

PORTS *and* HARBORS

November, 1974 Vol. 19, No. 11



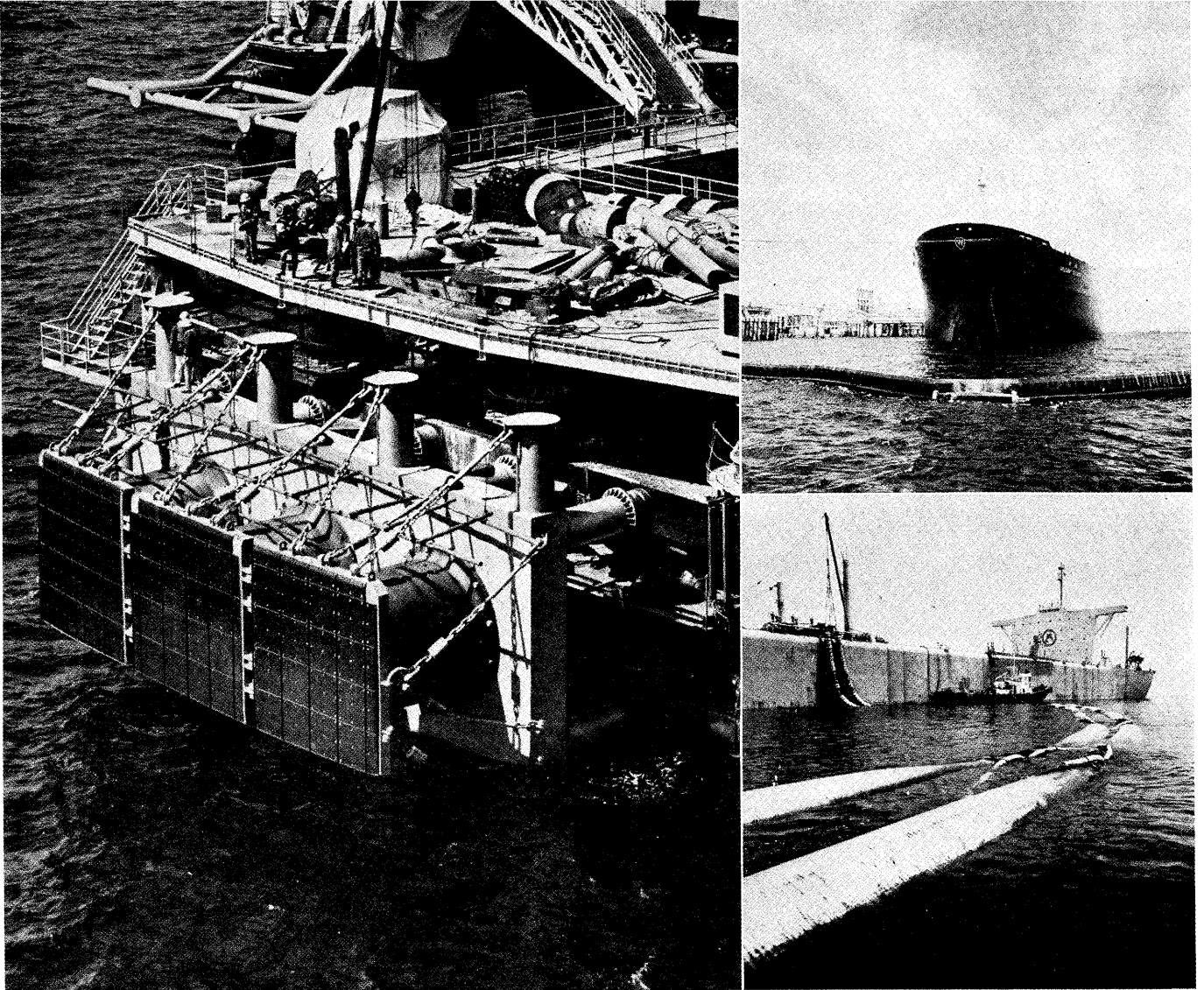
Port of Acajutla
El Salvador

IAPH Conference Singapore March 1975

The Publisher: The International Association of Ports and Harbors

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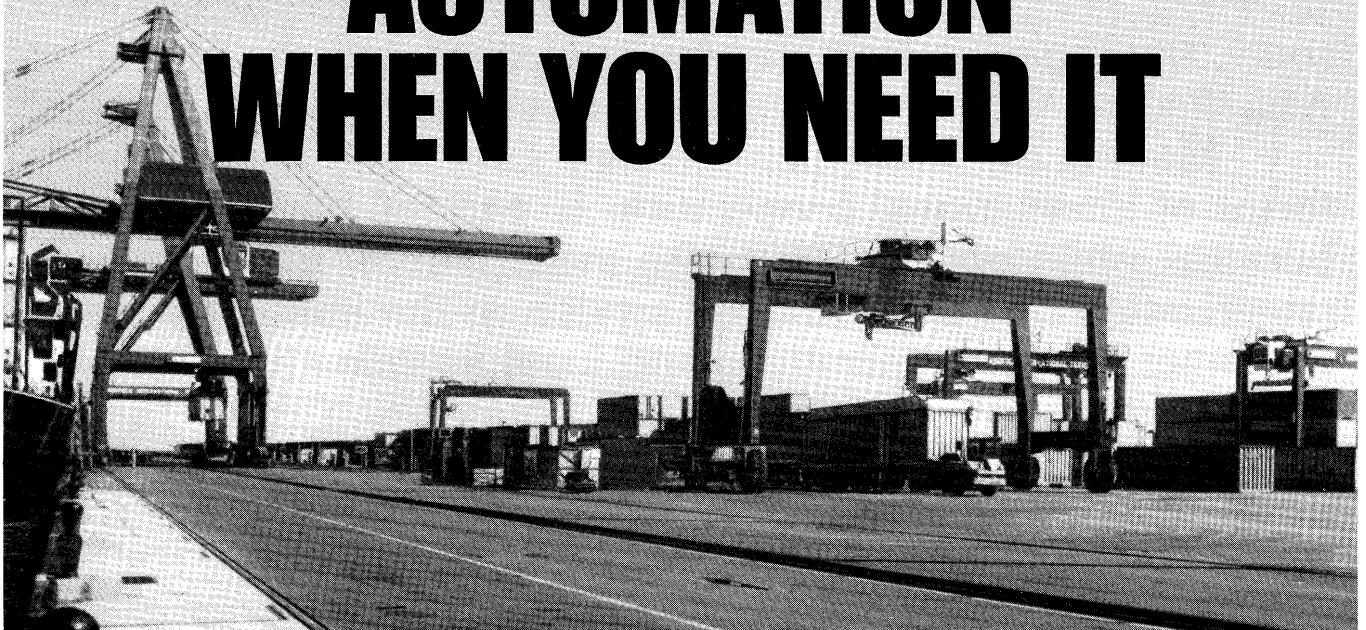
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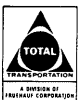
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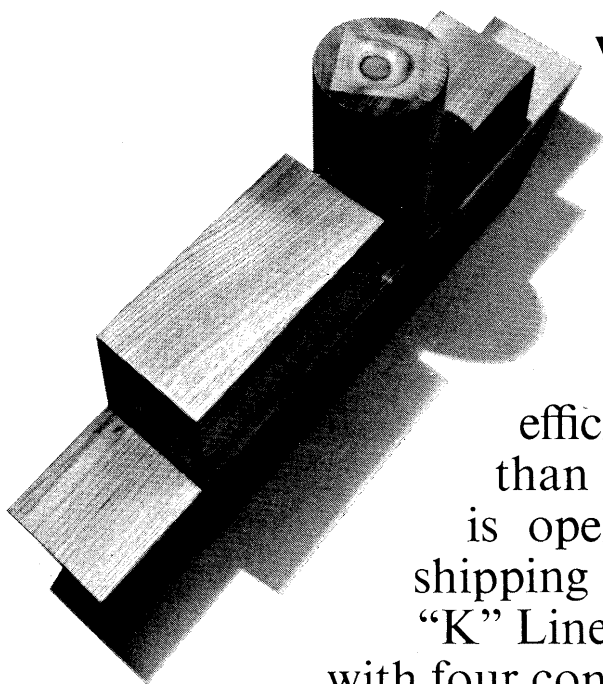


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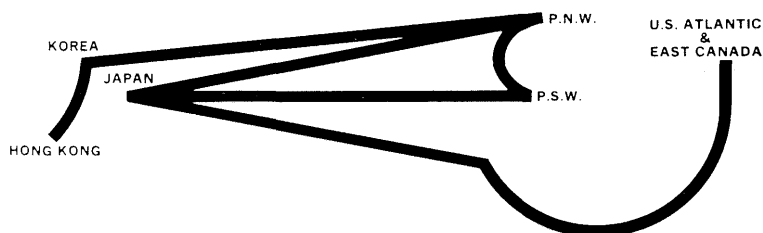
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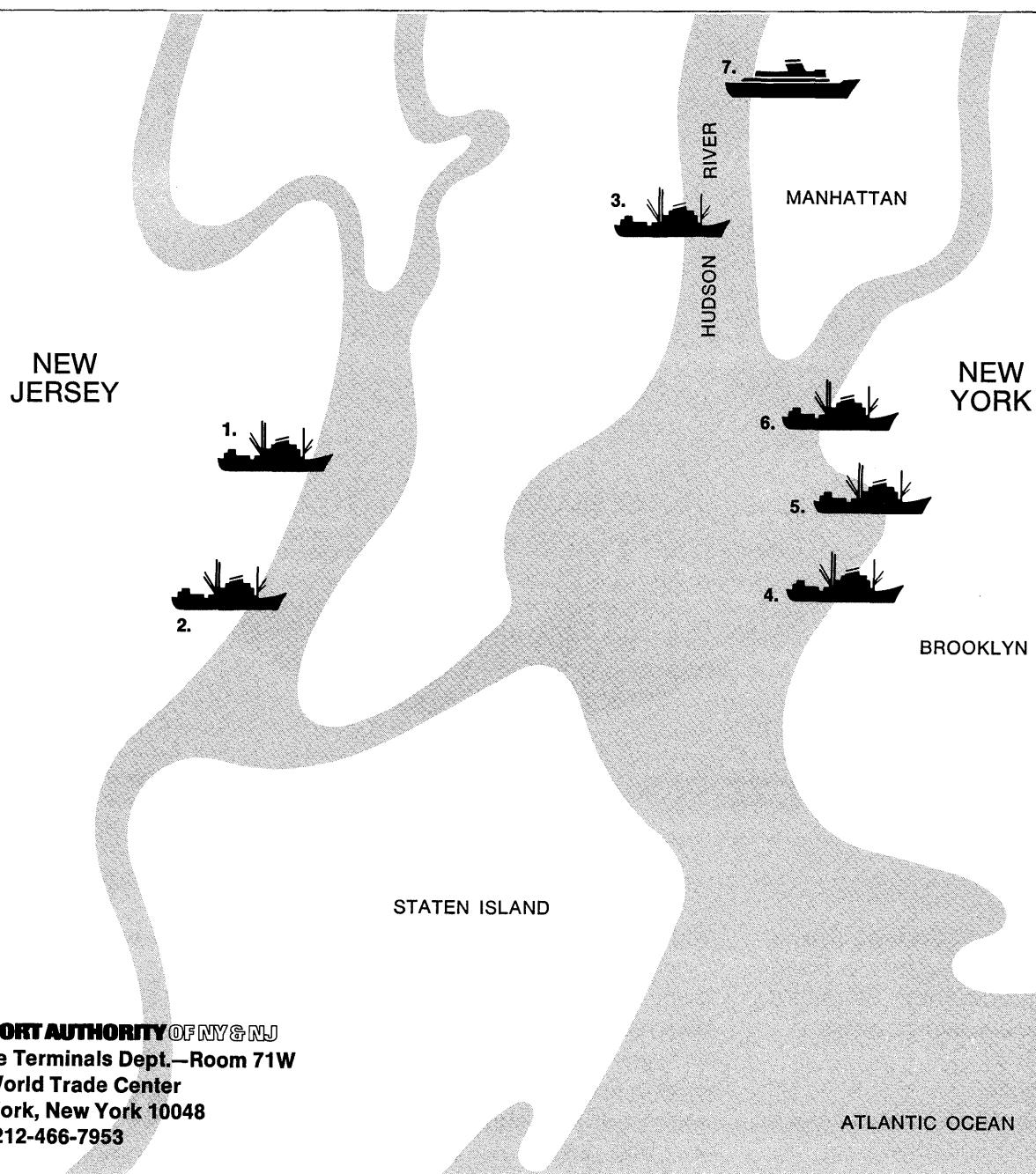
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Editor: Yoshio Hayashi

Published monthly by

The International Association of Ports and Harbors

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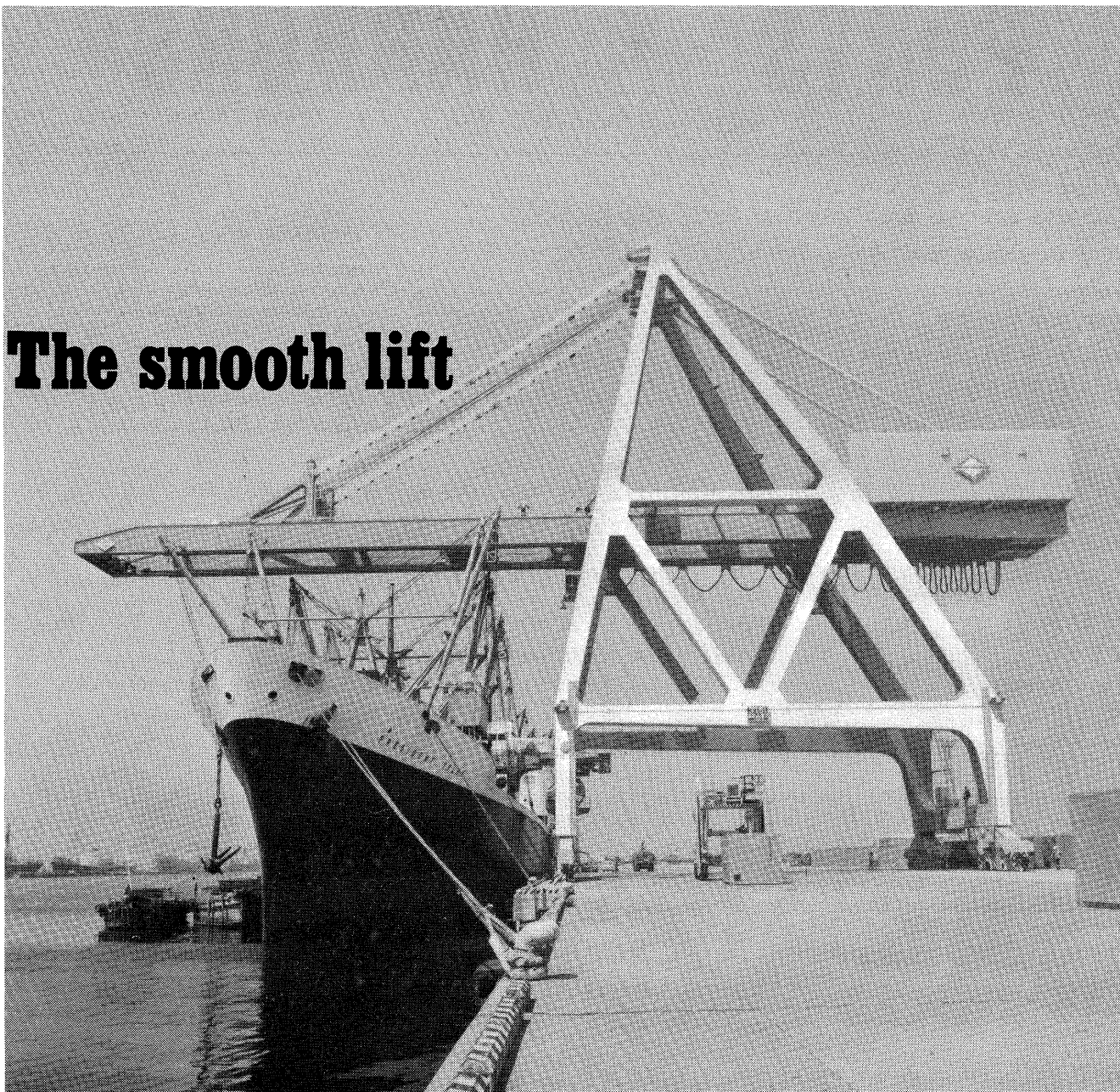
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PORTS *and* HARBORS

IAPH Head Office Announcements: Pages 7 ~ 17

Report of 6th Session on Shipping, UNCTAD

The Sixth Session of the Committee on Shipping, UNCTAD, the first session convened since IAPH was granted consultative status with UNCTAD, was called during July 29th - August 9th, 1974, at the Palais des Nations in Geneva.

Appointment by Mr. John Lunch, Director-General of the Port of London Authority, IAPH Liaison Officer with UNCTAD and the Presidential authorization by Mr. Vleugels, Mr. G.W. Nicklin, the Manager of the Management Services Department of the Port of London Authority, attended this session on behalf of IAPH.

Thanks to Mr. Nicklin's great efforts and kind cooperation, this office was provided with a voluminous report amounting to 24 pages on September 5th, within one month after the close of the session.

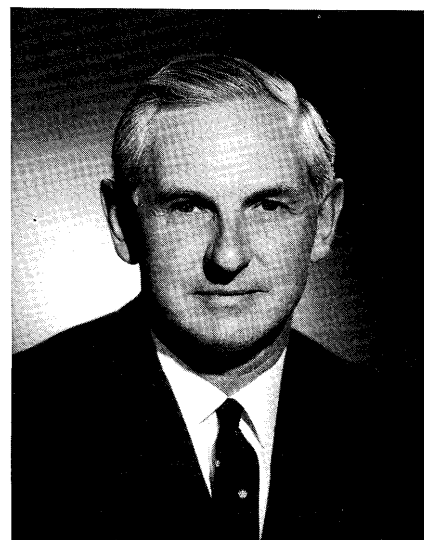
The following is the full text of the report, which, we are confident, will serve IAPH members as a vital reference material to study the current port problems of international importance.

Furthermore, taking this opportunity, we would like to stress that Mr. John Lunch is always quite willing to receive letters from IAPH members, with the copies to the President and Secretariat, in case they wish to make any suggestions for submission to UNCTAD. (K.Y.)

Agenda:—

The agenda provided for six main items of business:—

1. Consideration of the current and long-term trends of shipping problems in the light of the terms of reference of the Committee on Shipping and of the relevant resolutions of the Conference and the Board.
2. Economic co-operation in merchant shipping.
3. Freight Rates.
4. Development and improvement of ports.
5. Trade Practices and Organization in Shipping.
6. Other Business:—
 - (i) "Converting general cargo ships to handle unitized cargo".
 - (ii) "The economic effects of the closure of the Suez Canal".
 - (iii) "Shipping practices in relation to aid".
 - (iv) "A review of the resolutions and decisions on shipping and port questions adopted by the Conference and by the Committee on Shipping. Note by the UNCTAD Secretariat".
 - (v) "Information on certain matters in the field of



Mr. John Lunch

shipping and ports of interest to the Committee on Shipping. Note by the UNCTAD Secretariat."

- (vi) "Economic and Social Council decision on container standards for international multimodal transport".

Organisation of the Committee to Deal with the Agenda

Two committees were formed, the Plenary (or main committee) to deal with items (1), (2), (3) & (6) (vi) of the above agenda and a Sessional (or subsidiary committee) to deal with items (4), (5) & (6) (i) to (v). Mr. J.C. Sanchez Arnau (Argentina) was elected Chairman of the Plenary Committee and Mr. R. Vogel (German Democratic Republic) was elected Chairman of the Sessional Committee.

It transpired that there was little discussion of items 4 & 5 and as these items were completed very quickly, it was decided that item 3 should be transferred from the Plenary Committee to the Sessional Committee.

Discussion of the Items on the Agenda

Summaries of the papers considered under each item of the agenda and of the discussions are given in Appendix I to this report.

There were lengthy discussions of items 1, 2 & 3 and it was

(Continued on Page 11)

Amendments to Code of Dangerous Goods to be studied at January Session

The 24th session of the Sub-Committee on the Carriage of Dangerous Goods, IMCO, is due to be held at IMCO Headquarters, commencing on January 27, 1975.

The Provisional Agenda follows (Ref. IMCO Document CDGXXIV/1 24 July 1974).

1. Adoption of the agenda
2. Decisions of the Maritime Safety Committee and the Marine Environment Protection Committee related to the work of the Sub-Committee
3. Inclusion of Pollutants in the Code
4. Carriage of dangerous goods in unitized forms other than in freight containers
5. Portable tanks for dangerous goods
 - (a) Portable tanks for gases
 - (b) Multimodal tank containers
6. Emergency procedures for ships carrying dangerous goods
7. Amendments
 - (a) Amendments to the Code
 - (b) Amendments to Annex 1 of the Code
 - (c) Amendments to the Recommendations on Safe Use of Pesticides in ships
 - (d) Revision of Class 1 - Explosives
 - (e) Revision of Class 5.2 - Organic Peroxides
 - (f) Insertion in all Classes of information on UN Packaging Groups
 - (g) Amendments to the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods
 - (h) (i) Amendments to the Recommendation on Safe Practice on Dangerous Goods in Ports and Harbours
 - (ii) Reports on the Implementation of the Recommendation
8. Carriage of dangerous goods in limited quantities
9. Carriage of solid dangerous substances in bulk
10. Grouping of substances within classes by their properties
11. Relations with other organizations
12. Future work programme and date of next session
13. Any other business
14. Report to the Maritime Safety Committee

Mr. A.J. Smith, BPA, IAPH Liaison Officer with IMCO, wrote to us on August 7th, 1974, in this respect, stressing as follows;

"You will notice, at item 7(h) of the Agenda, that it is intended to consider (a) Amendments to the Recommendation on Safe Practice on Dangerous Goods in Ports and Harbours and (b) Reports on the Implementation of the Recommendation.

It would be helpful if IAPH members could be asked to advise me, through your good offices, of their comments on this particular item by say mid-November.

If the nature of the views of members is such that there could be said to be a wish for more urgency in considering the matter than is shown by the item's position on the Agenda, I can arrange to make representations to the IMCO Secretariat for a suitable alteration in its placement to be made."

IAPH members are requested to submit their comments, if they have any, to Mr. A.J. Smith in due course. His

address is,

British Ports Association, 3/5 Queen Square, London WC1N 3AR

The September issue of this journal (P 13 - 16) should be referred to when necessary. (K.Y.)

Survey by Committee on Containerization and Barge Carriers

Mr. Ben E. Nutter, Chairman of the Special Committee on Containerization and Barge Carriers has circulated a questionnaire, on August 9th, 1974 to both the IAPH member ports and non-member ports of the world, regarding container and other facilities at major ports.

Followings are complete reproduction of Chairman Nutter's letter and the questionnaire form.

Mr. Nutter, Chairman of the Committee, strongly requested, through this column, of the members who did not respond to his questionnaire so far to turn in their replies "as quickly as possible". (TKD)

August 9, 1974

Gentlemen:

Subject: I.A.P.H. Survey of Container Facilities

The I.A.P.H. Special Committee for Containerization and Barge Carriers is up dating the survey report of 1973 to include the latest information on facilities now in operation and those that are contemplated for expansion. This category of expansion includes those facilities that may be in the design stage or in some later phase of construction.

At the spring meeting of the Committee in Sydney, it was felt this information was vital to both ports and users of container facilities throughout the world. In this new survey, we have also been asked to include separate listings for RO/RO facilities and for LASH and Seabee facilities.

To assist you in filling out the form, I am supplying partial data from the Port of Oakland that sets forth the typical responses that could be made in the various columns on the survey form. The form has been simplified considerably from the survey that was done in 1973. We would appreciate any additional remarks that you would like to make in supplying the requested data.

It is now planned that the survey will be available and complete well in advance of the meeting in Singapore.

Sincerely,

Ben E. Nutter
Chairman

SPECIAL INSTRUCTION

The term 20' containers, and the concept of converting the actual number of containers to "20' equivalent" containers, is based upon the variation in lengths only. No conversion is involved in converting vertical heights which may vary in some trades from "half-height" containers or about 4 feet, to containers as high as 9 1/2'. Repeat — do not convert these numbers with consideration for the height of the container. The statistics we require are for those containers of nominally 20 feet in length and converted by direct ratio to 20' equivalent, whether these be 20', 24', 35' or 40'.

(See tables on next page.)

I.A.P.H.

SURVEY OF CONTAINER AND OTHER SPECIAL FACILITIES AT MAJOR PORTS

PORT	BERTHS			CRANES & FACILITIES	VOLUME	VOLUME	REMARKS	*EXPANSION IN PROCESS OF DEVELOPMENT
	NUMBER	LENGTH (METRES M) (FEET F)	DEPTH ALONGSIDE (METRES M) (FEET F)		CONTAINERS IN 20 FOOT EQUIVALENT 1973	MANIFEST TONS 1973 (Tons of 2000 lbs or metric tonnes of 2204.6 lbs)		
					*C= L= R=	*C= L= R=		
					*C=Container Berth L=LASH Berth R=RO/RO Berth	*C=Container Berth L=LASH Berth R=RO/RO Berth		*Facilities presently under design or con- struction and comple- tion within 5 years.

I.A.P.H.

SURVEY OF CONTAINER AND OTHER SPECIAL FACILITIES AT MAJOR PORTS

PORT	BERTHS			CRANES & FACILITIES	VOLUME	VOLUME	REMARKS	*EXPANSION IN PROCESS OF DEVELOPMENT
	NUMBER	LENGTH (METRES M) (FEET F)	DEPTH ALONGSIDE (METRES M) (FEET F)		CONTAINERS IN 20 FOOT EQUIVALENT 1973	MANIFEST TONS 1973 (Tons of 2000 lbs or metric tonnes of 2204.6 lbs)		
Oakland	Container 2 Berths Middle Harbor	439 (M) 1,440 (F)	10.7 (M) 35 (F)	2 - 40 ton capacity Alliance Cont. Cranes	*C= L= R=	*C= L= R=	Total tonnage includes manifest tons all systems.	
	2 Berths Outer Harbor	413 (M) 1,355 (F)	11.7 (M) 37 (F)	4 - 30 ton capacity Paceco Cont. Cranes				
	2 Container Berths 7th Street	488 (M) 1,600 (F)	10.7 (M) 35 (F)	1 - 27-1/2 ton capacity Star Cont. Crane 1 - 30 ton capacity Paceco Cont. Crane 1 - 33 ton capacity Star Cont. Crane				
	Outer Harbor Terminal 3 Berths	649 (M) 2,130 (F)	10.7 (M) 35 (F)	3 - 40 ton Cont. Cranes	*C=Container Berth L=LASH Berth R=RO/RO Berth	*C=Container Berth L=LASH Berth R=RO/RO Berth	Under constr- uction Por- tion of 7th St. Terminal.	*Facility presently un- der design. Partial com- pletion planned for 1975 Final completion 1976.
	RO/RO 1 Berth Stern Ramp	213 (M) 700 (F)	10.7 (M) 3.5 (F)	3 - RO/RO Ramps	Insert total figures for each category.	Insert total figures for each category.	Public Cont. Terminal	Completion expected November, 1974.
	1 Berth 1/4 Ramp	242 (M) 793 (F)	10.7 (M) 3.5 (F)		Total above 436,590	Total above 6,207,230		

Mr. Paul Bastard Appointed as IAPH Observer at PIANC meeting

Secretary General Dr. Hajime Sato was informed by the letter from President Vleugels dated September 2nd that Mr. Paul Bastard, Chairman of Special Committee on Large Ships was due to attend the inaugural meeting of Permanent International Association of Navigation Congresses - International Commission for the Reception of Large Ships to be held in Brussels on October 9th, 1974 as an observer on behalf of IAPH.

Mr. Paul Bastard, General Manager of Port Autonome du Havre, will also act as the French Representative at the meeting, and President Vleugels assures in his letter that Mr. Bastard's report of the meeting will be available to IAPH members in due course. (TKD)

Messrs. A. Pages, R. Boeuf & A. J. Smith Attend IMCO Session in November

As reported in the October issue of this journal (Ref. P-7), IAPH Proposal to IMCO on Wreck Removal is expected to be deliberated by the Legal Committee, IMCO, at its 24th session scheduled from the 11th through the 15th of November, 1974.

Mr. Andre Pages, Chairman of Special Committee on Legal Protection of Navigable Waterways, who initiated the above IAPH Proposal, Mr. Robert Boeuf, General Manager of Port of Dunkirk Authority and IAPH Executive Committee member, and Mr. A. J. Smith, Secretary of British Ports Association and IAPH Liaison Officer with IMCO, are expected to attend the session. (K.Y.)

Visitors

Commander E. H. W. Platt, Director and Assistant General Manager of BP Tanker Company Limited, U.K. visited the IAPH Head Office and was met by Dr. Hajime Sato, Secretary General on the afternoon of September 12th.

On the same day prior to his visit to the Head Office, Commander Platt paid a courtesy visit to Mr. Toru Akiyama, Secretary General Emeritus at Mr. Akiyama's Tokyo office.

Commander Platt served as Chairman of the Special Committee on Large Ships during 1969 - 1971 and he was on his way from Southern Japan where he was visiting various shipbuilding yards. Commander Platt left Tokyo on the evening of September 12th for Honolulu. (TKD)

2 Officials from the Government of Victoria, Melbourne, Australia came to Japan

Mr. A. J. Wagglan, Director of Ports and Harbors, Public Works Department, and Mr. Bruce Wadeson, Senior District Engineer, Ports and Harbors Division, Public Works Department of the Government of Victoria, Melbourne, Australia, have visited Japan during this month of September. IAPH Head Office, with the good co-operation of the Japanese IAPH Members as well as that of Japan's Ministerial agencies, has arranged highly extensive business schedules for the two visitors. The following are extracts of their schedules.

1. Mr. Wadeson:

Sep. 12 (Thu): Arrival Tokyo. Visit to IAPH Head Office to be met by Mr. Katsuya Yokoyama, Deputy Secretary

General and his staff. Visit to the Ministry of Construction to be met by Dr. Toyoshima, Director, Coast Division where he was given an over-all briefing on the foreshore protection works done by the Ministry of Construction.

Sep. 13 (Fri): Visit to the Ministry of Transport to be met by Mr. Yoshio Takeuchi, Director-General, Bureau of Ports and Harbours, followed by discussions with officials on foreshore protection works within the ports in Japan as well as the Planning of marina facilities.

In the after-noon, boarding the Tokyo Metropolitan Government's motor launch, Tokyo-Maru, observation of the high-tide dykes and pumping stations situated along the water-line of the City of Tokyo as well as the land reclamation works and port development works conducted within the Port of Tokyo.

Sep. 15 - 19 (Sun - Thu): Visit to Hokkaido, with the help of Dr. Akira Ozaki, a Professor of the Hokkaido University and the Hokkaido Development Agency, for the observation of the Regional Development works at Abashiri.

Sep. 20 (Fri): Visit to Sajima Marina, the first privately developed modern marina in Japan and Port of Misaki, one of the 13 largest fishing ports in Japan, which is administered by the Kanagawa Prefectural Government.

Sep. 23 (Mon): Visit to Hamanako (Lake Hamana) Marina, which is being developed by YAMAHA, near Hamamatsu, Shizuoka Prefecture.

Sep. 24 (Tue): Visit to Shizuoka Prefectural Government, to be met by Mr. Ichikawa, Director, Ports and Harbour Division, Shizuoka Prefectural Government. Observation tour of foreshore protection works along the coast of the Suruga Bay and visits to ports of Ejiri, Yaizu and Yui-Kambara, regional fishing ports, in the Bay.

Sep. 25 (Wed): Visit to Yonago Regional Office of the Tottori Prefecture of the Ministry of Construction to observe the foreshore protection works along the coast of Yonago area which faces to the Japan Sea.

Sep. 26 (Thu): Visit to Port of Kobe for the observation of port facilities and the Kobe Port Island (one of the largest man-made island in Japan).

2. Mr. Wagglan:

Sep. 19 (Thu): Arrival to Tokyo. Visit to IAPH Head Office to be met by Dr. Hajime Sato and Mr. Katsuya Yokoyama, Secretary-General and Deputy Secretary-General, and staff of IAPH.

Sep. 20 (Fri): Visit to Mitsui Shipbuilding Company's Chiba Factory, one of the newest and largest shipbuilding factories in Japan.

Sep. 21 (Sat): Visit to Keihin (Tokyo Bay) Port Development Authority's container terminal at Ohi near the Tokyo International Airport to be met by Mr. Takahashi, Director of Planning Division of the Authority. Observation of Berth No. 4 and 5 which are operated by Tokyo International Container Terminal Co., Ltd., which serves for the Trio Group's container vessels.

Sep. 24 (Tue): Visit to Nippon Steel Corporation's Kimitsu Works in Chiba Prefecture to be met by Mr. Takeo Kai, General Manager, Pollution Control Office to discuss various measures against pollution control. Observation of the facilities, iron ore unloaders, coal berths, blast furnaces, Heavy Plate Mill and others.

Sep. 25 (Wed): Visit to the Port of Osaka for the observation of port facilities.

Sep. 26 (Thu): Visit to the Port of Kobe, together with Mr. Wadeson, for the observation of port facilities and Kobe

Port Island.

They left Japan from Osaka International Airport for their next destination Hongkong. (RIN)

A Lady Specialist in Harbor Labor Matters from BTDB visited Japan

Mrs. Kay John, a member of the British Transport Docks Board (BTDB), also an Executive Member of the Transport Salaried Staffs Association, under the scholarship of the Winston Churchill Memorial Trust, has recently visited Japan for the purpose of observing the matters related to safety at port and provision for port workers for about 4 weeks.

Based upon the requests from Mr. Stanley Johnson, Managing Director of the BTDB, IAPH Head Office has prepared an over-all schedule for her stay in Japan with the good-cooperation of the IAPH members in Japan as well as that of various central and local governmental agencies and other friendly organizations.

Major items of her study trip are;

- 1) Codes of practices in operation at Far-Eastern ports
- 2) Port Safety Committees
- 3) Accident Prevention
- 4) Health and medical care

The followings are extracts from her schedules:

Sep. 16 (Mon): Arrival at Tokyo

Sep. 17 (Tue): Visit to IAPH Head Office to be met by Dr. Hajime Sato and Mr. Katsuya Yokoyama, Secretary General and his Deputy, and their staff.

Sep. 18 (Wed): Visit to the Ministry of Transport to be met by Mr. Yoshio Takeuchi, Director-General of the Bureau of Ports and Harbours and Mr. Seigo Madokoro, Counselor of the Bureau and given an over-all explanation on the organizational set-up of ports and harbours in Japan.

Sep. 19 (Thu): Visit to the Tokyo International Container Terminal Company's container terminal at Ohi for the observation of the facilities, to be met by Mr. T. Hirai, Director, General Manager of Technical Department.

Visit to the Ministry of Labor to be met by Mr. Ishimatsu Nohara, Director, Safety Division. An over-all guidance on the organizational set-up was given.

Sep. 20 (Fri): Joint meeting with people from the Japan Harbour Transport Association, led by Mr. K. Takahama, Managing Director, Mitsubishi Warehouse & Transportation Co., Ltd., and Ports and Harbours Cargo Transport Enterprise Labour Accident Prevention Association, led by Mr. S. Kimura, for the presentation and discussion on the general situation and improvement plans for the port workers and safety. Those presented at the joint meeting were: Mr. Takahama, Mr. H. Nakanishi, Managing Director, All Nippon Checkers' Corporation, Mr. T. Ebana, Executive Director of the former Association, Mr. S. Kimura and Mr. M. Tanaka, Executive Director and Director, Administration Department & Technical Control Department of the latter Association.

Sep. 24 (Tue): Visit to the Nagasaki Prefectural Government to be met by Mr. Tairoku Araki, Director-General, Civil Engineering Department. Visit to the Nagasaki Regional of the Ministry of Labour followed by the observation of facilities for workers at the Mitsubishi Heavy Industry's Nagasaki Ship Yard.

Sep. 27 (Fri): Visit to Port of Osaka to be met by Mr. O. Takamura, Director General, Bureau of Ports and Harbours, City of Osaka and his experts in the field of labours for the general presentation of matters related to port workers and

facilities for them. Observation of port facilities.

Sep. 28 (Sat): Visit to the Port of Osaka Port Workers' Welfare Association to be met by Mr. Yamaguchi, Director of the Association, including visits to its facilities; the Osaka Port Workers' Hospital and dormitories for port workers, and school and dormitories for children whose parents work on barges and lighters.

Sep. 30 (Mon): Visit to the Osaka Prefectural Government to be met by Mr. Kido, Director, Safety Division. Observation of training center for workers which is run by the Osaka Port Workers' Training Association. Visit to the Osaka Regional Office of the Ministry of Labour to be met by Mr. Yoshimoto, Director.

Mrs. Kay John is scheduled to visit to ports of Kobe, Yokohama and Tokyo toward the first part of October before she leaves Japan on October 12.

She will be visiting ports of Hongkong, Singapore, Bangkok and Bombay before she concludes her 2 months study trip. (RIN)

Report of 6th Session—

(Continued from Page 7)

in respect of these items only that resolutions were adopted. Heat was generated in particular, during the discussions of the trends in the developing countries' share of maritime tonnage and worsening terms for export credits to the developing countries for financing new ships. There was similar feeling in respect of the large increases in freight rates which have occurred in the last two or three years and frequent references were made back to the discussions on the Code of Conduct for Liner Conferences which had been dealt with at the special session of the Committee in March, this year.

Resolutions Adopted by the Committee

The resolutions adopted by the Committee were:—

(i) Development of Merchant Marines

This resolution related to item 1 of the agenda and urged the developed countries and international and regional and financial institutions to consider granting financial assistance on favourable terms and to give technical assistance for the development and expansion of the ship building and ship repairing industry in developing countries and further to facilitate the establishment or expansion of efficient national marines of developing countries. The Secretary General of UNCTAD was requested to prepare for the seventh session of the Committee a report on the way in which financial terms and conditions for the purchase of ships affect the development of the merchant marines of developing countries.

(ii) Economic Co-operation in Merchant Shipping

This resolution related to item 2 of the agenda and set out the following matters as being suitable and ripe for harmonisation and requested the UNCTAD Secretariat to give priority to the examination of these subjects for their consideration at the seventh session of the Committee:—

- a) Treatment of foreign merchant vessels in ports.
- b) Technical and economic assistance in shipping and ports.

It was resolved further that the UNCTAD Secretariat should report on the economic consequences for international shipping of the existence or lack of a genuine

link between vessel and flag of registry as explicitly defined in international conventions. Under this item the Committee also agreed that shipping and port statistics are important for the harmonisation of shipping policies and that work on this subject by the UNCTAD Secretariat should be continued taking into account the experience and efforts of other international organisations.

(iii) Freight Rates

This resolution related to item 3 of the agenda and called upon the UNCTAD Secretariat to present a study on the feasibility of introducing free in and out (FIO) rates in liner trades and the implications thereof. The results of the study to be reported at the seventh session of the committee on shipping together with a report upon the measures taken by governments of state members of UNCTAD for the implementation of resolution 69 (iii) which urged, *inter alia*:—

- (i) greater consultation by liner conferences with shippers and/or shippers' organisations in the setting of freight rates and
- (ii) cost savings to shipping lines resulting from port improvements be taken into account in freight rate consultations.

Code of Conduct for Liner Conferences

As the Code of Conduct for Liner Conference was not on the agenda a resolution was not considered on this subject, although many references were made to the Code during discussions of other matters. The Chairman dealt with this subject by producing a statement which was approved by the Committee. A copy of the statement is attached as Appendix II and the final sentence reads:—

Whatever the position may be of each country member of this Committee towards this Convention, I think the Committee can be content with the amount of attention and effort which the international shipping community has brought to a project emanating from this Committee.

Significance of the Session to Ports

The resolution on economic co-operation could prove to be of considerable significance to ports. This resolution called upon the UNCTAD Secretariat to give priority to examining:—

- a) The treatment of foreign vessels in port.
- b) Technical assistance in shipping and ports.

Individual ports may expect to receive enquiries from the Secretariat concerning the treatment of foreign merchant vessels in respect of such matters as priority of entry, allocation of berths, loading and discharging and dues and taxes.

Probably the most significant feature of the Session, however, was the lack of direct discussion of port matters despite many passing comments on the need to improve port performance and the inclusion in the agenda of an item on development and improvement of ports.

Although sixty nations were represented at the Committee by a total of more than two hundred delegates only five delegations included a port specialist. The need for I.A.P.H. to be represented at meetings of the Committee was clearly demonstrated.

Representation at future meetings of the Committee

It is desirable that the I.A.P.H. representative at future

meetings should have authority from the Association to present views on subjects on the agenda.

In order for such views to be represented adequately at the next Committee on Shipping, programmed for November 1975, it would be desirable for the Board of Directors of the Association to consider the subject matters on the agenda early in 1975. Hence, as early as possible next year a summary of the reports to be considered at the next Committee on Shipping should be sent to the Directors of the Association in order that the necessary consideration can be given to forming agreed views.

APPENDIX-I

Summaries of the Main Items Considered by the Sixth Committee on Shipping

Item 1. Current and long term trends of shipping problems - Review of Maritime Transport 1973.

The main points of the review were:—

(i) The Development of International Seaborne Trade

In the long run, the international seaborne trade, as part of world foreign trade, has followed a rising trend. Its year-to-year evolution is, however, subject to fluctuations. In the period 1960-1972, the annual rate of change in the international seaborne trade fluctuated between 4 per cent and 13 per cent. Although a wide range of factors influence the course of the world trade as a whole, and consequently, of international seaborne trade, the experience of recent years points to a dominant influence of a few industrial countries on world trade and likewise on international seaborne trade. For example, it has been noted that a relatively low rate of growth in 1971 in these countries was accompanied by a correspondingly low rate of growth in the volume of international seaborne trade in the same year, as compared with 1970. Conversely a relatively high rate of economic growth in these countries in 1972 was reflected in the increased volume of world seaborne trade in the same year. Similarly, a strong upsurge in the volume of world seaborne trade in 1973 (provisionally estimated to be 13%) was, to some extent, a result of the shortage of oil in the United States of America and the large-scale purchases of cereals by the USSR from the United States of America.

(ii) The Development of the World's Merchant Fleet

Changes in the World Fleet.

Between mid-1972 and mid-1973, the world active seagoing merchant fleet increased by 23.4 million grt or 40.4 million dwt as compared with a 21.8 million grt or 39.0 million dwt increase from 1971 to 1972. In percentage terms this represents an increase of 9.0 per cent in grt or 10.0 per cent in dwt in 1972-1973 as compared with about 9.1 per cent in grt and 10.7 per cent in dwt in 1971-1972. There was an average compound rate of 8.6 per cent in grt or a corresponding growth rate in dwt of 10.2 per cent per year during the period 1965-1973.

Tanker tonnage continues to grow more rapidly than that of non-tankers. During the period 1965-1973, tankers registered an annual rate of growth of 11.8 per cent in dwt and non-tankers an annual growth rate of

9.0 per cent.

Also, from 1972 to 1973, an 11.6 per cent rate of growth was recorded for tankers, compared with 8.6 per cent for non-tankers. However, within the group of non-tankers, bulk carriers including combined carriers recorded notable increases in tonnage over the period 1965-1973. The increase was nearly 4.3 times in grt and about 4.8 times in dwt that of the corresponding tonnages in 1965. In this regard, the rate of expansion in the tonnage of bulk carriers had been the fastest in comparison with tankers and other ships.

A slowdown is noticeable, though, in the pace of increase of bulk carriers in 1973, when the percentage increase in terms of dwt in the tonnage of this category of vessels was 16.1 as compared with a 21.0 per cent increase in 1972 and 17.3 per cent in 1971.

"Other ships" showed relatively marginal increases, in terms of grt and of dwt, over the period 1965-1973 and also from 1972 to 1973. The average rate of growth per year was only 3.4 per cent in terms of grt and 2.8 per cent in terms of dwt. From 1972 to 1973, the tonnage of this category of ship increased by 4.0 per cent and 1.9 per cent respectively.

Tonnage on Order.

During the 12-month period ending on 31st October 1973, the world tonnage on order increased by 87.4 million dwt or by 51.3 per cent as against a decrease of 1.1 million dwt in the corresponding period ending 31st October 1972.

In December 1972, alone, more than 10 million grt of shipping was contracted, as compared with 21 million grt placed with world shipyards during the preceding 11 months. Heavy ordering for new tonnage continued during the first four months of 1973, and a relative slowing down in the period May-July 1973, partly because of a sharp rise in prices and partly because delivery dates have been pushed well into the latter part of the 1970s, was only temporary. In the quarter, August-October 1973, there was a net increase of 26.3 million dwt. The world tonnage on order as at 31st October 1973 stood at 257.9 million dwt and amounted to an equivalent of 58.0 per cent of existing world tonnage, as against 179.5 million dwt on 31st October 1972, which amounted to 42.2 per cent of the then existing tonnage.

Total tonnage figures:—

	World Tonnage	Developing Countries share in GRT
mid 1973	284.2 million GRT	6.0
mid 1972	260.8 million GRT	6.1
mid 1971	239.0 million GRT	6.4

(iii) World Ship Prices

Shipbuilding prices rose sharply in 1973 though not in a uniform pattern for all types of vessels.

Approximate increases for different types of vessels compared with 1972 were:—

Bulk Carriers & Tankers	Gross % increase
30,000 DWT Bulk	60
87,000 DWT Tanker	60
96,000 DWT OBO	40
216,000 DWT Tanker	50
Liner Type Vessels	20

(iv) Freight Markets

The following table illustrates the trend during 1971 to 1973:—

	31st Dec. 1973	31st Dec. 1972	31st Dec. 1971
Liner freight index (1965 = 100)	154	132	131
Dry cargo tramp time charter index (1968 = 100)	358	134	75
Dry cargo tramp voyage charter index (July 1965 - June 1966 = 100)	241	94	70
Tanker trip charter index (inter-scale = 100 to 15th September 1969; worldscale = 100 thereafter)	216	132	108

Discussion of Item 1

In addition to the resolution adopted by the Committee in respect of this item the following suggestions were made concerning future reviews:—

- inclusion of a chapter on recent developments and statistical information relating to ports.
- inclusion of additional information on the methods used for calculating freight rate indices.
- inclusion of a chapter on technical assistance requested by developing countries, on the assistance granted to them and on the assistance available to them, in view of the nature of this topic and the importance attached to it by many delegations, which had suggested that a document might be issued on the subject.
- one delegation, supported by others, also made a number of suggestions concerning the possibility of breaking down the statistical information on national fleet tonnage in order to emphasize the operational or economic value of vessels and not merely their dead weight.

Item 2. Economic Co-operation in Merchant Shipping

Report by the UNCTAD Secretariat.

This report sets out the areas of co-operation in shipping dealt with in representative bilateral and multi-lateral agreements and also lists subjects which have been or are at present being considered by a number of selected international bodies.

Finally it sets out a list of broad areas which may be considered justify action to improve international co-operation. These are:—

- Promotion of shipping.
- Financing of merchant marines.
- Technical and financial assistance in shipping.
- Access to and treatment in ports of foreign merchant vessels.
- Port and shipping statistics.
- Legal aspects of international public and private shipping relations.

In summarising the discussion on this item the Chairman stated that:—

Most representatives were in favour of a better co-ordination of technical and financial assistance and had suggested that this question be studied, although some had expressed doubts about the further advantages of such co-ordination. All representatives who had spoken had stressed the importance of access to and treatment

in ports and suggested that this question be studied, but views differed on the need to revise the 1923 Convention. On this question, some countries had stressed the importance of the principle of non-discrimination; at the same time, other countries had stressed the importance of the principle of reciprocity.

The resolution adopted by the Committee accorded priority to areas IV and III above.

Item 3. Freight Rates

(i) Freight rate indices - Report by the Secretariat.

This report was produced in response to a Conference resolution that a pilot study be undertaken

- (a) to construct index numbers of liner freight rates in the import trades of developing countries and
- (b) to start on the construction of index numbers of freight costs of commodities exported by developing countries.

The Secretariat encountered difficulties in respect of (a) in the matching of trade statistics with conference freight tariffs and had made no progress in this area. In respect of exports, indices had been constructed in respect of four commodities i.e. cocoa, cotton, rubber and tea.

The indices indicate that for the four commodities combined, the freight rates by the end of 1972 were 33 per cent higher than the average for 1968 - the base year - and that more than half of the increase took place between the end of June 1971 and the end of March 1972. The freight rate indices for each of the commodities at the end of 1972, base 1968 = 100, were: cocoa 134, cotton 137, rubber 131 and tea 131.

(ii) The Maritime Transport of Jute - Report by the UNCTAD Secretariat.

This report considers in great detail the international trade in jute, the supply and demand situation, marketing, ocean transport and freight rates.

The world consumption of raw jute increased from 1.8 million tons in 1950/51 to 3.57 million tons in 1965/66. Since the latter date there has been a slight decline due to competitive man made fibres and alternative methods of packaging.

The report concludes that the long term future of the jute industry will depend largely on the maintenance of low prices.

Other findings are that freight rates for long jute as a percentage of price increased slightly during the 1960's but some bulking of shipments has been achieved on the major trade routes e.g. Pakistan to Western Europe and India to the United States of America. The report also concludes that rapidly increasing handling costs at both ends of the import chain together with delays in the turn round of ships urgently call for the adoption of some form of cargo unitisation.

Whilst palletisation or containerisation are not considered particularly appropriate, pre-slashing is considered a possible solution.

(iii) The Maritime Transport of Iron Ore -

Report by the UNCTAD Secretariat.

The main findings of this report are:-

1. Between 1960 and 1970 the seaborne trade in iron ore more than doubled in terms of weight and increased by 357 per cent in terms of ton miles as a result of increasing distances. Average distances rose from 2,600 miles to 4,400 miles.

2. Ten leading exporting countries account for 83 per cent of all iron ore exports, whereas on the import side only five countries account for a roughly similar percentage.
3. Some two-thirds of the trade consists of shipments from mines controlled by the steel making companies or on the basis of long term purchase contracts.
4. Important improvements were made in ports in the decade 1960 to 1969 and the general trend is to increase the capacity of ports handling this trade to receive ships of up to 250,000 D.W.T.
5. Freight costs per ton of iron ore declined during the decade 1960 to 1969.
6. Importers are generally in favour of buying on F.O.B. terms but increased selling on C. and F. terms could enable developing exporting countries to increase their share of the world tonnage of ore carrying vessels.
7. The economic reasons for transporting ores of up to 60 per cent iron content should be questioned. Pre-reduction processes need to be considered so that reduced transport costs can be achieved by exporting high iron content pellets or other forms of semi-processed iron ore.

Discussion of Item 3.

The Secretariat were asked to continue their work on freight rate indices with a view to widening the range of commodities and after much discussion on freight rates generally a resolution as reported in the body of this report was adopted.

Item 4. Development and Improvement of Ports

This item was concerned with two reports prepared by the UNCTAD Secretariat, "Berth Throughput: Systematic methods for improving general cargo operations" and "Port Pricing".

The report on berth throughputs described a study carried out by the Secretariat to identify the bottle-necks to higher berth throughputs to assess the benefits and methods of removing such bottle-necks.

A feature of the study is that two methods of analysing port performance have been developed in parallel. These are referred to as the "basic method" and the "simulation method". Both methods have been tested by application to three different ports. The basic method is concerned with the measurement of the intrinsic capacities of the various parts of the berth, thus providing ready identification of bottle-necks and an assessment of the benefits of widening them.

This method does not take into account variations in the rate of handling cargo - the normal fluctuations in the working rate, and the ability to vary it deliberately depending on external conditions yet it can give illuminating insights into the nature of and reasons for bottle-necks. In order to determine whether or not disregarding these sources of variation renders the result derived from the use of the basic method invalid, a second and much more detailed method of analysis was developed, which involved simulating the operation of a port inside a computer. The simulation method requires not only careful collection and analysis of large quantities of data (like the basic method) but also an understanding of the logic of the management decisions which influence the way the port operates.

The simulation method is a much more powerful tool than the basic method, and it can be used to elaborate on

operational aspects not quantifiable by means of the basic method, such as how port flexibility contributes to the efficient use of resources, and the extent to which facilities need to be over-provided in order to avoid excessive delays at times of peak demand. However, the application of the simulation method is not a task to be undertaken lightly. The data requirements and the technical expertise required to construct a realistic simulation model will place this method out of the reach of most ports in developing countries. In spite of its limitations, therefore, the basic method is likely to prove the more practical tool for identifying sources of port congestion, not only those which exist now but also those which will appear when the level of traffic increases.

The report discusses the various factors e.g. ship characteristics, routing of cargo, traffic variation, cargo handling methods etc. which affect berth throughputs and illustrates, with examples of three ports, the way in which the study can be used and improvements achieved.

The report on Port Pricing stems from the Secretariat's view that a significant factor in the improvement and expansion of port facilities, and in the effectiveness with which the port's assets are utilized, is the system of pricing adopted. Many ports have realized the intimate connection between the pricing system and improvement and expansion of the port on the one hand and efficiency of its use on the other, and have requested technical assistance in this matter. In the light of this accumulated evidence it seemed to the Secretariat essential that a full report on the subject of port pricing should be prepared for the guidance of the Committee on Shipping and of future technical assistance projects.

The report is in two parts. In part one the various factors which affect the determination of port prices are examined. Among these factors, the most important are: pricing objectives and constraints; supply of and demand for port facilities and services; flow of benefits, costs and revenue. They are separately analysed, and quantitative data showing their respective importance are provided. In addition, information about the various pricing systems at present applied in the world is presented.

The aim of part two of the report is to show, with appropriate examples, how the various port pricing components may be combined in the establishment of actual port charges. It is assumed that a revision of the port pricing system in a hypothetical port has to be carried out. The necessary steps which have to be taken are described. Difficulties which may arise are analysed and guidance is provided to assist in finding appropriate solutions. Although inspired by the situation in existing ports, all the examples given are hypothetical.

In introducing the discussion of the item "Development and improvement of Ports" the representative of the Secretary-General of UNCTAD observed that, unlike many of the Secretariat's studies in the field of shipping - which were produced as background material for intergovernmental action, the Secretariat's work in the field of ports consisted, almost exclusively, in the provision of guidance to Governments and port authorities on ways of increasing port efficiency.

The representative of the Secretary-General of UNCTAD further stated that, since 1970, the Secretariat's work in the ports field had been partly financed by extra-budgetary funds placed at its disposal by the Governments of Denmark, Finland, the Netherlands, Norway and Sweden.

In 1973, these Governments had agreed to provide additional funds to finance this work for a further three-year period. The Secretariat had been able to undertake a new activity as a result of this continued financial support, namely the organization of training seminars to assist in the dissemination of the results of its research work directly to port managers in developing countries.

The Committee commended the studies prepared by the Secretariat to Governments and port authorities in both developing and developed countries. It noted that the Secretariat was organizing seminars to present its studies directly to port management authorities and felt that this contribution to the improvement of port operations should be continued.

Item 5. Trade Practices and Organisation in Shipping

Under this item the UNCTAD Secretariat tabled a report "Trade Practices in Shipping". The representative of the Secretary-General stated that the report had been produced in response to a request from the Committee for an examination of the relationship between marketing structures and the costs of maritime transport. The report identified twelve trading practices which can increase shipping costs and these were divided into three groups: the first group related to the bunching of cargoes at loading ports at the end or beginning of a month, owing to the stipulation of the month of shipment in a sales contract, and also to the mandatory use of shipped bills of lading for letters of credit purposes and to the tendency of the expiry date of letters of credit to coincide with the latest date of shipment.

The second group of trading practices in the report related to trade in commodities and consisted of a grace period or due date systems, the structure of which could encourage speculators to delay deliveries of their cargoes; in other cases, delays in deliveries of cargoes might be encouraged by a system of fluctuating export duties, which could also be exploited by speculators.

The third group related to physical handling practices and included such practices as weighing cargo on the deck of the vessel or on the quay alongside the vessel and sorting out of cargo by submark in the hold of the discharging vessel. He observed that although evidence concerning the effects of these practices was sparse, the data in the report indicated that they could contribute to irrational shipping services and higher shipping costs. The report suggested that the adoption of "received for shipment" bills of lading might help to improve the situation, noting that ensuring safe custody of goods in ports prior to shipment was a pre-requisite for the use of such bills.

The general view expressed in the discussion of this item was that more detailed study was required of documentation and procedures to facilitate international trade and transportation. The representative of the Secretary-General of UNCTAD stated that, with respect to the broad field of documentation facilitation, the Secretariat was aware of the work being done by other governmental and non-governmental organizations, and had no desire to duplicate that work. He added that the Secretariat did not at present have the capacity within its present work programme to undertake further extensive studies in this area.

On the question of the adoption of "received" rather than "shipped" bills of lading, he said the Secretariat believed that additional study was warranted and proposed:—

(a) to investigate further the nature and extent of the

problem.

- (b) to consult with other organizations, as appropriate.
- (c) to report its findings to the Committee on Shipping at its seventh session.

The Committee agreed that the Secretariat should follow up the question of the general use of "received for shipment" bill of lading.

Under Item 5 a report was also considered of the Central Freight Booking Office, Sri Lanka prepared by Mr. D. Soysa, Director of Merchant Shipping & Tourism, Sri Lanka. Mr. Soysa personally introduced the report and said that the establishment of a freight booking centre had been an important innovation in his country. The main purpose of the Ceylon Freight Bureau was to arrange for a smooth flow of cargo at the lowest freight cost. He outlined how such an institution could achieve the conflicting aims of co-ordinating the activities of shippers, shipowners and port authorities.

Using advance information of cargoes to be shipped and of available vessels, it had proved possible to eliminate short shipments and empty vessel space. Normally, at least half of the cargo was at the port warehouses before arrival of the vessels and very often, loading commenced within a few hours of the arrival of the vessel. Another advantage of the Bureau was that such common abuses as offering rebates and giving priority to large shippers had been eliminated.

He stated that the operating costs of the Bureau amounted to only a fraction of comparable costs, such as for canvassing, which had been incurred before it commenced operations. The most important achievement of the Bureau was that it had strengthened the bargaining power of shipper vis-a-vis the conferences; the latter were now required to sign loyalty agreements with the Bureau.

The representatives of a number of countries indicated that similar bodies - such as export marketing boards - were already operating in their countries; they would, however, take the report in question into account with a view to improving the operations of such bodies in their respective countries.

Item 6. Other Business

- (i) "Converting general cargo ships to handle unitized cargo" - Report by the Secretariat.

The representative of the Secretary-General of UNCTAD in introducing this item stated that this report had been prepared by the Secretariat with the assistance of a consultant, he said that the conversion of older vessels was becoming increasingly common as a means of acquiring vessel tonnage at economic prices for the specialized requirements of individual trades. The reasons for choosing vessel conversion rather than newbuilding frequently were:-

- (a) high newbuilding costs and long delivery periods.
- (b) uncertainty as to the course of future technological developments; and
- (c) lower capital investment requirements.

The report discussed the ramifications of these issues and noted that, in their vessel acquisition decisions, developing countries could frequently benefit from the advantages available from vessel conversion.

The report included illustrations of several types of vessel conversion, including conversion to pallet-handling vessels, semi-container vessels and ro-ro vessels, and jumboizing.

This report was received with interest.

- (ii) "The Economic affects of the closure of the Suez Canal" - Study by the Secretariat of UNCTAD.

It was noted that the purpose of the study now appeared to have been overtaken by subsequent events.

- (iii) "Shipping practices in relation to aid"

The representative of the Secretary-General of UNCTAD introduced a report which had been prepared by a consultant, and which described and analysed current practices and attitudes towards aid-related shipping, and assessed the impact of present practices and of possible alternative practices. The report estimated that shipping costs arising from bilateral and multilateral aid had amounted to some \$800 million in 1970; according to further information received from the author by the UNCTAD Secretariat, this had increased to \$900 million in 1973.

The report found the practices of multilateral agencies in this field to be essentially non-discriminatory. For bilateral aid, the practices varied considerably, but in the main they did not constrain the free choice of the flag of vessels. However, two countries which were important contributors to aid programmes did have formal vessel flag restrictions.

The report examined four variants of "reverse tying" practices, that is, formally reserving certain aid-related cargoes for shipment in vessels of a particular flag as an effort to promote the national shipping of developing countries. The report noted that such "reverse tying" policies might give rise to some administrative and economic inefficiency but concluded that the possibility of using aid-related shipping as a conscious stimulus to development deserved careful examination.

Although representatives of a number of countries stated that their Governments were opposed to tying arrangements, reverse or otherwise, the Committee formed no conclusion on this subject.

- (iv) "A review of the resolutions and decisions on shipping and port questions adopted by the Conference and by the Committee on Shipping"

Note by the UNCTAD Secretariat.

The note presented under this item brought together in a single document the substance of the main agreements embodied in resolutions and decisions adopted since the establishment of UNCTAD. There was little discussion of this item.

- (v) Information on certain matters in the field of shipping and ports of interest to the Committee on Shipping"

Note by the UNCTAD Secretariat.

The note presented under this item gave progress reports on matters being dealt with by the Secretariat.

Probably the most important item in this note was the report on progress on the preparation of a draft of a convention on international intermodal transport.

An intergovernmental preparatory group has been set up to produce a preliminary draft. The group held its first session from 29th October to 2nd November 1973 and will hold a total of three sessions. The second and third are scheduled for 11th - 29th November 1974 and 28th July - 15th August 1975.

The report was noted by the Committee.

- (vi) Container Standards for International Multimodal Transport.

This matter will be considered at the seventh session of the Committee on Shipping.

(Continued on Next Page Bottom)

A multiple exit to the world of the Pacific

Ottawa (Canada Japan Trade Council Newsletter, July-August 1974):—Almost since the first day the railway pierced the Rockies and finally linked British Columbia with the rest of Canada, the question of port development has been debated. It has followed a familiar pattern. Furious local jealousies and conflicting interests have complicated the issue. For all the energy expended in talk and study, actual progress has been slow. It is encouraging to note that, today, some development work is underway although the barren debate continues. Perhaps the logjam might be broken was consideration to be given to multiple, rather than single, port development.

A recent visit to Kitimat, Terrace and Prince Rupert in the far north-west reaches of British Columbia, revealed a vastly underrated national asset. It would appear that the potential of this triangle holds the answer to one of Canada's most pressing national needs—surety of delivery of our vital exports. It could provide a guarantee of secure supply of the mounting tide of bulk-commodity shipments.

APPENDIX - II

Code of Conduct for Liner Conferences

Statement by the Chairman of the Committee at the sixth session

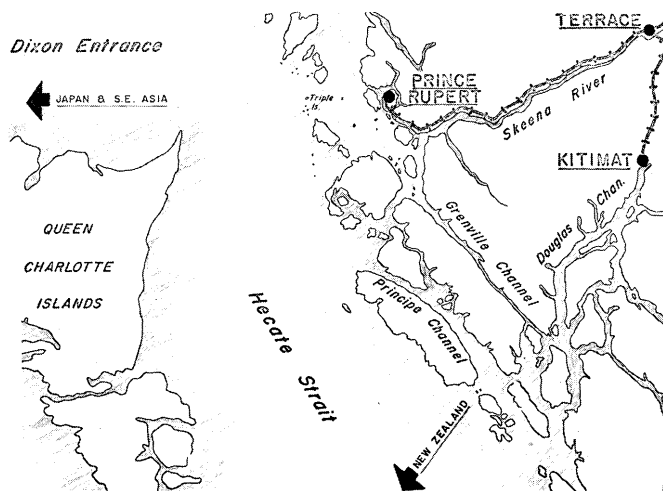
Throughout its existence the Shipping Committee has been concerned with the liner conference system. At its fourth session in 1970, the Committee considered this question. Subsequently, during the second session of the Working Group on International Shipping Legislation, the initiative of having a code of conduct for liner conferences emerged. This question of a code of conduct was discussed in various fora and finally led to the United Nations Conference of Plenipotentiaries on a Code of Conduct for Liner Conferences which was held at Geneva from 12th November to 15th December 1973 and from 11th March to 6th April 1974.

The Conference adopted at its last meeting a Convention on a Code of Conduct for Liner Conference providing rules for conference membership, relations among member lines, freight rates, settlement of disputes and other matters.

A large majority of countries represented at the Conference, including all developing countries and socialist countries and some developed market economy countries, voted in favour of the Convention, other countries voted against it or abstained from voting.

The Convention was open for signature on 1st July 1974 at United Nations Headquarters at New York. As of now two countries have signed the Convention.

Whatever the position may be of each country member of this Committee towards this Convention, I think the Committee can be content with the amount of attention and effort which the international shipping community has brought to a project emanating from this Committee.



The map shows the relationship of this triangle to the existing and potential resource-producing areas of western and northern Canada and to the shortest sea routes to the countries of the Pacific Rim. At present, the bulk of shipments move south to the Vancouver area. With the steady addition of rail and road facilities inland, the triangle could be the needed safety valve.

Terrace, at the peak of the triangle, is not a port but a key railway point. It lies on the main transcontinental line of the CNR. From it this line continues along the Skeena River to Prince Rupert. A branch line goes south-west to Kitimat. A new rail line is in the process of being pushed northward from Terrace to tap the tremendous asbestos, copper and coal deposits currently being opened up to the Alaskan and Yukon boundaries and beyond. Many other established resource industries already connect—or can be connected—to the main line between Terrace and Edmonton.

Both Prince Rupert and Kitimat have many advantages and both have some drawbacks. By using each to complement the other, twin ports could be created to great advantage. Unfortunately, the question being explored at the present time seems to be "one or the other" rather than "both". Quite naturally, local pride and interest has produced a rivalry between Kitimat and Prince Rupert reminiscent of that which existed for so long between Saint John, N.B., and Halifax, N.S. Events on the Atlantic Coast have shown both these venerable ports are necessary and, indeed, that additional ones adjacent are also needed. The character of resource development in the north-west and foreign demand for Canadian commodities suggest this applies with equal force to the Pacific Coast.

Both Prince Rupert and Kitimat enjoy the advantage of deep-water approaches and docking facilities, essentials in view of today's VLCCs and ULCCs. Both have water-front sites capable of almost unlimited development. One is the terminal of a main line. The other is directly connected to it. Work is already well along on construction of 40-acre, general cargo and forest products facility at Prince Rupert with planning going ahead for a large-scale bulk-loading facility adjacent. Kitimat has, perhaps, suffered somewhat from being regarded by some as a company town, a port developed to serve only one industry, the Aluminum Company of Canada. If this view was ever valid, it does not appear to be now. ALCAN has undertaken studies to assist development of Kitimat both as a city and as a port. The company's community interest is apparent and generous.

(Continued on Next Page Bottom)

World's Largest Ore Port at Tubarao, Brazil

by: Paul Soros, President, and
Bela Koman, Vice President
Soros Associates,
Consulting Engineers
New York, N. Y., U. S. A.

(This paper is to be presented at the Fall Meeting of AIME = The American Institute of Mining, Metallurgical and Petroleum Engineers, in Acapulco, Mexico on September 23-25, 1974.)

Introduction

Construction of new installations was recently completed in the Port of Tubarao, Brazil. With this expansion the port, operated by Companhia Vale do Rio Doce (CVRD), has become the largest iron ore port in the world, with an annual throughput capacity of 60 million long tons.

Growth of Iron Ore Exports

Since its formation CVRD has steadily increased the shipment of iron ore to overseas markets. Starting with less than 100,000 tons in 1942, the yearly export volume grew to 1,500,000 tons in 1951, 5,000,000 tons in 1961 and 25,000,000 tons in 1971.

The number of different grades of ore also increased during this period. Production of high grade pellets, starting in 1970, further increased the number of ore products to be shipped. In the same period the size of ore carriers increased twenty-fold to over 250,000 DWT.

Development of Port Facilities

Before 1966 the ships were loaded in the natural harbor of Vitoria. A new ore shipping port was inaugurated in that year at Tubarao, six miles north of Vitoria. This breakwater-protected installation with its dredged channel and turning basin could load up to 120,000 DWT vessels.

The initial installations at Tubarao included rotary dumpers to unload the ore trains, a stockpiling area of 1,500,000 ton capacity and a finger pier equipped with a 6,000 ton per hour slewing-type traveling shiploader. A screening plant was also erected. A second set of

Other industry is already established there. There are excellent sites for other industries and for loading and unloading facilities.

One problem exists for both ports which has nothing to do with their seaward aspect. It relates to their railway connections. To serve a bulk-loading facility, the line from Terrace to Kitimat would have to be upgraded for heavy-duty hauling at an estimated cost of more than \$5 million. The line to Prince Rupert is prey to stoppages from slides. It has been said that provision of adequate snowsheds on this stretch would run into the tens of millions. Without some hope of reasonable return, it is too much to expect the railway to undertake, unassisted, this work which requires such a heavy capital outlay. However, it should not be too much to expect inter-government railway and industry co-operation in finding a solution to ensure an obvious national need.

cardumpers and a second shiploader of 8,000 ton per hour capacity were added subsequently.

New Master Plan

The explosive growth of exports and the steady increase of ship sizes led to a thorough review of the shipping operations. This review, carried out in 1969 by CVRD's planning staff and by the consulting engineers, Soros Associates, included a projection of ore throughput volumes, prediction of fleet compositions based on the improvement potential of the receiving ports and determination of the adaptability of the Port of Tubarao for the loading of super-carriers and for the handling of other cargoes.

On the basis of these studies Soros Associates developed a Master Plan for the ultimate handling of 100,000,000 long tons of iron ore and pellets per year in 350,000 DWT class vessels, corresponding to the full development of the Itabira deposits and the doubletracking of the connecting railroad. Provisions were made for the construction of coal unloading and stockpiling installations and other cargo handling facilities.

Latest Phase of Port Expansion

On the basis of the Master Plan, Soros Associates designed additional ore handling facilities to load 270,000 DWT vessels and to increase the annual capacity to 60,000,000 long tons. Construction work on this expansion commenced in 1971 and was completed in 1973.

Key to the increased port capacity is a new loading pier supporting two slewing-bridge type shiploaders capable of loading 350,000 DWT class ships. Each shiploader has a peak capacity of 20,000 metric tons per hour and a nominal capacity of 16,000 metric tons per hour.

The 2-mile access channel was dredged to a depth of 75 feet to suit the largest existing ore carriers of 270,000 DWT. Some of the 17 million cubic yards of material dredged from the channel and turning basin was placed behind a rock dike to form a 140-acre storage yard.

In the new 2-million ton storage yard a traveling slewing stacker can stockpile the ore at the rate of 16,000 tons per hour. Reclaiming for shiploading is by two bucketwheel reclaimers, each of 10,000 ton per hour capacity.

The interconnecting conveyor system is controlled electronically from a central station and incorporates sampling and weighing facilities. The shiploading capacity of the new dock can be doubled to 40,000 tons per hour in the future by adding two more reclaimers and extending the conveyor system.

The installations were designed by Soros Associates as an integrated system, making it possible to place simultaneous multiple contracts for equipment and construction.

Receiving and Stockpiling of Ore

The iron ore originates in the mines of the "Iron Quadrangle" in the State Minas Gerais and surrounding areas, approximately 350 miles from the port. It is

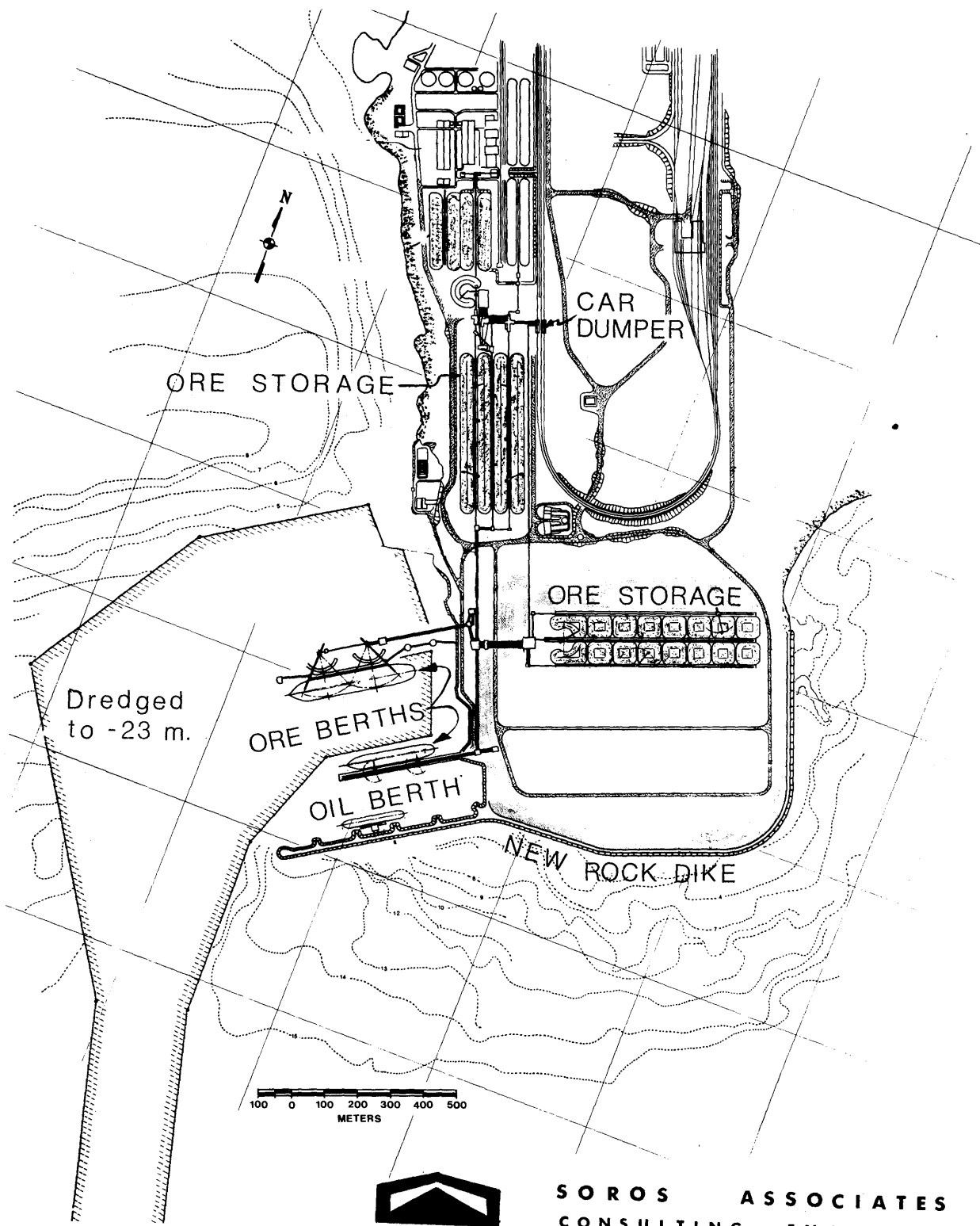


Fig. 1

transported by the CVRD owned Vitoria-Minas Railroad in trains of up to 160 cars carrying 11,500 long tons of iron ore on each run.

On arrival at Tubarao the trains are broken up in the marshalling yards and the cars are moved in strings of 50 or more by car pushers to the dumpers. The cars are equipped with rotary couplings and each set of twin dumpers can empty two railroad cars, without uncoupling, in a 90 second cycle at the rate of 6,000 to 8,000 tons of ore per

hour. Two sets of twin dumpers were in operation in 1973, with two more sets under construction.

From the car dumpers the ore is conveyed either directly to the shiploading pier or to the stockpiling areas.

To supplement the original stockpiling area and the additional stockpiles provided for the pellet plants, a new 2-million ton storage yard was built on land reclaimed from the sea. In this yard a rail-mounted traveling slewing stacker equipped with a 180 foot boom can stockpile the ore at the



Fig. 2



Fig. 3

rate of 16,000 tons per hour. Several different grades or ore can be stored in separate stockpiles in sufficient quantities to insure the prompt loading of the required cargoes into the arriving vessels.

Provisions were made for further increase of the storage capacity by the installation of additional stacking lines and/or by the addition of a patented Soros slave-stacker. With such expansion the overall stockpile capacity at Tubarao will exceed 6 million tons.

The new stockpiling area is 2,000 feet long by 400 feet wide with a 72" center belt feeding the stacker. Stockpiles on either side of the center belt have a height of 60 feet.

Ore Reclaiming and Shiploading

Bucketwheel reclaimers and power shovels are used to reclaim ore and pellets from the old storage areas. The reclaimed material can be conveyed to the ships, to other stockpiles or to the screening plant.

The new ore yard is equipped with two rail-mounted traveling bucket-wheel reclaimers, each of 10,000 ton per hour capacity. They incorporate special features to eliminate fluctuation in the feed to the high speed conveyor system. The reclaimers travel on either side of the stock-



Fig. 4

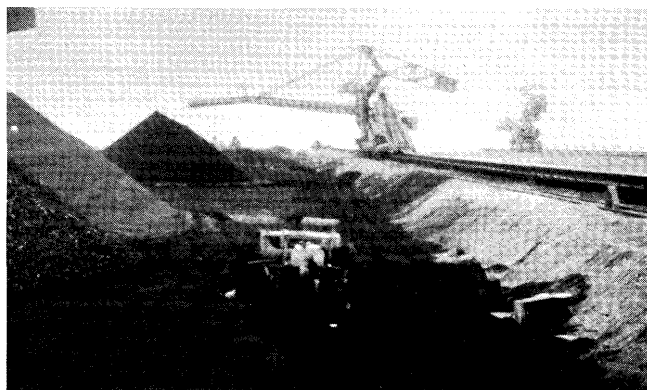


Fig. 5

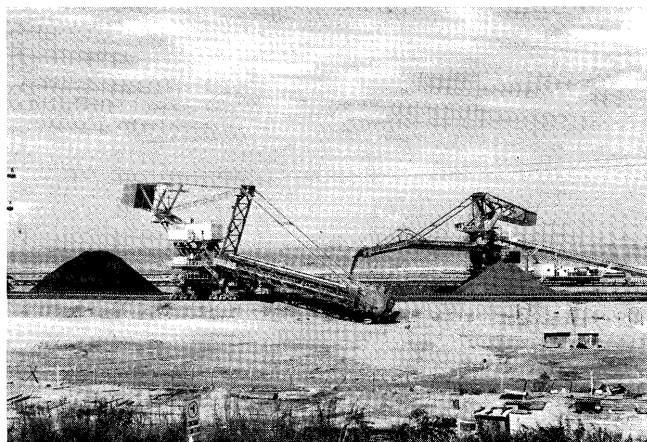
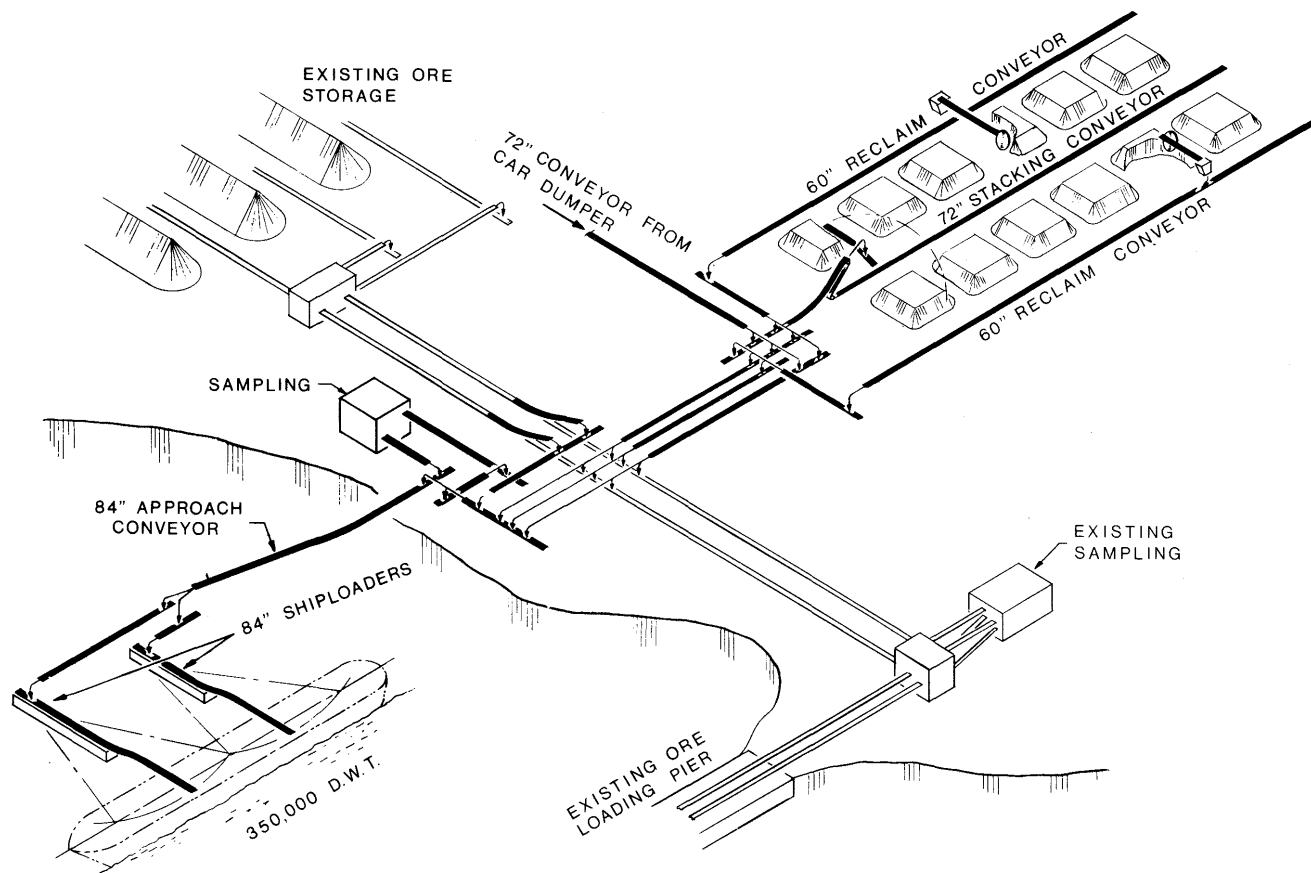


Fig. 6

piles, each feeding a 60" conveyor. The reclaimed material can be conveyed to the shiploaders or it can be recirculated to place it in another stockpile of the same storage yard. Reclaimed ore can be conveyed to any one of the shiploaders in the harbor. Two traveling type shiploaders operate on the old fingerpier, the original unit designed to load 6,000 tons of ore per hour and a second loader



SOROS ASSOCIATES
CONSULTING ENGINEERS

Fig. 7

installed in 1970 with a capacity of 8,000 tons per hour.

The new shiploading pier is equipped with two slewing bridge shiploaders, the largest units of this type. Each of these has a minimum capacity of 16,000 tons per hour but is designed to operate at rates up to 20,000 tons per hour with heavier material. The shiploading system has advanced design features of efficiency and flexibility as follows:

Interruption-free operation by switching the material flow from one loader to the other when necessary to load a different hold of the ship.

Loading two holds of the ship simultaneously at a combined total rate of 16,000 tons per hour.

Future expansion to load two holds at a combined minimum rate of 32,000 tons per hour and up to 40,000 tons per hour when operating with heavier material.

Ore is carried to the new berth by an 84" conveyor system.

The future doubling of the shiploading rate can be achieved with the addition of a second 84" conveyor system and the corresponding ore yard expansion.

The new ore berth was designed to accommodate 350,000 DWT class vessels in the future when the access channel is dredged to a depth of 90 feet. The present dredged depth allows the loading of 270,000 DWT ore carriers.

Control of Operations

The interconnecting conveyor system is controlled electronically from a central station which monitors railroad

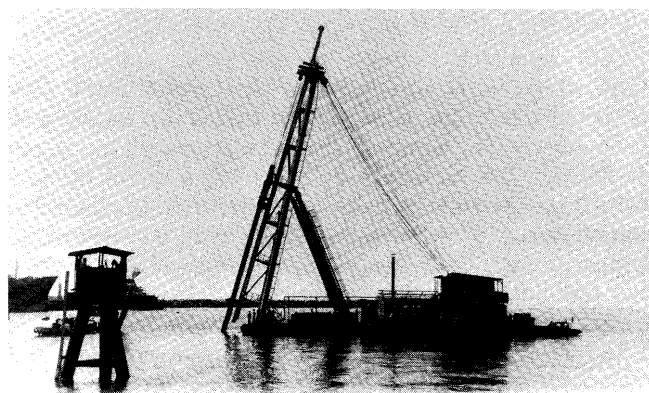


Fig. 8

unloading, stockpiling, reclaiming and shiploading activities.

Sampling and weighing facilities are incorporated in the materials handling system. At each of the three conveyors supplying the shiploaders, there is an automatic sampling station which analyzes the ore shipped and thus maintains rigid control over the specifications agreed in the sales contracts.

Automatic scales are built into the system to record the weight of the ore received and shipped out with an accuracy of 1% for stockpiling control and of 0.5% for the shipping control.

At the new shiploading berth a special arrangement was

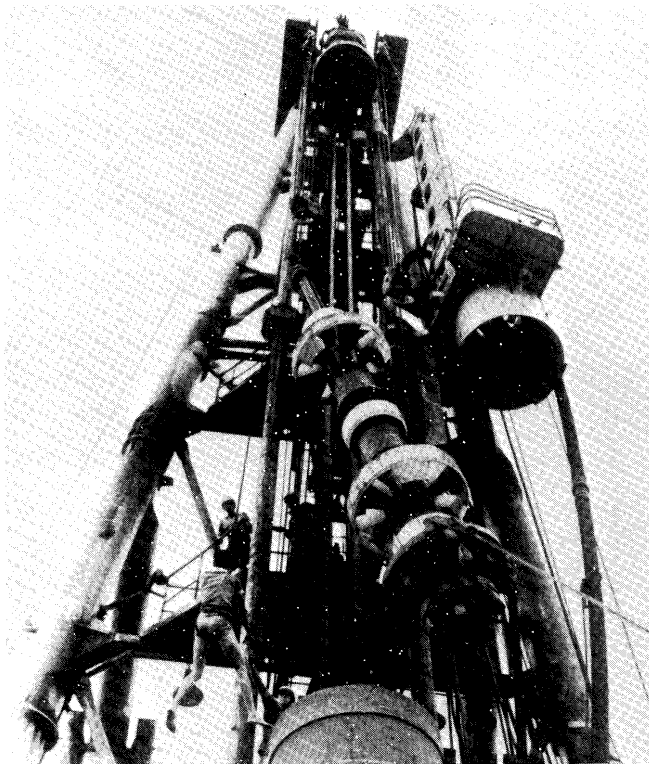


Fig. 9

worked out to insure the uninterrupted flow of the material arriving from the stockpiles at the rate of more than 5 tons per second. A novel moving rock box was developed to switch the massive flow of material from one shiploader to the other without having to stop the 84" approach conveyor system and the reclaiming machines.

Dredging and Land Fill

The approach channel, turning basin and the new shiploading berth were planned for 350,000 DWT class vessels in the future. Dredging was carried out for 270,000 DWT vessels. The approach channel was dredged to a depth of 75 feet, the turning basin to 52 1/2 feet and the new berth to 85 feet below mean low water level. Dredging was carried out by a cutter suction dredge and a trailing suction hopper dredge. Both dredges had to cope with wave action and with bottom material of varying hardness.

A rock mound dike was built in the open sea to enclose a 140 acre area adjacent to the old storage yard. Dredged material was deposited in this area, creating firm ground for the new ore storage yard and for future expansion.

Marine Structures

The new shiploading berth consists of 4 breasting dolphins, 4 mooring dolphins and supports for the conveyor system and for the turntable and curved rails of the shiploaders. All marine structures rest on steel pipe piles driven into the sea bottom. To insure the required anchorage and load bearing capacity, rotary drills were used inside the piles to penetrate into underlying hard layers. The diameter of the piles supporting the curved rail beams is 40", the rest of the structures are supported on 24" diameter piles.

The breasting dolphins consist of groups of flexible piles whose elastic deflection makes possible the absorbing of the impact from large ships. The outer dolphins have six piles

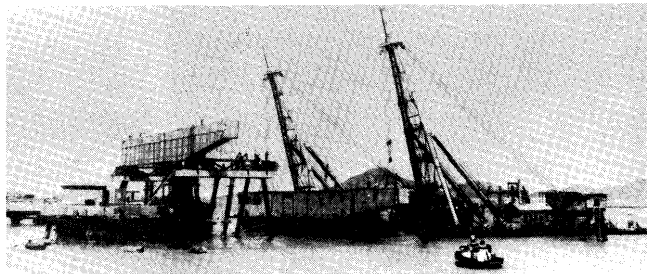


Fig. 10

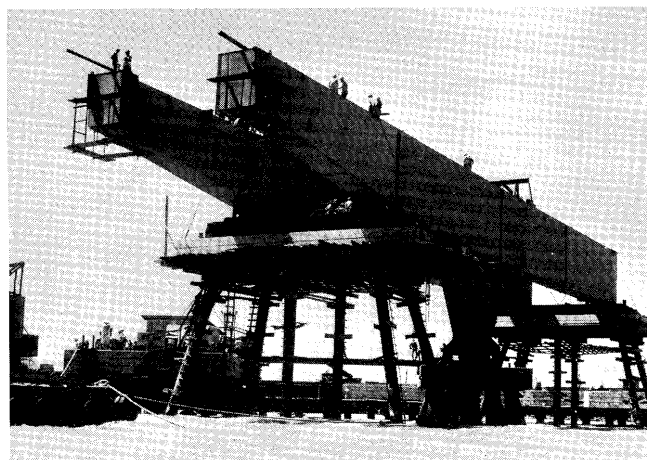


Fig. 11

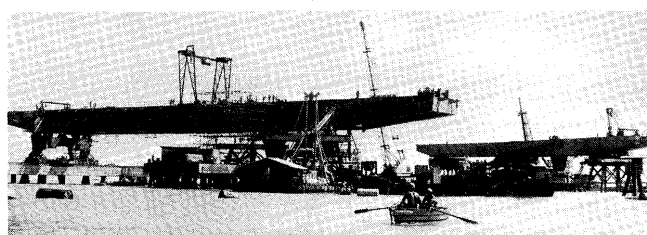


Fig. 12

and the inner dolphins four piles of 52" diameter. The wall thickness of these high-strength steel pipe piles tapers from 1 1/2 to 5/8 inch.

Temporary supports were built for the erection of the slewing bridge type shiploaders. Components weighing up to 120 metric tons were floated out to the pier on barges and hoisted into position for assembling. Erection cranes were mounted on top of the erected bridge girders in order to lift other components of the shiploaders into position.

For the erection of the high conveyor galleries feeding the shiploaders, a temporary scaffolding consisting of tubular members was built using a traveling portal crane and fixed hoists.

Main quantities for the new pier were as follows:

Steel piles:	3,710 metric tons
Concrete:	5,160 cubic meters
Reinforcing steel:	1,129 metric tons

The shiploader conveyors and marine foundations were designed by Soros Associates as an integrated system making it possible to place simultaneous multiple contracts for equipment and construction. A similar integrated approach was used on the remainder of the project.

Construction

The following is a list of contractors and suppliers on the project: dredging—joint venture of Bauer-Gregg; conveyors,

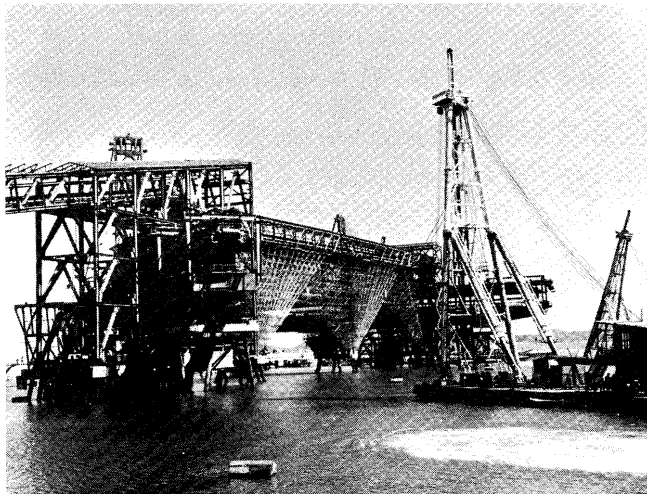


Fig. 13

stacker, bucketwheels and shiploaders—Ishikawajima-Harima Industries; sampling equipment—Gallagher; belting—Goodyear and Yokohama Rubber; and civil works and erection—Christiani & Nielsen.

C.V.R.D.'s development division was in charge of the planning, engineering and construction of the Tubarao expansion. Soros Associates was the consulting engineer for the master plan as well as for the port construction phase described in this paper.

Conclusions

This expansion of the Tubarao port facilities enabled CVRD to plan for the efficient shipping of the increased quantities of iron ore exports. Several consecutive loading records were set during the first few months of operation. All installations were built with provisions for further expansion in the future in order to maintain CVRD's excellent standing in the international iron ore market.

List of Illustrations

- Fig. 1—General plan shows dredged channel, breakwater, shiploading piers, ore storage areas and railroad yard.
- Fig. 2—New ore berth loads a 270,000 DWT carrier, while smaller ships are loaded at the old finger pier.
- Fig. 3—Aerial view shows dike built to reclaim land from the sea for the new ore yards.
- Fig. 4—Traveling ore stacker and reclaimers are erected on filled-in land.
- Fig. 5—Stacker has a reach of 180 feet.
- Fig. 6—Each bucketwheel can reclaim up to 10,000 long tons of ore per hour.
- Fig. 7—Flow diagram illustrates the conveying of ore from the cardumpers to the storage yards and to the shiploaders.
- Fig. 8—Floating pile drivers can handle up to 140 foot long piles.
- Fig. 9—Rotary drill is used to penetrate into hard seabottom.
- Fig. 10—Two floating derricks lift a 120-ton section of a shiploading bridge.
- Fig. 11—Shiploader girders rest on temporary supports during erection.
- Fig. 12—After completing the main girders, the remaining components of the shiploaders are hoisted into position.



Fig. 14

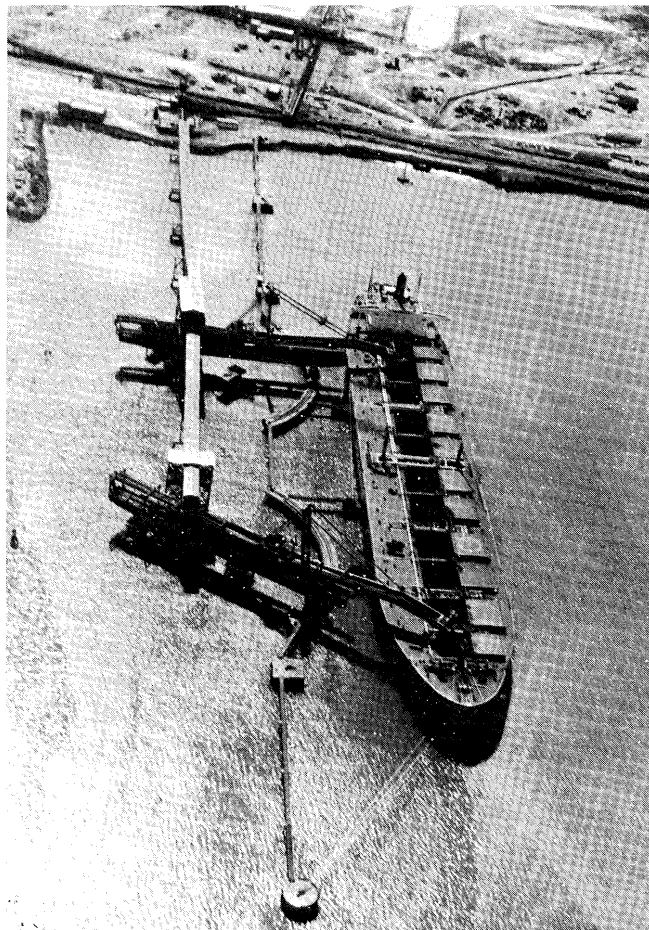


Fig. 15

- Fig. 13—Conveyor galleries are supported on pipe scaffolding during erection.
- Fig. 14—Berth is ready to receive ships, even before the temporary supports are removed.
- Fig. 15—New berth with the world's largest shiploaders can handle 350,000 DWT vessels. Vessel in photo is the 270,000 DWT Docecanyon.



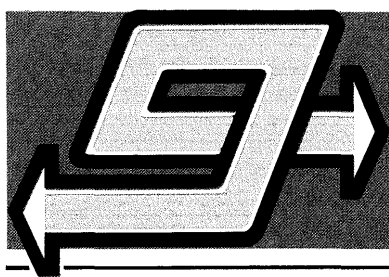
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Singapore Kaleidoscope

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In this special colour supplement we try to bring you closer to our world, a preview in miniature of what to expect when you come to Singapore in March 1975.

1. THE GARDEN CITY

The natural vegetation is tropically evergreen. Orchids, ferns, lianas, rotans and climbers grow in abundance in Singapore. In recent years, the Singapore Government had undertaken a project to plant grass, trees, flowers and shrubs along road-dividers, circuses and road junctions in order to make Singapore the cleanest and greenest city in South-East Asia. The island is transformed into a Garden City. Age-old Angsanas, Casuarinas, Rain trees, Flame of the Forests line the roads to form leafy arches, while colourful Bougainvillae, Canna shrubs and Rhododendron bushes grow freely along the wayside.

2. CULTURE AND FESTIVALS

Singapore's multi-racial and multi-

religious make up has given rise to festivals that are colourful, gay and yet traditional. Major festivals are important enough to be public holidays. The festivals colourfully express the island's rich cultural heritage. Singapore is thus an island of surprising contrast, whose people reflect in themselves and their ways all that is the East. And all, as far as the visitor is concerned, conveniently concentrated into 582.7 square kilometres (225 square miles) of a sun drenched tropical island that is truly "Instant Asia".

3. DINING

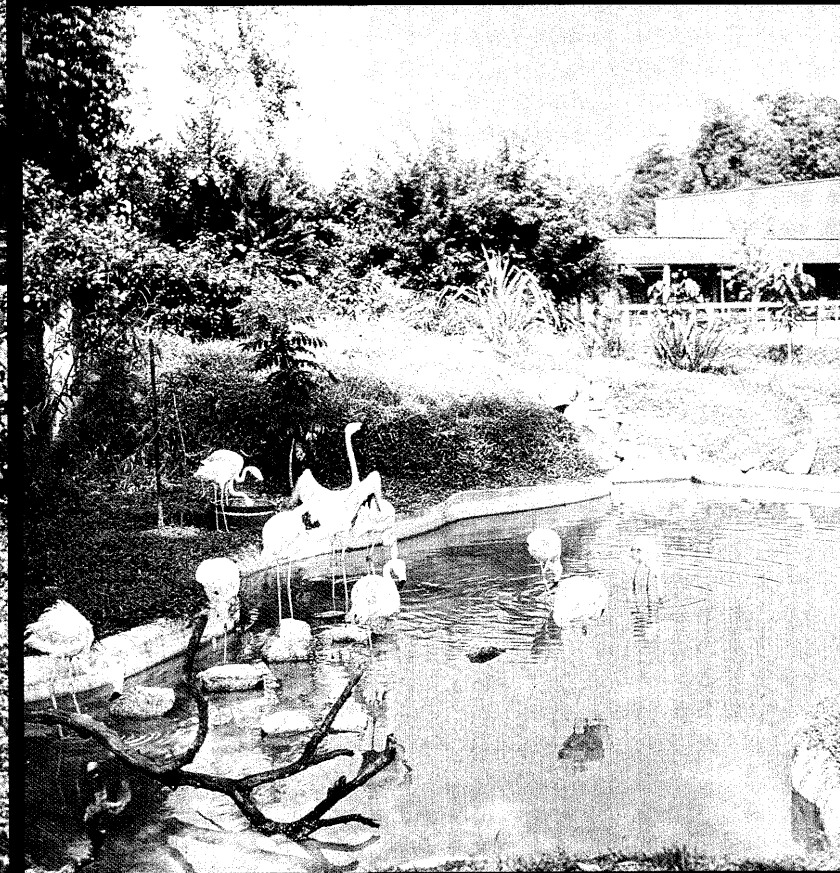
Dining in Singapore can be as adventurous or conventional as your fancy

CONTINUED ON PAGE 28

WELCOME TO SINGAPORE 1975



Left: Singapore . . . the Garden City
Below: Flamingoes . . . at the Jurong Bird Park



Pictures by courtesy of Singapore Tourist Promotion Board.



Modern satellite town — a night view



Chinatown by night



Above: At the beach
Left: Eating Out . . . Singapore Style



dictates. Singapore is at the crossroad of the world's kitchens — spicy curries, crisp aristocratic Peking duck, the bland whisper of the coconut milk, the succulence of an all-American steak, the sophistication of a Gallic sauce — you name it, Singapore's got it. Nowhere else in Asia offers this variety.

You can do it in style or in rubber flip-flop sandals, suit yourself — dine by candlelight with attentive waiters fluttering nearby, or at noisy steamy, folksy stalls where the true Singaporeans hang out.

There is nothing to compare with the mouthwatering anticipation of watching your meal prepared at a stall in front of you. And prices at the street stalls are about one-fifth of what you would pay if you dined in a "posh" restaurant. Remember, Singapore as an almost unique boast — the stalls are clean and safe, the tapwater pure. But, like we said, suit yourself!

4. ENTERTAINMENT

As soon as the sun is down, Singapore's colourful nightlife begins in its somewhat unique nightclubs, cinemas, restaurants, cabarets and bars. A visitor does not need to dress formally at night. In most places a long-sleeved shirt and tie is the only concession he is asked to make. A few night-spots insist that a jacket be worn. But there are many delightful and informal spots which a visitor may go in a sports shirt if he wishes.

Some popular places for dining and dancing have regular floorshows featuring especially oriental artistes.

5. SHOPPING

Shopping in Singapore has taken on an exciting aura with the mushrooming of numerous giant shopping complexes. There are not merely department stores, which already offer a wide variety of goods under one roof, but huge centres in the city and in Chinatown. Within these complexes are department stores, beauty parlours, boutiques, travel agents, restaurants, coffee-houses, jewellery stores and dozens of other speciality shops, selling everything from antiques to cameras.

6. SIGHTSEEING

Chinatown

A teeming hub of the incredible sights, sounds and smells of Asia. Here the specialty cook selects choice pieces of snake, turtle, flying fox and every conceivable kind of foodstuff from the rich harvest of land and sea. And the medicine shops sell anything from ginseng to dried sea horses. The latest additions to Chinatown are People's Park and Outram Park — multi-storey shops where bargaining is a fine art.

Bird Park

This multi-million dollar Jurong Bird Park is rated as one of the best in the world. With over 7,000 birds representing about 350 species, the 20 hectare Bird Park is fast becoming a centre of ornithological wealth.

It has over 86 landscaped aviaries numerous paddocks, lakes, and a five-acre "walk-in-aviary", within which is found the highest man-made scenic waterfall in the world.

Also found here is one of the world's largest collection of Birds of Paradise amongst zoos and parks.

For those hard pressed for time, three tram cars with running commentaries are available for a tour of the Park. A lake-side restaurant and 3 drink kiosks cater to the visitors' needs.

Tiger Balm Gardens

Overlooking the sea at Pasir Panjang is the million-dollar Tiger Balm Gardens, also known as Haw Par Villa. Acres of hillside have been carved into grottoes, bowls, caves and shelves with the sculp-

tures in full oriental splendour and vivid colour representing the temptation, rewards and punishments of this life and the next, and scenes from Chinese mythology. Recently, the "Australian Corner" and "American Corner" have been added.

Queenstown

An excellent example of housing based on modern town planning principles, Queenstown is divided into five neighbourhoods comprising a total of 17,500 units of flats and shops housing about 79,000 people. Community facilities such as markets, shopping centres, children's play-ground, community centres, clinics, open spaces and schools are provided.

OTHER ATTRACTIONS

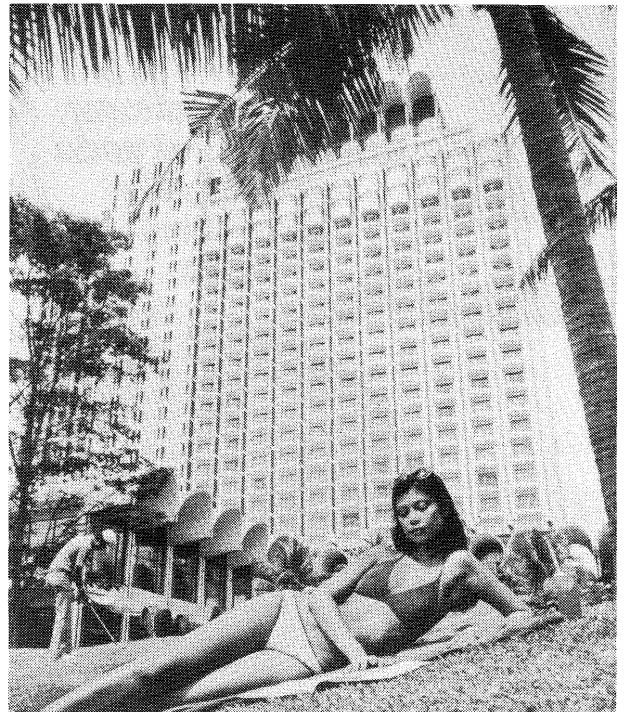
Other attractions include the Singapore Zoological Gardens in Mandai housing more than 300 animals in open-type or moated enclosures and is reputed to be the largest in Southeast Asia. For 'sun-lovers' there are ample sunny and sandy beaches to romp on. And for those with an inclination for floral beauty, the Botanic Gardens — 32 acres of lush greenery — is a must. Some 3000 species of trees, plants and beautiful orchid hybrids await your view.

SO, AS WE MENTIONED EARLIER, COME TO THE 9TH IAPH CONFERENCE IN SINGAPORE NEXT YEAR. IT WILL DEFINITELY NOT BE ALL WORK AND NO PLAY FOR DELEGATES AND THEIR ACCOMPANYING LADIES.



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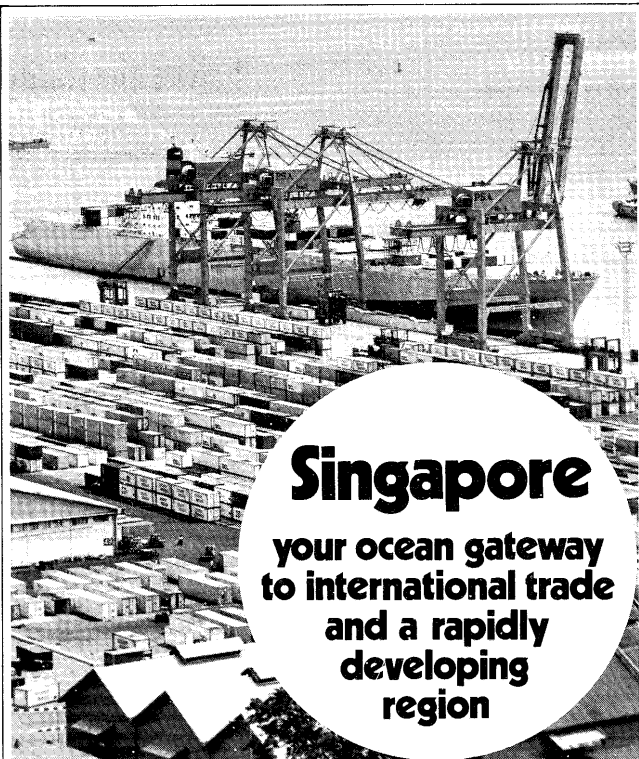
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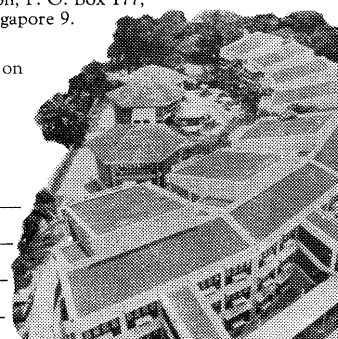
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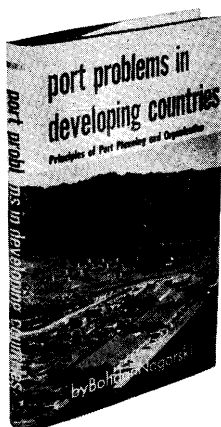
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Orbiter Probe

Resumption of navigation on Welland Canal

Cornwall, Ontario, September 9, The St. Lawrence Seaway Authority, Seaway Notice No. 13 of 1974):—Mariners are advised that the wreckage of Bridge 12 has been removed from the Welland Canal and that navigation is resuming at 1200 hours, September 9th.

Floating plant is still working in the vicinity of the site of the accident and ships must proceed at dead slow speed past this point.

Port is income generator

Montreal, Quebec, September 4 (News Release from National Harbours Board, Port of Montreal):—As many as 18,000 people earn their livelihood directly and indirectly from the movement of cargo at the Port of Montreal and its activity generates in the economy of the metropolitan region an amount of some \$261 million.

These are the major conclusions of an economic impact study of the Port of Montreal which have just been disclosed by the Chairman of the Port of Montreal authority, Mr. Jean Marie Chabot and Montreal Port Manager, Mr. Nicholas Beshwaty.

Prepared by the Economic Branch of the National Harbours Board this study reveals that wages alone paid to workers connected with port activities total \$136 million while purchases of goods and services by port related enterprises reach \$60 million.

According to Montreal Port Manager, Mr. Nicholas Beshwaty, this study has permitted to establish that the following sectors: trucking, retail trade, insurance, gasoline production, wholesale trade and financial establishments are those which derive the greatest benefits from the port activity. He also indicated that the study has determined that each ton of non containerized general cargo injects \$44.72 into local economy while the contribution of each ton of dry bulk cargo reaches \$5.20 and one ton of liquid bulk \$2.15.

Mr. Jean Marie Chabot, Chairman of the Port of Montreal authority stated that he was very pleased of the fact that the Port of Montreal was the source of such a significant economic contribution and expressed the opinion that if the present stable conditions in industrial relations are maintained at a favourable level, the Port of Montreal will continue to play an important role in the economic welfare of Montreal and its region.

Does treated sewage from ships hurt the water quality of the great lakes ?

Toronto Harbour Commission

Toronto, Ontario, September, 1974:—Environment Canada's insistence that sewage, whether it is treated or not, should be "contained" on board ship for disposal ashore is causing some concern throughout the Great Lakes and within St. Lawrence Seaway shipping circles.

There is fear that the "total containment" stand by some environmentalists would in fact harm water quality because the flow-through system of treatment now in operation on some ships processes the sewage to a greater degree of purification than many shore-based facilities.

Earlier this year, the Shipping Federation of Canada stated that the "proposed regulations may not be in the public interest and if enacted, would be detrimental to vessels trading in these waters (St. Lawrence River and the Great Lakes)"

It pointed out that the Ministry of Transport and the U.S. Coast Guard would in the final analysis be responsible for compiling anti-pollution regulations. The federation said that both agree on the flow-through system as being acceptable, provided it meets certain specifications yet to be ascertained.

Brad Guest, Port of Toronto's director of works, who helped prepare a special report for the Toronto Harbour Commission on the containment issue, said that the Great Lakes appear to have been singled out for stringent controls.

"At the present time these proposed regulations do not apply to the lower St. Lawrence River or to Canada's coastal waters," he revealed.

Harbour Master Captain John Mann and chief engineer Jack Jones helped Mr. Guest write the report which prompted the Toronto Harbour Commission to authorize its staff to meet with Ministry of Transport officials and attempt to clarify the issue.

A copy of the Proposed Regulations Respecting the Prevention of Pollution of Great Lakes Waters by Sewage from Ships was sent to the Toronto Harbour Commission in the fall of 1973 by the transport ministry.

"The proposed regulations were reasonable because they seemed to meet the requirements of the environment ministry and were practical from the ship owner's point of view," said Mr. Guest.

The regulations called for the containment of sewage on board ship when in confined waters and allowed overboard

discharge in open waters provided the sewage passed through an approved on-board treatment system. This system would produce an effluent "equal to or better than that discharged by present day municipal sewage treatment plants."

Everybody seemed satisfied with the proposed regulations until the spring of 1974 when the Shipping Federation learned that the environment ministry had reversed its position. The Ministry of Transport was informed that the new stand favoured "total containment" as far as sewage from ships was concerned.

The shipping federation feels that vessels have been much maligned and that the general public is of the misguided opinion that ships are the major polluters of the Great Lakes.

"The volume of sewage pollution from vessels in the Great Lakes is exceptionally small," the federation said. "In fact, a transport ministry spokesman in 1971 said that ships cause only 268 per cent of the total sewage pollution in the Great Lakes system. In other words, municipalities, industries and other sources contributed the remaining 99.732 per cent."

"There has been no increase in traffic operating in the lakes since 1971," Mr. Guest said. "However, a large number of ships have installed flow-through sewage treatment systems since then, even though there is no current legislation which requires it," he added.

The report prepared by the Harbour Commission's staff pointed out that should total containment become mandatory, the present on-board treatment systems would become obsolete and ship owners would be faced with costly alterations.

"The shipping industry is fully aware that retention would be required in certain areas of the Great Lakes such as in ports and harbours and in the immediate vicinity of any fresh water intakes," the report noted.

A spokesman for the petroleum industry told the annual meeting of the Canadian Port and Harbour Association last year in Trois Rivières, Quebec, that the "no discharge" rule would create a "legion of practical problems" with only negligible overall environmental improvement.

He said the total ban on sewage discharge from ships seemed to be "overkill of the highest order."

He went on:

"The philosophy of Environment Canada with respect to waste treatment is that best practicable treatment must be applied to all waste discharges. The application of this philosophy has resulted in the development of effluent regulations for the chlor-alkali, pulp and paper and oil refining industries. It is not clear why ships should be treated differently than other industries.

"I would not quarrel with those who say discharge of raw sewage—in any amount—into our fresh water system must cease. However, I understand that on-board treating systems have been developed which are capable of meeting the same standards as shore-based sewage works."

A number of Canadian coast guard vessels and the newest ships of Upper Lakes Shipping Limited, Canada Steamship Lines and other shipping companies have had the latest treatment plants installed. Each of the vessels has a system equivalent to tertiary treatment of sewage.

"There isn't a single municipality in Ontario that can boast of tertiary treatment," declared Mr. Guest. "Toronto

has the most sophisticated sewage treatment system of any city on the Great Lakes and that system is now at a stage half-way between secondary and tertiary treatment."

"Here we have ships which treat sewage more efficiently and more thoroughly than any land-based facility," said the Port of Toronto's works director. "Just think. Wouldn't it be ironic if the proposed regulations came into effect and the vessels were forced to pump out their holding tanks at cities where the sewage would simply be pumped into the municipal system and returned to the water without any treatment."

As indicated by the spokesman for the petroleum industry, the proposed changes—as envisaged by the environment ministry—would bring about a host of problems. For example: Unless all docks in all ports were equipped with pump-out facilities, the total containment concept would result in countless delays and excessive costs to ships.

Another question pops up. How about the municipalities whose dock areas are not serviced by sewers? In some cases costs of installation would be prohibitive.

CPHA offers \$1,000 prize in crest competition

Toronto, Ontario, September 20 (Canadian Port and Harbour Association):—The Canadian Port and Harbour Association is offering a prize of \$1,000 to the Canadian art student who can design a logo or crest for the association.

Rules for the competition are being drawn up by a committee made up of association members from Ottawa and the St. Lawrence River region.

"We decided at our annual meeting held recently (Sept. 9-11, 1974) in Vancouver to confine the competition to the various colleges of art across Canada," said association president William B. Rest, solicitor for the Toronto Harbour Commissioners.

The association hopes to have the entry forms and rules in the mail sometime in October.

"The competition will remain open until the end of January next year with the winning entry being selected a month later by the board of directors at a mid-term meeting in Ottawa," said Mr. Rest.

"I might point out that we chose to limit the competition to the colleges of art because our members felt that the calibre of entries would be excellent and that the prize money would help the winning student further his education," he added.

CPHA elects new slate of officers

Toronto, Ontario, September 19 (Canadian Port and Harbour Association):—Port of Toronto's solicitor William Rest was elected president of the Canadian Port and Harbour Association at its annual meeting held in Vancouver, B.C., from September 9 to September 11.

Mr. Rest succeeds Ken F. Fraser of the North Fraser Harbour Commissioners as head of the association which represents ports and harbours across Canada. New vice-president is Montreal port manager Nick Beshwaty.

Other members elected to the board of directors are: Mowbray Alway of the Hamilton Harbour Commissioners,

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The Port of Acajutla

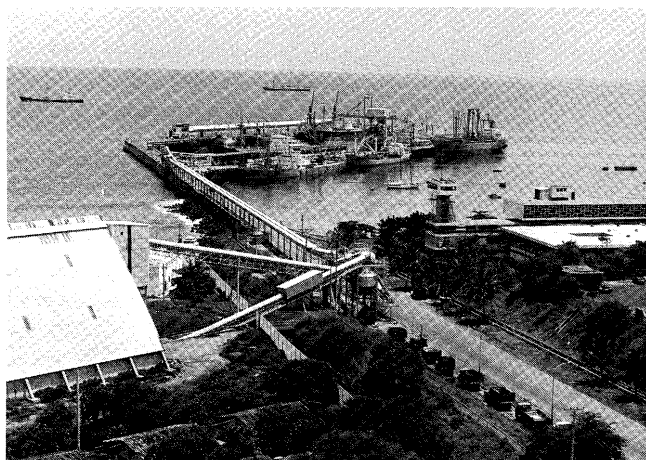
(See front cover also)

Acajutla founded in 1525 was the first port serving El Salvador and Guatemala at the time of the colony. It was from this port that the first expedition departed with the aim of conquering Peru.

Just a few meters away from the old colonial port a new one has been constructed, which undoubtedly is an outstanding item in the economy of Central America, as old one was at the time of the colony.

The new port that opened its doors to the world in August of 1961, consists of a breakwater mole 763 meters long; the access mole runs for approximately 453 meters long with a free width of 7 meters, and a finger pier called pier "A" which is 37 meters wide and 310 meters long and includes a combined breakwater, mooring dock and a transit shed.

During the first five years Acajutla outgrew its initial projections making it necessary to build a new finger pier in 1970. This pier named "B" is 360 meters long and has a free width of 28 meters.



Aerial view of Port of Acajutla



Port of La Libertad
(El Salvador)

Chris Brown of the Fraser River Harbour Commission, Fred DeVos of the Ministry of Transport and Loran Jordon of the Port Alberni Harbour Commissioners. Ian Brown, of the Toronto Harbour Commissioners, remains as secretary-treasurer.

The general aim of the association is to exchange information concerning port management and development of waterborne transportation between world ports and ports in Canada.

New container service to Europe

Charleston, S.C., September, 19, South Carolina State Ports Authority):—The establishment of a new major container service from the Port of Charleston to Europe was announced today jointly by the South Carolina State Ports Authority and U.S. Lines, Inc.

The service is scheduled to begin October 23. Making the announcement were W. Don Welch, Executive Director of the State Ports Authority, and William J. Keely, Vice President for the Eastern Division of U.S. Lines.

U.S. Lines will become the first new customer for the SPA's soon-to-be completed container crane and back-up facilities at Columbus Street Terminal.

U.S. Lines will begin with bi-monthly calls at the Port of Charleston with an option to increase their calls to a weekly basis within the first few months of service.

It is estimated that U.S. Lines will ship at least 75,000 tons of cargo through the Port in the first year of service. The lines has reserved an area for storing and handling as many as 300 containers in the back-up area behind the new container crane.

"We feel especially fortunate that a fine American-flag line with a proud heritage has made the decision to establish service from our port", Welch said. "The SPA works diligently to provide a high quality and broad range of service and we believe that this new service will contribute greatly toward our goal."

U.S. Lines is the second largest steamship line in the nation. Beginning in 1947, U.S. Lines was one of the first and largest customers of the Port, until four years ago when the line dropped several ports during its transition period from break-bulk cargo ships to container ships. U.S. Lines left the Port of Charleston and are now returning.

Their offices will be located at 6 Prioleau Street in downtown Charleston.

New map of terminals

New York, N.Y., August 28 (News from The Port Authority of NY & NJ):—A new Port of New York Transportation Terminals Map has been issued by The Port Authority of New York and New Jersey.

The four-color, 24-by-25 inch map shows the location of steamship piers, airports, bridges, tunnels, major highways, railroad freight and passenger stations, and other transportation facilities in the New Jersey-New York Port. The reverse side of the map carries 11 detailed panels of principal transportation terminals showing street connections to piers and terminals, including cargo buildings at John F. Kennedy International Airport and at the Newark International Airport Air Cargo Center.

An additional feature of particular interest to those concerned with motor trucking is a panel map describing the limits of the New York Commercial Exempt Zone prescribed by the Interstate Commerce Commission.

The map updates and replaces the New York Harbor Terminals Map, last issued in 1971, which has been prepared periodically by the bi-state agency since 1937.

Copies of the new map, which is free of charge, may be obtained in New York from the Port Promotion Manager, The Port Authority of New York and New Jersey, One

(Continued on Next Page Bottom)

New passenger ship terminal to open

by **Anthony J. Tozzoli**
Director of Marine Terminals

The Port Authority of New York and New Jersey

New York, N. Y.:—The dedication on Saturday, November 23 of the new Passenger Ship Terminal on mid-Manhattan's Hudson River waterfront will herald a new era for passenger cruising from the Port of New York. At long last the Port will have the attractive and comfortable passenger ship terminal accommodations it has needed for so long.

The new passenger terminal represents the keystone of the City of New York's and the Port Authority of New York and New Jersey's commitment to revitalize the west side of Manhattan. The terminal will provide a worthy gateway to the City for the thousands of ship travelers who sail from New York to ports throughout the world.

The conceptual development, planning and construction of the new terminal has required eight years of intricate negotiations involving the most careful cooperation of the shipping lines, of longshore labor, the City of New York and all its agencies, of the Port Authority and of the Federal Maritime Commission.

The terminal was first proposed by former Mayor John V. Lindsay shortly after he took office in January, 1966. At that time, the Mayor requested that the Port Authority "undertake a major study of passenger ship terminal operations in the Port of New York and endeavor to formulate, on a realistic basis, a program for development of modern, efficient and attractive terminal facilities for passenger ships on Manhattan's Hudson River waterfront."

After several years of intensive work, plans for the new terminal were approved by the Board of Estimate of the City of New York on May 13, 1971. On October 22 of that year the Federal Maritime Commission approved the agreement between the Port Authority and the City for the construction and operation of the new terminal.

Consideration for passenger comfort and convenience is reflected throughout the entire design of the new facility. It will be air conditioned and heated year round and its specious roof parking area will accommodate 1,000 vehicles.

A 1,700-foot-long roadway system will run the full length of the new three-level terminal, adjacent to the West Side Highway. It will permit rapid and easy pickup and discharge of passengers and baggage at both the street and mezzanine levels. The street level has been widened 60 feet beneath the viaduct to provide expanded areas for taxi lines

World Trade Center, Room 63S, New York, New York 10048. The new maps can also be obtained from the Port of New York Regional Trade Development Offices in Chicago, Cleveland, Pittsburgh, Washington, London, Zurich and Tokyo.



Mr. Anthony J. Tozzoli

as well as truck entrances for pickups and deliveries. An open mall will be developed for public use. The middle level will have three traffic lanes and a 20-foot-wide sidewalk for the loading and unloading of passenger baggage. The upper level, with three traffic lanes, will be used to reach the roof-top parking areas. Curved ramps connecting the middle and upper roadways will be at the north and south ends of the terminal.

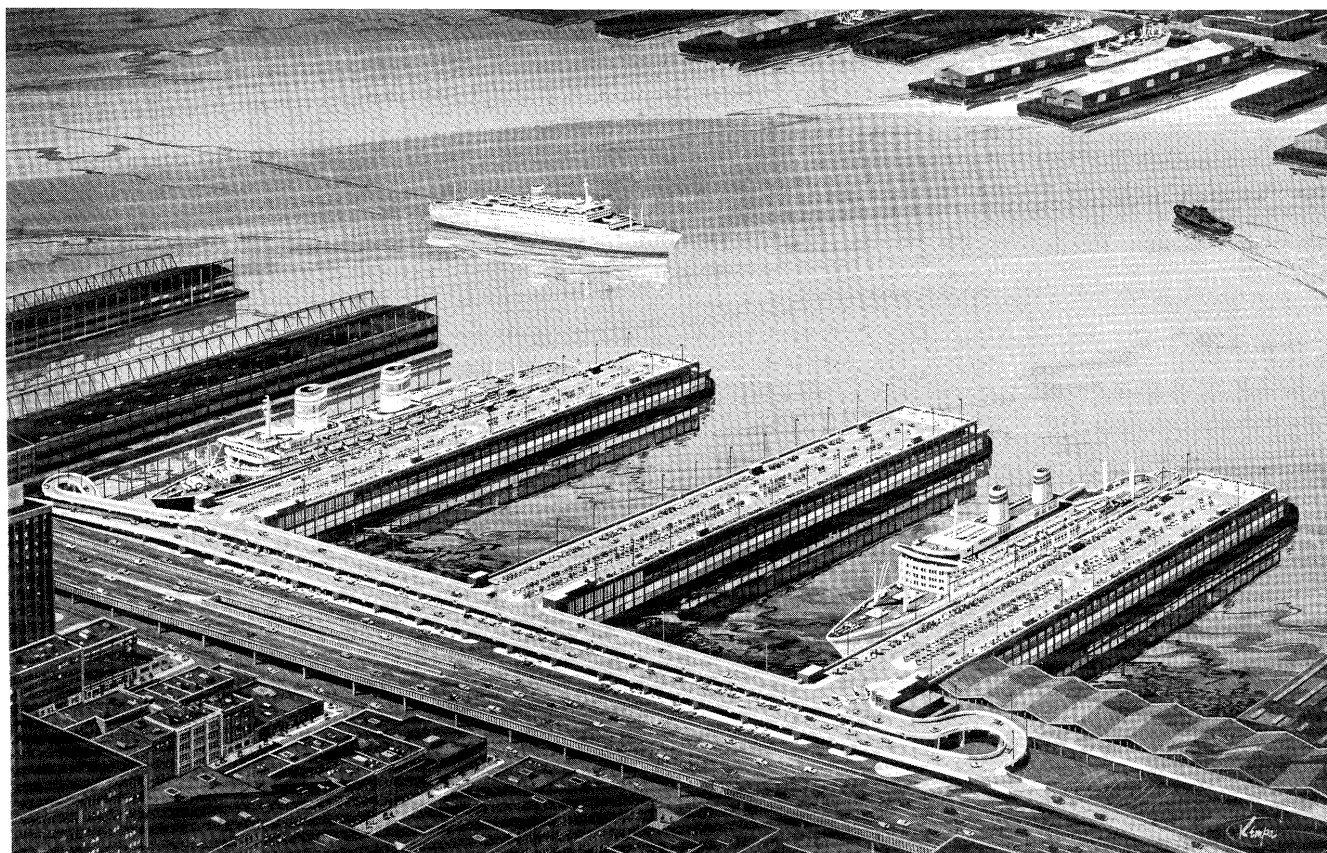
The entrance to the elevated roadway system will be on 12th Avenue between 54th and 55th Streets. This will serve traffic moving in a southbound direction, while the exit ramp feeds traffic into 12th Avenue at 46th Street. It is estimated that the new terminal will handle better than a half million passengers during the first year of operation.

Passengers and visitors alike will be pleased with the terminal's spacious lounges. The inshore lounge will be equipped with booths for car and limousine rental agencies, baggage express, and other passenger services. There will also be a snack bar and a center core of offices for representatives of the steamship lines using the terminal. An outstanding design feature of the terminal is the glass curtain wall which runs along the entire length of the terminal's facade. Serving as the new perimeter wall for each structure, the huge floor-to-ceiling windows afford those in the baggage hall as well as in the lounge area a sweeping view of vessel activity on the Hudson.

Just outside the glass curtain wall on the middle level are open gallery decks which stretch the length of each pier from the inshore end to the 3,000-square-foot promenade deck which faces the Hudson River. The gallery decks will be used for positioning of gangways and baggage conveyors, while the promenade deck will afford a splendid view of departing vessels.

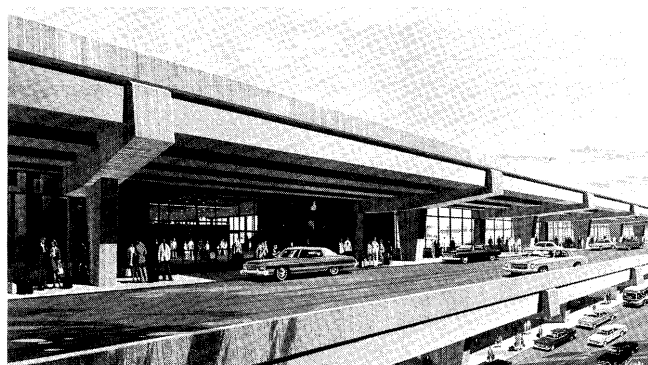
Travelers arriving at the new terminal aboard ships should also find that they will be able to retrieve their baggage more conveniently than in the past. This is due to a

(Continued on Page 38)

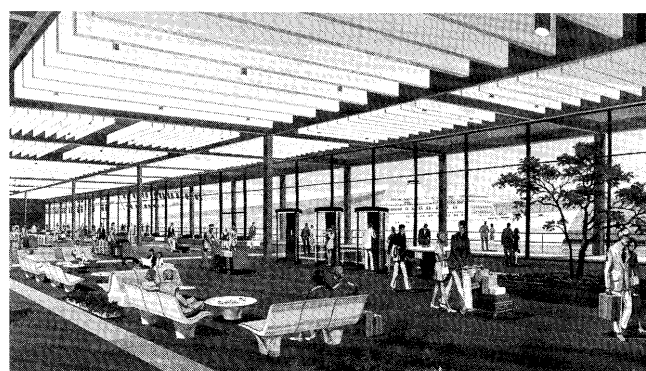


Slated for completion in November, the Passenger Ship Terminal will accommodate six liners at one time. Extension of roadway bulkhead 40 feet into river provides

convenient passenger/vehicle access with 20-foot-wide sidewalks at both ground and second levels. Roadway overhang and glass windbreak shield both levels from the elements.



Artist's rendering of the Passenger Ship Terminal to be opened in November by The Port Authority of New York and New Jersey on the Hudson River. The new terminal, designed to accommodate all passenger vessels calling at the port, will offer ultramodern lounges, rooftop parking, and efficient Customs facilities for ocean passengers.



Highly efficient Customs and baggage handling facilities and spacious lounge areas will be hallmarks of new terminal. Huge glass curtain walls will allow passengers to move from ship to curb in fully air-conditioned comfort. The terminal will also be heated as temperatures require and its spacious roof parking area will accommodate 1,000 vehicles. Gallery decks will be located just outside the glass curtain walls on the middle level for positioning of gangways and baggage conveyors.

(Continued from Page 36)

new sorting system planned for the terminal which makes use of a color/number code. With this system, baggage can be spread out for identification easier than with the system generally in use which uses the first letter of the passenger's last name. Unfortunately, this latter system does not account for the fact that certain letters are more common than others, and thus, baggage is likely to be distributed in unequal amounts. The new system should eliminate this problem.

With the new terminal quickly becoming a reality, the Port of New York and New Jersey reasserts its role as the nation's major cruise port. Indeed, the Passenger Ship Terminal is tangible proof of the port's pride in its reputation as the crossroads of world travel.

Biographical Note

Anthony J. Tozzoli, Director, Marine Terminals Department, is responsible for the conceptual development, planning, construction and operation of the Port Authority's piers and docks, including major ship terminals in Elizabeth, Newark, Hoboken, Brooklyn and the Passenger Ship Terminal on the West Side of Manhattan.

Mr. Tozzoli began his Port Authority career in 1946 as a Junior Engineer in the Engineering Department. Since that time he has served in positions of increasing responsibility in both the Engineering and Marine Terminals Departments playing a key management role in the planning and construction of the Port of New York's container terminal development at Elizabeth and Port Newark as well as the new Passenger Ship Terminal on the Hudson River. Prior to assuming his present position in January 1974, Mr. Tozzoli served as the Port Authority's Deputy Chief Engineer.

Mr. Tozzoli graduated in 1945 from Stevens Institute of Technology with a Bachelors Degree in Mechanical Engineering. He continued his professional engineering development at Bowdoin College, Massachusetts Institute of Technology and Cooper Union. He served as Ensign in the U.S. Navy during World War II.

Mr. Tozzoli, a Professional Engineer in both New York and New Jersey, is a member of the National Society of Professional Engineers and the American Society of Civil Engineers. In 1971, he received the Port Authority's Executive Director's Award of Achievement "in appreciation of his outstanding work in the conception, evaluation and implementation of the water surcharge method of stabilizing soils at the Elizabeth-Port Authority Marine Terminal." He was also the first recipient of the Martin S. Kapp Foundation Engineering Award of the American Society of Civil Engineers for his outstanding contributions to the field of soils engineering.

A member of the American Association of Port Authorities, Mr. Tozzoli is a Director of the North Atlantic Ports Association and the International Association of Ports and Harbors' Liaison Officer to the Economic and Social Council of the United Nations.

A resident of Westwood, New Jersey, Mr. Tozzoli was raised in Cliffside Park, New Jersey and attended St. Peters Preparatory School in Jersey City. He is married to the former Jeanne Clarihew of Teaneck; they have three children—Douglas 18; Lynn 16; and Robert 10. (8/30/74)

1st National Port Week

New York, N. Y., Sept. 16 (New York-New Jersey Port Promotion Association):—The Port of New York-New Jersey will observe the first National Port Week, September 29—October 5, with a four-hour inspection of port facilities in the bi-state harbor on Tuesday, October 1, James P. McAllister, President of the New York-New Jersey Port Promotion Association, announced today.

Mr. McAllister, who is also Chairman of the local National Port Week Committee, said the inspection was being jointly sponsored by three port groups: the bi-state Port Promotion Association, comprised of some 25 maritime groups, government agencies, and trade and civic associations; the New York City Council on Port Development; and The Port Authority of New York and New Jersey. About 400 trade and civic leaders, Port officials and press will be invited to the inspection. Certificates of appreciation will be presented to civic groups which have supported programs to develop and promote the facilities of the bi-state Port.

The inspection of port facilities, aboard a Circle Line vessel, will begin with a preview of the new \$35.9 million Passenger Ship Terminal now under construction on the Hudson River between 48th and 54th Streets. The terminal is being developed by the Port Authority at the request of the City of New York. The vessel will debark and return from Pier 88, one of three piers being modernized and reconstructed as part of the new cruise and transatlantic steamship facility to be opened this fall.

National Port Week was established by Presidential Proclamation early this year "in order to remind Americans of the importance of the port industry of the United States to our national life." The week beginning on the last Sunday in September was designated as National Port Week, during which public attention should be directed to the important role our nation's ports play in the American economy.

Over 1.6 billion tons of commerce in our foreign and domestic waterborne trades moved through our port gateways in 1972. The foreign portion of this total was valued at more than \$47 billion. The many and varied port handling activities required to service this vast trade volume alone generate about \$30 billion in direct dollar income to local and regional economies served by United States ports. This amount serves to stimulate an even greater economic chain of indirect revenues as these dollars are spent through the national economy.

The New Jersey-New York Port District is a 1,500-square mile area with boundaries approximately 25 miles from the Statue of Liberty. It contains all or part of 17 counties, nine in New Jersey and eight in New York, which, in turn, contain all or part of 234 municipalities.

In 1972, 9,347 ocean vessels called at the Port of New York. About 196,843,000 short tons of waterborne cargo moved into, out of and through the Port of New York in 1972, of which 61,778,000 short tons involved exports and imports. The remainder was largely coastal, regional or intra-harbor traffic.

In all, about 755 miles of shoreline encircle the waters of the Port District—460 miles in the State of New York and 295 in the State of New Jersey.

New fiscal program established

Oakland, Calif. ("Progress", August, 1974):—A fiscal program for 1974-1975 based on projected operating revenues of \$17,548,045 has been adopted by the Oakland Board of Port Commissioners.

The figure represents an increase of almost \$400,000 over the revenue projected for fiscal 1973-1974, which ended June 30.

The Port of Oakland's annual budget is based on the funds produced by its three operating divisions: Oakland International Airport, marine terminal facilities and rental properties including the Port of Oakland Industrial Park and Jack London Square.

Revenues from the Marine Terminals division, which is expected to be the largest producer in the new fiscal year, are estimated at \$7,483,331. Oakland International Airport is expected to generate \$6,335,300 for fiscal 1975, while the forecast for returns from rental properties is \$3,729,414.

Operating expenses for the coming fiscal year are predicted to be \$8,665,623. This is an increase of approximately \$875,000 over the previous year.

The Port's "annual net revenues" are expected to be \$8,211,372. Commissioner Thomas L. Berkley pointed out that there is a requirement that annual net revenues be at least equal to one and one-half times the 1957 revenue bond principal and interest payments for the fiscal year. The proposed budget meets that objective, Berkley said.

The Port of Oakland does not require tax funds for its operations and must base its annual budget on income produced by the level of business within its jurisdiction. According to Berkley, all revenue estimates have been "conservatively estimated," based on current levels of operations.

After paying debt service on bonds, Port operations are expected to generate \$1.1 million in additional funds which have been assigned to continue capital improvement projects. The rapid growth of the port requires that this amount be supplemented with proceeds from the sale of revenue bonds which are retired with port funds.

New real estate director

Seattle, Washington, September 10 (News Release from Port of Seattle):—Glenn V. Lansing was today appointed (Sept. 10) director of real estate for the Port of Seattle, according to J. Eldon Opheim, Port general manager. He joins the Port on September 16.

Lansing, a West Seattle resident, has operated his own industrial real estate brokerage and consulting firm since 1968 in Seattle, under the name The Lansing Company, Inc. Prior to this he was with Henry Broderick, Inc. for a six year period, attaining the highest brokerage commissions in the history of that firm.

Before entering upon an industrial real estate career, Lansing spent a dozen years as oil company geologist and as a consulting geologist, having received his degree in geology from the University of Washington in 1951.

Lansing is an active member of the Society of Industrial Realtors and chairman of its ethics committee.

A World War II Navy veteran of service on the



San Francisco, Calif., 9/25/74 (California Marine Affairs and Navigation Conference):—GATHERING OF EAGLES—Two former and the current San Francisco District Army Engineer joined recently in a brief ceremony paying tribute to a member of the trio. Colonel Frank Boerger, USA (Ret.) - left - in his role as a director of the California Marine Affairs and Navigation Conference and as dredging committee chairman - presented the association's commendation certificate to just-retired Col. James Lammie (right), for "outstanding service and contributions on behalf of navigation and the development and improvement of harbors and channels" in the Golden State. Recently-arrived Col. Henry Flertzheim (center), Lammie's successor, joined in congratulation. C-MANC represents all California commercial ports and most recreational harbors in support of civil works studies and improvements affecting commerce and boating.

battleships Nevada and Missouri, Lansing has also spent a brief period after the war as a merchant seaman, shipping out of Seattle.

Born in Idaho on a cattle ranch, he moved to Montana to spend his youth prior to enlisting in the Navy in 1942.

Lansing will head the Port's real estate department which has been under the management of George Sutter as acting director since the retirement of the former director in April. There are 30 persons in the department which prepares and administers all of the Port's extensive marine and airport leases and permits, and arranges the purchase and sale of all properties.

Tri-Port Seminar draws 85 delegates

Seattle, Wash. (Port of Seattle Reporter, July 1974):—The fifth tri-port seminar with representation from the Ports of Kobe, Rotterdam and Seattle was held in Seattle from June 23 to 27. At press time, a total of 85 official delegates had assembled for the sessions, including 35 from Kobe, 19 from Rotterdam and 31 from Seattle.

The five-day program was a balanced mixture of panel discussions, industrial tours and social activities. Topics that were to be discussed at seminar sessions included "Containerization," "Dangerous Cargoes & Disaster Prevention," "Nautical Safety & Guidance" and "Documentation & Computerization."

Also to be presented were special papers on "New Concepts & Changes in Ocean Transportation," "Redevel-

opment of Piers" and "The Role of the Port as a Center of Economic Activity."

Field seminars included inspection of Sea-Tac Airport's \$175-million expansion, container facilities at Terminal 18, auto-processing and barge-loading operations at Terminal 115, and a visit to the icebreaker "Staten Island."

Among social events were a salmon bake at Kiana Lodge, dinners hosted by the Kobe and Rotterdam delegations and Seattle banks, and luncheons sponsored by Seattle stevedoring firms and the Puget Sound Steamship Operators Association.

Mayor Tatsuo Miyazaki headed the Kobe delegation, while Mayor Willem Thomassen led the contingent from Rotterdam.

Cargo volume holds firm in first 6 months

Tampa, Florida, 9/13/74 (News from The Tampa Port Authority):—Tonnages at the Port of Tampa held firm during the first six months of 1974 as compared to 1973 and in the face of a declining economy. The month of June showed an uptrend in cargo handled at the port, Guy N. Verger, port director, reported.

The six-month period showed a slight increase of .26 percent as compared to the same period a year ago. During June cargo handled increased by four percent.

During the period a reduction in general cargo was noted. From June to January a total of 524,657 tons were handled while June-January figures in 1973 were 624,214 tons.

Phosphate and phosphatic products, in demand worldwide, showed an increase of 204,406 tons for the period. The six-month figure this year was 9,670,707 tons, while 9,466,301 tons were shipped the same period a year ago.

A reduction in petroleum products inbound during the first three months of the year was a principal factor in holding tonnage down. Total for the six-month period this year was 5,365,924 tons as compared to 5,753,728 tons in 1973.

Total cargo handled for the six-month period was 20,656,611 as compared with 20,501,139 in 1973. The total tonnage for the port in 1973 exceeded 42 million.

Petroleum shortages in the first quarter of the year were blamed for the tonnage reductions. Ships moving at slower speeds and the reduction of the numbers of ports at which ships called were also a factor. Other factors were the quotas placed by the U.S. government on export of scrap steel and the shortage of imported finished steel products. Both of these items are primary cargoes at the port.

NPC BOOK:

Record rise in traffic through British Ports: NPC Statistics for 1973

London, 25th September (National Ports Council News Release):—Last year saw the biggest annual increase in the traffic through Britain's ports since the National Ports Council began publishing statistics ten years ago. The record throughput of 382 million tonnes in 1973 was 30 million tonnes more than the 1972 figures.

The increase, shown in the latest issue of the Council's *Annual Digest of Port Statistics**, published today, was mainly due to higher through-puts of oil and petroleum products, both foreign and coastwise, but substantial rises in imports of ore and scrap metal, and of wood, and exports of chemicals, helped to swell the total.

Petroleum movements rose from 218 million tonnes in 1972 to 237 million tonnes—62 per cent by weight of all port traffic. Oil traffic has now put Milford Haven in second place, in tonnage terms, among British ports, only London having a greater throughput.

Tonnages through the major ports in 1973 are shown below (the figures in brackets are the tonnages excluding fuel traffic):

London	56.5 m (19.2 m)
Milford Haven	53.4 m (0.02 m)
Southampton	29.1 m (3.6 m)
Liverpool	27.3 m (11.1 m)
Medway	27.1 m (1.8 m)
Tees and Hartlepool	26.0 m (9.4 m)
Immingham	23.5 m (7.7 m)
Clyde	16.8 m (5.8 m)
Manchester	15.9 m (6.2 m)
Forth	10.3 m (4.3 m)
Swansea	7.1 m (0.9 m)
Bristol	6.0 m (3.0 m)
Tyne	5.8 m (2.4 m)
Hull	5.6 m (4.3 m)

Growth Ports

The Digest contains a port-by-port analysis of annual traffic for the years 1965 to 1973, in which a number of ports stand out for their growth in traffic other than fuels.

Of these, Felixstowe is an often quoted example, with a growth in non-fuel traffic from 442,000 tonnes in 1965 to 3,152,000 tonnes in 1973—the first year in which Felixstowe's tonnage has topped the three million mark. Other notable examples are Harwich (584,000 tonnes to 2,392,000 tonnes); Dover (823,000 tonnes to 2,567,000 tonnes); Tees and Hartlepool (7,339,000 tonnes to 9,442,000 tonnes); and the British Transport Docks Board's ports of Southampton (1,304,000 tonnes to 3,624,000 tonnes) and Immingham 2,364,000 tonnes to 7,654,000

* Annual Digest of Port Statistics 1973, Volume 1. Published by the National Ports Council, Commonwealth House, 1-19 New Oxford Street, London WC1A 1DZ. Price: £10.00.

(Continued on Page 42)

Port of *Kure*



"GLOBTIK TOKYO" at Nippon Oil Staging Terminal

CONSERVE OIL

No one will disagree that oil—lifeblood of the world's economy — is a limited natural resource. Coal, water, natural gas and nuclear fission are the better known alternative sources of power but individually or collectively they are no substitute for oil which in addition to its thermal qualities is a basic raw material. Both the producing and consuming nations owe a sacred duty to posterity to conserve this precious, irreplaceable resource in a sensible, safe and economical manner. Time is not on our side.

TOKYO TANKER CO., LTD.

(Continued from Page 40)

tonnes). In contrast, over the same period Liverpool's non-fuel traffic has declined from 15,515,000 tonnes to 11,104,000 tonnes. But Liverpool remains Britain's second port for non-fuel traffic.

Container Traffic

The year also saw substantial growth in container and other unit load traffic through British ports—an increase of six million tonnes on the previous year. The unit load tonnage in 1973 was 28.5 million, compared with 12.9 million in 1969, 16.9 million in 1970, 19.3 million in 1971 and 22.5 million in 1972. The 1973 tonnage was almost equally divided between 'roll on' and 'lift on' traffic. London was the major port for unit load traffic with 2,930,000 tonnes. Other ports with details published in the **Digest** are Southampton (2,750,000 tonnes); Felixstowe (2,531,000 tonnes); Dover (2,291,000 tonnes); Hull (2,101,000 tonnes); Liverpool (1,860,000 tonnes); Preston (1,420,000 tonnes); and Tees and Hartlepool (521,000 tonnes). All these tonnages are increases on the 1972 figures.

Form of the Digest

This year's **Digest**, the ninth to be published by the Council, has been altered in form to take account of the findings of a readership survey and also to make the statistics available at the earliest possible date. To the latter end the **Digest** is now being published in two volumes; the second volume, containing details which take longer to process, will follow later in the year. Unit load statistics, previously published separately, are now incorporated in the main **Digest**.

The Council's Director of Economics and Statistics, Mr. R.E. Baxter, said today that one of the more intractable problems in publishing port statistics, which, partly because of the complex structure of the industry, were drawn from a variety of sources, was that of timeliness. The present publication date represented an improvement of four months on the previous year's performance, but he only regarded this as a start and he hoped that in future years further inroads would be made on the time lag. The question of some basic data being published on a quarterly basis was also being considered.

The first volume of the **Digest** contains 79 tables divided into four sections: Goods traffic analysed by commodities; Container and roll-on traffic; Passenger traffic, and Manpower. The later volume will include statistics based on Customs data relating to overseas trading areas; number and type of berths and berth facilities by ports; traffic with ports of Northern Ireland and the revenues of major British ports.

What containers contain

Le Havre (Port of Le Havre Flashes, June-July 1974):—Of the 124,000 containers handled in Le Havre last year, 103,000 were full. But full of what? The main items imported in "boxes" were components (36,000 tons), unprocessed plastics (28,000 tons), coffee (22,000 tons), cotton (21,000 tons), fruit juice (19,000 tons), manufactured goods (18,000 tons), citrus fruits (18,000 tons) and asbestos (17,000 tons). Exports were mainly of tyres

and other rubber products (73,000 tons), vintage wines (71,000 tons), chemicals (47,000 tons), uprocessed plastics (25,000 tons), metal goods (18,000 tons) and cheaper wines of the "vin ordinaire" type (17,000 tons).

85% of the containers transiting through Le Havre travelled door to door, without being stuffed or stripped en route. Half were carried by rail and half by road.

Port of Rouen and the energy crisis

Rouen (Rouen Port, International Issue, June 26th 1974):

1. Return of coal

The energy crisis for some months has raised a certain number of questions again, and the port of Rouen, a traditional coal port, has figured in all this.

Last year, our port received 1,337,500 tons of coal, counts on getting at least a million extra tons of coal in 1974 to repeat the very good 1971 figure of 2,480,200 tons. This figure was not, however, a record, relatively speaking. The maximum tonnage realised since the war was 3,518,000 tons in 1949 and the absolute record for all time goes back to 1918 with the extraordinary figure of 6,925,000 tons. The port of Rouen therefore possesses a very useful reserve capacity for coal carrying.

Since the beginning of the year, the coal trade has been rising formidably; for the first quarter the figure was in fact 492,000 tons, namely 150,000 tons more than in the course of the first quarter in 1973. The greater part of this coal comes from the U.S.S.R. and from Poland.

2. Potential for coal

We can seize this occasion that the enforced return of coal presents, to recall the potential for coal that the port of Rouen possesses. Domestic coal is taken by four companies (SRRC/Sogerac, Charvet and Sorolac) the ships used being able to offer a full load that varies greatly; from less than 1,000 tons to 15,000 tons. Among these the French *Carolla*, belonging to the Union Navale with a full load of 14,880 tons, has now gone well over the hundred mark of calls at Rouen.

This domestic coal is dealt with on the quays of Rouen and re-forwarded inland by train, road or river. Some is even reexported to other French ports or to Great Britain (16,300 tons in 1973).

As regards industrial coal, generally meant for the E.D.F. power stations, there are two transshipping points; that of the C.R.D. (also called Cory Quay) and that of the S.C.A.C. (formerly Grande-Carue).

This coal, which generally arrives in big colliers from 15 to 25,000 tons are mostly re-forwarded towards the Paris area by pushed convoys. These convoys can reach 4,500 tons at the moment; but in 1980 they will move totals of 10,000 tons up the Seine.

The important installations at Rouen for handling the arrival of coal, and the acceleration of works improvement for making Rouen more easily accessible (notably by levelling the approaches near the confluence of the Risle) allowing access for bigger ships still, should allow our port

(Continued on Next Page Bottom)

Tilbury Docks: Unusual container crane movement

Port of London Authority

London, 13th September (PLA News):—The problem was easy enough to define. Three container cranes running on a single quayside track had to be shuffled so that the largest of them was moved from one end of the line to the other.

And the problem behind the solution was easy, too—it was putting in into effect that caused the head-scratching for it was a high boom single lift crane weighing some 500 tons that had to be moved and it was standing on one of the busiest of the Port of London Authority's multi-user berths at its Tilbury container port—itsself the busiest in the country.

And as if that was not all, the job had to be completed with the absolute minimum of disruption to the 24 hour working on the berth.

The crane had been built "out of sequence" deliberately, Operational requirements on the berth—the need for continuous, uninterrupted running by the other two cranes and by a fourth along the length of the quay, frequent use of the berth by deep sea container ships—made it in fact the only choice; for to have built the crane in sequence in the position required would have resulted in serious disruption of container handling on the berth, particularly of refrigerated cargo, and severely restricted the operation of an adjacent crane.

This would have led to a loss of goodwill from customers at the berth as well as, of course, a considerable fall in its efficient running.

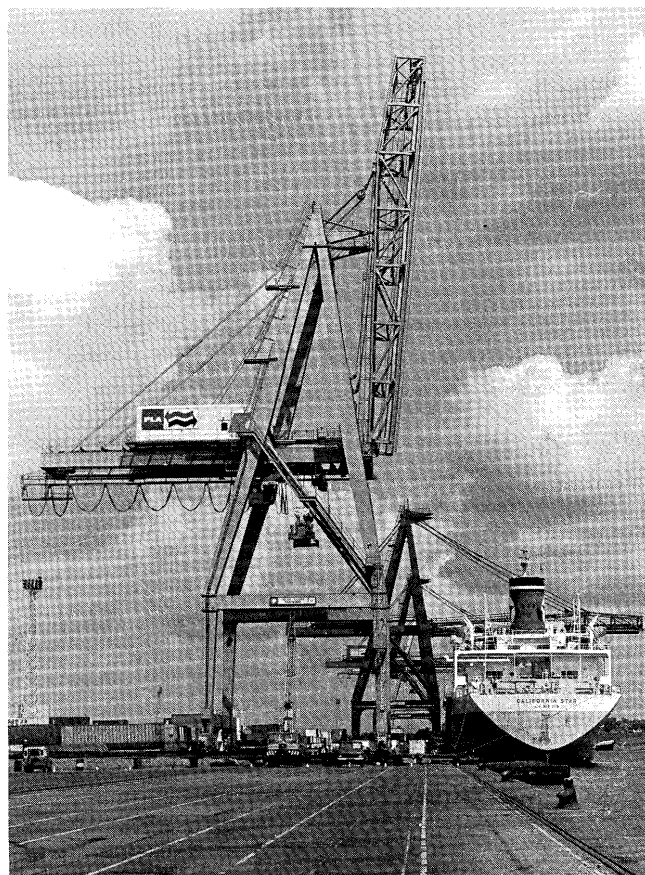
So it was decided to build the crane right at the end of the track and to shuffle the cranes around when the best opportunity arose—a difficult task but one which, in the event, went very smoothly and which was completed without any disruption whatsoever to shipping.

The crane, a Vickers Paceco Portainer, was built to give a complete range of craning facilities on the berth. Its high lift capabilities meant that the larger container ships with their boxes stacked four high on deck could be loaded or discharged with the minimum of trouble and used with the high boom twin lift crane next to it, the largest of container ships could be handled on the berth.

Two earlier single lift cranes together with the twin lift were already on the quay when the new Paceco was built and the position of the new crane was finally to be between the twin lift and the two single lift cranes.

A number of ways of moving the crane were discussed, including lifting it off the track on to a lighter and moving it to its new position by water but though this might have

to face up to a substantial growth in its coal trade when these better conditions are available. To sum up, here now is a very traditional trade steadily running down (up to now) but which finds itself, by force of recent events, once more a very busy trade.



High reach, single lift, container crane moving away from the quay on specially prepared track. (Exclusive to "Ports and Harbors")

meant the whole operation could have been completed in less time it would have been more costly and, most important, it would have totally disrupted shipping on the berths involved. There was also some doubt whether the sort of floating crane needed would have been available at the time that was best for the move and whether, in fact, it could have passed through the lock and into the docks.

The method finally decided upon was to lift the crane off its track and move it sideways away from the track so that the two single lift cranes could be fleeted past. The big crane could then be pushed back to its track and lowered into place—in the right position in the line of cranes.

To carry out the work was not quite as simple.

Engineers from PLA and from Vickers, who built the crane, put their heads together and came up with the idea of raising the crane off its tracks on hydraulic jacks as the first stage in the move operation.

As the crane was lifted the jacks—sixteen in all—were supported on military trestle sections until it was well clear of the track. Then extension rails from a track built at 90° to the quay track were passed under the crane.

The rails for this track were laid on their side and short lengths of similar rail were welded on the under side of the

crane's bogies, directly over the new track. Three and half inch diameter ball bearings, set in a spacing plate, were placed in the track rail and the crane lowered on top of them, the rail sections on the bogies fitting on top of the ball bearings.

The crane was then slowly winched away from the quayside track so that, once the extension pieces had been removed, the two single lift cranes could be fleeted past into their "proper" position.

Once the fleeting was complete the extension pieces of track were replaced and the crane winched back to the quay track where the jacking process was reversed and the crane returned to its position on the quay track.

The only real problems in the operation were relatively minor and were all foreseen. Running parallel to the quay track is a duct for the conductors for the cranes and this had to be shored up from the inside as the crane passed over it which meant disconnecting the top conductor during the operation. There is a slight front to back gradient on the quay which to be continued in the form of a ramp up which the crane was pulled, away from the quay track, but it was first necessary to weight test this ramp before the operation could begin to ensure that it would support the weight test this ramp before the operation could begin to ensure that it would support the weight of the crane.

The movement of the crane away from the quayside was achieved by the use of two ten ton winches which proved more than adequate for the job while the return was handled by two five ton winches, the ten ton pair acting as brakes in view of the slight incline from the ramp to the quayside.

Contractors for the job were Carter Horseley with much of the preparatory work being carried out by PLA staff.

At no time during the operation was the berth out of action. One crane was available for us the whole time and the only time the two single lift cranes could not be used was when they were being fleeted—a matter of about 20 minutes and in any case this part of the operation was carried out when there was no ship actually being worked on the berth.

It was the first time that a container crane had been moved in this way but with careful calculation of the weights that each jack would have to bear and of the stresses that the crane could come under—from the weather, for instance—the operation was carried out successfully and safely.

Port-Jérôme: 15% of Rouen's trade

Rouen (Rouen Port, International issue, June 26th 1974):—Let us recall in a few chosen figures the importance of Port-Jérôme in maritime trade: in 1973 the figure stood at 2,014,749 tons when the overall trade of the Port had risen to 13,406,096 tons. Imports of 508,832 tons came in through Port-Jérôme and 1,505,917 tons of exports left. We should also note that her trade was helped on by the 765,479 tons which the Mobil refineries sent off, 1,233,899 tons from the Esso refineries and 15,371 tons from the alcohol factory of Sodes. Port-Jérôme therefore is responsible for 15% of Rouen's trade.

The other actual annexe of Rouen, namely the Seine wharves situated near Honfleur (Miroline) for their part reached the trade figure of 786,437 tons in 1973, which

represents 6% of the Port's trade. Only 79%, then, of trade is actually handled by Rouen itself.

500,000,000 tdw in 1975 ?

Bremen (Bremen International, 8/9-1974):—The year 1973 brought the hitherto greatest increase in deadweight tonnage for the world merchant fleet. In 12 months the deadweight increased by 38.6 million tdw. Since 1969 the world merchant fleet was strengthened by 167.4 million tons, or by 59.3%. The number of ocean vessels (above 300 GRT) increased by only 2,776 units (= 10%), to 30,078. The total tonnage of these ships at the beginning of 1974 was already 449.3 millions tons. If the extension of the world merchant fleet is to be pursued at the same rate as hitherto, the total deadweight by 1975 will have topped 500 million tdw. This information was derived from the Bremen Institute for Maritime Economics.

Next stage: 60 knots

Bremen (Bremen International, 8/9-1974):—It is not by chance that one of the leading German ship-building experts, the Scientific Director of the Berlin Experimental Establishment for Dyke and Ship Construction, Prof. Dr. of Engineering Siegfried Schuster, has been meditating over the 'ships of the morrow' in the special Bremen number of a leading German cultural magazine. After all, one has been building ocean-going ships uninterruptedly in Bremen for over a thousand years; including in comparatively recent times the first German steamer, the fastest passenger ship of its day, the "Bremen"—which won the Blue Riband in 1929—, or the aerofoil ship "Bremen Pioneer", which was already trading regularly on the Weser in the 1950's. In shipbuilding "Bremen" is practically synonymous with "Pioneer". It was here in the major shipyard AG "WESER" that the Catamaran container freighter for 38 knots was recently drafted; here that the arctic bulk-carrier was developed for Northern Canada, which can break through polar ice of up to 4 metres thickness; here commenced, for the German coast, the container and Lash trades; and here also is centred, also in 1974, the focal point of German ship construction. Professor Schuster complements this tradition of always being a ship's length ahead.

Since 1959 the international exchange of goods has more than trebled. This trend is continuing. At the present time 60,000 ships are transporting 300 million tons of goods. Vessels are becoming ever larger, the million-ton tanker is no longer a mere utopian idea as, according to Schuster, she can transport more economically than pipelines and electric conductors. Although the lesser draught 'smaller' tankers which can navigate the large waterways, such as the Suez Canal, also have a future.

The ship-form will also alter radically. The container ship clearly shows that the angular containers will not satisfactorily fill out the current type of ship's hull. The Lash-ships are pointing the way to the future. These have been developed from the ferry-ship system, for which Schuster also forecasts new chances in the passenger trade. Moreover thoughts extend beyond the Lash concept, to vessels which are totally comprised of separable and yet independent ship sections which can be solidly combined with a narrow ship's mid-section for the crew and engines, but which can be broken down again on the roads

and—after the discharging and loading processes—reformed to make anew an ocean freighter with an uncommonly high turn of speed.

Possibly one was too early in turning to the hovercraft; which suffers from unmanageableness—in contrast to the aerofoil vessels with water jet propulsion, which are not only admirable in steering but which already at 30 knots exhibits the relatively lowest performance efficiency. In addition they evince excellent seaworthiness. It is, however, true that they will only prove profitable at a constructed size which has, as yet, not been achieved. Efforts are being made—according to Prof. Schuster—towards wingboats of 1,000 ton deadweight and a speed of 60 knots, which is after all more than 110 km. p. h. Whilst it is possible that the ship of the future will resemble less the 'romantic' form of the fish and more that of a flat rectangular container . . .

Unit Load Council

Oslo, Norway:—The Unit Load Council was established in May 1970 to promote the Unit Load Concept of cargo handling (Shipper-Packed Units).

From the start the Council concentrated its aims within Europe, but it was later decided to extend the activities to the international world including the developing countries where this concept should be of extreme importance.

MEMBERS

From the start only shipowners were members of the Council. However, in 1972, stevedoring firms, forwarders, port authorities, etc. were eligible to join as associate members.

MEMBERSHIP FEE

The first years required a yearly membership fee of N. kr. 60.000.-. With increased membership the fee has been reduced and for 1974 it is N. kr. 20.000.- for full members and N. kr. 10.000.- for associate members.

THE COUNCIL'S WORK

To introduce the Council and the Concept of Shipper-Packed units, a series of advertisements, feature articles and newsletters have been printed in magazines, journals, newspapers all over the world.

For further information, write to:

UNIT LOAD COUNCIL
Aslakveien 14
Oslo 7
Norway.

Port of Lisbon activity in the year 1973 (Summary in English)

Lisbon (boletim do Porto de Lisboa, January/February 1974):

1—Incoming shipping.

A total of 6,242 ships with 41,542,392 g.r.t. called at the Port of Lisbon in 1973. 1,515 of these vessels (7,180,962 g.r.t.) were Portuguese and the remaining 4,727 with 34,361,430 g.r.t. hoisted foreign flags.

That means a decrease of 160 ships (−2.5%) and 348,482 g.r.t. (−0.8%) in relation to 1972.

2—Commodities.

Last year, 10,811,172 metric tons of commodities were handled in the Port, which encompass 2,378,506 metric tons of loaded goods plus 8,432,666 metric tons of unloaded cargo.

The increase of the global sea-cargo concerning 1972 was of 349,454 metric tons (+3.3%) including growths of 71,441 metric tons (+3.1%) for loaded cargo and 278,013 metric tons (+3.4%) for unloaded cargo, respectively.

3—Sea-passengers.

In 1973, the amount of these passengers was of 298,687 persons. These figures represent a decrease of 10% in relation to previous year, which resulted in favour of commercial air navigation as occurred in last years.

4—River traffic.

The total of passengers who have crossed the Tagus estuary by boat in 1973 was of 26,916,280, which means a diminution of 3.4% concerning previous year.

As to vehicle river traffic by means of ferryboat, a decrease of 44,495 unities (7.1%) was registered in comparison with 1972.

5—Budget implementation.

The global revenue collected in 1973 by the Port of Lisbon Authority (AGPL) presents a growth of 137,940,000 escudos (+24.7%) in relation to previous year.

Its ordinary and extraordinary expenses in last year totalled 656,956,000 escudos, against 530,504,000 escudos in 1972, which corresponds to an increase of 23.8%.

Jump in containers and general cargo, first half of 1974

Port of Helsingborg

Helsingborg, Sweden, August 2 (Port of Helsingborg Press Release):—For the Port of Helsingborg the dockers strike early this year had an adverse influence on employment and economy, but the harm of the strike has been repaired to a great extent. This appears from the semi-annual report which shows again new records in traffic and cargo turnover. Of particular interest is the big jump in container traffic in parallel with the conventional general cargo traffic.

The movements of shipping have increased by 6.8 pct making the number of ship arrivals and departures for the period 73,176. By this the tonnage increased by 5.5 million net register tons and reached 39,663,458 nrt, up 16.1 pct.

The total cargo volume rose by 2.3 pct to 3,878,000 tons compared with 3,791,000 tons in the year before. It is principally the unit cargo that has influenced the result

favourably. The increase of this came up to 9.7 pct and has now reached a volume of 1,108,000 tons.

Conventional general cargo rose by 12.8 pct and arrived at 234,000 tons. The rail-ferry cargo has been slightly reduced by 26,000 tons thus ending in 1,149,000 tons for the first six months. A conservative estimate of the total cargo volume for the whole of 1974 indicates some 7.8 million tons, which is a new record for the port.

The oil crisis has disturbed the import of mineral oils which lowered by 30,000 tons. The oil crisis has also influenced the number of ferried motor vehicles which arrived at 430,000 against 446,000 in the previous year. The number of passengers for the six months period came up to 6,645,000, which means a slight fall by 18,000.

New Investments Improve the Port Services

The most important event for Port of Helsingborg in the last few years is no doubt the construction of the Sound Terminal—a completely new RoRo-harbour being built since January this year and projected for inauguration in the summer of 1975. The enterprise will cost some 20 million Sw. Crs and is constructed on the sites of the old oil harbour west of the Ocean Terminal. The new harbour will be equipped with 2 RoRo-berths for large ferry vessels with an adjacent reserve berth as well. On a total area of about

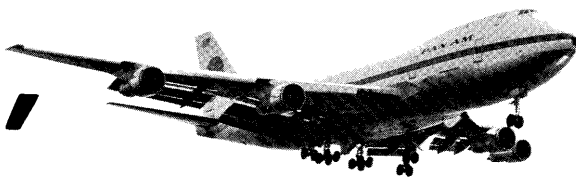


PORT OF HELSINGBORG:

Containers and other units are dominating the cargo

turnover of the port. The picture shows the Skane Terminal - sole complete container harbour of South Sweden.

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25,000 sq.m a complete freight and passenger terminal building will be at service. There will also be double tracks directly connected with the Central Goods Station of Helsingborg. The terminal will thus be suitable not only for road transport but also for railway cargo. It is the intention that the ferry line to Germany—Helsingborg-Travemünde/Lübeck with 3 daily trips in each direction—shall use the new terminal. The idea is also that the new harbour shall be opened for operation by RoRo-lines to other countries as well.

An event of great importance for the general cargo traffic is dredging of basin No. 6 in the South Harbour. The present depth of 8.5 m shall be increased to 10.5 m. The dredging and the reinforcement of the quays in the basin is already going on, and in December next the big liner vessels are welcome to the South Harbour as well.

A number of other improvements are also on the way. Among those the extension of the RoRo-warehouse in the Skane Terminal may be mentioned. A shield for the protection of RoRo-units at the south berth of the same terminal is to be erected. The above measures will all contribute to improve the service of the port.

Golden Horn Bridge completed in Istanbul

—A part of highway project to link Asia with Europe—

Tokyo, Japan, Sept. 11—The Golden Horn Bridge, constructed jointly by IHI (Ishikawajima-Harima Heavy Industries Co., Ltd.) of Japan and JBB (Julius Berger-Baobag A.G.) of West Germany for the Turkish Ministry of Public Works, was completed and opened to traffic on September 10.

Constructed over the inlet Golden Horn in the city of Istanbul, the bridge measures 995.3 meters in total length and 31.2 meters in width and forms a part of the "Bosporus Project" plan designed to link Europe with the Asian continent, another part of which is the 1,560 meter-long Bosporus Bridge completed in October 1973 by a consortium of English and West German builders.

IHI, together with their partners in the consortium, won the order worth about 4,600 million yen as a result of the original design presented in the international bidding in March 1971.

IHI undertook the design, manufacture and erection of the 822 meter-long steel bridge, while JBB undertook the construction of the prestressed concrete bridge, piers and their foundation on steel piles. All the steel girders weighing a total of about 7,000 tons were fabricated in Japan and transported to the construction site 24,000 kilometers away by two ships.

The construction of the bridge over the inlet Golden Horn, a project dreamed of by Leonardo da Vinci more than 470 years ago, has now been realized.

The consultant for the construction project is Japan Bridge Consultant Co., Ltd., of Japan.

Principal particulars of the Golden Horn Bridge are as follows:

Type: 8-span continuous steel plate deck type bridge with two lines of



The Golden Horn Bridge, Istanbul, Turkey.

	I-shaped girders divided into eight spans
Total length:	995.291 meters
Steel bridge:	822.2 meters
Prestressed concrete bridge:	153.4 meters
Total width:	31.200 meters
Roadway:	25.2 meters
Sidewalks:	3.0 meters x 2
Total amount of steel materials used:	abt. 7,000 tons
Steel material quality:	SM41, SM50Y, SM53, SM58, all of the Japanese Industrial Standard.

Congestion clears at Glebe Island Container Terminal

Sydney, 24th June (The Maritime Services Board of N.S.W.):—The increased storage charges, which came into effect as from the 8th April, 1974, on containers remaining at container terminals after the expiry of the three days free storage period after the containers become available for delivery, has resulted in the Glebe Island Container Terminal being virtually clear of congestion.

This was stated in Sydney to-day by Mr. W.H. Brotherson, President of the Maritime Services Board, who said that, although May was a record month at the Glebe Island Container Terminal with 7,118 containers being handled from 10 ships compared with the previous best month of January, 1974, when 8 vessels were at the Terminal and 5,912 containers were handled, congestion at the terminal has been reduced to a minimum. He said that 3,674 containers had been delivered from the terminal in May compared with 2,390 in March and 2,496 in April.

Mr. Brotherson pointed out that, during the month of February when congestion was at its worst, 63% of all containers made available for delivery from the Terminal remained after the expiry of the three day free storage period but in May this was reduced to 33%.

Based on the May figures, Mr. Brotherson said the annual throughput at the Glebe Island Terminal would approximate 80,000 boxes and the tonnage of cargo handled would be 1,000,000 tonnes per year.

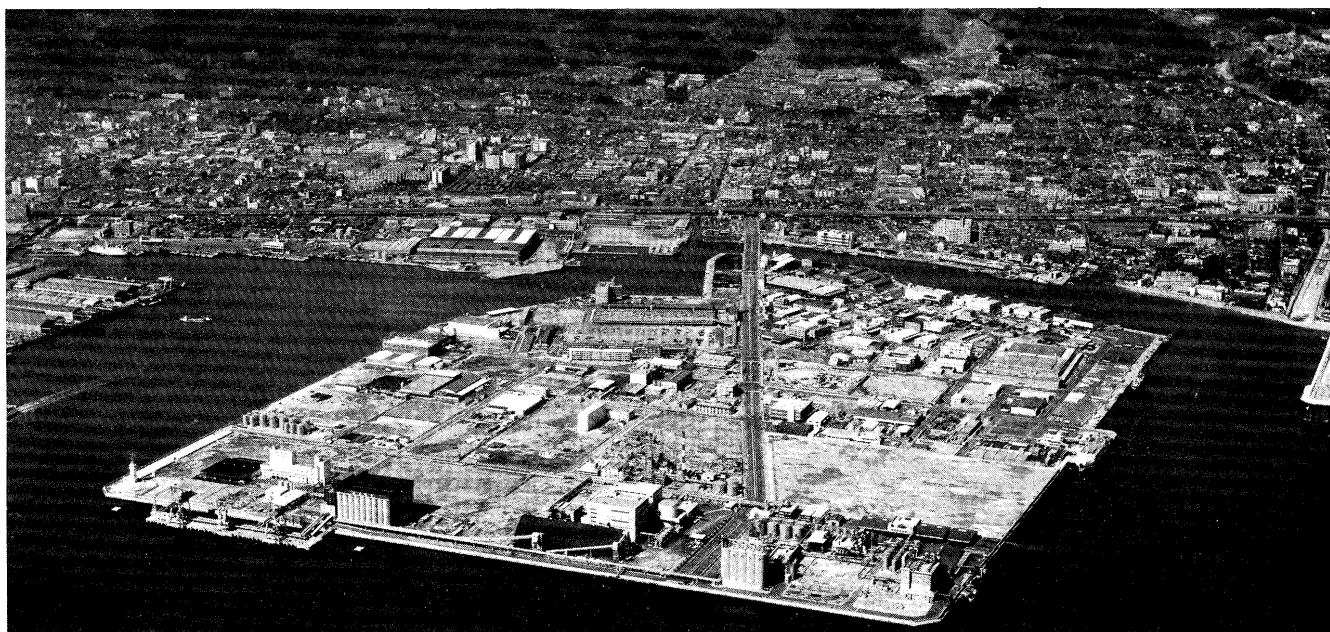
He said that the Glebe Island Terminal has an area of 25 acres and its ability to handle 1,000,000 tonnes of cargo

(Continued on Page 50)

Two Pictures of Port of Kobe



New angle of Port of Kobe. On the right, background, is seen the Port Island, still in the process of completing. (Port of Kobe)



Kobe:—East-Kobe Industrial District (Reclaimed) No. 4 Section (Foodstuff Combinat, Kobe-Fukaé Ferry Terminal). (Port of Kobe)

(Continued from Page 48)

per year represents a concentration of use of available land not matched by any similar facility in other parts of the world. The total tonnage of cargo handled in containers through the Port of Sydney now amounts to some 3.3 million tonnes, this being approximately 40% of all overseas general cargo handled in the port.

Removal of rubbish from Sydney Harbour

Sydney, 2nd July (The Maritime Services Board of N.S.W.):—Maritime Services Board employees removed more than 5,000 tonnes of rubbish from Sydney Harbour during the financial year ended 30th June, 1974.

This was stated in Sydney to-day by the President of the Maritime Services Board, Mr. W.H. Brotherson.

Mr. Brotherson said that all surface water from the surrounding city and suburban municipal areas drained into Sydney Harbour and carried with it quite a lot of litter from the gutters. Paper drinking cups, drink cans and the like were some of the common articles of rubbish found floating in the harbour.

He said that tree cuttings and other types of garden refuse are also common, these being placed near the water's edge and washed into the harbour during periods of heavy rain.

Commenting on some of the unusual items removed from the harbour, Mr. Brotherson said that a dead turtle weighing one ton was taken from the water near the Jeffery Street ferry wharf during October last and, in the same month, five dead dogs in one bag were found floating in the Walsh Bay area of the port. All told, throughout the year, there was a total of 40 dead dogs removed from the harbour.

Mr. Brotherson pointed out that a penalty of up to \$400 can be imposed for pollution of the navigable waters by garbage and, whereas in the past, only the person who actually deposited the garbage in the water was liable, a recent amendment now provides that the master of owner of a vessel or the owner or occupier of a place on land from which rubbish emanates is also liable to be fined.

Boating accidents

Sydney, 9th July (The Maritime Services Board of N.S.W.):—Although the number of boats on the waters of New South Wales is increasing rapidly, the number of fatalities and injuries resulting from boating accidents remains static.

This was stated in Sydney to-day by the President of the Maritime Services Board, Mr. W.H. Brotherson, who said that the number of pleasure boats registered by the Board—vessels having a potential speed of 10 knots or more and being not more than 19.81 metres in length, totalled 54,500 at the end of the financial year, an increase of approximately 10% on the previous financial year, whilst the number of people licensed to drive such vessels totalled 93,000 at the end of June, compared with 85,000 at the end of June last year.

He said this was in keeping with the usual 10% annual increase in both licenses and registrations recorded over previous years.

Mr. Brotherson pointed out that, whilst the number of boats registered represents only a small proportion of those operating on the waters of the State, it is indicative of the increased popularity of boating.

He said that since the Board commenced to keep statistics regarding boating accidents, the figures for both fatalities and serious injuries have remained fairly static.

In 1970, there were 25 fatalities and 44 serious injuries, in 1971 there were 23 fatalities and 71 injuries, 1972—28 fatalities and 68 serious injuries, and 1973—25 fatalities and 46 serious injuries.

So far this year, 62 accidents have been reported to the Board involving both pleasure and commercial craft in which 9 fatalities occurred and 34 persons suffered injury.

Mr. Brotherson said the statistics reveal that, over the years, the most common cause of fatalities relates to fire on board and accidents resulting from attempting to cross the bars at river entrances.

He pointed out that the danger period for fires is usually immediately after refuelling or when starting a boat which has been closed up for a long period.

He said particular care should be exercised when handling petrol and that care should be taken to ensure that the boat is properly ventilated and all fumes have been dispersed before an engine is started.

Commenting on the accidents which have occurred in crossing bars at river entrances, Mr. Brotherson said that in many cases the vessels were equipped with safety items such as life-jackets, etc., but they were not being used at the time of the accident. He stressed that boat owners should ensure that all persons on board are wearing their life-jackets when the boat is in a potentially dangerous situation.

New cargo shed to be opened

Sydney, 9th July (The Maritime Services Board of N.S.W.):—The Minister for Public Works, the Hon. Leon Punch, M.L.A., will officially open the new cargo shed and associated facilities at No. 5 Berth, Darling Harbour, in the Port of Sydney at 3.15 p.m. on Monday, 12th August, 1974.

This was announced in Sydney today by Mr. W.H. Brotherson, President of the Maritime Services Board.

Mr. Brotherson said the new cargo shed is the largest general cargo facility in Australia. It was built at a cost of \$1.4 million.

The shed is 169 metres long, 67 metres wide and 12.2 metres high at mid-point. It occupies an area of 11,320 square metres or 1.132 hectares. The total floor area for cargo stacking is 9,700 square metres.

Mr. Brotherson said that, unlike most wharf cargo sheds which are situated near the apron of the wharf, the shed at No. 5 Darling Harbour is situated towards the rear of the wharf area. It has been placed in this position to facilitate stevedoring operations employing heavy mechanical equipment.

No. 5 Berth, Darling Harbour has a total area of 3.77 hectares and forms part of a four berth complex in the northern section of Darling Harbour.

It is part of the second phase of the Darling Harbour redevelopment scheme.

A number of concrete caissons have been placed in

position to form a seawall for the two remaining long-shore berths in this area and extensive reclamation work is being carried out.

The two new berths will replace the former berths known as Nos. 1-4 Darling Harbour and Nos. 10/11 Walsh Bay.

Erosion of Lady Robinson Beach overcome

Sydney, 21st June (The Maritime Services Board of N. S. W.):—Despite the wide-spread erosion and damage caused to beaches on the New South Wales coast during the recent storms and very high tides, Lady Robinsons Beach in Botany Bay which was formerly a trouble spot, has not suffered damage from erosion.

Mr. W.H. Brotherson, President of the Maritime Services Board of N.S.W., said to-day that storms of much less severity had resulted in serious problems with erosion on the Botany Bay frontage stretching from Kyeemagh to Dolls Point in the past and there had been occasions when General Holmes Drive had been threatened.

Mr. Brotherson said that the research undertaken by the Maritime Services Board at its Hydraulic Laboratory at Botany Bay had dictated a special dredging pattern to eliminate the problems at Lady Robinsons Beach.

He said this work had now been completed and it was a source of satisfaction for the Board to be able to record the fact that the foreshore has now been stabilised.

Signing of \$79 million contracts for new wharves

Kelang Port Authority

Port Kelang, Malaysia:—Contracts for the construction of 3,500 feet of wharves and the reclamation of about 300 acres of swampland were signed between the Kelang Port Authority and 2 international firms at a ceremony in the Authority's headquarters on August 28, 1974.

Zublin-Muhibbah (a joint venture between the engineering firms Zublin of Germany and Muhibbah of Malaysia) is to construct the 3,500 feet of wharves—the first half of the 7,000 feet of wharves. Overseas Decloedt Et Fils of Belgium is to undertake the reclamation project.

The construction of the 3,500 feet of wharves costing M\$60 million was awarded Zublin (Germany)—Muhibbah (Malaysia) on May 18, 1974.

The Wharves to be built will comprise two sections:—

- i) the first section consists of 2,100 feet of wharves capable of handling conventional and container ships. Half the length of this section will be completed by July 1976 and the balance by February 1977;
- ii) the second section comprises 1,400 feet which will be used mainly to handle bulk dry and liquid cargo. 700 feet of this section will be available for use by December 1975 and the rest by May 1976.

Overseas Decloedt Et Fils of Belgium was awarded the contract to reclaim about 300 acres of land from Kapar Forest Reserve. The reclamation costs about M\$19 million.



Signing the multi-million dollars project, the Director-General of the Kelang Port Authority, Mr. Mohd. Zain bin Ahmad (right), and the Chairman Raja Azam bin Raja Kamaralzaman.

At the signing ceremony at the Authority's headquarters, the Authority was represented by its chairman Raja Azam bin Raja Kamaralzaman, the Deputy Chairman, Senator Datuk J.E.S. Crawford and Director-General Encik Mohd. Zain bin Ahmad. Senior officials of the Authority, the treasury, the Ministry of Communications and the Public Works Department attended the ceremony which was followed by a visit to the site of the project.

Background Information on the Project

Owing to the present and estimated future significant increase in imports and exports passing through Port Kelang, the government approved in October 1973 the further expansion of the North Port by 7,000 feet despite the recent completion of 2,800 feet of wharves including container terminal facilities in August 1973.

To enable planning of the project to commence immediately, Messrs. Coode & Partners in association with Yusoff Ibrahim Sehu Berakan were appointed as Consultants for the project.

Negotiations were held with the Selangor State Government to obtain about 300 acres of land at the Kapar Forest Reserve to be alienated to the Authority for the project. The negotiations were successful and the Selangor state government approved alienation of the land as requested.

Preparatory works for the project such as soil investigations, hydrographic surveys, resettlement of squatters occupying the site, location of sand at sea-bed for the purpose of reclamation and the reclamation of 25 acres for work site were completed by May 1974.

The Project

The project will be implemented in two phases:—

- i) the construction of 3,500 feet of wharves together with ancillary cargo handling facilities and the reclamation of about 300 acres of land to be carried out between 1974–1977;
- ii) the second phase of the project, which is expected to be implemented under the Third Malaysia Plan (1976–1980) will also consist of the construction of 3,500 feet of wharves and land reclamation for the provision of shore based cargo handling facilities; Basic facilities proposed to be developed as part of the

project will comprise:—

- i) transit sheds on the wharves and back-up godowns for long storage of cargo;
- ii) about 55 acres of land to be reclaimed will be situated outside the port security area. This area will be developed into a warehousing complex to be leased or rented to port users;
- iii) timber yard;
- iv) yard for storage of heavy lift cargo and stacking of containers;
- v) an area of about 71 acres adjacent to the bulk wharves will be set aside for tank farms and dry bulk cargo facilities;
- vi) bunkering facilities may be incorporated into the new wharves if there is sufficient demand for such facilities.

Asian Development Bank loan signed

Penang, Malaysia (Publication of the Penang Port Commission, July 1974):—The official signing of the agreement between the Malaysian Government and the Asian Development Bank for a loan of \$36 m. for the expansion project of the Port of Penang was held at Wisma Putra on 24th April 1974. This loan provides finance to cover the estimated foreign exchange component of the cost of constructing a Bulk Cargo Terminal at Prai and the addition of a Sixth Berth at Butterworth Wharves.

The Deputy Finance Minister Datuk Mohamed Rahmat signed on behalf of the Malaysian Government while the Asian Development Bank's President Mr. Shiro Inoue signed on behalf of the Asian Development Bank. The Commission was represented by its Chairman Tan Sri Abdul Jamil bin Abdul Rais and its Ag. Director General, Tuan Haji Mohd. Azuddin bin Haji Zainal Abidin.

The Bulk Cargo Terminal to service industries particularly in the Prai Industrial Estate and generally in the hinterland will initially include one deep water berth with pipelines, belt conveyors and open storage facilities. It will have a capacity to handle about 800,000 tons of dry and wet bulk cargo per annum. The scheme provides for the ultimate development of three more berths—one for both wet and dry bulk cargoes and two for liquid cargoes. Construction of the terminal is expected to begin in early 1975 and be completed in mid 1977.

The Sixth Berth to be constructed at Butterworth Wharves as an extension to the existing berths, will be 532 feet by 190 feet and will have a transit shed of 30,000 sq. ft. Although it is a general cargo berth, container crane tracks will be laid to make it a dual purpose berth similar to berths Nos. 4 and 5. When completed in early 1977, the berth will increase the cargo handling capacity of Butterworth Wharves by an additional 200,000 tons annually.

Feasibility study on development

Penang, Malaysia (Publication of the Penang Port Commission, July 1974):—A comprehensive feasibility study on the development of the Port of Penang leading to the preparation of a 20 year Master Plan for the port commenced in June with the arrival of experts from the Consultant firm of E.G. Frankel Inc. of Massachusetts, United States. The firm was awarded the contract to carry

out the study which was financed from a grant provided by the U.S. Government through the South East Asia Agency for Transport and Communication (SEATAC). The study is expected to take 8 months.

The scope of study includes the preparation of a comprehensive development plan for the port of Penang over the next 20 years to meet future demand for Port facilities.

Besides the long term plan, the consultants will make recommendations on possible improvements to existing port facilities, management and administration of the port for immediate implementation and will also assess the projects which are currently being undertaken by the Commission. Investigation on the draft limitations at the two entrance channels to the Port of Penang and the practicability of deepening these channel entrances will be included in the study. The impact of the East West Highway on the hinterland and service areas of the Port of Penang and Port Kelang will also be evaluated, and the environmental effects of the proposed port improvement projects upon Penang in particular and Malaysia in general, analysed.

The team undertaking the study include engineers and economists who are working under the directions of Dr. E.G. Frankel who has considerable experience in the field of transportations.

Singapore's largest warehousing complex

Singapore, 8 September (PSA Press Release):—Singapore's largest warehousing complex providing 200,800 sq meters of covered storage space will be housed in the Port of Singapore Authority's sixth gateway the \$80 million Pasir Panjang Port.

In addition to the complex, the new Port will have facilities for lighters, coastal vessels and LASH (Lighter-aboard-ship) barges to work cargo alongside.

The 542-metre lighter wharves are targeted for completion in November. It will be capable of accommodating at least 20 lighters. Another six barges will be able to berth at the LASH berth.

A further stretch of 671 metres of coastal wharves will be able to handle seven vessels when it goes into operation by April next year.

Construction of transit sheds and warehouses is in two phases. Phase One consist of four transit sheds totalling 38,000 sq metres and four warehouses with 63,500 sq metres.

The first transit shed will be operational in January next year and the last warehouse under Phase One is scheduled for completion by mid-1976.

Under Phase Two another 101,000 sq metres of covered storage space will be constructed. Work on Phase Two begins next year.

The PSA expects over 46,000 sq metres of warehouse space to be available for letting by late 1975 and those interested in obtaining space should write to the Traffic Manager (Pasir Panjang Wharves), Port of Singapore Authority, PO Box 300, Singapore.

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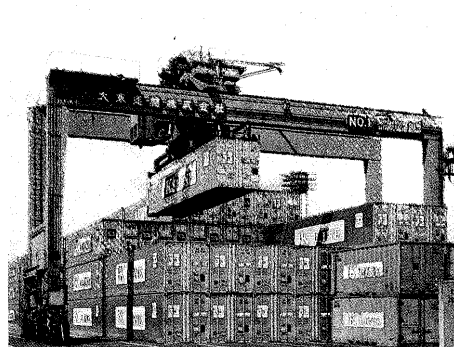
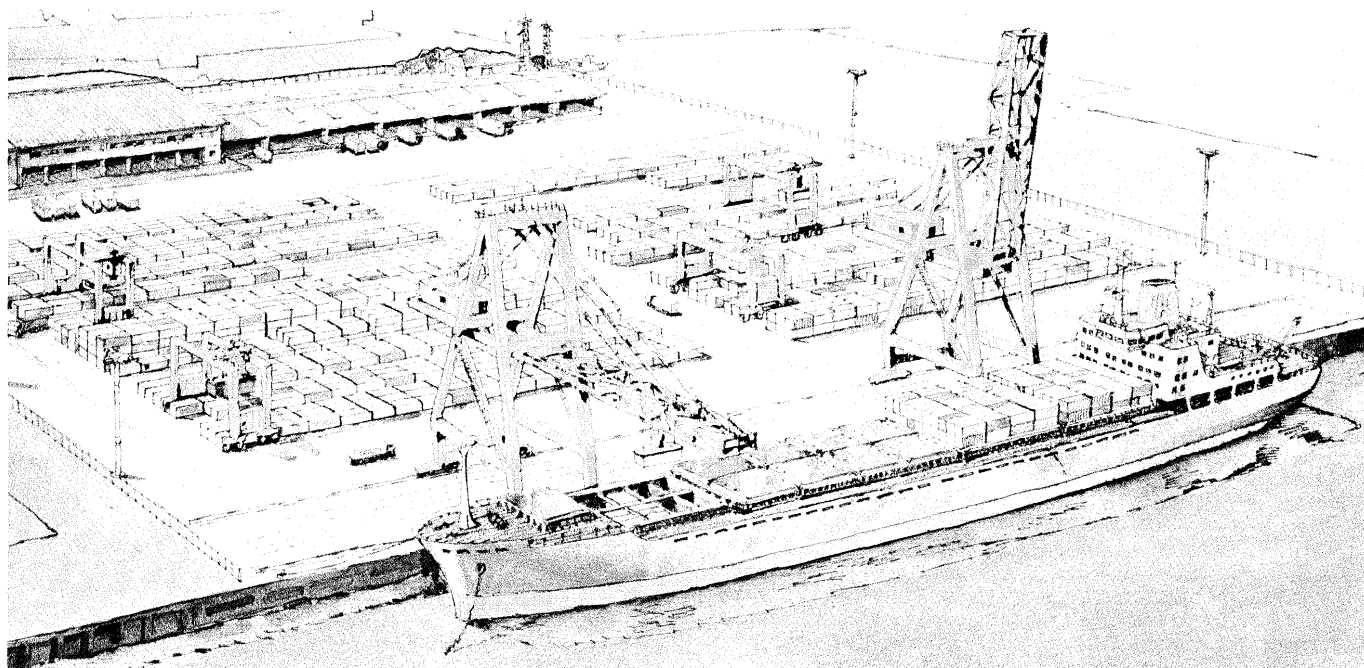


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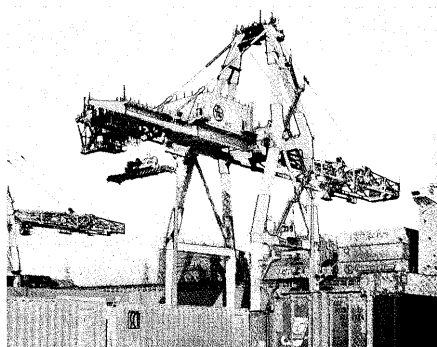
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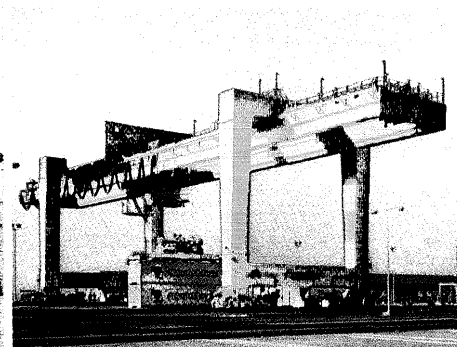
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