairncross Dockyard To Assume New Role

Cairncross Dockyard — for more than 40 years Australia's big ship repair centre — will be the focus of an eight-year, $50 million conversion programme to create a tourist, public and marine complex.

The 46 ha. of prime river bank land at Bulimba will carry (among other ventures) shipbuilding, a marina, hi-tech laboratory and marine experimental facilities, industrial and tourist style businesses, and will employ more than 1,200 people.

Behind the proposal is a Queensland company, Seagrove Holdins Pty. Ltd. — a subsidiary of the Golden Mile Marine group.

The dockyard was formerly a Queensland Government complex, operated by the Port of Brisbane Au-

London Team Selected For China Port Seminar

TecnEcon Ltd., the economic and transport consultants, and Placon Ltd., the port consultancy subsidiary of the Port of London Authority, have been selected by the UK's Overseas Development Administration to provide a three-week seminar on Port Development Planning in Ningbo, People's Republic of China. The seminar for 25 senior officials of the Chinese Ministry of Communications and ports industry is also supported by the UNCTAD Shipping Division, Geneva.

TecnEcon is providing the project management team and session leaders in development planning, forecasting and project appraisal techniques. Placon is providing session leaders drawn from PLA senior managers with current practical expertise in port operations analysis, statistics and training. During the seminar there will be additional input from UNCTAD and Chinese experts on specific matters relevant to the course.

Placon: Port Consultancy

Placon Ltd. is a wholly owned subsidiary of the Port of London Authority. It was established in 1973 to provide comprehensive consultancy and training services to organisations requiring professional advice and assistance in the port and related transport field.

Through Placon Ltd., the extensive managerial, technical and operating skills and the great range of practical experience of the Port of London Authority are effectively made available. The company draws its consultancy staff from senior levels of the Authority's management team and can supplement its in-house skills, where appropriate, by drawing upon its well established links within the industry and elsewhere.

The Port of London is the largest port in the United Kingdom and is long established as one of the world's great seaports. In 1986 it handled 48.3 million tonnes of goods of which 25.2 million tonnes was fuel oil, 9.9 million tonnes coal and aggregates and 13.2 million tonnes containers and break bulk general cargo. It serves shipping on all the world's major trade routes and deals with virtually every kind of trade and commodity. It is controlled by the Port of London Authority which is an independent statutory trust set up by Act of Parliament.

The Port of London Authority's responsibilities are wide ranging. The Authority is not only the statutory body responsible for development, conservancy, navigation and security but is also a major operating organisation in its own right with experience in virtually every aspect of port management and cargo handling operations.

TecnEcon: Economic Consultants

TecnEcon is an economics consultancy practice with a major emphasis on transport planning and infrastructure development initiatives. The firm works extensively overseas as well as in the UK, and has the advantage of being able to apply experience to clients' assignments from a wide range of similar projects elsewhere.

The firm's principals are all professionally qualified in ecomonics and, in their previous careers, have worked over a number of years alongside engineering teams, in the operational planning, economic appraisal and cost recovery aspects of major investment schemes. These skills are recognised among the major development institutions, and TecnEcon personnel are

(Continued on Page 34, Col. 1)

thority as a graving dock and handling ships up to 85,000 d.w.t.

When (last year) it was discovered that the dry dock's caisson needed extensive repairs, thus compounding the problem of accumulated losses of almost $12 million in 11 years, the government decided to close the yards and seek "expressions of interest" from the commercial sector for the dockyard's future.

From a list of 10 submissions, the government — on the recommendation of the Port of Brisbane Authority — decided to accept the Seagrove proposals.

The Minister for Water Resources and Maritime Services (Hon. Don Neal), who on January 20 made the official announcement of the dockyard's sale, said the company had agreed to pay $8 million for the site.

Mr. Neal said the employment and economic spin-offs from the project would be a major asset for the state.

The G.M.M. Operations Project Manager (Mr. Nick Lockyer) said the various enterprises planned for Cairncross would include:-

- the world's most advanced hull and propeller testing laboratory;
- a world standard facility for the construction, maintenance and repair of vessels to 2,000 d.w.t., plus a 2,000 d.w.t. slipway;
- commercial offices for marine types of businesses, and display areas;
- a futuristic maritime park featuring the latest techniques for construction;
- a full-scale ship passenger terminal;
- a public recreation reserve and sand beaches;
- an 80-boat capacity marina, also catering for hire and visiting craft;
- a maritime village to include a tavern, convention facilities and historic displays;
- waterfront restaurants.

Mr. Lockyer said most of the redevelopment work would be completed in three years.

He described the concept as "unlike anything in the southern hemisphere."

The hull and propeller testing facilities would be established in conjunction with the expertise available from Holland, the Queensland University and other national marine companies.

The Port of Brisbane Authority's Executive Chairman (Hon. A.M. Hodges) said the closure of Cairncross as a dockyard had been unavoidable but nonetheless regrettable.

The loss of the expertise associated with the industry was also a matter of deep regret.

He added: "However, what is past ... is past. Everyone must look forward.

"Cairncross has entered a new era and if confidence, enthusiasm and innovative ideas count for anything, the Seagrove people will have a very successful business. We wish them well."

Mr. Hodges said the sale of the property (at $8 million) would enable the Authority to pay off the accumulated debts associated with the dockyard's past operations.

(Brisbane Portrait)

London Team Selected

(Continued from Page 33, Col. 3)

called upon regularly on a secondment basis by leading agencies including the World Bank, Asian Development Bank, UNCTAD, Overseas Development Administration and London Docklands Development Corporation.

The professional services of TecnEcon cover operational, economic and financial analysis of transport and other development projects, in the areas of:

- urban development services;
- technical assistance and policy advice;
- economic development and infrastructure planning;
- industrial and energy planning;
- road and rail transport;
- port development and cargo handling; and
- fishery, shipyard and shipping line studies.

MSB Ports: Region's Most Modern Facilities

Australia as a nation relies upon its trading performance for its prosperity and standard of living. To succeed, it must have the most efficient port facilities.

In New South Wales, the Maritime Services Board has achieved major advances in efficiency and cost-effectiveness in the State's ports. The major trading ports — Sydney, Botany Bay, Newcastle and Port Kembla — administered by the MSB between them handle one-third of Australia's total maritime trade.

They boast the region's most modern and sophisticated container facilities, massive and highly efficient bulk loaders and waterway improvements to accommodate the world's largest ships.

As a result of efficiency improvements by the MSB

- Port charges are down 20% in real terms
- Loader fees for coal exports are down more than 20% in real terms
- Operating costs have been reduced in real terms in each of the last three years
- Turnaround times for ships in NSW ports have been reduced
- Annual trade exceeds 90M revenue tonnes a year
- The amount of trade per MSB employee has risen 10% in three years
- The annual dividend paid by the MSB to State Treasury has risen by more than 25% in three years

These achievements are just the start. Efficiency improvements currently being introduced, in consultation with unions, will lift performance and reduce costs by more than $20M a year. The savings will be passed on to help the State's shipping and export industries win more sales overseas.

The MSB is in the forefront of the national and international drive to improve maritime efficiency and performance. As a result, the Premier State now has the premier ports.

NSW Strengtens Ties With Asian Ports

The NSW Government will increase trading and investment opportunities with Asia through the establishment of sister-port relationships with China and Korea.

The Minister for Transport, Mr. Terry Sheahan, said approval had been given for the establishment of sister-port links with three Asian ports. They are: Port of Newcastle with Qinhuangdao, Hebei Province, China; Port of Newcastle with Pohang, Republic

of Korea; and Port of Sydney with Huang Pu, Guangdong Province, China.

Mr. Sheahan said these were additional to the exisitng sister-port relationship between Sydney and the Japanese port of Yokkaichi.

"The sister-port relationships are an indication of the bonds of friendship which exist between NSW and our Asian trading partners," he said.

"They also enable the NSW ports to exchange information with other ports handling similar commodities, and they open up opportunities for administrative, technological or commercial assistance.

"By improving our understanding of trade and technological challenges in those countries, they ultimately lead to business, investment and contract opportunities for NSW companies and organisations."

Mr. Sheahan said it was hoped that representatives of at least some of the new sister ports would be able to visit NSW later this year to take part in formal signing ceremonies.

The Port of Qinhuangdao is situated in the north of China near Beijing and is, like Newcastle, its country's major energy exporting port. Both serve large coal producing areas, are associated with steel-making and handle petroleum products, grain, general cargo and fertiliser.

The South Korean Port of Pohang is also associated with steelworks and handles iron and other ores, coal and iron and steel products.

Sydney's new sister port, Huang Pu, is the fourth largest port in China and serves the major city of Guangzhou (Canton), capital of NSW's sister-state, Guangdong Province. Like the Port of Sydney, it handles general cargo, containers, grain and crude oil.

Export of Logs: Suva Operation Efficient

Management in its efforts to increase revenue has embarked on a comprehensive marketing programme. Recent negotiations were held to load logs from Suva instead of the usual shipping outlet at Galoa. The Marketing Manager together with the Director Operations and Director Finance were instrumental in the initial arrangement for the first shipment of 5,571 m^3 of logs on the vessel "Marc Theil."

Although it was estimated that the vessel would take longer to complete the loading operations, the actual time taken was 5 days. This was achieved through better supervision, planning and the concerted effort put in by our workers.

Figures revealed that the Suva operation was much more efficient than the one in Galoa. The loading rate at Suva was 1,340 m^3 per day which is understood to be considerably higher than that being achieved at Galoa.

The supercargo of the vessel praised the systematic manner of the loading and the hard work put in by our stevedoring personnel.

The Director Operations while speaking to the stevedores at a meeting to review the operation thanked them for a job well done. *(WAVU)*

Port Klang to Develop Model Tariff Structure

Port Klang is one of four ports chosen to develop a model port tariff structure. The other three ports are Bangkok, Colombo and Melbourne.

The project is being undertaken by ESCAP with funding from the United Nations Development Programme. The pilot project has already begun in Port Klang with the assistance of three consultants — Encik Barry Cable, head of ESCAP's ports division, and Melbourne Port Authority's Senior Marketing Officer (Policy) Peter Hodgkins and Senior Finance Officer Mark Griffin.

Mr. Encik Cable told WARTA LPK: "This is the first time anywhere in the world that a project is being undertaken to develop a standardised tariff structure. A standardised tariff structure will be of tremendous help to all port users and port authorities as there will be the same definitions and nomenclatures for all ports using the model. In fact, ports outside the ESCAP region have also indicated interest in the project."

Mr. Encik Cable said that the project does not touch on pricing as this is up to individual port authorities. He added that members of Asean Port Authorities Association and the Australian Association of Ports and Marine Authorities have agreed to adopt the model which is expected to be ready early next year.

Port Klang has been chosen for the pilot project because of its successful development and implementation of the PORTMIS (Port Management Information System) project, also undertaken by ESCAP, in 1982. Port Klang's PORTMIS model is now being introduced in the ports of Colombo and Bangkok. *(WARTA LPK)*

TRADENET Company For System Operation

By Shamimah Begum
Cargo Systems Dept., PSA

THE TRADENET SYSTEM was officially announced by the Minister for Trade & Industry and Second Minister for Defence, Brigadier-General Lee Hsien Loong on 3 Dec. 86. One year later, the TRADENET Company was formed and held its first Interim Board of Directors' Meeting on 2 Dec. 87.

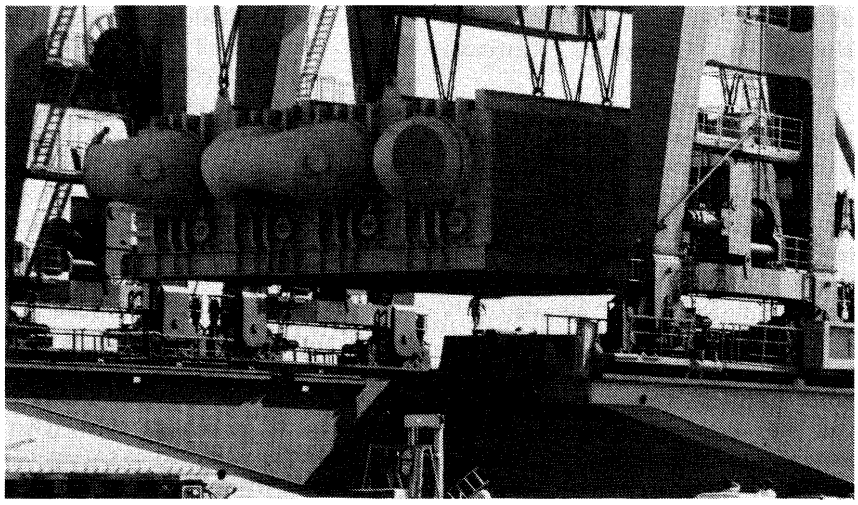
The shareholders of the company are Trade Development Board (TDB), PSA, Civil Aviation Authority of Singapore (CAAS) and Telecoms. The company's total paid-up capital is $6 million. TDB is the major shareholder and Mr. Yeo Seng Teck, Chief Executive Officer of TDB, is Chairman of the company.

The Company will operate the TRADENET System which is targetted for implementation by the end of this year. The System will link traders, freight forwarders and shipping agents, with TDB, Customs, other government controlling agencies, and air and seaport authorities for the processing of manifests, inward and outward declarations and permits.

The TRADENET System will be linked with the Maritime Community System (MCS) that PSA is currently developing. While the TRADENET System deals mainly with Declaration and Clearance, the MCS links the port with shipping agents, hauliers, forwarders, shippers and consignees for the processing of bookings, shipping notes and delivery orders and other port-related documentation.

(PSW News)

Evaporator blocks destined for the Jebel Ali "E" power station desalination plant



Aden Expansion Project To Solve Congestions

The Project aims to solve the recent existing congestions in the Port of Aden to meet the increased demand of anticipated vessels and goods in the future which made it incumbent to embark on the expansion and Development of the port installations and its relevant associated facilities mainly by construction of 900 metres new deep-water alongside berths for berthing modern vessels, dredging of the navigation channels and turning cycle and berthing of vessels. The project comprises of the following basic subjects:—

A) Construction of 750 mtrs of quay wall with 11 metres depth to accommodate vessels upto 36,000 DWT, for general cargo, containers and bulk grain carriers.

B) Construction of special quay of 150 metres long with 7.6 metres depth for Ro/Ro Vessels.

C) Construction of a small quay for coasters with depth of 6.00 mtrs.

D) The project comprises also of the following:—

1. 17 Hectares of open storage.
2. Additional three transit sheds of 60 metres wide 170 mtrs long to handle general cargo.
3. 25,000 square metres for handling and storage of containers.
4. One container gantry crane of 40/50 tons capacity.
5. Six rail mounted quay-side portal cranes, 6 tons capacity.
6. Additional six forklifts of 4 tons capacity.
7. Additional two forklifts of 26 tons capacity.

E) Extensive dredging and widening of the navigation channel, area of berthing and turning cycle of vessels and dredging of the area in front of the quay will be in the manner indicated below:—

1. Lengthening, widening and dredging of recent existing navigation channel to become 1.5 Km, long, 150 metres wide and 11 metres deep.
2. Dredging of the area of berthing and turning cycle of vessels to a depth of 11 metres, 750 metres long and 280 metres wide.
3. Dredging of the area in front of the recent Home Trade Quay to 6.7 mtrs with length of 285 metres and width of 250 metres.
4. Dredging of the area in front of the side-quay for Roll-on Roll-off vessels to a depth of 7.6 metres.

F) Land reclamation area will come from the extensive sea with a distance of 20 hectors behind the berths wall which has to be prepared for building warehouses, open storage area and other associated facilities by using proper dredged soils resulting from dredged channel of vessels and their berthing and turning cycle area in front of the berths.

G) Erect different attached premises within the new project equiped with services such as fire station, electric transformer and health centre.

H) Additional 4 pilot and mooring launches.

I) Construction of Relief Access Road with length of 475 metres and 21 metres width.

J) Preparation of study for the efficient operation of the new cargo handling facilities in line with modern methods in port administration and cargo handling operations in addition to the proposed training of national personnel.

Heaviest Lift Ever in Jebel Ali

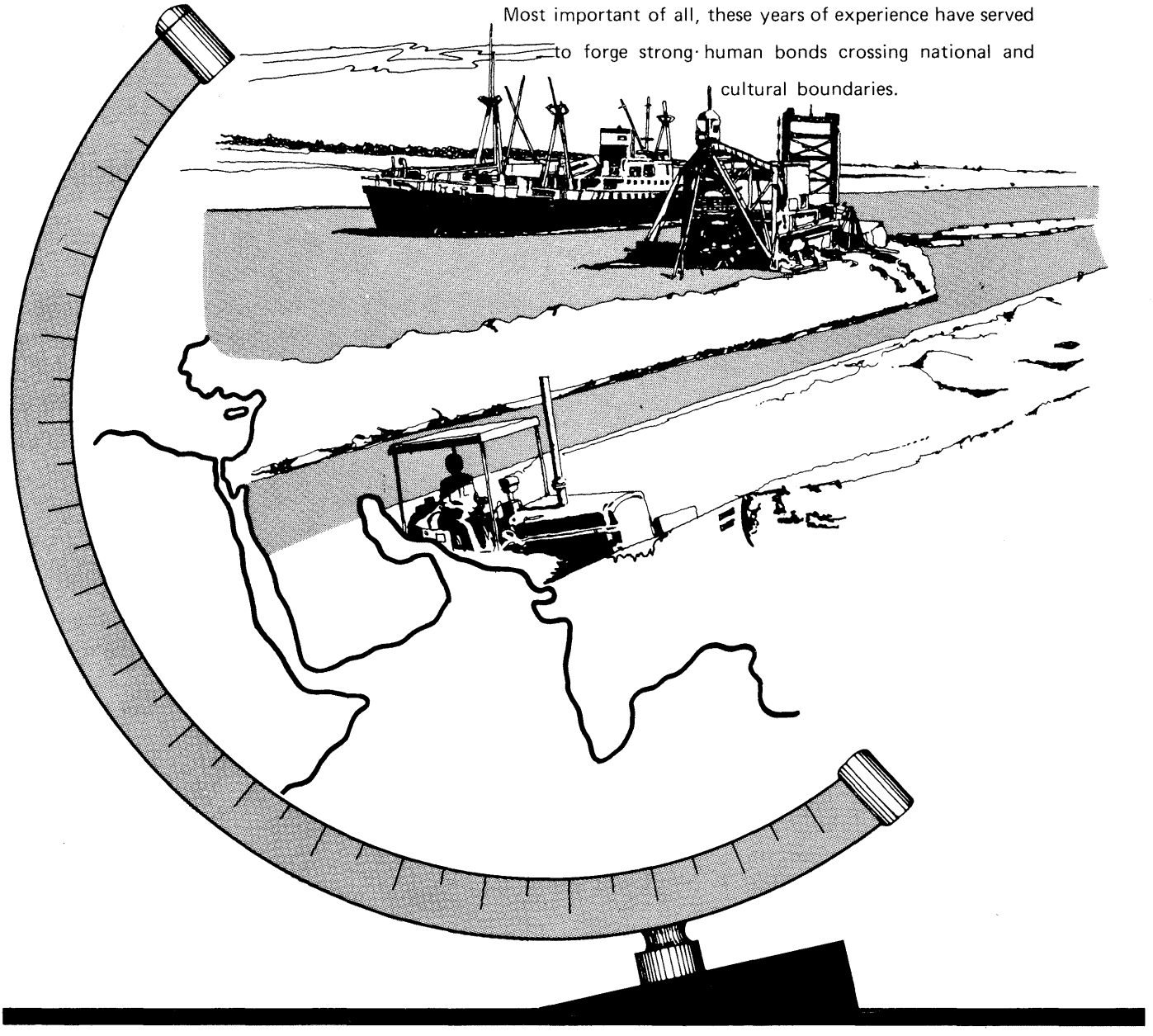
Dubai's port of Jebel Ali was host again recently to a "Dock Express" vessel, with another consignment of evaporator blocks for the Jebel Ali Industrial Zone.

The largest of the "Dock Express" series of heavy lift, semi-submersible vessels, the "Dock Express 20," is seen here discharging the heaviest of ten evaporator blocks which formed part of a total consignment of some 29,000 freight tons. The blocks, ranging in weight from 540 tons to 589 tons, are destined for the Jebel Ali "E" power station desalination plant, under construction by Korea Heavy Industries for Dubai Electricity Co. The agency of the vessel was again entrusted to Y.B.A. Kanoo, one of Dubai's foremost agents and a company well experienced both in Jebel Ali and in coordinating the special requirements of such vessels.

The transportation from quay to site was performed by local heavy transport specialists Mammoth Gulf, whose massive modular trailers can be seen waiting to take delivery of the block as it is gently lowered into place by the vessels two gantry cranes operating together, each of some 300 tons capacity.

Creating is our business.

We add human ingenuity to nature and create new land, make and maintain waterways and harbors all for the benefit of mankind. In the Near and Middle East, we have successfully cooperated and worked together with local technicians in numerous large and small-scale projects since 1961, such as widening and deepening the Suez Canal, so we are thoroughly familiar with the area and work involved. Most important of all, these years of experience have served to forge strong human bonds crossing national and cultural boundaries.



We help countries to build their future.

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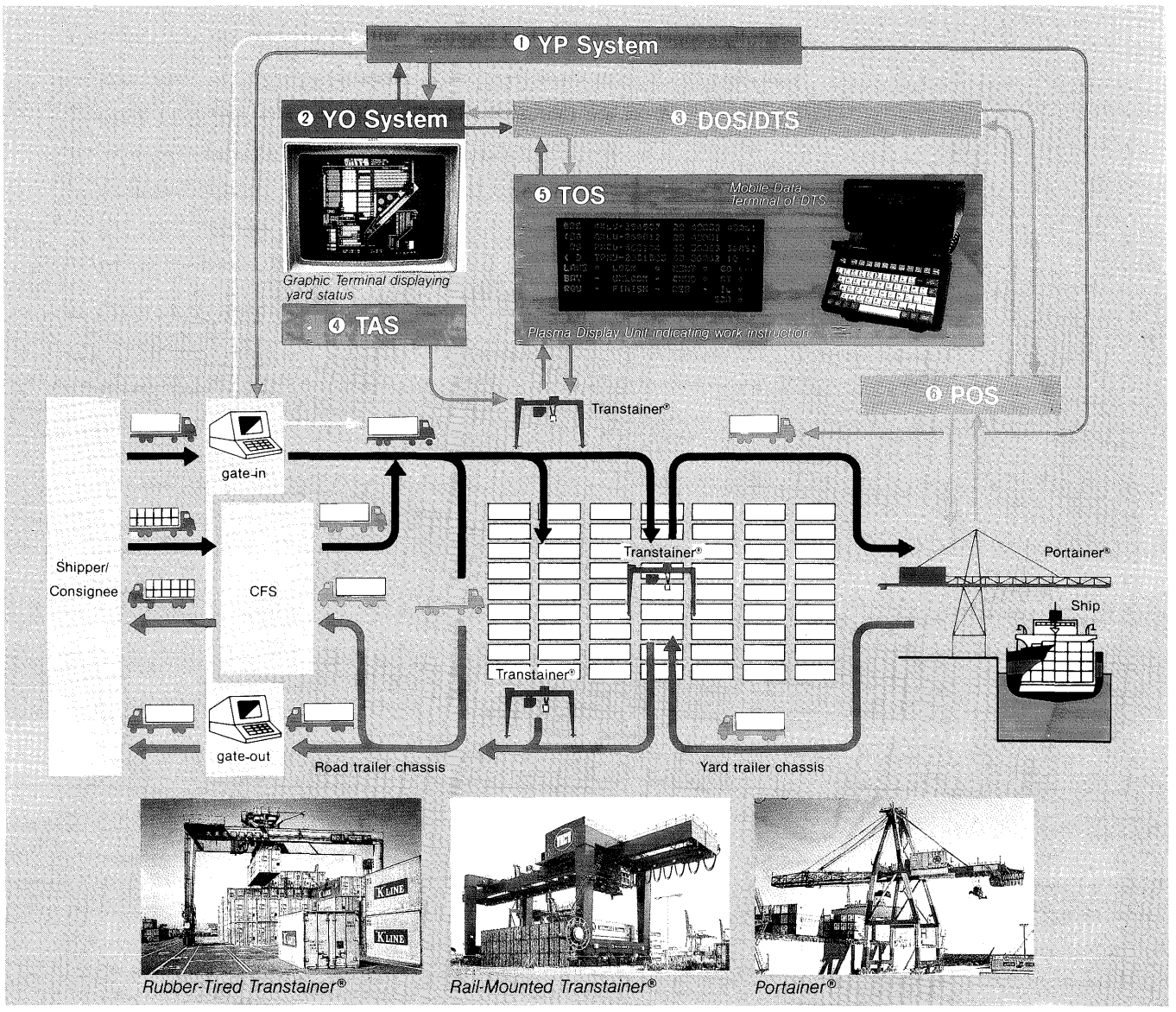
Telex: 2723054 OCEAN J Overseas Office: Singapore, Malaysia, Hong Kong, India, Indonesia, Sri Lanka, Egypt, Saudi Arabia, Iraq.

MITSUI Automated Container Terminal System



❶**YP System**: Yard Plan Computer System
❷**YO System**: Yard Operation Computer System
❸**DOS**: Data Transmission & Oral Communication System (Inductive radio)
DTS: Data Transmission System (Radio)
❹**TAS**: Transtainer® Automatic Steering System
❺**TOS**: Transtainer® Operation Supervising System
❻**POS**: Portainer® Operation Supervising System

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