

PORTS *and* HARBORS

March, 1979 Vol. 24, No. 3

PORTO DE BELÉM

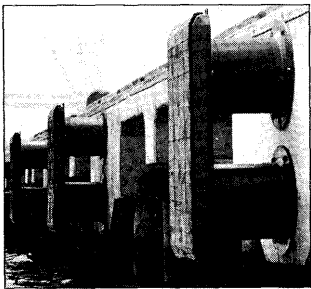


IAPH Conference Le Havre May 1979

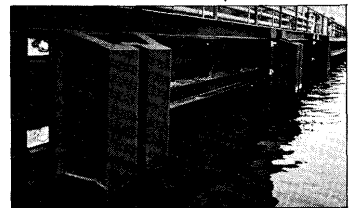
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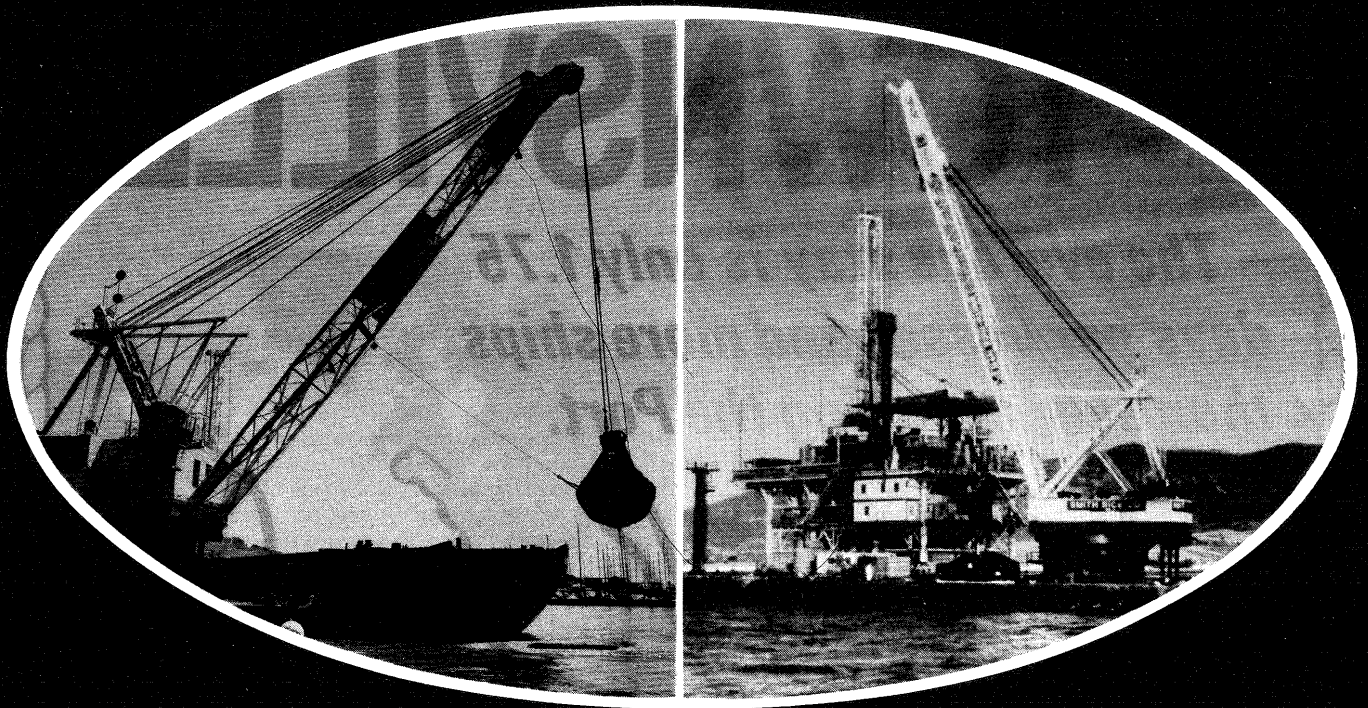
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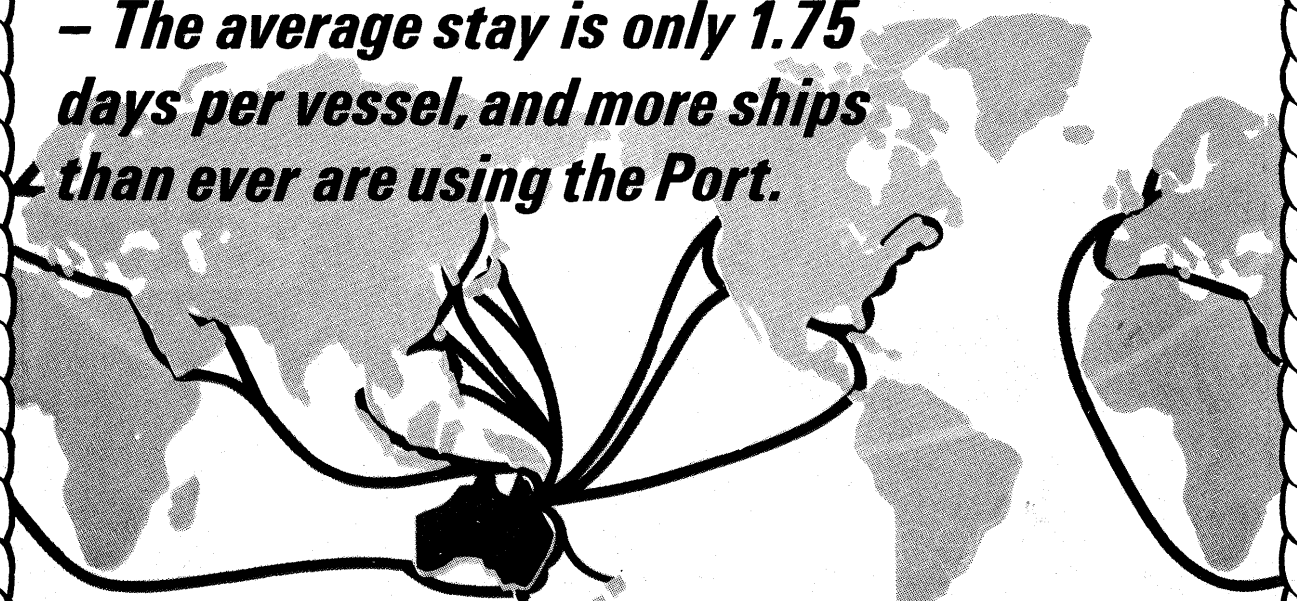
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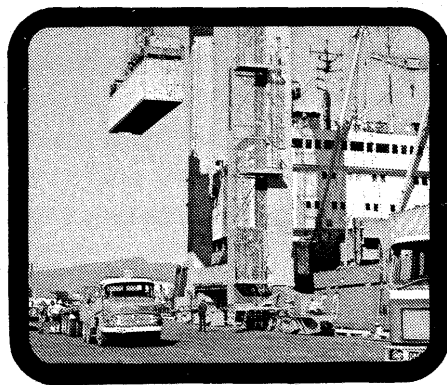
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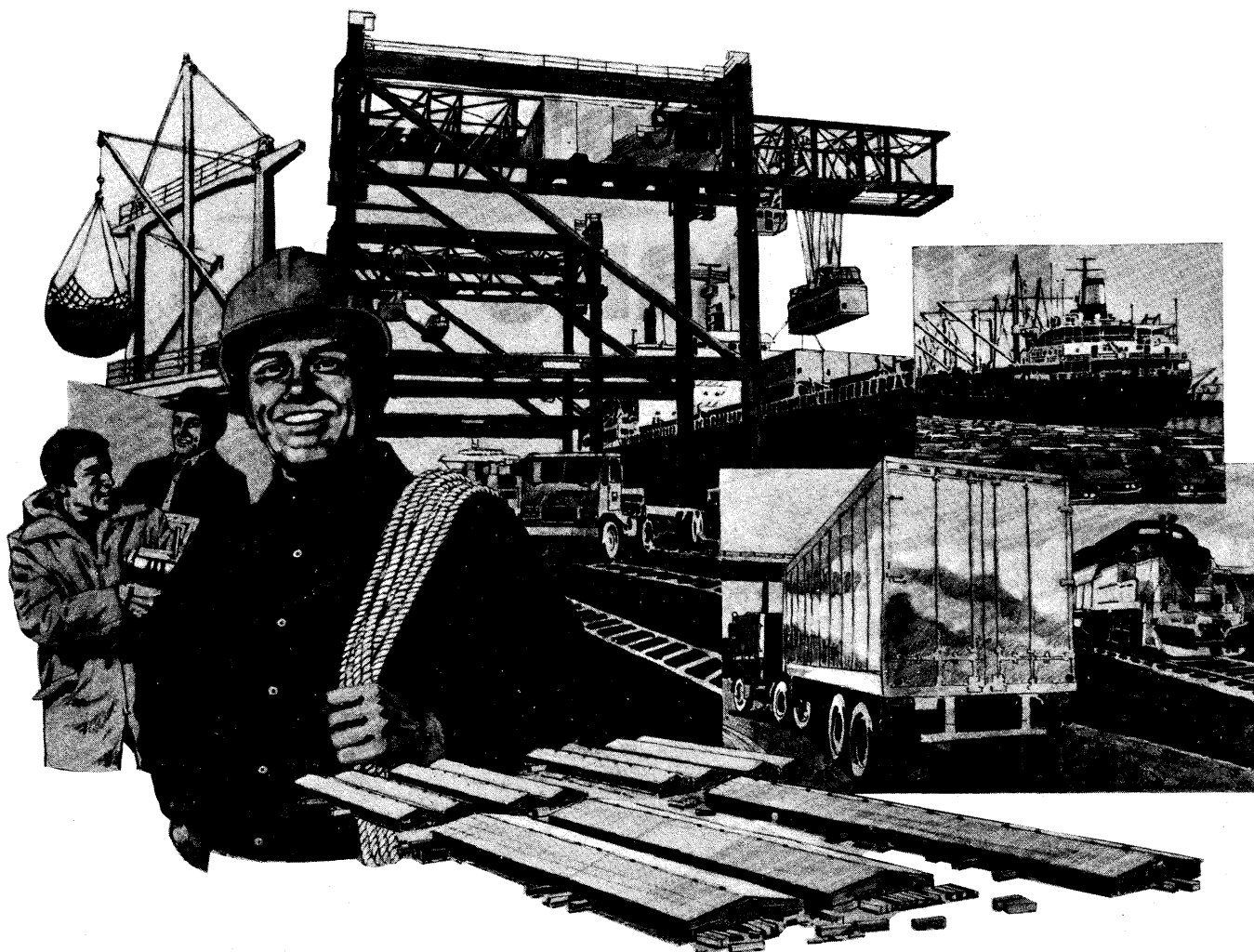
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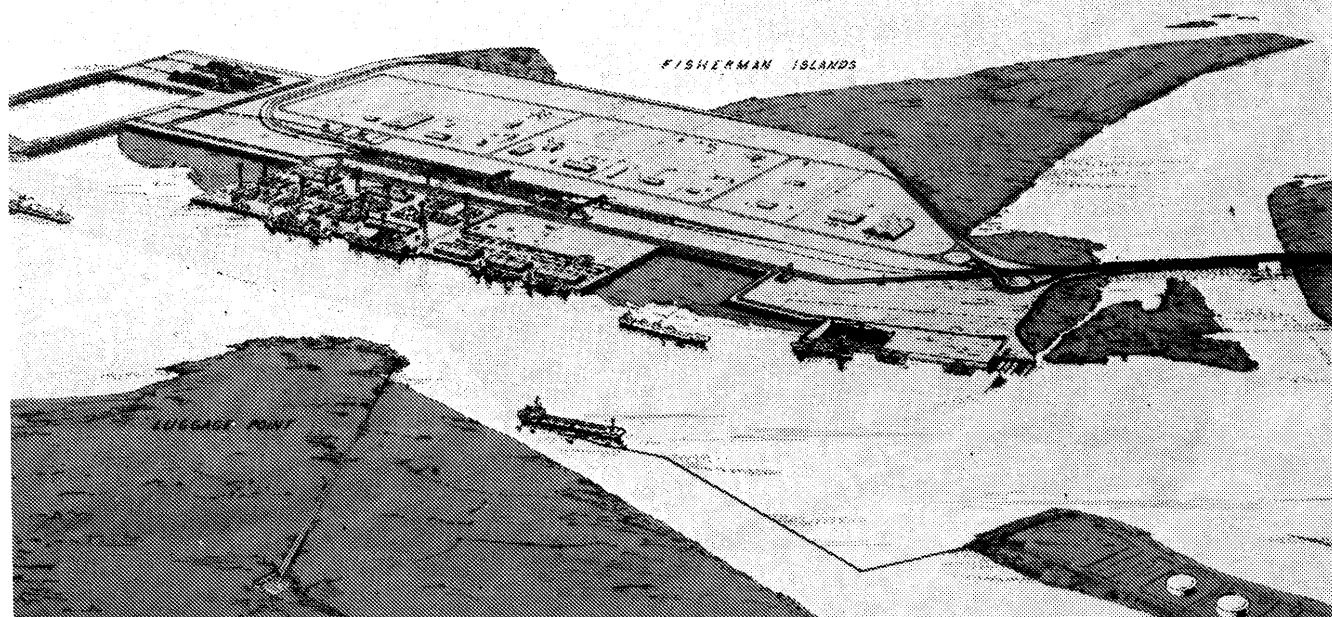
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The Cover: Cover picture shows a bird's-eye view of the Port of Belém presented by Companhia Docas do Pará, Brazil, through the good offices of Cel. Raul da Silva Moreira, Director-President. Belém is the principal city and commercial centre on N. coast of Brazil as well as the capital of the State of Pará, which lies on the right bank of the River Pará, most easterly tributary of the Amazon delta.	

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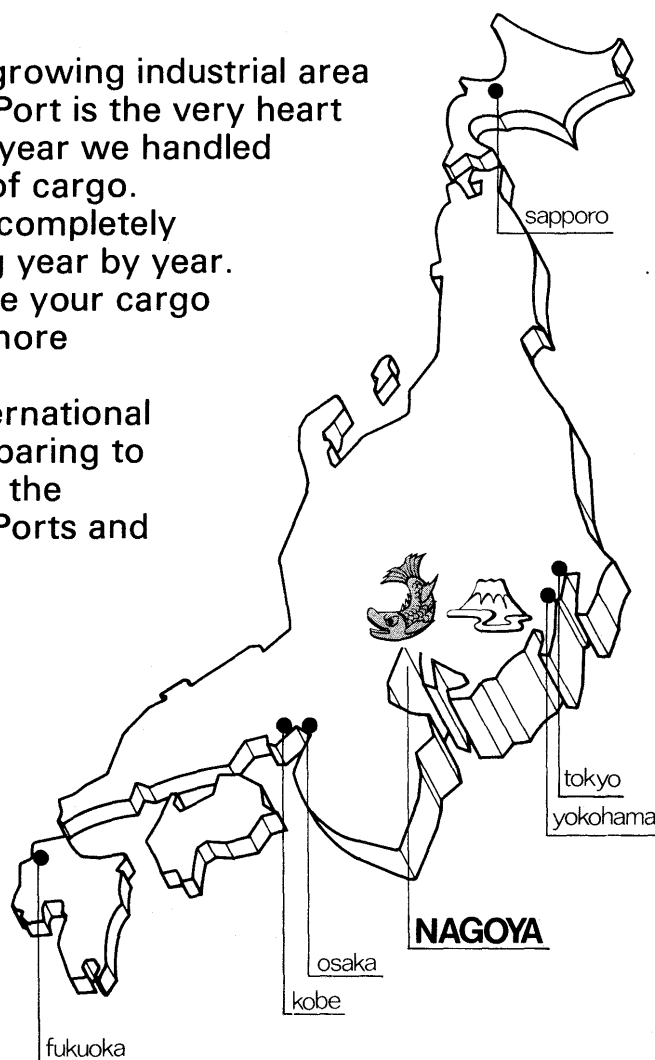
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IAPH annoucements and news

Nobel Prize Winner Wassily Leontief Speaks at Le Havre Conference

"Professor Wassily Leontief, winner of the 1973 Nobel prize in Economics and famous as the originator of his 'input-output' table (also known as inter-industry relations table), will be the key speaker at the 11th Conference and will lead the first Working Session on May 15th", announced the Conference Organizing Committee.

The first Working Session by Professor Leontief shall be divided into two phases, first 90 minutes for his lecture on "World Ports of the Future" and 2nd 90 minutes for questions and answers after a 30-minute break.

The resumé of his paper will be pre-distributed to the participants who completed registration by the closing date—March 15, 1979—from the conference host along with other reports of 4 Special Committees for their preliminary study.

The participants wishing to ask question to Professor Leontief, are requested to prepare such questions by filling in the fixed question-form distributed beforehand by the Conference Organizing Committee in company with the Professor's resumé.

In order to handle the overall session efficiently, a committee to screen the questions submitted by the participants shall be formed up, likely with three IAPH Vice-Presidents plus Secretary General serving on it, who may take charge of screening questions before passing them on to the answerer.

Professor Leontief's profile as was provided by the Organizing Committee, Le Havre, is introduced hereunder. (TKD)

CURRICULUM VITAE

Wassily Leontief: Department of Economics, N.Y.U.,
518 Tisch Hall, New York, N.Y. 1003

Born: August 5, 1906—Leningrad (St. Petersburg), Russia

Education:

High School—Leningrad, Russia

University of Leningrad, 1921-25, M.A. Major: Social
Sciences

University of Berlin, 1925-28, Ph.D. Major: Economics

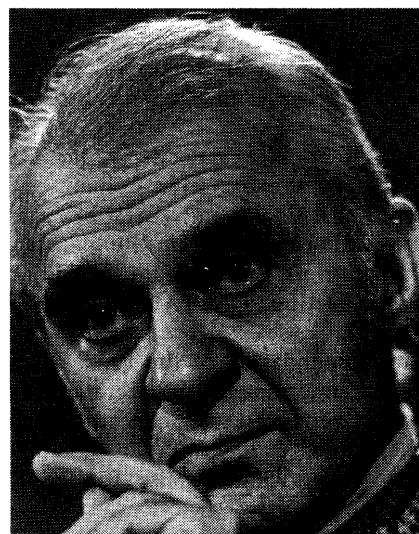
Previous Positions:

Instructor (1932-33), Assistant Professor (1933-39), Associate Professor (1939-46), Professor of Economics (1946-53), Henry Lee Chair of Political Economy (1953-75), Harvard University; Professor of Economics, New York University (1975-present)

Director, Harvard Economic Research Project (1948-1972)

Chairperson, Society of Fellows, Harvard University (1965-1975)

Research Associate, Institute of World Economics, Uni-



Professor Wassily Leontief

versity of Kiel, Germany (1927-28); Economic Advisor, Chinese Government, Nanking (1928-29); Research Associate, National Bureau of Economic Research, New York (1931); Part-time General Consultant, U.S. Department of Labor (1941-47, 1961-65); Part-time Economic Consultant, Chief, Russian Economics Sub-Division, Office of Strategic Services (1943-45); Consultant, United Nations Secretary General's Consultative Group of the Economic and Social Consequences of Disarmament (1961-62); Part-time General Consultant, U.S. Department of Commerce (1966-present)

Publications:

The Structure of the American Economy, 1919-1939, (1941, 1951)

Studies in the Structure of the American Economy, (1953)

Input-Output Economics, (1966)

Essays in Economics, (1966)

The Future of the World Economy, (1977)

Articles in scientific journals and other periodicals in the United States and abroad.

Honorary Awards:

Order of the Cherubim, University of Pisa, 1953; Doctor Honoris Causa, University of Brussels, 1962; Doctor of the University, University of York, England, 1967; Officer of the French Legion d'Honneur, 1968; Bernard-Harms Prize Economics, West Germany, 1970; Doctor Honoris Causa, University of Louvain, 1971; Doctor Honoris Causa, University of Paris (Sorbonne), 1972;

(Continued on next page bottom)

Miss Phinopoulos, Cyprus Ports Authority won the First Prize

Winners of the IAPH Award Scheme 1978 announced

Mr. Sven Ullman, Chairman of Special Committee on International Port Development, in his letter Jan. 18 to President Altvater, disclosed names of the winners of the IAPH Award Scheme. As reported previously, the IAPH Award Scheme, a composition contest under the theme of "How could the efficiency of your port be improved" has attained a keen attention of young officers of the member ports all over the world and as much as 30 entries were contributed.

These entries were examined by the Panel of Experts appointed by the Executive Committee, namely Mr. Howe Yoon Chong, Chairman/General Manager of the Port of Singapore Authority, Mr. John Gituma, Managing Director, British Transport Docks Board, Mr. Eric Williamson, Chief of Ports Section, UNCTAD and Mr. Sven Ullman, Chairman of IPD.

By the recommendation of the Panel of Experts, with the Presidential endorsement, the Secretary-General, in his letter of Jan. 24 addressed to all concerned, announced following winners.

The First Prize Winner: Miss Paphne Phinopoulos, Cyprus Ports Authority

To be awarded with US\$500.00, an IAPH Silver Medal and an Invitation, including travelling costs up to US\$2,000.00, to attend the 11th IAPH Conference in May 1979 at Le Havre, France

The Second Prize Winner: Mr. O.B.E. Babah, Nigerian Ports Authority

To be awarded with US\$400.00

The Third Prize Winner: Mr. Miguel Angel Barrientos and Mr. Santiago Aguilar Moreno, Comision Ejecutiva Portuaria Autonoma, El Salvador

To be awarded with US\$300.00

The Fourth Prize Winner: Mr. Dadid Matu Gacanja, Kenya Ports Authority

To be awarded with US\$200.00

In addition to the four prize winners, the Panel of Experts considered that the entries submitted by the following individuals should be given with a special mention. They

(Continued from page 7)

Nobel Prize in Economics, 1973; Doctor Honoris Causa, University of Pennsylvania, 1976; Doctor Honoris Causa, University of Lancaster, England, 1976.

Memberships:

American Philosophical Society; International Statistical Institute; Honorary Member, Japan Economic Research Center, Tokyo; Honorary Fellow, Royal Statistical Society, London; Corresponding Fellow of the British Academy, 1970; Corresponding Fellow of the Institut de France, 1968; Member, National Academy of Sciences (U.S.), 1974; American Economic Association (President, 1970); Accademia Nazionale dei Lincei, Italy, 1975; Honorary Member, Royal Irish Academy, 1976; British Association for the Advancement of Science (President, Section F, 1976).

were Mr. Offiong E. Edet, Nigerian Ports Authority, Mr. J.O.P. Ajai, Nigerian Ports Authority, Mr. Ibok E. Nsa, Nigerian Ports Authority, Mr. Jacob T. Thomas, Port Services Corp. Ltd., Muscat, Sultanate of Oman, and Mr. Joseph Olayiwola Atolagbe, Nigerian Ports Authority.

Mr. Ullman said in his report to the President Altvater that it was the view of the Judges (Panel of Experts) that this Award competition established itself as a worthwhile Scheme and it was their strong recommendation to continue the Award Scheme in the future and that they found it of great interest to study the entries and that they would like to thank all those who had contributed entries to the competition. And, it was emphasized that those who have not received a prize on this occasion would feel encouraged to submit entries in future competitions.

While the IAPH Silver Medal will be handed over to Miss Daphne Phinopoulos, the First Prize Winner at a proper occasion during the 11th Conference, this office takes the liberty of presenting her winning paper on page 14 of this issue.

The IAPH Award Scheme 1978 was participated by the following individuals:—

Mr. G. Haruna, Nigerian Ports Authority
Mr. Rowland C. Ikpoh, Nigerian Ports Authority
Mr. Nnanah Oguama Okukwu, Nigerian Ports Authority
Mr. E.A. Akomola F.E., Nigerian Ports Authority
Mr. Hilarious Opiya, Kenya Ports Authority
Capt. T.R. Falk & Capt. T.G. Wilson, Kenya Ports Authority
Mr. Jacob T. Thomas, Port Services Corp. Ltd., Sultanate of Oman
Mr. Christopher, E. Udi, Nigerian Ports Authority
Mr. E.O.O. Bassey, Jr., Nigerian Ports Authority
Mr. J.O.P. Ajai, Nigerian Ports Authority
Mr. G.R. Saunderson, Auckland Harbour Board, N.Z.
Mr. Ibok E. Nsa, Nigerian Ports Authority
Mr. U.O. Kalu, Nigerian Ports Authority
Mr. Joseph Olayiwola Atolagbe, Nigerian Ports Authority
Mr. Jacob de Jong, Port of Rotterdam
Mr. Victor Uche Ike Dunkwu, Nigerian Ports Authority
Miss Mary Yayah Gwei, Cameroon National Ports Authority
Mr. Offiong E. Edet, Nigerian Ports Authority
Mr. Miguel Barrientos & Mr. Santiago Aguilar Moreno, Comision Ejecutiva Portuaria Autonoma, El Salvador
Mr. O.B.E. Babah, Nigerian Ports Authority
Mr. David Matu Gacanja, Kenya Ports Authority
Mr. Edward A. Pinto, Mormugao Harbour, Goa, India
Mr. F.A. Rosario, Bombay Port Trust
Mr. Jean E. Policard, Port-au-Prince, Haiti
Mr. V.P. Phadke, Bombay Port Trust
Mr. J.U. Mehta, Bombay Port Trust
Mr. Y.R. Sane, Bombay Port Trust
Miss Daphne Phinopoulos, Cyprus Ports Authority
Mr. Mark Adjei Obimpeh, Ghana Ports Authority
Mr. Amos Oshisanya, Nigerian Ports Authority

(In order of the receipt)

Election of New Board Members is under way

For the election of the Directors and Alternate Directors for the new 2-year term after the 11th Conference until the 12th Conference in 1981, Secretary General Sato recently circulated a letter to all members of the Board of Directors requesting them to take necessary actions and inform its result to the Head Office by March 1st, 1979.

As of January 30, 1979, the Board of Directors are represented by 74 members including President, Vice-President, one Director each from 65 countries, two from New Zealand, three each from Japan and U.S.A. in accordance with the provisions of the By-Laws which reads; Sec. 9 "... one elective Director from each country represented by not more than ten Regular Members, two elective Directors from each country represented by more than ten and not more than twenty Regular Members, three elective Directors from each country represented by more than twenty Regular Members, and subject to the approval of the Board of Directors, one elective Director from each country represented only by one or more Associate members ... "

Those new member countries whose national Directors and Alternate Directors are not yet represented on the Board, are requested to make the election, without failure, and inform their names to the Secretariat so that the new term will be well taken care of by them. (TKD)

More Replies expected by Mr. Vleugels

In connection with the questionnaire on Trade Facilitation, as reported in the February issue, Mr. Vleugels, Chairman of IAPH Committee on Trade Facilitation wrote to this office that he received replies from nearly seventy ports, for which he expressed his great appreciation for the cooperation. He further expressed, "In order to enrich the report on this important subject, members who have not yet replied to the questionnaire would be encouraged to contribute to the survey." Applicable members are kindly requested to give their support on the matter by returning their replies. Details of the questionnaire will be available in the February issue of the journal.

New Members are invited for IAPH Committees

Members interested to serve on any of Special and Standing Committees for the new 2-year term beginning at the close of the 11th Conference and ending at the close of the 12th Conference are invited to make application by writing to the Secretary General specifying the Committee or Committees he wishes to serve on by March 30, 1979. The applications will be presented before the President for his official appointment. The members who may attend the 11th Conference can make this application on the spot.

The Committee members are to be appointed by the President from among the candidates who so applied to or are recommended by the Committee Chairmen or Executive members prior to the each Conference according to Sec. 36 of By-Laws.

The guidelines to select membership of Committee by the President shall be:

1. Members of 3 purely household committees, namely, Finance, Constitution and By-Laws and Membership Committee and the Committee on International Port

Development which should be deemed as quasi-household committee, being responsible for the funds contributed by members as special technical assistance funds, must be limited to Regular Members and regional representation should be well balanced.

2. For other committees, expertise's knowledge and wisdom must be put together as much as possible, and therefore, Association Members can be committee members and regional balance is not so important.
3. No member shall be appointed to serve on more than two committees.

The steady growth of the Association as seen today can be well accredited to the growing activities undertaken by the various Committees over the recent years, such as the following scope of activities of the 6 committees other than the 3 household committees (TKD)

a. Special Committee on International Port Development

Chairman: Mr. Sven Ullman
General Manager
Port of Gothenburg, Sweden

Vice-Chairman:
Mr. Kang, Chang Sung
Administrator
Korean Maritime and Port Administration
Korea

This Committee was established with a view to providing ways in which ports in developed countries can assist ports in developing countries to improve their operation, facilities and administration through collaboration with world organizations, such as the United Nations, the World Bank, the Organization for Economic Cooperation and Development. The C.I.P.D. concentrates on considering:

1. To propose and to up date the necessary details of training and technical assistance in the ports field which is available to developing countries from members of IAPH and other sources;
2. To propose and to administer schemes to encourage the study of methods to improve the efficiency of ports, particularly those of the developing countries; and
3. To study means of increasing the participation of developing countries in the activities of IAPH.

b. Special Committee on Large Ships

Chairman: Mr. Francis L. Dixon, Jr.
Senior Analyst
Logistics Department
EXXON Corporation, New York, USA

Vice-Chairman:
Mr. J.M. Wallace
President
The Maritime Services Board of N.S.W.
Sydney, Australia

The Committee examines the problems arising from the presence of ships in approaches and in ports, especially very large ships carrying dangerous goods in particular, the Committee will examine the following problems:

1. Management of traffic in approaches and in ports
2. Port Safety procedures
3. Pollution prevention and control
4. Fire prevention and fire fighting methods
5. Coping with the sub-standard ships

The Committee coordinates its activities with other international organizations such as IALA, PIANC, OCIMF, IMPA.

This Committee is sub-divided into the following three working groups with respective program:

I Bringing Ships Into Route of Port

- Traffic Control
- Pilot Influence
- Tug Assistance

II Safety & Pollution Prevention While in Port

- Safety Procedures (Double Check)
- Maintenance Mooring (Large Ships & Dangerous Goods)
- Speed Controls—Passing Ships
- The Vapor Emission—HC in Water
- Waste Handling

III Crisis Management

- What Firefighting Hardware at Berths—In Harbor
- What Pollution Pickup Equipment
- Procedures/Cooperatives
- Drills—Drills—Drills

c. Special Committee on Containerization, Barge Carriers and Ro-Ro Vessels

Chairman: Mr. R.T. Lorimer
General Manager
Auckland Harbour Board
New Zealand

Vice-Chairman:
Mr. William Bowey
Management Consultant, London, U.K.

It is a recommendation that the Committee, in terms of its order of reference will continue to study and make available to members of the Association information on the operation, planning and development of facilities and systems.

In particular the Committee endeavours to:

1. Ensure that the information derived from the statistical returns on container is evaluated and disseminated as required.
2. Finalise and promulgate the reports on
 - (a) Standard Glossary of Maritime Terms
 - (b) Standardisation of Ro-Ro Ramps
3. Update the Survey of facilities and operations of terminals providing for containers, Ro-Ro and Lash systems.
4. Evaluate the different types of equipment and methods of operation adopted by ports.
5. Render assistance and advice as necessary to ports on experiences gained from established operators.
6. Liaise with the Large Ships Committee to obtain regular up-to-date information on trends in ship size and design.

The Committee will coordinate and cooperate with other Committee established by the Association and with other international organizations such as ICHCA, UNCTAD, PIANC and the proposed International Container Terminal Operators Association.

d. Special Committee on Trade Facilitation

Chairman: Mr. Robert L.M. Vleugels
Director-General
Port of Antwerp, Belgium

Vice-Chairman:
Mr. W. Don Welch
Executive Director
South Carolina State Ports Authority,
Charleston, USA

This Committee was established with a view that cumbersomeness of paper works and procedures in ports is hampering the efficiency of ports everywhere in the world, and improvement in this regard is actually required by all port related industries.

Therefore, this Committee will have, as the scope of activities, the followings:

- To take an active part in promoting the simplification of port related trade documentation and procedures to improve port efficiency.
- To gather the knowledge and suggestions from banks and shipping companies and IAPH members in the field.
- To spread the information on progress made among the membership of IAPH.
- To keep contact with CCC, and establish close co-operation between the two.

e. Special Committee on Community Relations

Chairman: Mr. J. Bax, Head External Affairs
Department, Port of Rotterdam Municipal
Port Management, Netherlands

Vice-Chairman:
Shri A. Padmanaban, Joint Secretary (Ports)
Ministry of Shipping & Transport
New Delhi, India

Objects: Ports are still essential service instruments to World Trade. The "hold the world together" by serving the trade needs of nations. As developing countries enter into World Trading patterns, it becomes even more important that ports have the possibility to adapt to changing circumstances. However, in order to do this, ports need the support of the politicians and the general public.

- Actions: A. The Committee make research and make clear to the public, the vital functions ports fulfil with regard to World Trade and their contribution (economic and social) to the communities of which they are part.
- B. The Committee mobilize the large amount of communication skills and expertise already present within the IAPH members.
- C. The Committee put before the Association, action plans, on a worldwide scale, to clarify the essential functions of the ports. It would not try to disregard the claims of anti-port groups, but point out compromises so that ports and cities both may develop and support each other.

f. Standing Committee on Legal Protection of Navigable Waterways

Chairman: Mr. Andre Pages, Ingenieur General
des Ponts et Chaussees
France

Vice-Chairman:
Mr. A.J. Smith, Secretary
British Ports Association
London, U.K.

This Committee has the duty to perform a continuing review of those matters currently under coordination by the Legal Committee of IMCO, and other organizations, related to the subject of Legal Protection of Navigable Waterways, and related subjects.

The items this Committee is expected to look after include, among others, the following:

- Work of the International Maritime Committee, on the liability of terminal operators
- IMCO review of the 1969 Convention on civil liability for oil pollution
- IMCO works on wreck removal and related issues
- IMCO works on regime of ships in foreign ports
- Works of the International Association of Airports and Sea Port Police, on crime in ports.

WMO/IAPH Ties Confirmed

As reported in the October 1978 issue of the journal, IAPH has been asked to express view and comments on the WMO's (World Meteorological Organization) draft recommendation and draft manual on marine meteorological services.

Dr. G.K. Weiss, Director of World Weather Watch Dept., WMO, in his letter of December 13, 1978 communicated to this office followingly:—

"We have had the pleasure of receiving comments from ports' authorities of various countries all over the world and it was particularly gratifying to learn that the proposed standard and recommended practices in the draft Manual met with their full support. In several comments mention was made of the close contacts which exist between ports' authorities and the national meteorological service. Such contacts are indeed essential on obtaining the full benefit of available marine meteorological services. Members of the Commission for Marine Meteorology will be informed of the views expressed by your Association on this matter. Also on their behalf, I should like to thank you for your excellent co-operation which, I trust, will be a continuing feature between our two organizations."

This office expresses sincere thanks and appreciation to those people who have been kind enough to contribute to the enquiry from WMO. As of this date, this office knows that the replies were expressed from the following gentlemen:—

(In order of dispatching)

Mr. G.W. Altvater, Executive Director, Port of Houston & IAPH

Mr. A.J. Smith, Secretary, British Ports Association & IAPH Liaison Officer with IMCO

Mr. Sushil Chatterji, Port of Singapore Authority

Mr. James H. McJunkin, General Manager, Port of Long Beach

Mr. Robert Boeuf, Ingenieur General des Ponts et Chaussées, France

Mr. Andre Pages, — dito — /Chairman, IAPH Standing Committee on Legal Protection of Navigable Waterways

Mr. Paul Bastard, Inspection General des Ponts et Chaussées & 2nd Vice-President, IAPH

WHAT is the S.D.R.?

Introduction

As indicated through previous communications and articles in the journal, the adoption of the SDR unit as the unit of dues of the Association, as a part of the Association's measures for the achievement of the financial self-sufficiency, has been thoroughly studied by the Finance Committee and the Executive Committee and is expected to be placed on the agenda of the 11th Conference of the Association in France in May this year.

This small article is prepared to attain members' overall understanding or idea about the SDR and the effect to be derived from the system.

S.D.R and U.S. Dollar and Other currencies

1. S.D.R. (Special Drawing Rights) was created in 1969 as a standard expression of the business conduct of the IMF (International Monetary Fund) to constitute as the central reserve funds for the international monetary exchange systems.
2. It is defined that the value of one S.D.R. is equal to the Weighted Average of the currencies of 16 donor countries (Basket System), which are selected out of countries whose export value are exceeding 1% of the total world export value respectively.
3. The value of the S.D.R. therefore is protected from any drastic change of exchange rate of a currency to affect the system. Or, it is designed to keep the value from being overly affected by a monetary turmoil.
4. The value of the SDR in terms of the U.S. dollar is determined as the sum of the dollar values, based on market exchange rates, of specified quantities of the 16 countries.
5. The value of the SDR in terms of any currency other than the U.S. dollar is derived from that currency's exchange rate against the U.S. dollar and the U.S. dollar value of the SDR.
6. Exchange rate of each of sixteen currencies in the SDR is regularly announced by the IMF and will be available via the relevant national authority for the finance.
7. For example, the movement of the exchange rate of the sixteen currencies against the SDR for December 6, 13 and 20, 1978 is shown in the table hereunder.

Currency	Dec. 06	Dec. 13	Dec. 20
Australian dollar	1.12031	1.12105	1.13084
Austrian schilling	17.8714	17.8398	17.4733
Belgian franc	38.6322	38.5640	37.7558
Canadian dollar	1.49297	1.50274	—
Deutsche mark	2.43924	2.43726	2.38565
French franc	5.60963	5.59666	5.46504
Iranian rial	89.7069	89.9487	91.6584
Italian lira	1082.59	1084.23	1077.86
Japanese yen	251.650	250.414	250.882
Netherlands guilder	2.64379	2.64134	2.58620
Norwegian krone	6.54902	6.55390	6.51200
Pound sterling	0.652396	0.647944	0.646412
Saudi Arabian riyal	4.28327	4.28205	4.31142
Spanish peseta	91.0855	91.2556	91.2266
Swedish krona	5.65481	5.65154	5.59900
U.S. dollar	1.27289	1.27632	1.30058

(Materials quoted from: IMF Survey, December 1978 issue)

Post-Conference Tours in Details

The Organizing Committee for the 11th Conference, Le Havre recently announced the details of the itinerary for the four different courses of the post-conference tours as follows.

All participants who have not yet turned in their registration forms to Le Havre are requested to expedite to do so making their selection carefully of the course from among the followings. (TKD)

ALTERNATIVE I: VINEYARD & GOURMET TOUR; MAY 21/24, 1979.

MAY 21: (8H00: Departure from Meridien Hotel).
Departure from Paris by motorcoach, taking Highway PARIS-LYON.

English speaking guide will accompany:

Arriving in GEVRAY-CHAMBERTIN around 13H00;
Lunch: HOSTELLERIE du VIEUX MOULIN in BOUIL-
LARD.

15H00: Visit of BEAUNE, famous cellars "des Hospices"
Musée du Vin and visit of a Burgandy Cellar and wine tast-
ing. Visit of Hotel-Dieu.

Trip by coach on to Lyon.

19H00: Arriving in Lyon: HOTEL SOFITEL.

20H30: Gastronomic Dinner in the most famous BOCUSE
Restaurant: in Collonges (15 km away from Lyon.).

MAY 22:

09H00: Visit of LYON City., Roman Theater, Museum
Gallo-roman . . .

12H30: Gastronomic lunch: CHEZ LA MERE CHARLES
in MIONNAY (15 km from Lyon).

15H00: Visit to famous ORNITHOLOGICAL Park at VIL-
LARS LES DOMBES (15 km from Lyon).

16H30: Visit to famous Medieval City of PEROUGES
(20 km from VILLARS LES DOMBES).

19H00: Return to Hotel SOFITEL (48 km from PER-
OUGES).

Free evening.

MAY 23:

10H00: Departure to VIENNE (32 km from LYON).
Visit to Archeological Site, Temple of Augustus and LIVY,
Roman Theater, Lapidary Museum and Church of Ste
Colombes.

12H30: Gastronomic Lunch: Restaurant POINT-LA PY-
RAMIDE in VIENNE.

15H00: DEPARTURE for PEAUGRE en ARDECHE
(30 km south of VIENNE) for Photo-Safari in the Natural
Park (same type as THOIRY: African Reserve).

17H30: End of Safari, and return to LYON(50 km be-
tween PEAUGRE and LYON).

Picturesque route along the right bank of the Rhône. Visit
to the vineyard of COTE ROTIE and Wine Tasting.

19H00: Return to the Sofitel Hotel.

Free evening.

MAY 24:

09H00: Final departure from the SOFITEL Hotel with
luggage towards ROANNE through the famous pass of FIN
BOUCHIN (LYON-ROANNE: 100 km of picturesque
route).

12H00: Gastronomic Lunch: Restaurant TROIS GROS of
ROANNE.

15H00: Departure from ROANNE towards PARIS through
Burgandy Route of vineyards. (Roanne-Paris: 390 KM).

20H30: Arrival in PARIS.

ALTERNATIVE 2: MONT SAINT MICHEL AND THE LOIRE VALLEY.

MAY 21/23, 1979.

MAY 21:

Departure for ALENCON, crossing Ile de France and Nor-
mandy and passing through DOMFRONT and Saint Hilaire
du HARCOUET; arriving at Mont Saint Michel:

Lunch and visit to the MONT;

Night spent in ANGERS.

MAY 22:

Visit to Castle of AZAY-LE-RIDEAU, passing through
SAUMUR and CHINON. Arrival in TOURS.

Lunch and Visit to VILLANDRY: visit to the Gardens.

Then Chateau de LANGEAIS: Wine tasting and visit to the
Castle.

Dinner in AZAY-LE-RIDEAU.

Night spent in TOURS.

MAY 23:

Visit to various Castles: CHENONCEAU, CLOS-LUCE,
CHAMBORD.

Lunch at Clos LUCE.

Return to Paris towards 08H00, passing through AMBOISE,
MONTRICHARD and CHEVERNY;

Stop in CHEVERNY.

ALTERNATIVE 3: ROME:

MAY 20/26, 1979.

MAY 20:

Departure from Paris on to ROME.

Transfer from Airport to Hotel.

Arrival to HOTEL DE LA VILLE IN ROME.

MAY 21 to MAY 26:

Free Stay in ROME: Optional tours can be booked from
our local Bureau in ROME.

MAY 26:

Departure from Hotel to the Airport: Transfer planned.
Flight to PARIS.

ALTERNATIVE 4: GOTHENBURG:

MAY 20/21, 1979.

MAY 20:

Departure from Paris to Gothenburg.

Transfer from Airport to Hotel.

Stay in Hotel Europa.

Dinner in Hotel Europa.

MAY 21:

After breakfast taken in the Hotel, morning visit of S.K.F.

Lunch offered by S.K.F.

Transfer to the PORT of GOTHENBURG.

Meet representative from the PORT of GOTHENBURG for
briefing after the Meeting.

Visit of the PORT of GOTHENBURG. (See photos on page
25)

Cocktails.

Transfer to the Airport.

(Flight GOTHENBURG on to PARIS is not included in the
package, on the request of participants willing to join
ICHCA HELSINKI Congress.).

GENERAL NOTES:

All packages require a minimum of 20 participants to
operate.

More information should be available within a month.
Please apply to Miss Catherine DECOUX: AMERICAN EX-
PRESS I.B.C. in PORT AUTONOME DU HAVRE for any
request and registration of mentioned POST-CONFER-
ENCE TOURS.

PRICES:	Alternative 1	1 person:	FFR: 2.385,-
		2 persons:	FFR: 4.170,-
	Alternative 2	1 person:	FFR: 1.150,-
		2 persons:	FFR: 1.980,-
	Alternative 3	1 person:	FFR: 2.230,-
		2 persons:	FFR: 4.050,-
	Alternative 4	1 person:	FFR: 1.730,-
		2 persons:	FFR: 3.460,-

Training Courses 1979 by PSA and PLA

PSA Training Courses 1979

Port of Singapore Authority announced the programme for 1979 of its training courses on January 18, 1979, featuring the three categorised items of (a) Port Operations, (b) Management and Administration and (c) Safety.

Courses are subdivided into numerous aspects as follows:—

Port Operations Courses

Training for Operational Instructors

(a) Winch/Dockcrane instructors' Course

(b) Forktruck/Tractor Instructors' Course

(c) Mobile Crane Instructors' Course

Conventional Cargo Handling

Practical Attachment at PSA's Container Terminal

Planning & Operations of a Container Terminal

Management & Administration course

Port Administration & Operations

Training & Development

Principles & Practice of Supervision

Port Policing & Security

Safety Courses

Ship Inspection

Principles of Fire Fighting

Fire Prevention in High Rise Complexes

Oil Spill Control

Shipboard Fire Fighting & Prevention

During the period from March to November, some 26 courses are programmed, while the duration of courses vary from five days up to three weeks, and the fees range from S\$150 to 450.

For further details, please write to: Mrs. Monica Beh, Manager (Training), Port of Singapore Authority, P.O. Box 300, Singapore

PLA-PLACON Training Courses 1979

Port of London Authority's Placon Ltd. announced on January 15, 1979 of its training courses for 1979, covering a wide range of port related subjects, including security, management and operations, ship loading, seamanship and others.

Rough description of the courses are as follows:—

Port Security

Port Policing & Security (Senior, Containers & Unit Loads, Intermediate and Induction)

Command Management and Techniques

Marine Services

Seamanship

Chartwork and Radar

Management and Operations

Port Management and Operations

Ship Loading (Appreciation and Cargo Superintendents)

Container Groupage

Documentation

Instructor Training

First Aid

Plant Operation

Safety

Some seventeen courses, duration varying from 2 weeks to 8 weeks, will be available with tuition ranging from £160 to 1200 per person.

For further details, please write to: The General Manag-

er, Placon Limited, London Dock House, 1 Thomas More Street, London, E1 9AZ, England

Seminars, Conferences, etc.

Legend: ●) Title, Purpose/Location

2) Organization/Convention Coordinator

3) Date/Fee

① Seatec II Seminar, Theme: "Port Works: a key to world progress". Singapore, as part of the Marintec Asia 79 event

2) Sponsored by UNESCAP, IAPH, ICHCA, SEDB. For further information write to: Intec Press Ltd., 51-53 Chipstead Valley Road, Coulsdon, Surrey, CR3 2RB, England

3) June 11-15, 1979. Delegates fee: Inclusive of all seminar papers, lunches, receptions, transportation to "Marintec Asia" exhibition: Industrialised countries S\$ 990 (£245), Asia, Africa, Central & South America (excluding Japan, Hong Kong & Australasia) S\$ 400 (£100), Exhibiting company delegates (maximum three per stand at reduced rate) S\$ 666 (£165)

Publications

"What U.S. ports mean to the economy"—A study conducted by the Planning and Development Department of The Port Authority of New York and New Jersey under contract for the U.S. Maritime Administration. 58 pages. For sale by the Superintendent of Documents, U.S. Government Printing Office. \$2.30.

This brochure is a popularized version of the basic study, "Economic Impact of the U.S. Port Industry: An Input-Output Analysis of Waterborne Transportation," and takes the same general approach.

Membership Notes

New Members

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(Mr. Eljas Muurinen, Managing Director)

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(Mr. Can M. Bui, Senior Engineer)

Open forum: Port releases:

IAPH Award Scheme 1978: First Prize Winning Paper

Operation of back-up areas: their importance in increasing port efficiency, with special reference to Limassol Port, Cyprus

**by Miss Daphne Phinopoulos
Cyprus Ports Authority**

Introduction

The back-up area operations at the ports in developing countries usually are not as efficient as the quay operations. This introduces inefficiencies at the quay and also additional operating costs.

It has been found that at the Limassol port in Cyprus, a small developing country, 1665 gang hours at the quay i.e. 43.7% of the number presently worked, could be saved by reducing inefficiencies. This would mean increase in port capacity, securing more transit traffic, and lowering of operational costs.

Part of these inefficiencies can be attributed to sheds, open stacking areas, container yard, parking lots and warehouse operations.

Suggestions are centred around better organization of sheds, the creation and operation of parking lots, the creation of separate warehousing facilities with the aim of increasing the holding capacity of sheds and minimizing the disruptive influence of direct deliveries on port operations.

Purpose

In particular this paper is concentrated on the following:

1. What is meant by back-up area operations.
2. The importance of back-up area operations in port operations.
3. Possible problems arising at the Cypriot port of Limassol because of possible shortcomings in the back-up area operations.
4. Operational and organizational changes and minor investments in new or improved facilities to overcome the shortcomings pinpointed.

1. What is meant by back-up areas

The function of a port is to provide the means of transshipping cargo from sea transport to land transport (and vice versa) in the quickest, most efficient and economic way possible.

The cargo handling activities through the port may be divided into four types:

- a. The discharge operation—moving cargo from/to the ship's hold to/from the quay.
- b. The transfer cycle—moving cargo from/to the quay to/from the back-up areas.
- c. The back/up areas—receiving, classifying and storing

cargo discharged from the ship or to be delivered to the ship.

- d. The delivery cycle—moving cargo from back-up areas or direct from ship outside port area and vice versa.

The purpose of this paper is to examine that part of the port operations that are encompassed under "back-up areas".

For the purposes of this paper back-up areas consist of sheds, open storage areas, warehouses, parking lots and container yard.

The purpose of back-up areas is to function as a "buffer system". "An efficient 'buffer' allows the activities on either side of it (say, receiving cargo into the shed and delivering hourly and daily) to be carried on without interfering with each other".¹

The function of each section of the back-up areas are:

- a. Transit shed, open storage areas, and container yard—These are located immediately across the apron from the ship's berth and are used for holding cargo for short periods pending clearance and acceptance by the receiver, or in the case of exports for assembly of cargo in anticipation of ship's arrival.² Such temporary storage allows customs authorities and (in the case of agricultural products) produce inspection authorities to inspect cargo.
- b. Warehouses—These are usually located at a greater distance from the quay than the shed and they are used for holding goods over a longer period of time than in the sheds at the importer's convenience.²
- c. Parking lots—to facilitate the semi-direct and direct route of discharging/delivery of cargo. Parking lots for lorries awaiting to receive cargo directly; for lorries awaiting to load directly; for trailers involved in Ro-Ro operations; for passenger cars before loading in passenger ferry-boats.

¹ "Berth throughput—Systematic methods for improving general cargo operations". Report by the Secretariat of UNCTAD, 1973. In this report the term "buffer system" is used for storage areas. This term has been broadened here to include other, more temporary, facilities for the reception/delivery of cargo.

² "Mission: Port Development, with Case Studies" by Walter P. Hedden, The American Association of Port Authorities, Washington D.C., 1967.

As can be seen from these functions back-up areas comprise of facilities for all three types of routing of cargo:

- a. Direct—from/to ship to/from lorry and outside the port.

- b. Semi direct—from ship to temporary storage, usually less than 24 hours on a mobile mode of transport for quick loading activity, to lorry and outside the port and vice versa.
- c. Indirect—from ship to shed and if necessary to warehouse storage before delivery to the receiver.

2. The importance of back-up area operations

The changes in the back-up area operations have not kept pace with changes in the discharging/loading operations leading to landside congestion and repercussions on quay side activities. This leads to reduced efficiency, hence to increased operationing costs.

The advancement of technology in shipping has led to more efficient ships through specialization—bulk carriers, container ships, and Ro-Ro ships and to increases in the unitization of cargo—from bits and pieces to pallets to containers. This has led to tremendous increases in the rate of loading/unloading of ships.

Quay length which can handle 500,000–1 million tons a year of cargo on Ro-Ro trailers or in containers can only handle 30,000–100,000 tons a year of conventional cargo.¹ This has led to increasing demands on back-up area facilities in terms of space and efficiency. The neglect of this aspect of port operations has led to the abandoning of terminals² and to reduced efficiency at the hook—a luxury that can be ill-afforded by either the ship operator or the port operator because of the highly capital intensive ships, facilities they operate.

The trend in shipping is to aggravate any shortcomings in the back-up areas: as ships grow larger, so does the problem of the discontinuity between the arrival/departure of cargo in large ships and the slower arrival/departure of it by inland carriers³.

The problem is that technological changes are being initiated by shipowners trying to reduce their costs without consulting terminal operators. This is even more important for developing countries since the changes brought about are capital intensive and require technical and operational expertise where developing countries lack both capital and the required experience so modes such as containers do not cater for the needs of developing countries in the most efficient and economical way.

¹ "A decade of general cargo handling development—from bits to boxes" in "Port Perspective 1976", National Ports Council Bulletin No. 9.

² "Port development—investment choice must strike the right balance" by R.E. Takel, MSc, FRICS, MCIT published in the Nautical Review, June 1978, Vol. 2 No. 4.

³ Fairplay International Shipping Weekly 27.4.1978.

3. Possible problems arising at the Cypriot port of Limassol because of possible shortcomings in the back-up areas.

It has been found that 1665 gang hours which is 43.7% of the present gang hours worked could be saved if operations were made more efficient. This could be partly attributed to the inefficient operation of the back-up areas.

From data on gang hours worked at Limassol port it was calculated that an average of 3812 gang hours are worked per month. Using recorded maximum productivities (rate of loading/discharging cargo on/from ships) the reduction in the gang hours required to handle the same amount of cargo was calculated. This was 2147. Similarly, using the recorded minimum productivities the additional gang hours required to handle the same amount of cargo was calculated (See Table 1).

TABLE 1 Activity at the Limassol Port—actual and potential*

Type of ship/ Commodity	Average No. of ships called per month	Average Tonnage handled per month	Productivity (tons per gang hour)			Gang Hours				
			max* ²	min* ²	ave.	Actually worked, average per month	Required if productivity continuous at		% of actually worked	
							max.	min.	released	additional required
1	2	3	4	5	6	7	8	9	10	11
Conventional Ship:										
Citrus* ¹ (cartons)	7	7,356	29	12	17	439	254	613	42.1	39.6
Cement* ¹ (pre-slung)	5	8,458	46	24	32	255	184	352	27.8	38
Container* ¹	7	2,954	104	12.2	37.4	81	28	242	65.9	198.8
General* ¹ (loose)	41	18,726	24	4.8	12	1,491	780	3,901	47.7	161.6
Other	10	18,920	47.3	7.3	24.5	778	400	2,592	48.6	233.2
Container Ship:										
Containers	23	13,793	150* ³	22* ³	66	205	92	627	55.2	205.1
Roll-on-Roll-off:										
Container general Cargo and cars	14	6,739	115	10	53	127	59	674	53.5	430.7
Sub Total	107	76,946	42.8	8.5	22.8	3,376	1,797	9,001	46.8	166.6
Bulk Carriers:										
Grains	3	28,687	96	43	87	329	299	667	9	103
Wines	2	1,669	50	20	33	47	33	83	30	37
Passenger	13	2,107	117.5	5.7	27	60	18	370	70	521
TOTAL	125	109,409	52	11	28.7	3,812	2,147	10,121	43.7	165.5

* Base on an analysis of data for January–February 1978.

*¹ Conventional ships whose cargo was at least 70% this item.

*² Productivities maintained for at least one shift by one ship.

*³ In terms of number of containers this was 12 containers per hour for maximum and 3 containers per hour for minimum.

The maximum capacity of the port during normal working hours is 3200 gang hours¹. Since the actual hours worked are 3812 it means that on the average the port is fully occupied during normal hours and overtime is worked also to cover the total.

The importance of achieving the highest possible degree of efficiency cannot be overemphasized.

The congested situation at the port has turned away potential revenue—as exemplified by the turning away of ships requiring transit facilities after the Lebanese crisis and the turning down of applications from private enterprises for more permanent transit facilities at the port.

An increase in the efficiency will help capitalize on this potential traffic. Also, saving of even some of the 1665 gang hours will mean reductions in handling costs as 972 gangs out of 3812 are done on an overtime basis.

It will be now explained how part of the wasted 1665 gang hours can be saved by better organization of the back-up areas. This will also reduce some operating costs besides the improvement in efficiency.

It is by no means claimed that all minimum productivities or even any single minimum productivity are solely due to held-ups in back-up area operations.

The main types of problems in the operation of the back-up areas leading to hold ups in the productivity at the quay were the following:

- The lack of demarkations and the assignment of positions for containers in the container yard leads to the loss of time of gangs waiting for the right container to be sent to the quay for loading.
- The failure of the transfer cycle to keep up with the unloading. This implies the loss of gang hours at the quay. By minimizing the unloading time of cargo in the shed we minimize the gang hours lost without having to put more investment in tractors or trailers.
- The lack of prior knowledge on contents, destination of containers for export leads to loss of time by the gangs as consultations on the stowing of the ship and last minute restacking of containers to reach the required container are carried on.
- The practice to sort out the cargo by marks and numbers simultaneously with its discharge from trailer in the store means that the rate of unloading given a certain number of workers, is restricted.

¹ The maximum capacity of the Limassol Port, 3200 gang hours, was calculated assuming that the port can accommodate 7 ships working with 2 gangs and 2 ships with container/heavy loads working with one gang each, during the one 8 hour shift 25 days a month.

- The lack of facilities for prestowing of cargo in the port, except for containers, leads to either waiting time of the gangs or congestion at the quay because of the uncontrolled arrival rate of trucks to the quay.

Since the function of back-up areas is to act as a “buffer system” inefficiencies in these operations also affect the landside activities.

- The lack of advance information on the cargo to be delivered each day and the time interval within which to be delivered lead to waste of manpower and equipment on the sheds if there are not enough deliveries on that day and to shortage of manpower and equipment when the demand is high leads to long queues of trucks waiting causing higher operating costs.
- The lack of demarkation in the sheds and the container yard leads to losses of time by truck drivers and the shed personnel as they search for the right consignment.

4. Operational and organizational changes and minor investments in new or improved facilities to overcome the shortcomings pointed out.

At present only shed and open storage facilities for incoming cargo and a container yard for incoming and outgoing containers are offered on an organized basis at Limassol Port. Consequently the capacities of the other systems, warehouses, parking lots could not be evaluated. However general guidelines are given on their organization and operation.

Also the open storage areas are not dealt with in this paper as they posed on problems upto now. The remarks on how to meet organizational inefficiencies on shed operations also apply to container yard operations, so they are not dealt with separately.

Currently 27% of the cargo handled through Limassol port goes through the indirect route while 73% goes through the direct (See Table 2).

This does not show the actual demand on each system but how the port coped with tonnage that was handled. It was estimated that at least an additional 132,000 tons that could have been routed through the sheds were handled to/from warehouses outside the port because of the lack of capacity.

Currently there are two sheds of a total of 16,400 m² under construction, to be completed by the end of the year. These will have a potential capacity, of 133,000 tons per year, under present methods of work, which will again be congested if the traffic currently lost 132,000, is routed through these sheds.

Further it has been known that with the increase in size inefficient practices tend to become worse.

The aim of the suggestions in this section of the paper is to put an end to the disruptions caused by the nearly full sheds and the lack of the facilities offered.

(A) Operations in sheds

The maximum capacity of the existing sheds, under present circumstances, was estimated at 195,079 tons per

TABLE 2 Cargo through each routing

Period Jan. - Feb. 1978	Discharged					Loaded					GRAND TOTAL
	Shed	Open Stacking area	Container Yard	Direct Delivery	Total	Shed	Open Stacking area	Container Yard	Direct Delivery	Total	
Tons	24505	12114	9764	90214	136597	0*	0	14694	67529	82223	218820
%	18	9	7	66	100	0	0	18	82	100	
	11	5	4	42	62	0	0	7	31	38	100

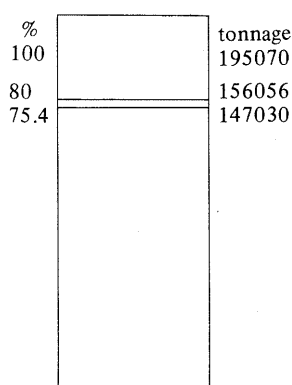
* Some transit cargo goes through sheds but data on this is not available. This is included under direct delivery.

year. This is a function of the following:

Total area	: 24,136 m ²
Allowance for alleyways and offices	: 40%
Average stacking height	: 1.21 m
Average density of cargo-min. in sheds	: 0.61 tons/m ³
Average transit time in shed	: 16 days
Allowance for broken stowage ¹	: 20%

As throughput is 147.030 tons per year this means that sheds are 75.4% utilized. As 80% is regarded as the maximum operating potential¹ the 75.4% utilization signals either the need for investment or a change in operations, if sheds are not to become a bottleneck in the flow of cargo from shed to ship. The situation in the sheds is illustrated in graph 1.

GRAPH 1 Graph illustrating the maximum capacity and the actual capacity used, of the shed.



¹ See footnote¹ page 14. The averages used are "weighted averages" derived from an analysis of manifests of cargo in sheds.

Although the present sheds are on average not congested which means bottlenecks should not have been created here, they actually are.

The explanations lie in the following:

- There are short but intense peak periods when cargo must be unloaded from trailers or forklifts transferring cargo from the ship at a very fast rate. Because the sheds are not organized to work at an equally fast rate immobilization time of trailers means that delays were caused at the quay. To avoid making extra investment in trailers the sheds have to be organized in a better way.

At such times it may prove expedient for cargo to be dumped at a certain section of the shed while other men are working at the other side of the pile separating cargo by marks and numbers and storing it at another section of the shed.

The current practice to sort out the cargo by marks and numbers while unloading the trailers, simultaneously to the ship's discharge of cargo may be less costly in labour requirements but is more costly to the overall efficiency hence to the cost of port operations.

- Although the average holding capacity of the sheds is 8,550 per day it may at times be reduced to 3,000¹ tons per day because of the frequency of small consignments of small cartons with a low stacking height and density.

On such periods the capacity of the sheds become a

severe limiting factor on the rate of unloading at the quay because of delays to find other space than the sheds for the goods. Also the port loses income because cargo has to be stored outside the port.

To improve this situation it is suggested that rackings be installed in shed to increase the capacity for holding low density cargo. Sheds at Limassol port are 6.5 m. at the eaves rising to 13.5 m. in the centre and the floor conditions are not expected to pose any limitations to the installation of racking facilities. With the use of appropriate equipment such as reach trucks which can operate in aisles only 2.8-3 metres wide², no extra space will be lost. Actually there will be an immediate gain in volume as the "alleyways" in Limassol sheds are 4 metres wide. If racks are placed at the one blank end of each shed an estimated 8% saving will be made. Of course further research must be undertaken into the question of more extensive racking and before the selection of equipment and racking to be used. Charges for storage of cargo now based on weight could be changed to tons/m³ to charge the importer for the volume occupied. Charges should be such as to encourage the standardization of packages and the unitization of cargo into pallets, which allow the more efficient use of volume capacity of sheds.

¹ This was calculated by taking into account the most frequently occurring stacking height of 0.84 m. and the most frequency occurring cargo density 0.31 tons/m³.

² International Freight Weekly. 4.7.1978

- The lack of proper demarkation of shed's floor into bays and alleyways means that space is wasted and that time is lost searching for consignments. Proper demarkation with a reference number for each bay will help to reduce the time spent and, a conservative estimate, to increase available space by 10%.

The greatest benefit will be the reduction in costs through the resulting better organization of the shed.

To increase the overall efficiency of the sheds planning must also take on the delivery side—from the shed to the lorries.

In delivering cargo from sheds there seems to be an excess capacity in manpower, as a lot of men seem to stand about idle. Bottlenecks, however, occur because of the bunching of truck-arrivals at particular peak hours.

The erratic nature of arrivals of lorries for the receipt of cargo from sheds means that no planning on manpower and equipment requirements for delivery can take place. To alleviate the shortages of manpower and equipment and long queues of lorries during peak demand (and vice versa for low ebbs in activity) a truck appointment scheme is suggested. This needs the co-operation of road haulage companies. They will be required to present their collection/delivery schedules in advance i.e. the haulier notifies the man in charge of sheds of the cargo to be delivered/taken and a time is given. (Say 0800, 1000, 1300) of expected time of arrival.

This facilitates the restacking of cargo in shed to create space and to shorten delivery time of consignment to receiver.

B. Operation of Warehouses.

Such facilities do not currently exist at Limassol port. Some criteria for their operation and creation were given in

the first part of this paper. Here some further points are made on their location and operation.

- (i) Contrary to transit shed rule of operation "keep the cargo moving" here the main concern should be "to preserve goods in custody from spoilage or contamination".¹

- (ii) Such premises could be leased to private companies.

It is suggested that when shed No. 4, is completed, being the furthest away from the quay, is used for purely warehouse operations to which longer staying cargo is kept. This will benefit the overall performance of the port as

- a. by moving cargo that stays in sheds No. 1 and 2 for over, say 25 days which is currently 27% of the total cargo moving through these two sheds, valuable capacity will be released near the quay,
- b. the capacity of the transfer cycle will be increased by a shortening of the distance over which trailers have to travel carrying cargo from the ship.

¹ See footnote² page 14.

Shed capacity released at the quay can be used for the pre-stowing of general cargo for exports.

Currently general cargo is delivered direct to ship's side causing congestion on quays by lorries awaiting their turn to unload small loads of varying stowage factor. Delays are caused because of time lost for the proper truck to arrive at the look with the heavier consignments while trucks with lighter consignments may already be there.

It is suggested, that this cargo is pre-stowed in sheds No. 1 or 2, 1-2 days before ships expected arrival, according to the stowage plan of the ship.

General cargo loading is only 8% of outgoing cargo (e-

quivalent to approx. 4,000 tons p.m.) but it has one of the lowest average productivities: 12 tons per gang hour.

C. Operation of Parking lots for commercial vehicles.

At Limassol port there are 4 car parks (see port layout) to serve the direct routing of cargo which as mentioned earlier is by far the greatest as 73% of all cargo is handled in this manner. But their shortcomings in doing so was assessed by

- a. imperial observation of e.g. lorries congesting quays,
- b. the Traffic Engineering Department of the Ministry of Communications and Works which took traffic counts at the gate of Limassol port and in of the vehicles parked in port on a certain day.

The conclusions drawn are that:

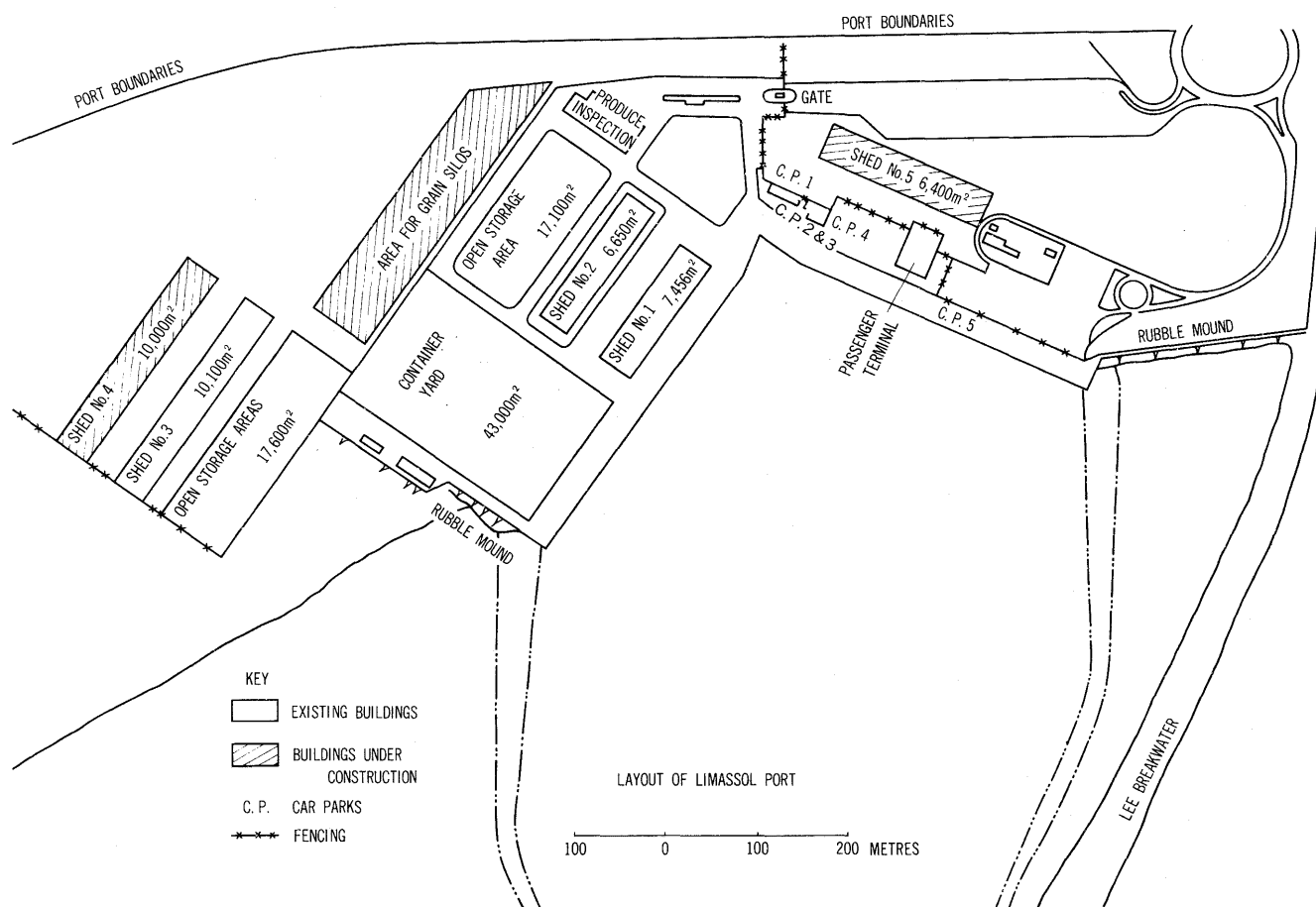
- a. Out of the 601 commercial vehicles entering the port on a certain day 541 i.e. 90% did not use the car park areas.
- b. Out of a total of 1,886 vehicles in port on that day 1,251 (66%) were private cars. Of these 618 were in the car parks while the rest were scattered all over the port.

Private cars occupy almost completely the car parks that should have been used by commercial vehicles. More over, except for car park No. 1 which was almost empty, part of car parks space is wasted because of the lack of demarkation of the ground into parking lots.

This is the area of operations that the back-up area operations must spread into, to ensure—

- a. The regular flow of commercial vehicles from/to the sheds and quays.

(Continued on next page bottom)



Industrial Ports and Economic Transformations

Series No.10

By Paul Hanappe and
Michel Savy

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In the case of loading direct on a ship a minimum amount of cargo to be loaded must be at such parking lots on the day of commencement of the loading on a ship.

In the case of unloading direct from ship a certain minimum number of lorries must be in port during the unloading direct from ship.

b. proper policing of the area.

Separate parking lots are required for each type of routing i.e. (i) direct (ii) semi-direct and (iii) indirect routing of cargo.

Each lot may be sub-divided into the main cargo-operation e.g. (i) lorries awaiting to deliver cement, citrus during that day (ii) lorries discharging onto trailers cargo to be shipped in the next 24 hours, at maximum (iii) lorries delivering cargo to sheds, collecting cargo from sheds.

The location of such parks will depend on land available and location of the purpose of visit.

Also the needs of individual port users e.g. haulage companies, large importers/exporters must be catered for—and eventually charged accordingly.

Currently a study is being carried out by the Traffic Engineering Department (Ministry of Communications and Works) for the amount of space required and location for such parking lots.

After the completion of such works it is up to the back-up area personnel to supervise their operation so as to ensure that they perform their purported function at a sufficiently high level.

In general, it may be concluded that,

- 3.1. Pipeline networks—Natural gas
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For the proper organization of back-up areas advance notice of the cargo to go through each section is necessary: Ships requesting berth to load/discharge cargo must submit details of the cargo to go through direct semi-direct or indirect routing so that space required may be estimated.

If it is found that such demands will create congestion in these areas then berth may be refused unless an alternative, at least as efficient method of discharge/loading is found.

To facilitate the analysis of manifests it is suggested that a detailed analysis of manifests is undertaken to evaluate stacking height, density of cargo by broad categories of cargo/packaging so that certain standard criteria may be set which will be used to draw up graphs against which back-up area supervisors can easily read back-up area requirements.

Conclusion

The importance of increasing the efficiency in the back-up area operations lies in the fact that capacity can be increased with the minimum of investment. So our port can increase in capacity without increasing in size.

The additional incentive in increasing the efficiency of the port activities in this area as described in this paper, is the fact that the changes required in the back-up area operations can be effected with the minimum changes in the institutional set up.

21.9.1978

In preparing this paper Cpt. A. Bayada, entrusted with Cargo Handling at Limassol port, contributed invaluable information on problems encountered in back-up areas operations at Limassol port.

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(Final Instalment)

IAPH Facilitation Activities

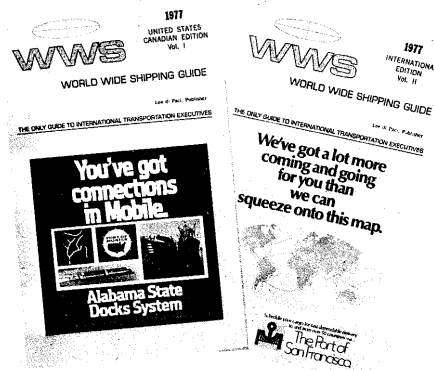
Mr. Rober L.M. Vleugels, Chairman of the IAPH Special Committee on Trade Facilitation, has recently been collecting preliminary material as a background for substantial facilitation discussions at the 11th Conference in Le Havre, May this year.

Among the most interesting items of information has been a note on certain current development in the Economic Commission for Europe supplied by United Kingdom Simplification of International Trade Procedures Board (SITPRO). Mr. Vleugels considers that these items are of general interest and at his suggestion, they are produced below.

Dangerous Goods Documentation

While international development of standards for dangerous goods classification, safety procedures and physical handling has progressed rapidly, documentation standards have not received detailed attention and consequently grew more complicated and diverse. Several sets of documents, each different and asking for different details, have had to be prepared for each shipment. The new Recommendation seeks to rectify this by proposing, amongst other things, that documents should call for a single standard "set" of information about the goods, viz. the correct technical name, hazard class, UN Number and flashpoint and that all other details should be ascertained from these references. It also

(Continued on page 22)



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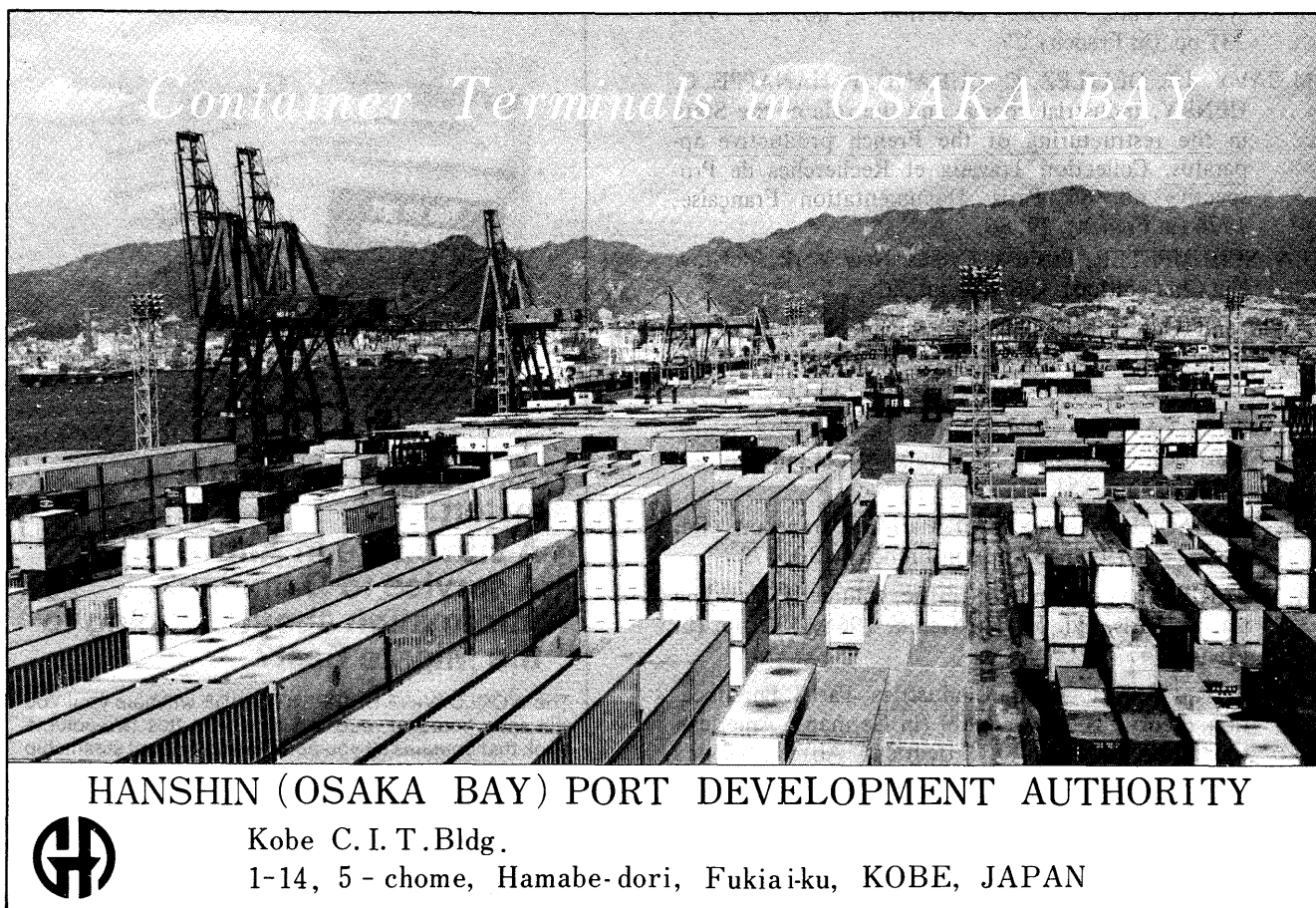
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proposes that the dangerous goods declaration should be combined with the normal transport documents whenever possible, but otherwise should be designed according to a model form set out in the Recommendation. It further deals specifically with the increasing problems of combined transport and the use of computers.

The Recommendation has already been implemented in some countries, and is being discussed within IATA, IMCO, FIATA and the UN's own Committee Experts on the Transport of Dangerous Goods.

Simpler Shipping Marks

Complicated shipping marks, as well as being time consuming and expensive to produce, render severe difficulties for any who have to check cargoes especially when checking them against documents. It is said that packages are being used as documents because they bear so much information. A Recommendation is therefore being developed and its current draft proposals set out a simple content and format for a Standard Shipping Mark which it recommends should be internationally adopted. It would consist of four lines: the buyer's initials; the order number; the port/place of discharge and delivery; and package number. Other information would be marked separately and not included in the Mark on documents; while existing international symbols for handling and dangerous properties would be used.

The Recommendation is being developed jointly with ICHCA and other interested parties such as ICS, therefore full provisions on correct marking for cargo handling pur-

poses are being included. It is expected that the Recommendation would primarily influence importers, who normally specify the shipping marks, exporters, cargo handling interests and related governmental agencies.

Port/Location Code

The UN ECE has been working on the development of a port/location code for several years, but has not yet produced any specific recommendation.

Majority opinion now favours a code consisting of 2 alpha ISO country code plus a 3 alpha port/location code, e.g. PL SZZ for Szczecin in Poland.

Possible variations from this format include a numeric alternative, a classifier to distinguish port from airport etc, national departures from the 3 alpha format for the second part of the code and the omission of the country code for national use.

Codes for Ships' Names

The UN ECE issued, in February 1978, its Recommendation No. 10, "Codes for Ships' Names". This recommends the use, where a code is required, of the existing ITU RCS (Radio Call Sign) on a provisional basis as the best available code for ships' names.

The RCS code structure is far from ideal for computer applications, but it is hoped that it will be restructured at the World Administrative Radio Conference in 1979.

The main alternatives studied by the ECE, namely ships' official numbers as issued by national registration authorities and Lloyds Register Data Processing Number, were felt to be less suitable than the Radio Call Sign.

ENAPU-PERU's activity 1977

ENAPU-PERU was formed by the Government of Perú under the provision of D.S. No. 17526. This decree was amended on the 1st. January 1970 by D.L. 18027 which since that date has controlled the activities of the organization.

The Empresa Nacional de Puertos ENAPU PERU, belongs to the Transportation and Communications Sector, is a legal entity under Peruvian law and has economic and administrative autonomy. It is responsible for the administration, operation and maintenance of the Peruvian port complex.

Some figures in the following consolidated form, which have been excerpted from "Empresa Nacional de Puertos

Memoria Anual 1977", show the salient aspects and development of the ENAPU-PERU's activities.

General Balance Sheet, ENAPU

December 31, 1977 (extracts)

	1977	1976
	(in millions Sol)	
Assets		
Current Assets	1,671	1,134
Fixed Assets (less depreciation)	10,731	5,071
Total Assets	12,403	6,206
Liabilities		
Total Liabilities and Capital	12,403	6,206

Cargo Tonnage mobilized by Terminal Groups, 1977

(extracts)

in Thousands

Terminals	Loading			Unloading Cargo			Costal Cargo			Total Dry Cargo	Total Liquid Cargo	Gross Total
	Dry	Liquid	Total	Dry	Liquid	Total	Dry	Liquid	Total			
Total ENAPU	2,923	828	3,751	2,890	779	3,670	999	5,473	6,472	6,812	7,080	13,893
A. Sub-Total Terminals Maritimos (19 Terminals)	2,906	757	3,663	2,831	660	3,492	675	5,332	6,008	6,413	6,750	13,164
B. Sub-Total Terminals Fluviales (4 Terminals)	16	70	87	59	118	177	323	141	464	399	330	729
C. Sub-Total Other Terminals (9 Terminals)	6,577	—	6,577	10	82	93	442	1,718	2,161	7,030	1,801	8,831
Gross Total	9,500	828	10,328	2,901	862	3,763	1,441	7,191	8,633	13,843	8,882	22,725

Port of Esbjerg 1978

• Biggest project ever

Esbjerg's port and technical industries are currently preparing to take part in the huge project necessary to bring North Sea gas ashore. The final political decision still remains to be taken, and is expected this year. But it is already known that Esbjerg will be the main junction point for the underwater pipeline and the land distribution network. The main pipeline from the gasfields in the North Sea will be brought ashore a little north of Esbjerg. Esbjerg is already the main base for the Danish oil activities in the North Sea.

Current plans indicate the need for 5,000 km of land pipeline and 300 km underwater pipeline in the Danish area. From Esbjerg, the line will continue East to Egtved.

A provisional estimate sets the cost of the entire project at Dkr 8—10 billion, and assumes it will require 80,000 tons of steel and a similar quantity of concrete for the North Sea pipeline alone. More recently, the natural gas pipeline has been linked to another major Danish project—construction of a bridge across the Great Belt. Both projects can be of very considerable importance for Esbjerg—natural gas as outlined above, and the Belt bridge by increasing Esbjerg's position as a traffic centres.

• Public investment—The basis for private initiative

The Port of Esbjerg is owned by the State, and the State

naturally wants to have the best possible guarantee that the right investments are made in Esbjerg. Probably everyone now agrees that it was right in 1868 to invest in a port on the west coast of Jutland. The same conclusion must be reached concerning the latest bigger expansion project east of the existing harbour, which will be completed by 1981. Private initiative has already invested at least as much in buildings and installations here as the Government grant for the entire expansion, 74 million kroner.

Expansion usually means investment, and the Port's expenditures show that in the five years 1978-1982 about 150 million kroner is to be spent in modernisation and expansion. About 25 million will be used this year.

The Esbjerg Harbour Board have every reason to be satisfied with the space which will be available for many years ahead. The filling of another two million m² can still be carried out within the natural harbour area. Room enough for several kilometres of new quays and the adjacent land area needed without starting to demolish any part of the town. It is a situation many other ports undoubtedly would like to experience.

Annual Report 1977/78: Gladstone Harbour Board (extracts)

1. Chairman's Review

The Central Queensland area abounds in rich mineral wealth besides being a land that supports enormous pastoral and agricultural industry.

Gladstone's role as the Port for the Region has long been acknowledged and the facilities which currently exist have efficiently handled the cargo passing through the Port.

With the uncovering of new Coal Fields, the possibility of the emergence of new cargo destinations and the potential for larger ships, the Gladstone Harbour Board has been continually aware of the need for modern facilities able to handle the Port's trade into the foreseeable future.

For a number of years, the Board has been working towards the provision of a new Coal Handling Facility at the Port. It is with great satisfaction in reviewing the year ended 30th June, 1978, that I report planning for the giant Clinton Coal Facility is well advanced and that Tenders for the first Contracts were called before the year's end.

This \$30 m Facility will initially handle Coal from Dampier Mining Company's Gregory Mine, but its capacity is such that other Coals will be able to be shipped through it. My Board is most appreciative of the initiative taken by Dampier Mining Company and its parent Company. The Broken Hill Proprietary Company Limited, in joining with the Board in the provision of this new venture.

During the year ended 30th June, 1978, trade through the Port showed a slight down-turn of 1.19%, when compared with previous years. Total cargo handled was 14,932,184 tonnes. The decrease was mainly due to cyclical factors and is not considered to indicate a long term trend.

Coal exports totalled 6.3 million tonnes, whilst Grain Shipments were 229,961 tonnes.

Queensland Alumina Limited, who operate the World's largest Alumina Refinery, handled 54% of the Port's trade over their South Trees Wharf.

Prudent financial management has resulted in the Board maintaining a sound financial base. Every effort is made to keep Port Charges competitive. Harbour Dues collected during the year totalled \$1.7 million, and Tonnage Rates were \$231,000.

Interest by a number of large industrial concerns indicates an exciting future for the Port of Gladstone. The deepwater Harbour, established City, and abundant electricity from the Gladstone Power Station, together with the rich surrounding areas, combine to present an inviting package to industrialists who are searching for sites on which to establish.

Enthusiasm surrounds the announcement by Comalco Limited that, subject to financial and other pre-conditions, the Company intends to establish an Aluminium Smelter with an initial output of 180,000 tonnes per annum on Boyne Island, in the eastern part of the Port.

The Queensland Government has passed legislation which brings closer the establishment of a Clinker Works by Queensland Cement and Lime Company Limited at Fisherman's Landing, in the western section of the Port.

W.R. GOLDING
Chairman

2. Import and Export Figures

	(tonnes)	
Year	1977	1978
Imports	6,370,277	6,199,945
Exports	8,741,976	8,732,239
TOTAL:	15,112,253	14,932,184

3. Financial Statements 1977/78

(1) Balance sheet as at 30th June 1978

1977 \$,000	1978 \$,000	1978 \$,000
	Accumulated Funds	
	Balance as at 1st July, 1977	12,207
	Surplus transferred from	
	Appropriation	4,029
12,206		16,236
	Represented by:—	
2,748	Current Assets	5,866
	Deduct	
311	Current Liabilities	303
2,437	Working Capital	5,563
16,908	Add Fixed Assets	17,625
19,345		23,188
	Deduct	
	Security Deposits	262
	Loan Indebtedness—	
	Government Loans	1,375
	Inscribed Stock and	
	Debenture Loans	5,375
	Less Sinking Fund	60
7,139		6,952
12,206		16,236

Notes: Depreciation has been deducted from Fixed Asset Values shown. Depreciation is not provided on Channels and Swing Basins and Land.

(2) Profit and Loss Statement for year ending 30th June 1978

1977 \$,000	1978 \$,000	1978 \$,000
	INCOME	
	Wharves	
	Harbour Dues, Tonnage Rates	
1,532	and Berthing Charges	1,571
	Conveyor Systems	
1,747	Handling Charges	1,850
251	Others	312
3,530		3,733
	LESS EXPENDITURE	
	Wharves	
	Operation, Maintenance	
637	and Depreciation	666
	Conveyor Systems	
	Operation, Maintenance	
1,678	and Depreciation	1,790
325	Others	331
2,640		2,787
890	OPERATING SURPLUS	946

**(3) Source and Application of Funds
for year ending 30th June 1978**

Source	\$,000
Operating Surplus for Year	946
Add Back Depreciation Charges	997
Income from Investments	331
Adjustment of Conveyor Handling Charges	2,675
Other Funds	332
	<u>5,281</u>
Application	\$,000
Increase in Working Capital	3,126
Acquisition of Fixed Assets	1,738
Reduction of Loan Indebtedness	417
	<u>5,281</u>

**Annual Report 1977/78: Cairns
Harbour Board (extracts)**

Chairman's message (extract)

It is more than pleasing for me to report that the Cairns Harbour Board has enjoyed a most successful and progressive year.

The financial year ended with an operating deficit of \$6872 against the estimated budget of \$20902 which reflects the control the Board had exercised during that period.

Exports recorded an overall increase of 1.18 per cent mainly due to growth in the northern and Peninsula trade, while imports had an increase of 5.2 per cent, resulting from improved petroleum products, fertilisers and the Northern trade.

Overall trade growth was not able to absorb increased costs and the operating deficit totalled \$35559 on wharves, of which the principal expenditure was maintenance and channel dredging.

Total receipts for the financial year amounted to \$3386652 and the payments totalled \$3489081. Receipts from Administration, Maintenance and Operations of the Board and interest on loans were \$2151274 and payments \$2216892.

Capital improvements amounted to \$208597. Included in this figure was \$35573 for the completion of the pump and lighting on No. 10 berth.

Reclamation of the Smiths Creek area came to \$96200. Roadworks, plant replacement and work on the new workshop were other principal items of expenditure.

M. BORZI O.B.E.
Chairman

1. Cargo statistics—tonnes

	IMPORTS		EXPORTS	
	1976/77	1977/78	1976/77	1977/78
OVERSEAS	47 467	52 723	380 280	378 948
COASTWISE	265 551	276 569	75 581	82 292
	313 018	329 292	455 861	461 240

2. Income and Expenditure

	\$
Operating Income	1,597,792
Harbour Dues	906,950
Tonnage Rates	239,397
Rentals	158,354
Others	<u>293,091</u>

Operating Expenditure	1,496,444
Depreciation	108,220
Operating Deficit	6,872
Non-Operating Income	125,598
Non-Operating Expenditure	5,295
Non-Operating Surplus	120,303
Total Surplus for 1977/78	<u>113,431</u>

3. Balance Sheet as at 30th June 1978

	30.6.78	30.6.77
	\$	\$
Capital	3,753,727	3,510,248
Reserves	989,628	1,086,495
Subsidies and Non Repayable Advances	6,298,120	5,816,677
	<u>11,041,475</u>	<u>10,413,420</u>

Fixed Assets	4,931,880	4,747,634
Assets provided by Lessees	11,832,061	11,766,263
Current Assets and Investments	1,676,560	1,690,900
	<u>18,440,501</u>	<u>18,204,797</u>

Deduct		
Current Liabilities	34,360	38,537
Long Term Liabilities	7,364,666	7,752,840
Total Liabilities	<u>7,399,026</u>	<u>7,791,377</u>
Assets Less Liabilities	<u>11,041,475</u>	<u>10,413,420</u>

— Post-Conference Tours (page 12)



View from the Skandia Harbour, the most modern harbour for bulk cargo.



In the foreground, Lundby harbour, in the background the free harbour with two basins. These harbours are the residence for traditional shipping. The free harbour is specialized in import of among many other things fresh fruit and cars.

"Hairy" cargo problems smoothly solved.



It is no coincidence that "Hamburg Service" has become a household expression in the world of shipping. Experts with special know-how and a comprehensive range of services for every conceivable special requirement help us solve your problems smoothly and reliably, around the clock.

He is around in your neighbourhood, too: A reliable and expert representative of the Port of Hamburg, ready to give you special advice, planning support and full information. Contact him today.

Port of Hamburg

The Free and Hanseatic City of Hamburg. Representative Office in Japan. c/o Irisu Shokai K.K. Toranomon Mitsui Bldg., 3-8-1, Kasumigaseki, Chiyoda-ku, Tokyo 100

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Tel. 0211/482064/65

Frankfurt
Tel. 0611/749007
Stuttgart
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International maritime information: World port news:

IMCO seeks more experts for Technical Assistance Programme

IMCO News:—IMCO is planning to build up its roster of experts who help the Organization to implement its rapidly-growing technical assistance programme.

The programme began in 1965, and has increased in both size and importance in recent years, as more and more nations seek to expand and improve their maritime activities.

Assistance of this type is a crucial part of IMCO's drive to raise international maritime standards. Experience has shown that while the developing nations are anxious to build up their shipping industries in accordance with the high standards laid down by IMCO, their progress is often hampered by a shortage and sometimes a lack of experienced, qualified personnel.

The areas in which they are required include maritime safety administration, training and legislation; shipbuilding and ship repairs; marine pollution; radiocommunications; hydrography; navigational aids; and port development.

The projects concerned range from one month to several years in length. Applicants should have the highest technical qualifications in their field, and IMCO is particularly seeking those who have had considerable on-the-job experience—such as several years at sea—and now work in a managerial capacity.

Because the work is global in nature, preference will normally be given to those who are proficient in English, French, Spanish or Portuguese, or a combination of these languages.

Salaries and other emoluments, which are normally exempt from income tax, are in accordance with the United Nations scales.

Applications, which will be treated in the strictest confidence, should be sent to:

The Programme Officer
(Fellowships and Personnel)
Technical Co-operation Division
IMCO
101-104 Piccadilly, London W1V0AE.

International Forum on Appropriate Industrial Technology: UNIDO

UNIDO, in co-operation with the Government of India, has organized a two-part International Forum on Appropriate Industrial Technology. The conference was the largest ever convened for the purpose of confronting the increasingly pressing problem of identifying industrial technology suited to the specific needs and conditions of developing countries and transferring the technology to them.

The first part of the Forum, held at New Delhi 20 to 25 last November, brought together 500 public and private decision makers, technical experts and representatives of

research institutes concerned with the practice and application of appropriate technology.

The second part of the Forum was a conference of ministers from some 40 developed and developing countries which considered the policy implications of the conclusions reached by the preceding meeting.

The objectives of the Forum

The International Forum on Appropriate Industrial Technology is intended to provide a basic conceptual approach and specific action programmes on the use of appropriate technology to further the industrial strategy in both the modern urban and dispersed sectors. The main objectives are:

- To determine which industrial sectors in developing countries would lend themselves to the application of alternative techniques and processes.
- To consider the effect of specific alternative technologies in certain sectors on socio-economic and technological development in semi-urban and rural communities in developing countries.
- To consider policies that may be needed in order to ensure effective development and application of alternative processes and techniques.
- To promote greater international cooperation in the allocation of resources, and in particular to bring about more research in developing and industrialized countries in both enterprises and institutions.

The concept of appropriate technology

Appropriate technology is that which contributes most to the economic, environmental and social objectives of development. Generally, three sets of factors determine whether a technology is suitable:

- **Development goals**
 - Growth of employment and output through more effective use of local resources
 - Formation of skills
 - Reduction of inequities in income distribution
 - Fulfilment of the basic needs of the poor
 - Improvement of the quality of life
 - Promotion of self-reliance
- **Resource endowments**
 - Availability and cost of local manpower
 - Level of skills and local management capabilities
 - Availability and cost of water, energy and natural resources
- **Conditions of application**
 - Level of infrastructure
 - Climate, environment and tradition
 - Cultural and educational background and social structure of the population
 - Location of existing industry
 - Size and demand of foreign and domestic markets

(Continued on next page bottom)

A number of issues still to be resolved in current World Trade Talks

Port of Toronto, Ontario, Canada:—Although good progress has been made in the current round of world trade talks in Geneva, a number of issues still must be resolved in the coming weeks, according to Ambassador J.H. Warren, Canadian Co-ordinator for the Multilateral Trade Negotiations.

He noted that sufficient momentum has been reached in the talks that participants will be reluctant to jeopardize them on "non-fundamental points of national interest."

Mr. Warren detailed a number of the issues at a dinner (January 9, 1979) marking the opening of World Trade Centre Toronto.

He said that some agricultural matters will probably remain under negotiation until close to the end of the talks. However, significant progress has already been made in a number of areas including trade in dairy products and bovine meats.

Progress has also been made in developing a forum within the General Agreement on Tariffs and Trade (GATT) to discuss agricultural trade matters after negotiations are completed.

While much has been agreed on bilaterally, the agreement is dependent, in many cases, on what other countries are prepared to do.

For example, while Canada and the United States might have agreed on a change in tariffs, much would depend on what the European Economic Community or Japan agree to do.

"So over and above those areas where bilateral settlements are still outstanding, there remains the question of final balancing between all the countries concerned.

"This will be a vigorous process since difficult issues tend inevitably to remain unresolved until the last moment, and it is frequently the case that one country's high export priorities are precisely in the area of another country's high import sensitivity."

In his speech, Mr. Warren placed particular emphasis on the completion of tariff negotiations with and among countries other than the main participants, including certain of the developing countries and a number of countries in Eastern Europe.

He said high priority will be given in the coming months to concluding discussions of changes in the General Agreement on Tariffs and Trade aimed at improving the framework for trading with developing countries.

"An important feature of such change is likely to be a general enabling clause which would permit developed countries, under prescribed conditions, to extend special



Toronto, Ontario, Canada:—Ambassador J.H. Warren, Canadian Co-ordinator for the Multilateral Trade Negotiations, sends a telex message to World Trade Centres around the globe, marking the official opening of World Trade Centre Toronto on January 9, 1979. The message reads, "I take great pleasure in officially opening World Trade Centre Toronto today. We all look forward to the growth of world trade and to the contribution World Trade Centres can make in the development of international commerce and better relations between countries." Looking on, from left, are: Guy F. Tozzoli, President, World Trade Centers Association and Director, World Trade Center New York; Ernest B. Griffith, Executive Director, World Trade Centre Toronto; and Anthony J. Ormsby, Chairman, The Toronto Harbour Commissioners.

and differential treatment to developing countries in response to their particular economic needs."

"While developing countries are not expected to provide fully reciprocal concessions for benefits received in trade negotiations, they will be expected to assume progressively increased GATT obligations as their trade and economies develop," he explained.

Apart from the broad political and economic aspects, he said it is important to keep in mind the increasing significance of the developing world in global trade.

"Although starting from a much lower base, real growth in developing countries has averaged over six per cent since 1960, compared with four per cent for the industrialized countries," he said.

"The developing world is on the move. The developing countries particularly the most advanced, are already important trading partners and will be so increasingly from both the export and import points of view."

Mr. Warren stated that a number of issues are not yet resolved. One important non-tariff issue still to be settled is the question of the actual coverage of the proposed

(Continued from page 27)

Foreign exchange situation

The concept of appropriate technology applies to both labour-intensive, small-scale production and capital-intensive, large-scale units. The determining factor is that the production technique in question should fit solidly into the circumstances at hand and promote the general strategy of development.

agreement on government procurement in terms of the entities and thus the type of products to be included.

Another is whether a nation will be allowed to take selective action against imports from a country or group of countries that are damaging a domestic industry rather than against all imports.

Mr. Warren said if all goes well in the period ahead, and if governments and the U.S. Congress do not have major difficulties with what has been worked out by the delegations, the Geneva phase of the talks could be formally ended early in the spring.

"Thereafter it will be up to the participants to undertake domestic legislation or other procedures as necessary to permit them implement the agreements signed," he said.

This would bring six years of negotiations to an end. As a result business would have greater confidence in the trading environment and governments should be in a better position to resist protectionist pressures.

He concluded that if the negotiations are brought to a successful conclusion, "we will have headed off the spectre of failure and the consequent rapid drift to trade restrictionism."

ICC prepares for UNCTAD V trade and shipping debate

ICC Press Release:—In a preparatory paper for UNCTAD V to be held in Manila in May 1979, the UNCTAD Secretariat asserts that "an examination of world shipping shows that the market mechanisms . . . especially in the bulk sector, have led to adverse and abnormal developments in maritime transport and in particular restricted the growth of merchant marines of developing countries."

To prepare the world business position and strategy prior to UNCTAD V, the International Chamber of Commerce (ICC) is organising a Conference in Bath, United Kingdom, from 14 to 16 March 1979. The Conference, entitled "Trade and Shipping-Policy Issues for World Business" will be chaired by Mr. Ian MacGregor, current President of the ICC.

Three Working Sessions are planned. The first will examine how commodities are bought and sold before going into the operation of the dry bulk and liquid bulk transport markets. The second will be devoted to a debate on the major factors influencing competition in shipping such as the shipbuilding market, finance for the purchase of new and second-hand ships, flags of convenience and state-owned shipping companies. The third session will deal specifically with the developing countries and the transport of primary commodities centering on three main aspects:

- criteria for ship operation in bulk markets,
- effects on trade and shipping of UNCTAD Secretariat proposals for greater participation by developing countries in the bulk markets,
- alternative ways of meeting the economic and commercial needs of these countries.

ADB approves \$26 million loan for Belawan Port project

The Asian Development Bank approved a loan of \$26.30 million for the first phase development of Belawan Port in Northeastern Sumatra, as well as a technical assistance grant to help prepare a feasibility study for the second phase development.

The Bank loan will cover 40 per cent of the total foreign exchange requirement for the Project; the Republic of Indonesia has requested the Federal Republic of Germany to provide a loan to finance the remaining 60 per cent. The total Project cost is estimated at about \$100.5 million with nearly \$67.0 million as the foreign exchange component.

The Project, which forms the first phase of development of Belawan Port, is to expand port facilities at Belawan to enable it to handle the expected foreign general cargo traffic for the period up to 1985. The Project components financed by the Bank loan include the construction of transit sheds and other ancillary facilities, the paving of access roads and the port area, the purchase of tugboats and pilot boats, and the provision of consultants' services both for construction supervision and the preparation of Phase II development of the port. The Project components for which financing has been requested from the Federal Republic of Germany include wharf construction, dredging and reclamation works, and provision of cargo handling equipment.

Belawan is the third international port in Indonesia to be assisted by the Bank to meet the rapidly growing cargo traffic. The Government accords high priority to the Project because of the increasing congestion and delays experienced by vessels calling at the port. Expansion of the port's capacity and operation improvements will significantly cut the cost of ships lay time, waiting time and lighterage, resulting in substantial savings for ships and cargoes entering the port.

In addition to expansion of port facilities at Belawan, the proposed project will also help to improve the port's financial and operational management, including commercial accounting, restructuring of ports tariffs, and on-the-job training of port administration personnel. At the same time, the Government is planning to establish a port training school at Belawan by the end of 1980.

Container traffic in 1978 estimated an all time record: Port of Montreal

Total cargo tonnage handled at the Port of Montreal during 1978 will be slightly higher than in 1977, and it is expected that at year's end it should reach 20.3 million metric tons of general cargo and bulk commodities of various kinds.

Mr. N. Beshwaty, Port of Montreal General Manager, stated that despite present economic conditions, the general cargo category (the most profitable for the port) will total 3.7 million metric tons compared with 3.2 million tonnes in 1977, for an increase of 14.8%.

Container traffic has increased by 37.1% over 1977, and it is estimated that by the end of 1978, an all time record of 179,000 units will have been handled, for a volume of 2.2 million tonnes of general cargo. Traffic in the bulk cargo category should remain at a level comparable to 1977, and the volume of petroleum products, grain, various ores and others will total approximately 16.6 million tonnes.

During the year under review, the Montreal Port Authority has spent an amount of \$14.5 million in capital and maintenance expenditures as part of its modernization program, and the General Manager indicated that similar credits will be earmarked in 1979 to cope with technological changes and to ensure that Port installations

efficiently meet users' needs.

Mr. Beshwaty noted, with satisfaction, that the climate of stability and industrial peace which presently prevails between longshoremen and maritime employers has contributed to a large extent to the resurgence of shippers' confidence in the Port of Montreal and that he anticipates a continuous growth of Port activity in the years ahead.

In conclusion, the Port's General Manager announced that a special Port's Day will be held on Sunday, next June 3rd to create a better public awareness of the importance of Port's activity in the economic life of the metropolitan region.

Record for Port of Nanaimo

Exports of forest products over the Port of Nanaimo assembly wharf reached a record 795,000 tons in 1978.

The Previous highest export tonnage was in 1977, with 672,357 tons and the second highest year was 1974 with 502,062 tons.

In announcing the record tonnage Don Rawlins, Chairman of the Nanaimo Harbour Commission, said that the additional 122,643 tons over the previous year represented a 15 percent increase. "More shippers are using the port to assemble lumber cargoes" said Mr. Rawlins, "not only from mills on the island, but also from the mainland."

U.S. and Panamanian environmentalists join forces to save Canal Zone forests

"The Panama Canal Spillway":—The Panama Canal, the Department of Defense and the Panama Government have launched a joint anti-deforestation program aimed to control and prevent further destruction of the natural forest areas currently within the Canal Zone. Cooperative actions will include information and education campaigns and surveillance and enforcement measures during the next 12 months which are designed to eliminate slash-and-burn agriculture, a practice which over the past several years has become an increasingly acute problem in the Canal Zone forest. The illegal cutting, burning and farming in the Canal Zone has resulted in deforestation that is a threat to the water supply of the Panama Canal. It could sharply affect the capacity of the system to support interoceanic commerce.

It has been determined that within the Canal Zone about 500 hectares (1,250 acres) of forest are cleared each year from January through April, when farmers slash-and-burn virgin forest to prepare to plant crops after the first heavy rains.

In addition to the educational campaign, an enforcement and surveillance program directed towards preventing further cutting, clearing and burning operations has begun.

The Panama Canal's Police Division is responsible for implementation of surveillance and enforcement. Coordination of the program is the responsibility of the Canal's environmental control officer.

In addition to preservation of the watershed in the Canal Zone, the control program will contribute to the protection of the forest itself, wildlife habitats, water quality, and reduction of soil erosion.

Baltimore surpasses 4 million tons of containerized cargo in 1978

For the first time, the port of Baltimore surpassed 4 million tons of container cargo for a single year solidifying its standing as one of the largest container ports in the United States, the Maryland Port Administration reported in a year-end review of 1978 trade activities.

The port of Baltimore had an exceptionally good year during 1978 and can expect continued growth and improvement in 1979, W. Gregory Halpin, Maryland Port Administrator, said in reference to the tonnage statistics.

"I say exceptionally good," Mr. Halpin explained, "because this past year gave indications of being soft in trade expansion. But that was not the case with cargo volumes moving through the port of Baltimore."

Actual container figures in 1978 reached 4.29 million tons, which is 56 per cent of all general cargo recorded in the port. Total general cargo statistics, container plus breakbulk, reached 6.31 million tons.

In looking at total international trade in the port, which includes bulk as well as general cargo, the MPA estimates 34 million tons of export-import cargo was handled in Baltimore during 1978, almost 3.6 million tons more than 1977. This increase of 11.8 per cent, occurred during a period of slight economic downturn around the world.

"Although it's always risky to predict the future," Mr. Halpin said, "we are confident that the port of Baltimore will continue to improve the level of cargo handled at its waterfront facilities. There are several reasons we believe this.

"To begin, new container/breakbulk terminal is coming into full operation at Locust Point Marine Terminal-South early in the new year. This terminal is capable of handling another 600,000 tons of cargo annually. Also, the decline in the U.S. dollar will continue to stimulate export trade—a category of foreign commerce in which Baltimore excels even under normal economic conditions.

"Furthermore, there is little question as to the continued foreign demand for U.S. coal and grain, and the U.S. demand for petroleum. This will help bulk tonnages to increase in the years ahead. The only bulk commodity in question is import ore which relies totally on the order book demands of the domestic steel industry," Mr. Halpin said.

County bond issue to finance bulk Terminal facility

Charleston Harbor terminals will be expanded in ensuing months with construction of a bulk off-loading facility for Alumax, Inc. The sophisticated installation to handle alumina ore for Alumax's new plant is to be financed under an industrial bond issue.

Authority to issue up to \$35 million in bonds was granted October 3 by Charleston County Council. Such financial assistance can be provided to new industries under a state law to encourage industrial growth.

Alumax is constructing a \$400-million aluminum reduction plant near Coose Creek in Berkeley County, 15 miles north of downtown Charleston. Raw material requirements will be monthly shiploads of from 30,000 to 35,000 tons of the Australian-produced alumina, a bauxite derivative.

Containerized cargo growth rate continues at high level

Charleston:—A review of SPA first-quarter containerized cargo statistics reveals impressive growth information. The period covered is July through September of fiscal year 1979 which ends next June 30.

During the three months, terminal facilities at Charleston handled 451,436 tons of commodities transported in the land-sea metal boxes.

Container traffic has increased almost 41.5 percent since the first quarter two years ago when 319,154 tons crossed the docks. During the same period last year, the total was 374,836.

Of additional significance is the 44.8 percent gain recorded in break-bulk cargo at Charleston in the past two years.

The port shows a very favorable trade balance in the combined total of containerized and break-bulk shipments. Exports are running at the rate of 62 percent, compared with 38 percent import.

Port Corpus Christi News

• Corps working on DEEPORT impact statement

The Army Corps of Engineers is moving ahead with its task of writing a final Environmental Impact Statement on the 72-foot DEEPORT project at Harbor Island.

The Corps' Galveston District is revising its draft EIS based on the record of the Sept. 23 public hearing and the many written statements submitted before the Oct. 3, 1978 deadline.

The EIS is expected early 1979 and a final decision on issuance of a construction permit is likely from the Corps by mid-1979. That could mean that the 2½ to 3 years of construction could be completed by 1983.

Most elected public officials from the Corpus Christi Bay area spoke in favor of the deepwater port project during the public hearing.

DEEPORT drew opposition from a sizeable delegation, most of whom live in Port Aransas, across the ship channel from where the existing oil handling terminal would be modified and deepened to handle tankers drawing up to 72 feet.

The Corpus Christi Chamber of Commerce presented the Corps with more than 15,000 petition signatures gathered in Corpus Christi asking that the Corps act quickly to issue the DEEPORT permit.

"The plan under consideration today is the result of exhaustive engineering work and environmental study. All possible alternatives have been considered. The present concept emerged because it strikes a balance between economic benefits, navigational safety, maximum oil spill safeguards and environmental impacts. Efforts have been made at every step in the planning process to minimize environmental disturbance," said Harvey Weil, Port Counsel.

Several negative comments were filed by state and federal environmental agencies following the hearing. William E. Carl, chairman of the Navigation District Board of Commissioners, said the project sponsors are eager to continue the dialogue with the various agencies such as the Environmental Protection Agency and the U.S. Fish and

Wildlife Service.

"We want to identify problem areas and work toward resolving them," Carl said. "There is no question that there will have to be some compromises made as we go through the routine permit process."

"The Corps of Engineers is required to address all objections brought to its attention and it will try to resolve the objections of various agencies, including the EPA. Naturally the Corps will rely on the Navigation District to provide suggestions for overcoming various objections and we plan to cooperate with the Corps fully," Carl explained.

Container crane groundbreaking scheduled at Port Everglades

A giant step forward will be taken by the Port Everglades Authority on January 22, as the official groundbreaking ceremony will be held for the installation of a 30 long ton, container handling crane.

The crane, scheduled to arrive in April for assembly, should be operational by August. The new crane will reduce vessel port time required for loading and discharge at Port Everglades, thereby improving ship turn around time. It has lifting spreaders for 20, 40, and 35 foot containers.

The \$6 million project is a joint venture between the Port Everglades Authority and Sea-Land Services. The cost of the crane is approximately \$2.6 million and will be borne by Sea Land. The port will contribute the outlay for the construction of the 1,500 foot track from which the crane will operate.

Commissioner Jack Behringer said of the joint venture. "This is an example how government and private enterprise can work together in a program that will be advantageous for the economic development of our community and South Florida."

Second Guam Portainer crane dedicated

(Paceco News):—A 40 Ton Portainer® crane was recently dedicated at the Commercial Port of Guam, Cabras Island. The Portainer crane is the second one built for the Guam Port Authority by Paceco, Inc.

The 115 ft. outreach and 50 ft. backreach Portainer crane, with a 20'/40' telescopic spreader, will complement the original Portainer crane and further aid the turnaround time of calling container ships.

New ro/ro ramp at Jacksonville

A new roll-on/roll-off ramp facility on the Blount Island Terminal at the Port of Jacksonville is scheduled to be completed in mid 1979.

Engineering to design a ramp capable of handling every type ro/ro vessel and range of ro/ro cargo has been approved by the Jacksonville Port Authority Board.

"We have watched a trend in the past few years of certain types of volume cargo converting to ro/ro vessel, when and where it is available," said JPA Trade Development Director Fred Whelan. "This new facility, therefore, will fulfill our commitment to continue our progressive growth pattern, to compete in all areas of ocean shipping, and to provide our customers with the capability to handle specialized cargo vessels."

Free time allowance liberalized at Port of NY-NJ

A change in tariff regulations at the Port of New York-New Jersey which will allow 45 days free time for assembly of export "project shipments" has recently been announced by The Port Authority of New York & New Jersey.

Prior to the change, the Terminal Conference tariff had allowed only 10 days free time for what was called "consolidated cargo" with 5 additional days permitted on request. The Port Authority's previous regulation had allowed 10 days for containers.

The liberalization of the free time allowance will make the Port of New York-New Jersey more competitive with other U.S. ports in consolidating and otherwise handling the varied components ordered for overseas projects, such as an entire power plant or a factory.

NY-NJ longshore industry to process men and women as new dockworkers

The joint employer-union board that administers longshore labor agreements in the Port of New York and New Jersey recently announced that it has reached agreement to immediately process some 825 new pier worker applicants including more than 100 women for jobs as temporary longshoremen at area marine terminals.

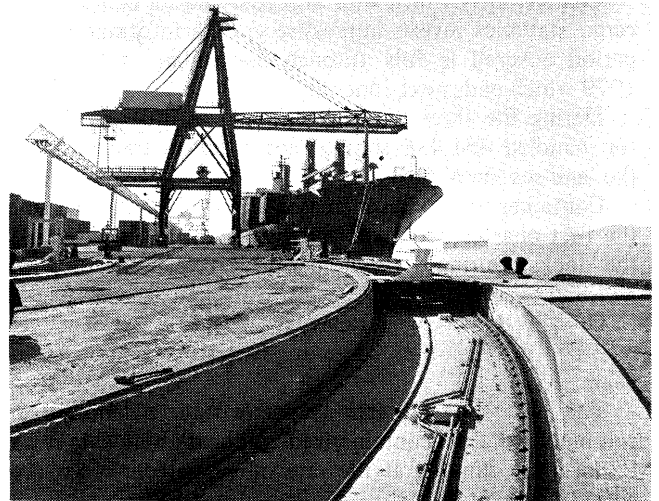
Reported by Thomas W. Gleason and James J. Dickman, co-chairmen of the NYSA-ILA Contract Board, the action paves the way for entry of the first substantial number of new dockworkers in the port labor force here in more than a decade. Also, it marks the first time in harbor history that women will work on equal footing with men in the waterfront job category of "longshoreman," which involves the handling of ocean cargoes that, often, are heavy and difficult to move.

The new group of temporary workers will be eligible for jobs in the holds of ocean vessels berthing at New York City piers and at waterfront sites in New Jersey.

The new group of workers has also been alerted in a letter from the board that they should not expect to receive employment on a regular basis since longshore work is casual. Actually, the port has an excess of workers in the labor force above the average daily hiring of about 7,000 dockers. But shortages develop periodically in the ship "hold" category, and the new workers are being brought into the labor pool to ease the problem.

When they are hired, the new workers will receive the same pay scale as regular ILA members—\$9.60 per hour—and they will build credits for paid holidays and vacations annually. They will also be eligible for medical, welfare and pension benefits similar to that available to permanent workers.

A unique \$1 million transfer system developed by Port of Oakland



The Port of Oakland's newest marine terminal entered full operation with the arrival of the Singaporean container-ship M.V. Neptune Emerald—thanks to an innovative engineering solution to the problem of moving a 600-ton gantry crane with fixed wheels around a corner between two wharves.

The \$1 million crane transfer system developed by Port engineers and the consulting engineering firm of Jordan/Casper/Woodman/Dobson is a variation on the traditional railroad turntable.

What it does is to enable the Port's 13-acre Outer Harbor Berth Six, operated by Crescent Wharf & Warehouse Company, to share two of four towering A-frame gantry cranes stationed at the adjacent Sea-Land Terminal, in spite of the fact that the Berth Six wharf is at a 60-degree angle to Sea-Land's quay.

Surmounting several limitations, the Port of Oakland's engineers invented a system whereby the crane is driven onto special hydraulically-powered "trucks" set in curved trenches below crane-track level.

The wheeled trucks themselves travel on subsurface tracks, and trundle the massive crane around the bend, where it can meet the next set of straight wharf tracks.

A new multi-purpose ship calls at Oakland

The first of three versatile new container-carrying cargo liners ordered into Italian Line's West Coast-Mediterranean service recently called at the Port of Oakland's Outer Harbor Berth Six.

The 611-foot, 17,600 dwt D'Albertis will be joined within the next few months by new-built sister vessels Da Mosta and Pancaldo, linking Oakland and other West Coast ports to Barcelona, Marseilles, Savona, Naples, Genoa, Leghorn, Valencia and Cadiz.

The ships, each equipped with three Liebherr twin cranes for handling of outsize cargo and heavy lifts, have a maximum capacity of 706 TEU, both in 20-foot and 40-foot containers, including reefers. In their normal configuration they will carry 480 TEU of containers in two cellular holds, with three holds and four tweendecks for pallets, rolling stock, breakbulk and unitized general cargo.

Chinese port engineers at Oakland



CHINESE PORT ENGINEERS CHECK OAKLAND—Fourteen high-ranking harbor engineers from the Chinese mainland visited the United States recently and concluded their study-tour with an inspection of the extensive container-handling facilities of the Port of Oakland, the West Coast's leading general cargo export gateway to the Far East. Heading the delegation was Mrs. Kuo Tsien, second from left, Vice Minister of Communications of the People's Republic of China, and Vice Chairman of the Council of the Chinese Society of Civil Engineers. Mrs. Tsien smiled in front of two of Oakland's 16 gantry container cranes along with, from left, Robert Crandall, Marine Terminals Manager, Port of Oakland; Captain Nelson Tsui, Operations Manager, Oakland Container Terminal Company; and Li Min, deputy head of the PRC delegation and a member of the Council of the Chinese Society of Civil Engineers.

Port aids many tri-county projects

Port of Portland "Portside":—The Port continued to support economic development projects in the tri-county Port district through its technical assistance program in 1978. Eight projects have now been completed and three more are currently in progress.

In the Multnomah County Regional Industries Study, the Port examined employment trends by specific industrial classifications for the period 1972-1976, comparing changes for Multnomah County to 19 subregions in Oregon and Washington.

The Port assisted Washington County in the preparation of its Overall Economic Development Plan (OEDP), which was approved by the Economic Development Administration in September 1978.

The City of Estacada and its Industrial Park Advisory Committee received assistance in the preparation of a promotional brochure for the city-owned industrial park. The Port also prepared a report outlining a plan for tenant location within the park.

The Port was involved in the analysis of a 338-acre site in the City of Sherwood's northeast industrial area. Numerous concerns were addressed in this study including costs of extending utility services, development constraints, finance methods and grant opportunities.

An industrial survey, which examined land use trends, business site selection criteria, and general problems businesses experience, was conducted and analyzed by the Portland Chamber of Commerce and outlying tri-county chambers with Port assistance.

National commission for port policy

"Hinterland" Antwerp:—The new «National Commission for Port Policy» was officially installed by the Minister of Transport, Mr. J. Chabert, at the end of June 1978. This Commission's task is to study the various aspects of transport, investment, industrialization and the economy in general which have an effect upon national port policy.

In his address the Minister pointed out that the Commission's first job was to make a thorough analysis of the developments which could be expected with regard to world trade, the specialization in certain kinds of traffic, the European economy, the possibilities of industrialization and the means of transport involved. Such a forecast forms the necessary and essential basis for calculating the costs and benefits of investments, which is of decisive importance if state money is to be properly invested.

The second important task with which the Commission is entrusted is to give advice with regard to the harmonization of the conditions of competition between Belgian seaports.

The third task of the Commission is to define national port policy in wider, international context with an eye to the competitive relations which exist between Belgian seaports and other European ports.

Container traffic first six months 1978 at Antwerp

Port of Antwerp Promotion Association:—From data, provided by the General Management of the Port of Antwerp, it results that container traffic in Antwerp continues to grow.

During the first semester of 1978 in total 177,681 containers were handled, which represents an increase of 18,784 containers as compared to the corresponding period of 1977, empty containers not being taken into account.

This raised the total containerized goods traffic to 2,854,200 tons, representing an 11.3% increase against 1977 (+19.5% outgoing and +1.2% incoming).

Port of Antwerp Promotion Association:—The Dutch ministerial Cabinet approved of the treaty with Belgium, dealing with the installation of a new radar chain along the Western Scheldt. The apportion of the installation costs—beared for 10% by the Netherlands and for 90% by Belgium—is based upon a report, indicating the number of vessels on the river Scheldt bound for a Dutch port on the one hand and for a Belgian port on the other.

Container terminals hit by rising costs: NPC

Bristol "Portfolio":—The soaring costs to port authorities in providing and operating terminals for Container operations are emphasised in the latest issue of the National Ports Council Bulletin, published recently. Referring to "the savage effect of inflation since 1972", the authors point out that this effect bites not only on the current costs of operating a container berth, even ignoring depreciation charges on a replacement cost basis, but also on the capital cost of new berths.

"In order to break even, the box charge (the charge per container handled) for a berth commissioned in 1972 should have been increased by over 60 per cent by the end

of 1977 just to cover inflation; the adequacy of such an increase assumes a realistic charge was made in the first place. Likewise, and even more daunting, a berth commissioned by the end of 1977 would be around 130 per cent more expensive to run than a similar one built in 1972."

The article, on "Costs and Charges" has been jointly written by Mr. A.B. Reid of Victoria Deep Water Terminal Ltd. and Messrs. H.K. Dally and D.J. Wellard of the National Ports Council. It is one of three articles in the latest issue of the Bulletin which have been reprinted from "Containers—their Handling and Transport" which was published earlier this year.

The article points out that the heavy investment entailed in container terminals—the capital costs at the end of 1977 was estimated at between £11.4 m and £14.2 m—makes it a question of paramount importance that the pricing for use of the facilities is right. If appropriate criteria are established and followed for new investment, in theory at least no container facilities should be running at a loss. The authors set out the following major pricing objectives to secure financially viable container operations:

- (a) to yield a revenue from users sufficient to meet the financial objectives of the port authority.
- (b) to promote the efficient and full use of the facilities provided by the port, and
- (c) to provide an adequate return on investment so as to give the port a positive incentive to improve and develop the facilities.

The authors also point out the adverse effect on other port operations of unitisation, as follows:

"It is generally the case that the transfer of traffic from general cargo to unitised cargo has severely depressed revenues received by ports, tonne for tonne, and this, together with the heavy investment of the ports in container facilities and the liability of the under-utilised conventional berths, has had a major impact on the financial structure of the ports concerned and indeed the industry. In these circumstances, and where there is little likelihood of increased throughputs generated other than by way of growth in UK trade, there are few options but to increase charges to a level that will render these container facilities viable in their own right. The alternative is cross-subsidisation or insolvency."

Government O.K.'s Mersey freightliners

"Portfolio" Bristol:—Whilst the Port of Bristol Authority and Freightliners Limited, the National road-rail container haulier are conducting a joint feasibility study into the need for a freightliner terminal at Bristol's Royal Portbury Dock Mersey Docks and Harbour Company have been given the go-ahead for just such an £800,000 terminal.

Following the dock company's submission on May 16th the Secretary of State for Transport, Mr. William Rogers, announced during a visit to Liverpool in October 1978 that a 50% grant towards the project will be made under Section 8 of the Railways Act of 1974.

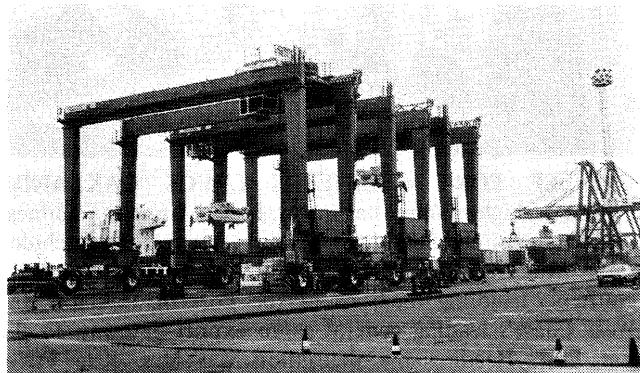
Mr. Rogers said that he had been impressed by the case made for grant-aid by the dock company. It was a measure of the importance of the project that the Government had acted so quickly.

At present containers are transported by up to 60 vehicles a day from Royal Seaforth to the rail terminal at

Garston, for some part through the city centre.

The new terminal consisting of two tracks served by a gantry crane, is expected to handle its first train in the autumn of 1979.

Felixstowe adding six Transtainer® cranes to port operation



1st (3) of 6—35 MT Paceco/Vickers Transtainer cranes at Port of Felixstowe, Eng. Portainer in background.

The first three of six Paceco/Vickers Transtainer® cranes ordered earlier in 1978 have been received and put into operation by Felixstowe Docks and Railway Company at its ultra modern port facility at Felixstowe, England.

The 35 Metric Ton Rubber Tired Transtainer cranes have a 74 ft. span and will stack 20'40' ISO containers four high and six wide plus a tractor roadway.

The last of the six Transtainer cranes ordered is scheduled for completion and delivery in early 1979.

Liverpool news

• Surcharge cut not enough says M.D.H.C.

The India Pakistan Bangladesh Conference has reduced its surcharge on the Port of Liverpool to 12½ per cent.

But the long-awaited decision brought a sharp retort from the managing director of the Mersey Docks and Harbour Company Mr. James Fitzpatrick.

"The reduction is welcome", said Mr. Fitzpatrick, "but the surcharge is no longer justified in any shape or form".

The decision to reduce both the inward surcharge of 19 per cent and the outward levy of 17½ per cent took effect from 28th November 1978.

Throughout 1978 the Mersey Docks and Harbour Company and the British Shippers Council have been pressing for the outdated surcharge to be dropped.

The I.P.B. Conference said their decision to follow with a reduction to 12½ per cent was taken "having noted signs of some stable improvement in the turn-round situation in Liverpool".

• South Docks development one step nearer

Redevelopment of Liverpool's South Docks came one step nearer with agreement in principle between the Mersey Docks and Harbour Company and Gerald Zisman Associates Limited for a lease of the Albert, Salhouse and Canning Docks south of Pier Head in Liverpool.

Documents have now been exchanged and it is expected that the formal agreement will be signed early 1979.

(Continued on next page bottom)

Government requires a detailed costed plan

"Port of London":—On 6 July 1978, the PLA submitted recommendations to the Secretary of State for Transport designed to provide a practicable way of moving towards a viable port.

The key features of the PLA's recommended strategy, details of which were published in Information Paper No. 2 'The Challenge of Decision New were:—

1. The transfer of PLA cargo handling operations from the Royal Group of Docks to India and Millwall Docks and Tilbury during the first half of 1979.
2. The retention of the India and Millwall Docks for a further period under strictly monitored conditions. The length of this period would depend entirely on successful performance.
3. Reductions in the PLA manpower strength (both registered and non-registered personnel) of some 650 directly related to the transfer of activity from the Royal to India and Millwall and Tilbury Docks, and a further 1,400 arising from an improvement in working practices, a reduction in the number of medically categorised men, and general manpower reductions throughout the PLA arising from productivity and other rationalisation measures.
4. Government assistance in obtaining finance for re-structuring the port, including severance payments.

The development planned for this strategic 50 acre site will bring back trade and commerce to the area. It includes, offices, shopping, leisure and amenity facilities, among them a maritime museum and river-side walks, service roads and extensive car parking.

The Albert Docks warehouses which are listed as buildings of historic and architectural interest, will be restored and put to a variety of uses to meet the changing needs of central Liverpool and Merseyside.

The proposed lease will be for 125 years and should ensure the Dock Company's continued participation in the increasing benefits from the progressive development of the three docks.

● Government study slammed

A survey by the Department of Employment has been condemned as out-of-date and damaging to areas like Merseyside by Dock Company Managing Director, Mr. James Fitzpatrick.

It names industries and areas which it claims are the country's black-spots for industrial strife. But the facts and figures only cover the period from 1966 to 1973.

The survey—a full report is to be published shortly—claimed that eight groups of workers including dockers, were responsible for 30 per cent of strikes, and it named Merseyside as one of the blackspots.

"But it says nothing of today's situation or the situation since 1973, which after all is five years ago", added Mr. Fitzpatrick. "The record among Liverpool dockers couldn't be better. In 1972 we lost 27 days per man through industrial stoppages.

In 1977 it was down to 2¾ days—a record as good as and better than many other ports and industries elsewhere in the country.

The Secretary of State also received the comments of local councils, trades unions and groups who have an interest in the future of the dockland area.

In a statement in the House of Commons on 31 July, Mr. William Rodgers, Secretary of State for Transport, said that the Government broadly endorsed the PLA strategy but on the understanding that the Royal Docks remained open.

Mr. Rodgers said that the Government "is prepared to provide financial assistance towards severance costs for registered dockworkers and staff on condition that the Authority sets in hand urgent measures to secure the most rapid possible rundown of surplus manpower and on the understanding that no steps are taken towards the closure of the Royal Docks."

The Secretary of State has said that as the basis for Government financial assistance he will require a detailed costed plan, after further discussions with the Trade Unions, designed to establish specific targets of manpower reductions. No financial aid will be provided until this plan has been submitted by PLA and approved by the Government.

Mr. Rodgers made it clear that he expected the Trade Unions to fulfil their undertaking to co-operate fully not only in an urgent examination of the size and structure of the workforce but also in an examination of working practices and industrial relations agreements in all areas to achieve cost savings and greater flexibility. It was on the understanding that this cooperation would be immediately forthcoming that the Government had not endorsed closure of the Royal Docks.

If a satisfactory plan is produced the Government will make available £35 m in grants towards severance costs. It will also guarantee any necessary backing for further borrowing, up to £10 m, for the financing of the organisation while manpower reductions are being achieved.

The Government did not dispute the PLA's traffic forecasts, which were supported by the National Ports Council. They recognised that the major problem facing the port, surplus manpower, is compounded by the fundamental structural changes in the pattern and nature of traffic. With the further development of containerisation and unit loads the more labour intensive general conventional cargo traffic continues to reduce.

Following the Secretary of State's decision, PLA management and the trades unions have been meeting on a twice weekly basis in a Joint Committee consisting of 12 members from each side, to discuss the detail to go into the plan.

Traffic forecasts for the UK as a whole, and the PLA, have been discussed in detail and figures have been agreed as a planning base. A number of measures have been discussed which are aimed at reducing costs and improving profitability. Discussions are also taking place on the resources necessary to handle the forecast traffic, the capital expenditure proposals, and other aspects such as real estate, financing and so on.

Voluntary severances have already begun with the first group of non-registered staff due to leave in November.

In September the PLA issued unaudited accounts for the first 28 weeks of the year. Compared with the same period for 1977, the figures showed that during the first 28 weeks a loss of £4.7 m was incurred compared with £3.3 m for the corresponding period last year.

Due in part to the continuing depression in world traffic and the continuing uncertainty over the future of the Upper Docks, tonnages generally were below the levels forecast with throughputs of conventional breakbulk cargo handled at PLA berths amounting to 622,000 tonnes, some 297,000 tonnes below last year's figures—a reduction of some 32 per cent.

Reserves, which at the end of 1977 stood at nearly £2 m, had been replaced at 14 July, by an accumulated deficit of £2.7 m.

The effect of the drop in conventional breakbulk cargo on the Upper Docks, where much of the PLA's share of this traffic is handled, has resulted in a loss of £4.3 m for these docks in the first 28 weeks of the year, before allocating general overheads, interest payments etc., compared with a loss of £4.1 m for the whole of last year.

The Joint Committee is seen by both unions and management as a forum for discussing current problems and the measures needed to implement the overall strategy now endorsed by the Government.

Garston's new container terminal operational

BTDB London:—A new container terminal developed by the British Transport Docks Board in conjunction with Irish Sea Ferries at Garston Docks on Merseyside will be operational in mid-January.

The new terminal, built on the site of former coal shipping berths in North Dock, will provide improved facilities to handle the growing number of containers passing through the port.

In the past five years throughput of the original container berths at Stalbridge and North Docks, operated by Irish Sea Ferries and more recently also by Unimar Lines, has increased from 25,000 units annually to 35,000 units in 1978.

Commenting on the development, Mr. Tony Winfield, Garston's new Docks Manager, said that the new terminal was coming into operation at a time when Garston was experiencing a rapid increase in demand.

"The extra facilities will ease the pressure on the existing terminal and provide valuable scope for expansion," he said.

BTDB to undertake major development at Lowestoft

The British Transport Docks Board are to go ahead with a major development at the port of Lowestoft, more than doubling the size of vessel which will be able to use the port's commercial Inner Harbour.

The scheme, which involves deepening the entrance channel by 1.5 metres, is expected to take a year to complete and to cost in the region of £½ million. When the work is finished the channel will have a width of 22.5 metres and a depth of 6.2 metres below ordance datum, allowing vessels of up to 6,000 tonnes to be handled at the port.

Lowestoft Docks Manager, Robin Nicholls, welcomed

the Board's decision. "This is really excellent news for Lowestoft. The project will allow the port to cater for more of the shipping lines wanting to take advantage of our location as Britain's most easterly port.

Prospects for 1979 by the Mayor of Esbjerg, Henning Rasmussen

It seems likely that 1979 will prove to be the most decisive year in the history of the development of the Port of Esbjerg. The decision will be taken during 1979 as to whether or not the existing maximum draught of the five kilometre approach channel to Esbjerg can be increased from the present 9.3 metres to perhaps 13-14 metres. The main force behind this desire is the co-operative power station group ELSAM, as an increased channel draught is a definite condition for a proposed, gigantic extension of the Vestkraft power station.

— Both the actual Port area and its annual turnover have increased enormously within the past decade.

— The development areas towards the east involve at least two million square metres which will naturally be placed at the disposal of the Port. My personal expectation is that extensions will be made with a growth average of approximately 100,000 square metres per annum during the next 15 years. This is considerable when one considers Esbjerg Borough's average sale of commercial and industrial sites—between 120,000 and 140,000 square metres per annum. Nevertheless I have such strong faith in the Vestkraft project and the other inherent advantages for the Port that I judge these figures to be absolutely realistic. In addition, the figures of recent years have shown that rail transport of goods to and from Esbjerg is steadily increasing. Danish Rail's long-term planning includes a new Terminal at the Port of Esbjerg requiring a very large area.

— Esbjerg is a government-controlled port, contrary to ports like Aalborg, Aarhus or Copenhagen.

— Esbjerg is the only Danish alternative to a number of foreign ports. The trend involving rapid increase of operational transport costs clearly points to Esbjerg as the natural choice for an extremely suitable traffic junction. The Port's position ensures fully rational incoming and outgoing transport. This alone is sufficient to safeguard future developments which cannot—in any event—be hindered by controversial discussions of any nature.

Dunkerque news

• 1978, 9 MONTHS TRAFFIC: +8%

Provisional figures released show that September as usual is not a busy month (2.43 Mn tons) but the overall traffic keeps growing over 1976 and 1977 levels and Dunkerque growth figures rank second after Le Havre.

IMPORTS	Jan/Sep	Jan/Sep	%
(,000 tons)	1977	1978	78/77
TOTAL	20,003	20,745	+ 4
EXPORTS	Jan/Sep	Jan/Sep	%
(,000 tons)	1977	1978	78/77
TOTAL	4,026	5,227	+30
TOTAL TRAFFIC	24,029	25,973	+ 8

(Contained on page 38)

**Port service
must be
multi-purpose
and permanent**



**PORT OF
ANTWERP**

The multi-purpose and "round the clock and year" activities are some of the assets symbolized by the new P.R.-emblem, stressing the fact that the Antwerp service to port users **AT ALL TIMES** meets all requirements of international trade and transport.

Information: General Management of the Port, Town Hall, Antwerp, Belgium.

(Continued from page 36)

Among other things, one notices

- the stability of oil imports (Government's Policy)
- the drop in imports of iron ore (Steel Crisis)
- the sharp rise of imported coals (reversion to coal for power stations)
- the drop of imports of sand (Building Crisis).

As for exports, apart from the oil products and general cargo virtually all figures show a growth and sometimes a very dramatic one indeed: 6 mn tons ought to be achieved by the end of the year.

● NEW PASSENGER FACILITIES

Since July 1976 when Dunkerque West new Cross Channel terminal became operational, over one million passengers used the gradually improving facilities but the time for another major improvement has come and both the Port Authority and the Chamber of Commerce of Dunkerque have agreed to build new tourist accommodation. Apart from the already existing amenities, the new marine terminal will consist in a new cafeteria (320 sq.m.), a bank (40 sqm), a public waiting hall (110 sqm) and a ticket office. Extra parking spaces will be surfaced and playing grounds with trees and grass provided for. These extensions should be ready by June 1979.

Remodelling of la Pinède Dock in progress

Marseilles:—As the limits of the extension of the traditional docks of Marseilles have already been attained, the only way of adapting these docks to new types of traffic is by remodelling the existing dock basins. Naturally, Fos still has extensive possibilities for the creation of new facilities requiring large ground surfaces on deepwater quays. But at Marseilles, apart from the deepwater quays at the Northern docks and the adaptation of the Joliette and Arenc docks to RO/RO traffic, the central area of the port could offer only narrow quays and dock basins that are ill-adapted to the needs of modern traffic. With the remodelling of La Pinede dock, a new stage is starting in the redevelopment of this area.

The most obvious requirements are those of RO/RO traffic which constitutes 30% of the goods in transit through Marseilles, but the requirements of container traffic, carried on coastal or conventional ships, must also be taken into consideration.

The work of remodelling the area has therefore been scheduled to take place in several phases. The first phase, which is now in progress, consists in filling in the end of the basin located between Mole E and the Traverse de la Pinède. The land thus reclaimed will offer 15,000 m² of ground surfaces, serving two RO/RO berths, by the end of 1978.

The cost of this remodelling work is very reasonable: 35 million francs for 500 m of quays and four RO/RO berths. The work schedule provides for the completion of the final quays by 1981.

Eight Algerian student port officers trained by P.M.A.

Port of Marseilles:—At the request of the Algerian National Ports Office, the P.M.A. is providing, for the

second consecutive year, a practical training course for eight Algerian student port officers.

The purpose of the course is to give the students the benefit of the P.M.A.'s knowledge in the organization and operation of a Harbourmaster's Office and to train them in practical aspects of port operations.

The organization of this course comes within the framework of the vast programme of co-operation between the P.M.A. and the Algerian National Ports Office, which was started in November 1976 and covers many aspects of port activity, and which illustrates the excellent relations existing between the Algerian Ports and the Port of Marseilles.

Bremen International

She is intended for the North America & Canada/Australia liner-service.

● Bremen increases shipment of complete factories

Freighters of up to 45,000 tons, with an 11-metre draught can, w.e.f. immediately, utilise the initially 450 m (later 850 metre)-long, new East-quay in the western section of the port. The 400 metre, in depth, and the more than 200,000 sq-m operational area immediately behind the quay (equipped with 5 shore-cranes of up to 24-ton capacity and a heavy-lift bridge of 80-ton capacity) crane-rails, railway trackage, roads leading to 5 autobahns, sheds etc.,—supplement the 1.5 km-long quay (with 140,000 sq.m of shed-space and a further 200,000 sq.m of open space) on the western side, and is especially designed for the collection, assembly and shipment of complete factories, such as saltwater-desalination plants, sugar-factories, nuclear-power plants, steel-foundries and engineering-factories. The ever-flexibly administered port installations at Bremen and Bremerhaven take the latest developments into account; with operations ranging from on-forwarding centres, to distribution and collection centres for massive general-cargo quantities and complete major-plants.

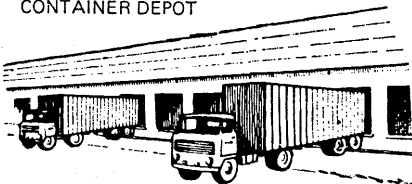
● Cargo handling in 1978 increased by 9% in Bremen/Bremerhaven

Following a world-wide cargo-handling recession in recent years, the Bremen/Bremerhaven port-group broke a new record in 1978 in attractive general-cargo handling in even exceeding for the first time the 1974 boom-year. This German port-group attained a general-cargo proportion of 61.2% of the total cargo handled (25 million tons—2 million, or 8.7%, more than 1977). Participating here in this enormously high general-cargo share in 1978 was the modern sea transport modes (container, ro-ro, lash) with 38.2%.

Over the last 12 years Bremen, for maintaining and increasing one of the most modern port-groups, has invested some DM 600 millions for industrialising port trade in Bremen and Bremerhaven, ranging to Germany's largest container-terminal, over the first port-data bank in the world from the exemplary port-expert school for training the requisite highly-specialised port-worker of the future. New port installations in Bremen and the second extension to the Bremerhaven container-terminal (both to be completed in 1979) cost about another DM 250 millions,

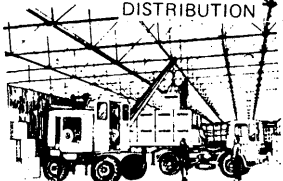
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CONTAINER DEPOT

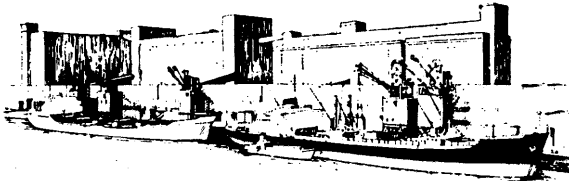


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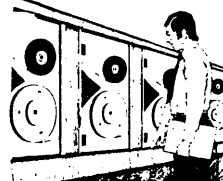
WAREHOUSING/
DISTRIBUTION



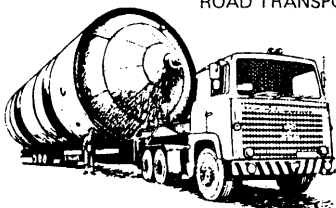
BULK TRAFFICS



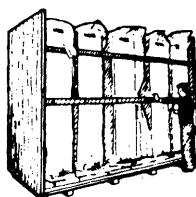
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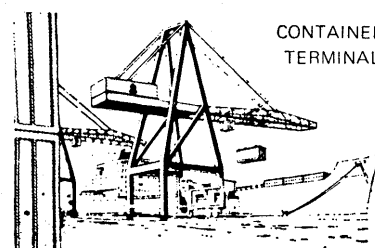
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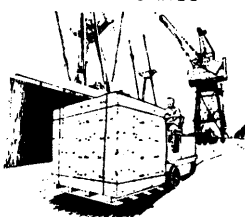
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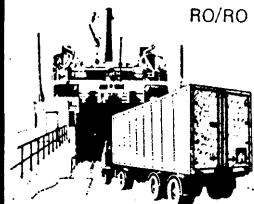
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Four general cargo handling companies report: more cargo, major investment

"Port of Hamburg Topics":—The dynamism of the many private firms of Hamburg's port economy is an extremely important precondition for continuing positive development in the biggest German seaport. Competition among the firms themselves increases the efficiency of the port as a whole and gives it the opportunity quickly to adapt itself to all technical changes in seagoing traffic.

Lager- und Speditions-Gesellschaft

With an estimated sea-borne cargo turnover of about 2.2 million tons, the share of the Lager- und Speditions-Gesellschaft in the Port of Hamburg's total general and bagged cargo traffic 1978 will increase from approximately ten per cent to about 14 per cent. In the first half of 1978 this port company handled 1.4 million tons—about 20 per cent more than in the first half-year of 1977. The Tollerort Terminal (Sheds 90/91) accounted for some 800,000 tons of this.

Containers played an important role in this upward trend. 32,722 containers (20-foot units) were handled at the Tollerort Terminal in 1977; in the first six months of 1978 the figure was already 27,117 containers.

More than 60 liner services call regularly at the terminals of the Lager- und Speditions-Gesellschaft—the Tollerort Terminal as well as Kuhwerder (Sheds 69 and 70, and Grevenhof) and the Kühltransit AG: an average of almost 120 ships per month.

The Tollerort Terminal quay is over 1.1 kilometres long and has seven ships' berths. 30,000 square metres of covered shed area are available for the packing and unpacking of containers, as well as for the interim storage of general cargo of every kind.

Sloman, Schöer & Co.

The wharfage company of Sloman, Schöer & Co. (Sheds 64 and 65) wound up its investment programme for Shed

65 by commissioning a new storage shed, bringing the covered total surface at this shed to 14,500 square metres. During the past two years alone the company invested a total of 4 million DM in modernisation and expansion of the storage and handling facilities at Shed 65.

Together with Messrs. Jordaberg, with whom a cooperation agreement has existed since 1976, and the Hanseatic City of Hamburg, it is planned to extend the Kamerun pier from a quality and quantity point of view in order to gain access to traffic growth in modern transport sectors.

The company is now a modern, efficient quay operator with a connected large-scale storage unit and million installation. The undertaking stores, inter alia, non-ferrous metals as well as coffee and cocoa. In this respect it is a registered storage house with the commodity exchanges in London. Twelve liner services or shipping companies are "at home" with Sloman, Schöer & Co.

Unikai Hafenbetrieb

In the first half year of 1978 the quay operators Unikai Hafenbetrieb GmbH, a subsidiary company of Hapag-Lloyd, transshipped some 600,000 tons of cargo of all sorts. About two thirds of the volume were conventional goods—and a third involved containers.

Hapag-Lloyd ships are not the only vessels to berth regularly at Unikai in Kaiser-Wilhelm-Hafen. Other shipping companies are also regular callers here. A total of 32 lines calls at the terminal—among them two full and four semi-container services.

Eurokai

With its terminal in the Container Centre Waltershof the Eurokai KG a.A. achieved in 1977 an increase of 6.6% in turn-over yield. Container traffic accounted for 80% of total cargo handling. A further positive development is also expected for the future.

Since the spring of 1978 the Eurokai Terminal has been handling vessels of the Dart Line, a new major customer whose expected transshipment volume is about 15,000 containers per annum. Since the middle of 1977 ships of the Hansa-Linie have also been serviced, equipped with hinged stern ramps.

Hamburg Port opens first stage of giant fruit center

Tokyo Representative Office of Hamburg City:—The first stage of a huge HHLA Fruit Center was opened recently at the Port of Hamburg. The facilities provide storage shed space of 25,000 square meters which includes refrigerated rooms, a truck traffic interchange and various fruit processing and handling facilities.

Eight refrigerated rooms account for 5,000 square meters. The balance of 20,000 square meters is taken up by two storage sections with a sorting and shipment section.

Six of the new refrigerated rooms are equipped with a Rollax system. Fruit is stored in three levels here.

The refrigerated rooms afford optimum storage condi-

(Continued from page 38)

whilst a third, still mightier extension of the Bremerhaven container-port in the early 80's (already in the planning stage) will cost, again, about DM 300 millions.

• World's first port-computer installation functions successfully

The introduction has been finalised of the first port-data bank COMPASS, the world's first information-to-different-branches system, in which are included all the operational units of the largest German port-handling organisation, the Bremer Lagerhaus-Gesellschaft in Bremen and Bremerhaven. After a prolonged trial-period the forwarding field is now feeding its entire export documentation through the Export I section of the Siemens-developed COMPASS system. Additional to forwarding and cargo-handling undertakings, customs and port-authority divisions are also subscribers for COMPASS information. Hereby the main step has been taken toward the new standardisation arrangement for the Bremen ports.



tions for sensitive fruit at temperatures which can be precisely controlled between minus 2°C and plus 13°C and kept at constant temperatures ($\pm 0.5^\circ\text{C}$) for as long as required. In all rooms the humidity can be adjusted up to 90% to prevent drying of the fruit. Two rooms in the new facility can provide temperatures as low as minus 25°C.

Another section of the first development stage to become operative was the new "Interchange"—the arrival and departure control for truck traffic. A data monitoring screen here linked directly with the data processing center for fruit handling operations ensures smooth and swift clearance of loaded vehicles.

This concentration of fruit handling operation creates optimum conditions for the sorting and despatch to consignees of all kinds of fruit. The grouping of loads for despatch by road or rail is carried out in the sorting section using the terminal's own EDP system. Punctual supply of pre-information ensures prompt despatch.

When the center is completed in 1979, it will cover a total area of 700,000 square meters, provide eight berths for all types of deep-sea vessels and afford 75,000 square meters of covered space, including 90,000 cubic meters of refrigerated space, as well as numerous other service facilities for fresh fruit handling.

23 per cent container handling rise in first half of 1978

"Port of Hamburg Topics":—Yet another great step forward! This is the impression gained from the Port of Hamburg's container statistics for the first half of 1978.

287,000 containers (20-foot basis) were handled in the months from January to June—53,000 more than in the comparable period of 1977 (134,000). And the upward trend is continuing.

Taking the semi-annual result as the basis for an overall estimate, it can be expected that in 1978 a total of some 580,000 containers with a gross weight of 5.1 million tons will find their way via the Port of Hamburg's installations—a good 100,000 more than in the year before.

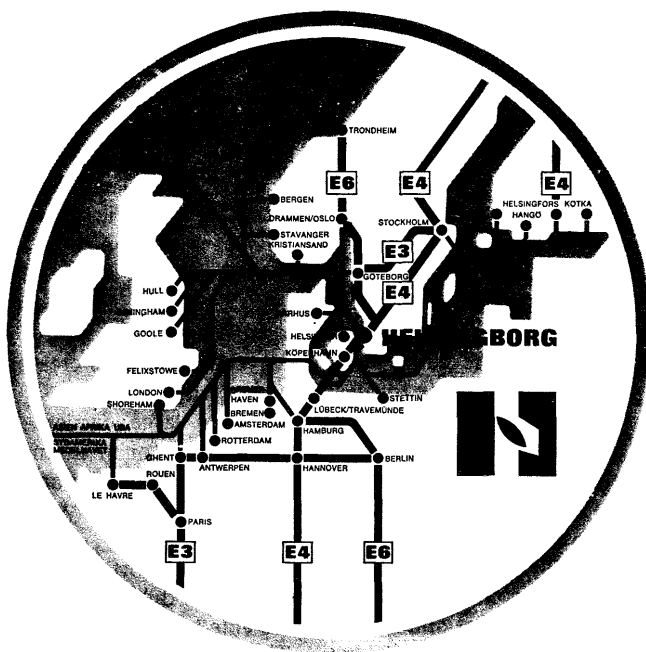
A few more interesting facts can be gleaned from the container statistics:

Of the container total, just under 82 per cent were loaded and just over 18 per cent empty units.

The average weight per container saw a minor increase to 13.6 tons.

(Continued on next page bottom)

YOUR PORT



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Terminals for all kinds of commodities offer appropriate storing facilities such as silos, cold stores, tanks etc.

A new port project comprising 25 hectares of land area is under construction and will be ready for operation in 1982. The terminal unit to be known as the West Harbour is designed to include two basins with wharves of 1,000 m length and up to 13 m depth. Four RoRo berths will be available for deep-sea and short-sea vessels.

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Rotterdam wants to enlarge port entrance for ships drawing 72 feet

"Rotterdam Europort Delta" 78/3:—Today the entrance of the port of Rotterdam is suitable for ships drawing 68 feet which means that such vessels are able to enter port with the desired clearance between keel and channel bed during at least 75 percent of the theoretical tides on both sides of high water. The 72-foot operation—cost 88.2 million guilders in 1976 prices—means inter alia that the approach channel in the North Sea must be adapted. Removal of a series of submerged dune ridges in the sea section off the Rhine mouth in recent years has created a safe approach route for deep-drawing tankers.

'Accessibility of our port to very large carriers will remain a determinant, also in the future, for maintenance of Rotterdam's position as Europe's biggest oil port and for our competitive capability in general,' said Mayor and Aldermen in their proposal to the City Council.

If the proposed enlargement of the Rotterdam port entrance comes off, 84.5 per cent of the deep-drawing tankers (60 feet and over) will be able to call at this city in 1979 without any problems. This percentage can be increased to about 93 by means of special procedures, such as using high tide. In favourable conditions even vessels with a draught of about 75 feet will be able to enter.

As reported in a previous issue a new commodity flows model will be published shortly, with prognoses of traffic developments in the port of Rotterdam. It will contain wholly new estimates of future oil landings, computed on the basis of the following assumptions:

- Oil production will no longer (be able to) comply with demand in the (near) future. In the year 2000 world oil consumption must not exceed approximately two and a half times the current level.
- The developing countries must be given at least a constant share in oil consumption.

For this reason the maximum growth of oil consumption in the Netherlands and the other industrialised countries must be confined to the rate of world oil consumption. For the Netherlands, which is now using about 25 million tonnes a year, this would mean a maximum domestic consumption of 50 million tonnes in the year 2000.

On the basis of these new starting-points landings of crude oil in the Rijnmond ports are estimated at 123 million tonnes in 1980, 143 million tonnes in 1985, and

The container share of the port's total general cargo handling, the "containerisation degree", rose from 25.7 per cent in 1977 to just under 30 per cent in the first half of 1978.

The trend towards the door-to-door container is also rising; the proportion of the containers loaded or unloaded in the port is only about 28 per cent.

The relationship between container reception and dispatch is practically equal.

At the moment no end is in sight to this upward trend in container traffic. According to expert estimates, the coming year will already see over 1,000 container ships sailing between the ports of all the continents (the present figure being 770).

150 million tonnes in 1990. If one adds the oil which is re-exported (all over western and northern Europe in smaller vessels), then the volumes of oil which will be handled in the port of Rotterdam, will be 136 million tonnes in 1980, 157 million tonnes in 1985 and 165 million tonnes in 1990.

In these calculations the economists of the Rotterdam Municipal Port Management have assumed that the city will retain its relative competitive position by adapting the port and its approaches in time to new developments in the commodity flows and in shipping. If the port were not made accessible to ships drawing 72 feet, oil landings would diminish in the long run. The researchers expect that in that case the maximum supply would be 'only' 110 million tonnes in 1980, 130 million tonnes in 1985 and 135 million tonnes in 1990.

The new estimates for Rotterdam port landings and transit of crude oil are determined in part by the expected output and distribution pattern of the North Sea oil. It is assumed that the annual North Sea production will grow from 155 million tonnes in 1980 to 238 million tonnes in 1985 and 260 million tonnes in 1990 after which it will taper off.

About 12 per cent of the North Sea oil is expected to reach the consumers via Dutch ports. Over 50 per cent of the production will be routed via Great Britain and Scandinavia. For Rotterdam this will mean a temporary considerable drop in the traditional transit of oil (from the Middle East for example) to these countries. It will increase again in 1990 to recover at the 1976 level in 2000.

Mayor and Aldermen propose to limit the depreciation period for the 72-foot project to fifteen years in view of the uncertainties surrounding traffic developments in the longer run.

They observe that an enlargement of the port entrance will not yield any significant extra income. The earning capacity calculation is based almost entirely on the income losses that will result from a failure to deepen the approach to the port of Rotterdam. If the present-day situation remained, income from seaport dues would diminish in the long run.

In preparing the earning capacity prognoses, it has been assumed that the current 'channel surtax' comprised in the seaport dues for crude oil landings (averaging 32.13 cents per tonne, rate base 1978), will not undergo any extra increase and that normal increases in seaport dues, including channel surtax, will not result in traffic losses.

Maintenance costs would have to be borne by the State of the Netherlands insofar as the deeper channel comes under its administration (1.2 million guilders annually) and by the City of Rotterdam for the section of the channel within its territory (0.1 million guilders a year).

The construction of the deep approach off the mouth of the River Rhine was commenced at the time on the basis of a scheme providing for two-thirds of the cost to be borne by the State and one-third by the City of Rotterdam. When the port entrance depth had to be improved beyond the existing 57 feet, the State withdrew from the scheme,

saying that the City of Rotterdam should bear the full cost and recover it from the users.

Although the new scheme differed from what is usual in other countries (in all kinds of competing ports these costs are often borne in fully by the State), the Rotterdam City Council accepted it, being convinced that the development of the port must not be halted. But Mayor and Aldermen stressed that this could not be a precedent for making the City fully responsible for the investment again this time.

Recent events have shown that the most carefully computed prognoses may be upset by unforeseen developments. There is no denying that an investment of this size involves a certain financial risk. Mayor and Aldermen feel that this alone is sufficient reason for the State to take a share in the investment costs.

Talks with the Ministers of Transport and Waterways and of Economic Affairs have meanwhile begun. Mayor and Aldermen will submit final proposals to the City Council as soon as agreement is reached on an acceptable cost-sharing.

Mineral oils and Animal feeds up; total 1978 tonnage dips slightly

Vereniging "de Amsterdamsche Haven":—According to a forecast, the Port of Amsterdam will post significant gains in the 1978 tonnage of mineral oils and animal feeds. By the same means, viz a trend based on the actual figures for the first ten months of 1978, the Economic Department of the Amsterdam Municipal Port Management, indicates that total 1978 tonnage in the port will only decline by 0.5 percent to 17.2 million tons.

The worldwide steel slump adversely effected iron ore cargo in Amsterdam as it did in most Western European ports. According to the forecast, Amsterdam will have handled 1.4 million tons of ore by the years end, down almost 45 percent from 1977.

This sharp decline was largely compensated by increases in mineral oils (up 13.7 percent to 5.3 million tons) and animal feeds (up 71.4 percent to 1.65 million tons).

Heerema named Port Alderman

"Haven Amsterdam":—Drs. Ennéus Heerema has been named Alderman of the City of Amsterdam in charge of the Port, Economic Affairs and the Airport. In his capacity of Alderman for the Port, he replaces Mr. C.H. Goekoop.

Rotterdam's big shore-based radar project initiated

"Rotterdam Europoort Delta" 78/3:—It is the intention for the new shore-based radar system to replace in 1983 the existing chain of shore-based radar which dates from 1956 and is now becoming obsolescent. The old shore-based radar system was designed to assist shipping when visibility is bad. But as the port grew busier, an expansion of radar assistance became necessary. The number of ocean-going vessels calling at the port of Rotterdam in 1956 was about 20,000, compared with some 30,000 vessels today whereas the size of ships too, has shown a sharp increase.

It has appeared to be impossible to adapt the existing shore-based radar equipment further to new developments. For this reason the City of Rotterdam and the State decided in 1975 to replace the old shore-based radar by a new vessel traffic management system.

The studies for the new shore-based radar system are

required jointly to answer two questions:

— How will the traffic management work out precisely in actual fact (what will ships be doing, who will be in radio contact with whom, how busy will it be during peak hours, etc.)?

— Can radar and other electric aids be refined to such an extent that they will be able to track all traffic movements and predict critical situations?

An important element in all this is moreover that business firms in the port and a number of authorities have responded in large measure to an inquiry into their ideas on an up-to-date vessel traffic management.

The activities of the preparation phase will result in a design for a pilot system by the end of this year. When it is decided to build and try out this system, this will take about two and a half years. On the basis of the experience gained in that period (how does the system work, how do the ships react, what are the people doing?) decisions can then be taken as to the installation of the definitive system.

The port of Rotterdam will then be equipped with an adequate instrumentarium to increase safety and efficiency. It will be built for the joint account of the City of Rotterdam, paying one-third of the cost, and the State which will bear two-thirds. The overall construction cost, including civil engineering, is estimated to be between 150 and 200 million. The agreement between the City of Rotterdam and the State has not yet adopted a standpoint about the question how far the vessel traffic management system should go. The studies now being undertaken will have to furnish the relevant information for this (political) choice. The agreement roughly describes the new system as follows:

— a shore-based radar chain to replace the present system, to be linked up with a form of visual presentation which must still be determined,

— expansion of radar coverage in the sea region off the mouth of the Hook of Holland port,

— extension of radar coverage to the port basins (the present system covers mainly the river),

— a data processing system linked up with the radar system,

— a possibility of visual presentation and data supply aboard ships, if possible.

Abandon existing cost-sharing for maritime access routes

"Rotterdam Europoort Delta" 78/3:—The (Netherlands) Seaports Consultation Committee recommends a basic scale under which the State would bear 80 per cent and the port administration 20 per cent of the cost of port entrances and waterways inland insofar as the latter are no part of the main waterways system. This is only a basis for cost share-outs since either party would be entitled to reopen discussion on the actual distribution of the cost of any new port project.

If the port administration feels that it cannot raise 20 per cent, it will open a discussion in which it will be required to show why its share should be less. On the other hand the State is entitled to prove a possible claim that the port administration should contribute more than 20 per cent.

The new proposition maintains the principle of shared port development costs, while recognising that the time-hon-

oured one-third contribution by the port administrations is too high.

It will be necessary, however, to find workable criteria for departing from the 20-80 scale so as to prevent long drawn-out and interminable studies of the cost distribution.

The Committee suggests as criteria the international competitive capability of the port in question, its socio-economic situation and the nature of the investments.

The scale is to be fixed for each individual project since the works in question differ in kind and extent. Sometimes they concern adaptations to an increase in shipping, at other times attraction of a certain kind of transport and at other times again the imparting of a given economic stimulus to a region. Then the parties have to decide by the available criteria whether and to what extent they should depart from the basic 20-80 cost distribution.

The proposal by the Seaports Consultation Committee is based on premises differing from the discussion note which the former Minister of Transport and Waterways submitted to the Seaports Consultation Committee for comment. The Ministerial note was based on the principle that the user must pay insofar as this would not seriously affect the competitive capability of the seaports.

The Seaports Consultation Committee, however, puts the port's socio-economic interest and international competitive capacity first and foremost, and bases its cost distribution proposal on these considerations.

The Seaports Consultation Committee has also probed two other alternatives. The first was for the State to bear the full cost of investments, and the other a 20-80 share-out applying to all projects without exception. But the Committee has decided not to recommend these courses, if only because they are felt to be too rigid and to take no account of differences in projects and in the situations of the ports.

West European countries act against unsafe ships

"Rotterdam Europoort Delta" 78/3:—The Netherlands and seven other West European countries are going to take joint action against ocean-going ships which fail to comply with international safety and labour-protection requirements. This is laid down in a Note of Agreement recently signed in The Hague by experts representing the Governments of Belgium, Denmark, the German Federal Republic, France, the Netherlands, Norway, Sweden and the United Kingdom.

The agreement provides for random checks on board ocean-going vessels of all nationalities both in ports and inland waterways. In this way it is found whether there are any conditions on board which present clear hazards to the health and general safety of crew and passengers. The closely defined requirements follow those of international conventions.

The authorities may order random checks or designate specific vessels suspected of not complying with the international requirements. Any vessel which is found wanting will be allowed to leave port only when the necessary improvements or other precautions have been taken.

The Note also provides for the setting up of a permanent information exchange system among the participating countries. Experts of the eight cooperating nations will meet at least once a year to discuss the efficacy of the rules

and propose improvements if necessary. The secretariat of the group of experts will be in The Hague.

Rhine-Rhône link

"Rotterdam Europoort Delta" 78/3:—At the recent general meeting of the Österreichischer Wasserstrassen und Schifffahrtsverein in Vienna, Mr. Marc Schreiber spoke about France's endeavour to build a major inland waterway linking the Rhine with the Rhône and the Mediterranean. It is the intention for this project to be completed at the same time as the Rhine-Main-Danube canal.

Mr. Schreiber, of the Société d'Etudes Mer du Nord—Méditerranée (of Paris), explained that the Rhine-Rhône link will use the Rhône and Saône rivers in the south. Major adaptations of these two rivers, which will be completed by about 1980, will result in a waterway with a depth of three and half metres and a length of 530 kilometres.

Then there will still be a 229-kilometre gap between the Saône and the Rhine. Here the route will follow a system of older canals and existing smaller watercourses, all of which will be enlarged. Twenty-four locks will be needed to overcome differences in height. The canals to be used in this sector have an overall length of 123 kilometres, and the river stretches which will have to be canalised add up to one hundred kilometres. The total length of the lock chambers will be five and a half kilometres.

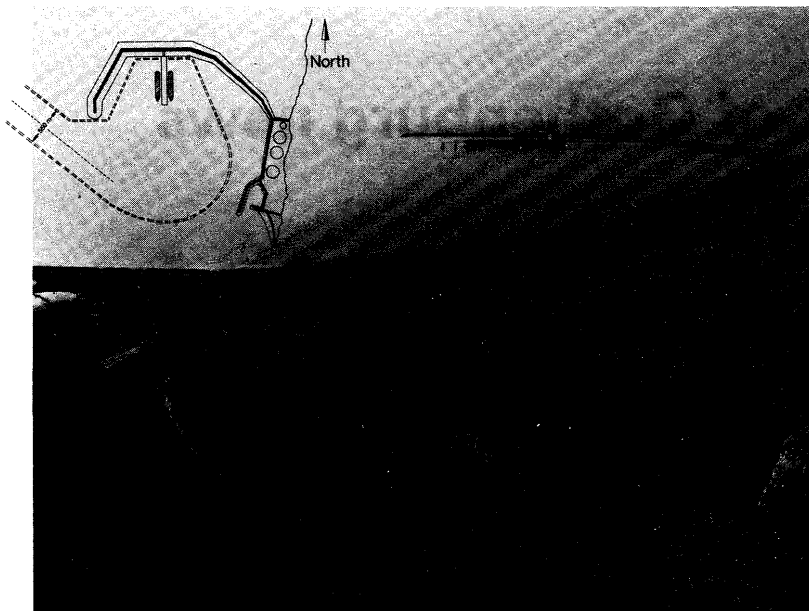
The plans are being carried out by the Compagnie Nationale du Rhône, a company composed similarly to the Rhein-Main-Donau AG in the Federal Republic of Germany.

President Valéry Giscard d'Estaing announced in 1975 that operations on the main link must begin in 1981 and be completed in 1985, the year when the Rhine-Main-Danube link will be completed. For the route of the canal the so-called Alsace variant has been chosen, debouching into the Rhine near Mulhouse.

Realisation of this major project still requires an increase in the budget available for the expansion of shipping routes and possibly also a coordination with regard to international financing. Nevertheless the Société d'Etudes Mer du Nord—Méditerranée is optimistic about the chances of completing the plan within the fixed time-limits.

As regards future shipping there are still open questions as to the régime that will apply on the new waterway: the French Government inclines to opt for a free international accessibility if such a régime can be established for the entire Rhône-Saône-Main-Danube axis. The French are currently studying to what extent cooperation of the various regions in the financing can be made possible.

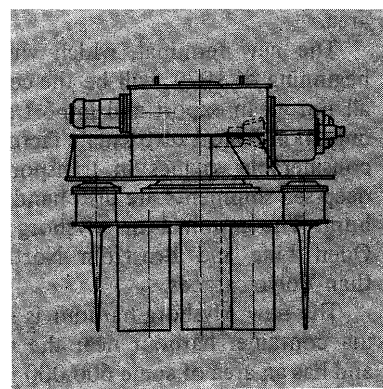
The Rhine-Rhône link will debouch into the Mediterranean in the proximity of Marseilles, near Fos where a large-scale port and industrial centre is being built and in part already operative.



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Voith Water Tractors for Safe Ship Handling

The two Voith water tractors "Abeille 9" and "Abeille 10", with an input horsepower of about 4,000 HP each, were put into service according to schedule to safely dispatch the giant 550,000 tdw tanker "Batillus" on her maiden voyage at the inauguration of the Antifer Oil Terminal/France.

Three similar water tractors were recently put into operation in the new port of Saldanha/ South Africa. And when super-tankers call at the oil terminal at Rio de Janeiro, four Voith water tractors will also be there to ensure safe ship handling.

The dispatch of such giant vessels calls for the construction of special port facilities and sets

the most demanding requirements on ship handling vessels. Many years of experience in the application of such vessels in ports of this kind were authoritative in the above cases for encouraging decisions in favour of Voith water tractors.

We should be glad to let you have more details.

Fig. 1) Antifer Oil Terminal

Fig. 2) Voith Water Tractor "Abeille 10"

Fig. 3) Voith-Schneider Propeller Type 32 G III/200

as 778 e/3

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Port of Gothenburg news

- **11% rise in Port of Gothenburg export and import figures**

Export and import over the Port of Gothenburg rose by 11% during the first ten months of 1978 compared with the same period 1977.

Export figures have shown a positive trend for almost a year now—mainly a result of Swedish industries' better possibilities to sell on the international market after the devaluation of the Krona. Export of parcel goods was thus up 17% for the period and totalled 3.3 m. tons while import was 3 per cent below last year's previous level.

Oil rose 13% and reached 11 m. tons. Domestic cargo handled over the port—mainly oil cargoes—fell 12%. The total for export, import and domestic cargo reached 17.1 m. tons which is 6% up from previous year's figures.

- **Volvo's terminal at Älvsborg enlarged**

Volvo has asked the Port of Gothenburg for a further 22,000 m² in addition to the 70,000 m² area which earlier has been booked for Volvo's new export and import terminal at the Älvsborg harbour. Volvo has also got an option for another 20,000 m² enlargement of the terminal area.

The new terminal, which will come on stream at the beginning of 1979, will be the centre for the Volvo group's all European export and import shipping transports. It lies only 4km from Volvo's main factories and is expected to give considerable savings in transport costs. Most of Volvo's deep-sea shipments are also handled in the Port of Gothenburg. The terminal in Älvsborg will also be used by the Oden Line and Broström North Sea services for other-than-Volvo cargoes.

The new Älvsborg harbour is situated west of the Skandia container harbour near the mouth of the Göta River and has an area of some 600,000 m².

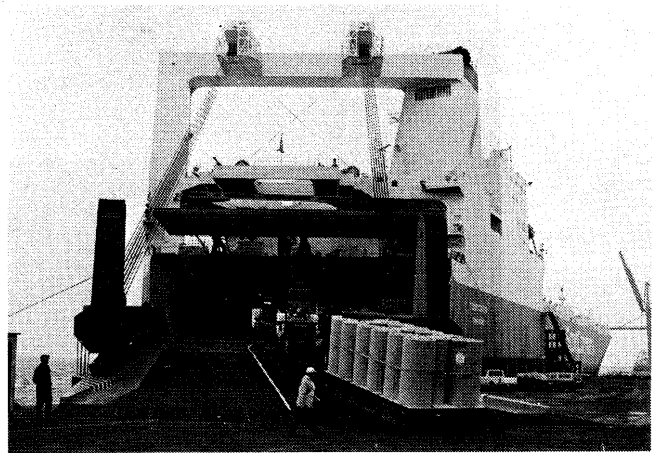
During the latter part of 1978 some 30 m. Kronor [£ 4 m.] has been invested in the construction of the new harbour—in building berths and enlarging the paved areas, in providing for inland connections by roads and railways and so on.

- **Gothenburg homeport for two new top-modern ro-ro fleets**

Two of Gothenburg's largest shipping groups—Broström and Transatlantic—are both going through a period of rapid modernization of their cargo liner fleets.

Broström's new ro-ro's have been especially observed for their high degree of automation which has made it possible to minimize the crew to 16 people against 22 in a similar ordinary Swedish vessel.

The Transatlantic fleet is also going through a radical modernization. The first of the company's new ships, the m/s "Boogabilla" of 22,500 tdw was recently put into service on the ScanCarriers' trade between Europe and Australia/New Zealand [ScanCarriers is a Transatlantic/Wilhelmsen/EAC joint service]. When the m/s "Boogabilla" loaded 7,798 tons in 17 hours at Gothenburg's Skandia Harbour, this was, according to the owners,



The jumbo quarter ramps of the world's largest ro/ro carriers are wide enough to allow a terminal tractor + trailer and a forklift carrying a 20' container to meet. The "Boogabilla" and the "Tourcoing" are twins, recently delivered to the ScanCarriers group. This is the "Tourcoing" loading in Gothenburg's Skandia Harbour.

a new record for the ScanAustral/ScanCarriers group. The 12 m. width of the ship's ramp, which allows traffic in both directions at a time, shortens time at quay a lot.

New development at Helsingborg

The Helsingborg Port Authority decided recently in favour of a further large scale extension to the existing facilities which will help to consolidate its position as the number 2 Swedish port after Gothenburg. The extension will centre upon the construction of a terminal unit for deep-sea and short-sea traffic to be known as the West Harbour (Västhavnen).

Recently a research of the development for Helsingborg has been carried out by Professor Lars Nordström of the University of Gothenburg. The study concludes that the port will experience an increased cargo throughput until the end of the century. During recent years the rate of cargo throughput has increased in average 6.7 pct annually, which will mean that the maximum capacity at the port will be exceeded by 1981. Within the existing acreage there is no way to effect the estimated expansion. This means that some 275,000 sq.m will be needed until the year 2000, and this acreage has to be provided by land reclamation. The best location of the new extension would then be between the present North and South Harbours.

The construction of the West Harbour is to take place in 2 stages in order to allow the port to adapt itself to the anticipated growth in traffic. The first stage will be designed to meet the demand up to 1990, while the second stage will cover the estimated traffic growth until the year 2000.

The cost is estimated at 130 million Swedish Crowns
(Continued on next page bottom)

Ports of Tomakomai and Napier become official sisters

The Port of Tomakomai in Hokkaido, Japan and the Port of Napier in the North Island of New Zealand joined hands each other and formally they signed the joint declaration of conclusion of sisterport agreement on February 15th, 1978.

The signing ceremony of the joint declaration of conclusion of sister-port agreement was held through the international telephone service. At each end of the phone call were the President of the Tomakomai Port Authority, Mr. Genro Oizumi, who is also Mayor of Tomakomai city, and the Hawke's Bay Harbour Board's Chairman, Mr. L.J.R. Tucker. The Mayor of Napier, Mr. Clyde Jeffery also spoke during the telephone call.

After signing declaratory certificates noting the sister-port agreement in English and Japanese, Mr. Oizumi said it was a happy day for him and the citizens of Tomakomai. "I believe the two ports, though located far apart on the Pacific Ocean, will be linked together with deep friendship and by aspiring for mutual port interchange, shall not only contribute to the prosperity of both ports but also strengthen the ties of friendship between both countries." said Mr. Oizumi.

The trades between the Port of Tomakomai and the Port of Napier began with the opening of regular line services operated by both Gearbulk Limited and Japan Line Limited to carry wood pulp from the Whirinaki Mill of Carter Oji Kikusaku Pan Pacific Limited 19 kilometres north of the Port of Napier to Tomakomai.

The Whirinaki Mill, a joint venture of New Zealand and Japan, produces 650 tonnes of wood pulp per day (for Tomakomai) and 420 tonnes of timber per day (for Japan) in automation systems.

Outline of the Port of Tomakomai given by the Port Authority is as follows: "The place where we have the Port of Tomakomai had been in a monotonous sand coast which locates in the south-west of Hokkaido and extends almost straightly.

"There we began to construct an artificially excavated port in 1951 for the first time in Japan. The biggest trouble in this construction had been how to overcome the drift sand.

"Today's development of the Port of Tomakomai has been solely due to a conquest of the drift sand. And then many artificially excavated ports have been constructed on the basis of this success in various parts of Japan.

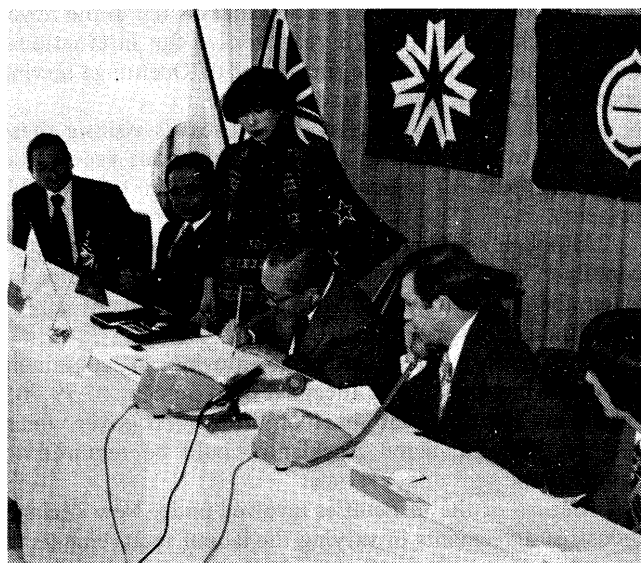
"The Port of Tomakomai has two sections: one is the

appr. of the first stage at present prices, involving dredging operations, breakwaters, filling up, quays, RoRo-berths and other technical equipment.

It is reasoned that the ships to be served at the West Harbour will be either RoRo or be fitted with their own lifting equipment, thus quay cranes would not be required. The second stage is scheduled for completion in 1990-91 and will cost an additional 85 million SwCrs at current prices, which will bring the total cost of the project to 215 million SwCrs.



Port of Tomakomai



Shown just after the telephone link with New Zealand which officially made Tomakomai a sister port of Napier are, from left, Mr. J. Sakuma, Executive Vice-President of the Tomakomai Port Authority, Mr. T. Homma, Vice-chairman of the Tomakomai Port Authority Council, Miss M. Hashimoto, general affairs department staff, Mr. G. Oizumi, President of the Tomakomai Port Authority (Mayor of Tomakomai), Mr. H.W. Harvey, Missionary from New Zealand, and Mr. K.J. Dustow, Assistant Missionary.

west port section, almost completed at present, the other is the east port section, which is being developed.

— The main purpose of the west-section is to be a base of sea-board industry which will serve 133,000 tonnes of Aluminium per year, 70,000 barrels of refined oil per day and 4,250,000 kw electric power. We have already invested 50 billion yen now. And this section is being a busy port

(Continued on next page bottom)

Auckland ready for heavier container traffic

What Mr. R.W. Carr, Chairman, described in his end-of-year review as an "arduous and financially disappointing 1978" saw the Auckland Harbour Board record a small surplus overall but a deficit of \$NZ1.7 million in the port working account "which is the true measure of operational success or otherwise".

The surplus after necessary appropriations was \$523,000 which was achieved largely as result of a credit of nearly \$NZ2.2 million from the Board's substantial property holdings in and round Auckland City.

Mr. Carr attributed the loss on port operations to the general decline of world trade as affecting New Zealand exports and imports, and to a sharp 24.36 percent rise of \$NZ4.8 million in total wage costs which reached \$NZ24.5 million.

"In fact, the actual result was more than \$NZ3.7 million worse than anticipated in December 1977 when original estimates forecast a surplus on port working in excess of \$NZ2 million," said Mr. Carr.

"The downturn in world trade was reflected in the fewer ships which in our 1977/78 year worked the International Port of Auckland and the small Port of Onehunga serving coastal and Pacific Islands trades,"

He said the number of merchant vessels visiting these ports fell to 1,890, down 280 on the previous year. Total trade dropped 8.7 percent to 5.41 million tonnes (8.7 percent).

"Although container ship calls at Auckland rose to 203, container traffic did not expand at the rate anticipated when the pressure was on for rapid development of the Auckland container terminal.

"The total tonnage of cargo moving in containers improved but only by .1 (decimal one) percent to 79,765 containers. This was far short of the 90,000 boxes which shipping lines predicted Auckland would be required to handle in the year under review.

"Because of the difficulties involved under New Zealand industrial agreements in varying the labour requirements to a lesser volume of container trade than was predicted, the shortfall in throughput lost the Board more than \$NZ2.6 million of anticipated gross revenue".

Roll-on roll-off, conventional break-bulk and bulk cargoes were all down on the previous year. Only export

cargo was up, the increase being from approximately 50,000 tonnes to a total of 1.53 million tonnes.

While a much poorer trade result than expected it still produced a port operating income of \$NZ35.1 million compared with approximately \$NZ29.8 million in the Board's previous year.

"But it was a frustrating year," said Mr. Carr. "The good thing is that Auckland is now well equipped to handle expeditiously the considerably larger volume of container traffic expected when world trade revives.

"Our gross average container handling rate has improved to 22.42 boxes an hour.

"Several times under favourable conditions this rate averaged up to 45 boxes an hour during the working of individual vessels late in the year, a clear indication that our two-berth, three crane terminal is ready to meet whatever demands are made on it in the future."

14.5 million tonnes of cargo handled at Gladstone

Gladstone Harbour Board, Queensland, Australia:—Figures released recently show that during 1978, 14.5 million tonnes of cargo were handled at Gladstone. This is a drop of about 1.2 million tonnes on the 1977 total. Coal exports dropped by 540,000 tonnes to 6,016,000 tonnes. The other significant decrease was Bauxite by about 900,000 tonnes to 4,843,000 tonnes. Grain and Seed exports rose by 90,000 tonnes to 333,352 tonnes. Alumina exports also rose to 2,252,843 tonnes, an increase of 150,000 tonnes over the previous year's figure.

398 cargo carrying vessels visited the Port in 1978 as compared with 436 in 1977.

Singapore orders six terminal cranes

Paceco News:—The Port of Singapore Authority recently ordered six Rubber Tired Transtainer® cranes from Paceco, Inc.

The 30 Long Ton terminal cranes have a 74 ft. span enabling them to stack containers four high and six wide plus a tractor roadway. They will be equipped with a reeved-in telescopic spreader that will handle 20'/35'/40' sized containers. Also featured is an air conditioned cab for operator comfort.

as a distribution center because of its location. We've got roll-on roll-off system in and the need of ferry services are increasing also.

"The sum of trades through this port has been increasing since the opening of the port in 1963. We had a total trade of 39,870,000 tonnes and 17,308 boats which docked here in 1977.

"Concerning the east port section, we planned to establish an industrial base in an undeveloped area of 10,000 ha and to manufacture 300,000 barrels of refined oil per day, 400,000 tonnes of petro-chemical products per year, 180,000 cars per year and sub-products. Until now we've invested 34.5 billion yen to provide basic equipments progressively since 1972".

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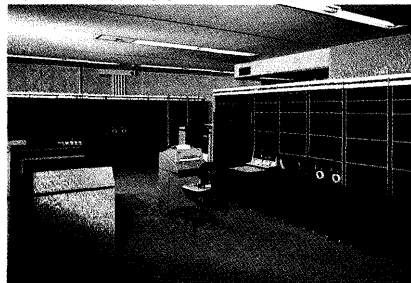
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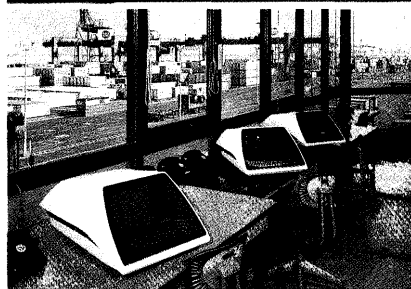
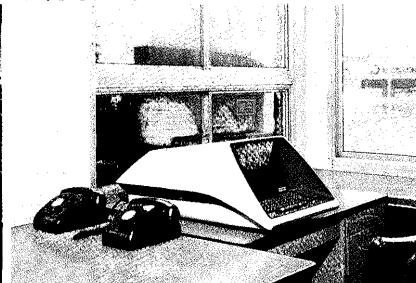
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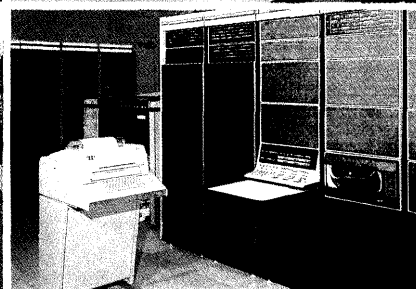
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