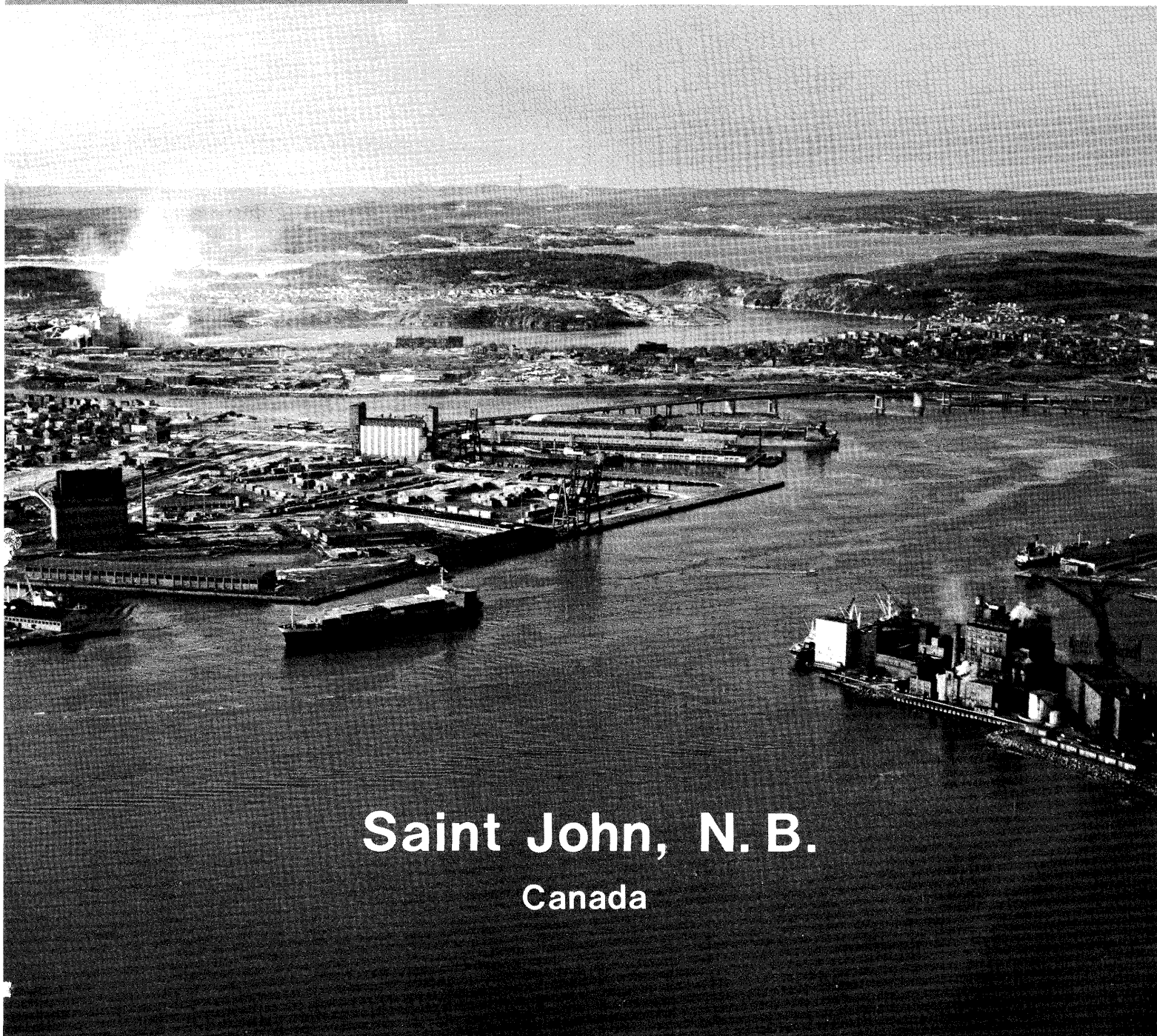


PORTS *and* HARBORS

April, 1979 Vol. 24, No. 4



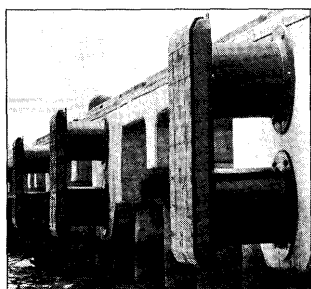
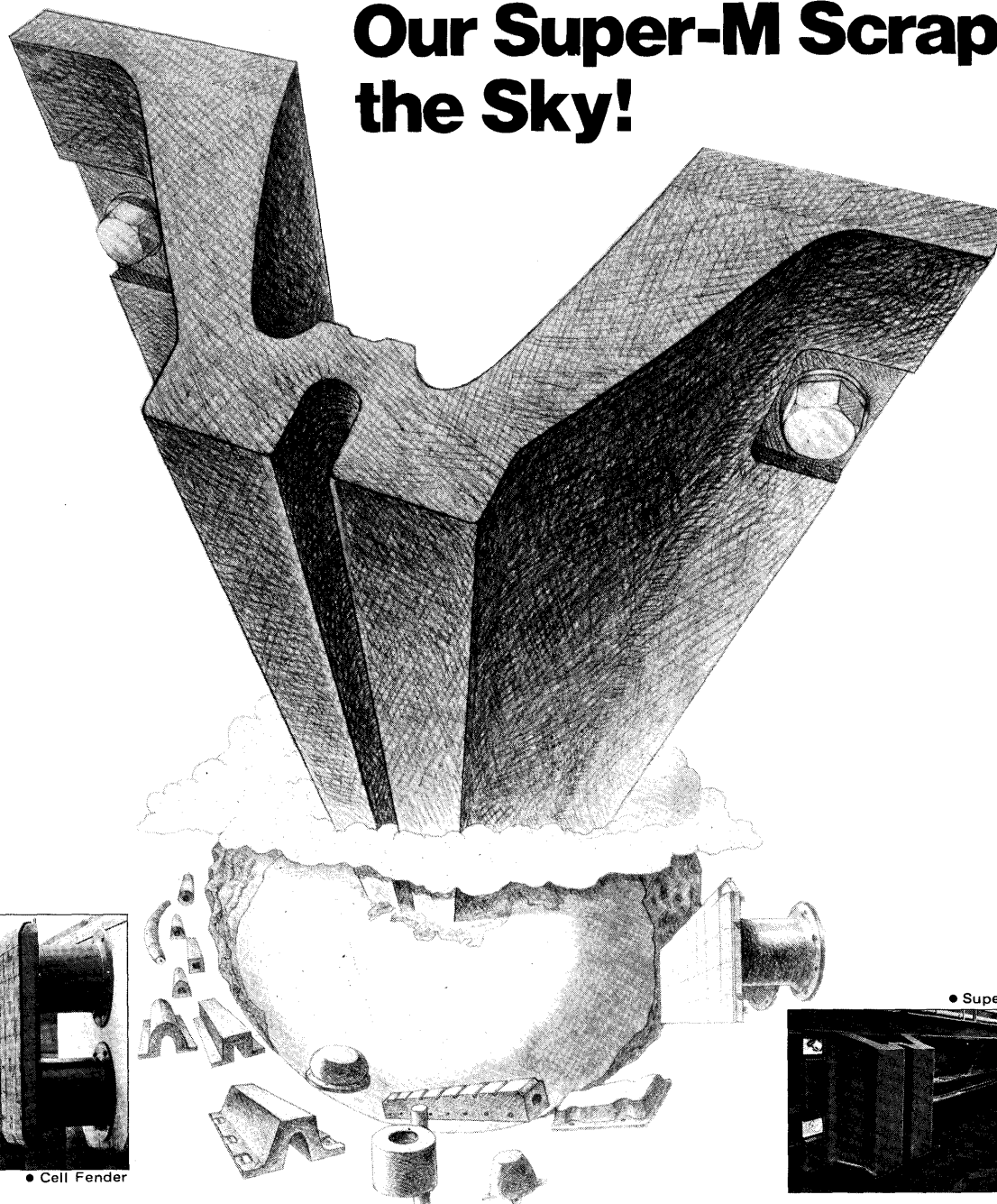
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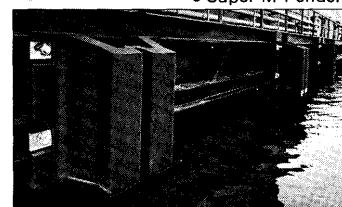
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N O T I C E

Dear Readers,

April 4, 1979

Due to most unfotunate but inexcusable mistake at our printer-house, the picture of Mr. J. Le Theule, Minister of Transport, Honorary President of the 11th Conference was misplaced with the picture of Mr. F. Le Chevalier, President of the Board of Directors of the Port of Le Havre Authority, the host port, as appeared on page 9 of the April 1979 issue of the journal "Ports and Harbors " (Vol.24, No.4).

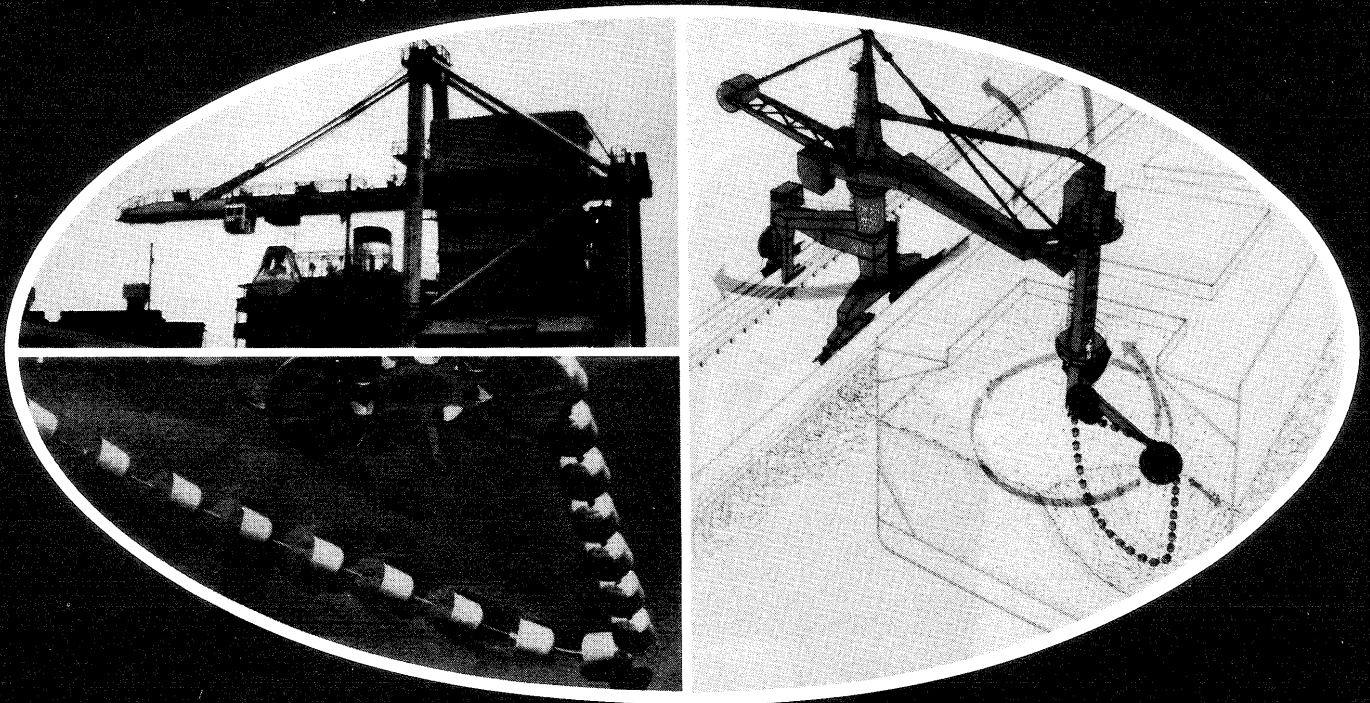
The Printing House of the journal, taking the responsibility, reprints and recirculates the revised copy enclosed herewith.

With our regrets for the inconvenience,

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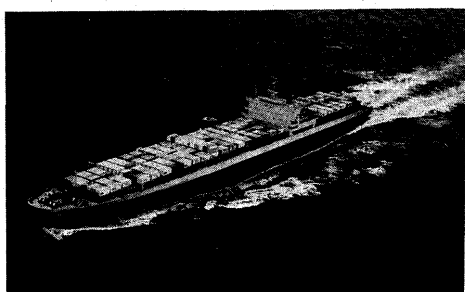
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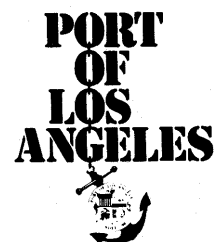
Between now and 1982 Port of Los Angeles will invest \$250 million to keep a firm grip on its position as the cargo capital of the West.

Thirty-two major projects will be undertaken to improve services and expand land resources.

The main channel will be deepened from 35 ft. to 45 ft. and widened to help provide smooth handling and safe navigation for the world's largest ships. The 16 million cubic yards of material dredged up from the bottom will be used with landfill and backland development to create 1000 additional acres of land in the Port's Outer Harbor and double its shiphandling capability.

Part of this increase will come from the new Seaside Container Terminal complex now being developed. With a 5000 ft. all-concrete wharf, six cranes and 135 acres of backland, it easily handles six containerships at berth and will be one of the largest and most efficient terminals in the world.

Whether the investment creates new services or improves existing ones, the Port's modern cargo handling methods — including 14 giant container cranes with total estimated lift capacity of 360 containers/hour — will reduce ship turnaround time.



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April, 1979 Vol. 24, No. 4

CONTENTS

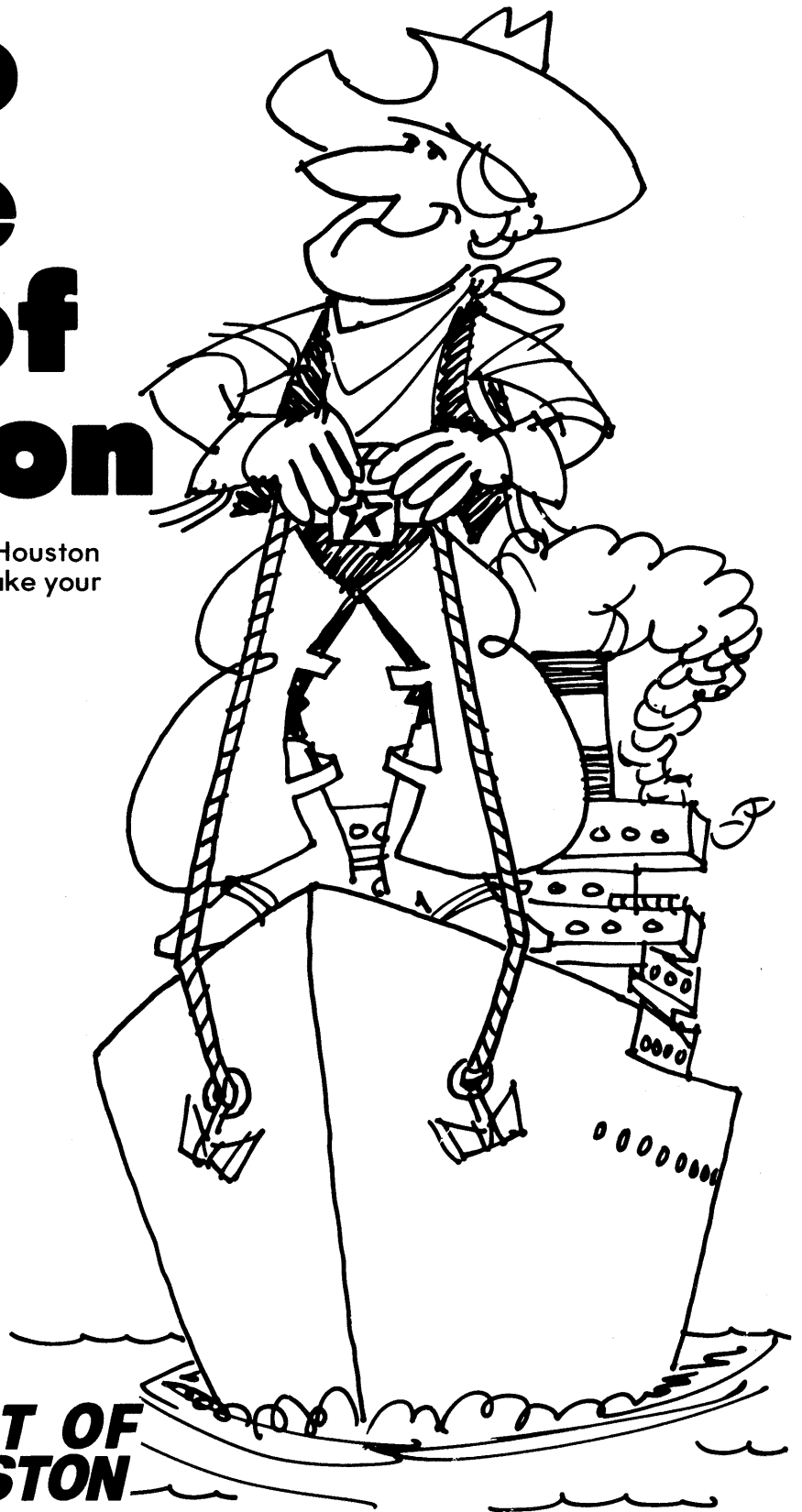
	Page
IAPH announcements and news:	7~19
Provisional Agenda & Time Schedule of 11th Conference—"Bienvenue en France!"—Your Host looks forward to welcoming you—Introducing Staff Members of the Organizing Committee—Daily Program of the 11th Conference—Advance Announcements on Four Working Sessions—Messages from Working Session Chairmen at the 11th Conference—Financial crisis appealed by Officers—Mr. Pages proposes Permanent IAPH Representative to IMCO & UNCTAD—Mr. Robert Boeuf passes away—Mr. Howe Yoon Chong becomes Defence Minister—Credentials requested: Regular & Board Members—Attendance by Proxy urged: Regular & Board Members—Publications—Seminars, Conferences, etc.—Membership Notes	
Open forum, Port releases:	
Shippers' Needs Emphasized (from "Container News")	20
The future of port development in the Rhine, Meuse and Scheldt Delta (by F. Suykens, Port of Antwerp)	21
Recent advances in bulk terminal technology (by Paul Soros).....	28
Annual Report 1977-78: Port of Brisbane Authority	29
Annual Report 1977-78: Townsville Harbour Board.....	30
International maritime information:	
World port news:	
Report of the Second Session of the Committee on Shipping, Transport and Communications, 14-22 November, 1978, Bangkok, Thailand (by Mr. D. Low, Embassy of the Republic of Singapore, Bangkok).....	31
Piece Rates for Dock Workers (by Mr. R. Roy, ILO).....	32
Le Havre speaks of their hopes for 1979 (Le Havre Series 9).....	42
Gulf Patterns.....	45

The Cover: Aerial view of Saint John Harbour, N.B., Canada, with loaded container vessel departing.

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IAPH announcements and news

Provisional Agenda & Time Schedule of 11th Conference

I. AGENDA (Plenary Sessions)

OFFICIAL OPENING CEREMONY

(09:00/11:00, Monday, May 14, 1979)

1. Address by Conference Chairman—Mr. J. Dubois
2. Addresses by Dignitaries
3. Introduction of Dignitaries and IAPH Officials
4. Introduction of Messages from Friendly Organizations
5. Address and Declaration of Opening of the Conference by IAPH President
6. Announcement of Conference Committees by IAPH President
 - Nominating Committee
 - Ways & Means Committee
 - Credentials Committee
 - Honorary Membership Committee
 - Resolutions & Bills Committee
7. Closing of the Session by IAPH President

FIRST PLENARY SESSION

(14:00/16:30, Monday, May 14, 1979)

1. Address by IAPH President
2. Report by Chairman of Credentials Committee
3. On IAPH Business Activity by Secretary-General
 - Activity in general
 - Membership situation
 - Settlement of Account for 1977–1978
 - Settlement of Account of Special Port Development Technical Assistance Fund for 1977-1978
 - Recommendation on the proposed budget for 1979-1980
4. On Settlement of Account for 1977-1978
 - a. Board Chairman's Report on the deliberation by Joint Meeting
 - b. Recommendation by Chairman of Ways & Means Committee
 - c. Approval
5. Report and Recommendation by Chairman of Finance Committee, on financial prospects
6. On the changes of Sec. 5 of By-Laws (Membership dues)
 - a. Submission of Proposed Bill to change Sec. 5, by Board Chairman
 - b. Recommendation for the proposed changes by Chairman of Resolutions & Bills Committee
 - c. Adoption of Bill
7. Budget for 1979-1980
 - a. Submission of Proposed Budget for 1979-1980 by Board Chairman
 - b. Recommendation for the Proposed Budget by Chairman of Ways & Means Committee

c. Adoption

8. Reports by Chairmen of Special/Standing Committees
 - a. Membership Committee
 - b. Constitution & By-Laws Committee
9. On changes in Constitution and By-Laws
 - a. Submission of proposed changes by Board Chairman
 - b. Recommendation for the proposed changes by Chairman of Resolutions and Bills Committee
 - c. Adoption
10. Reports by Chairmen of Special/Standing Committees
 - a. International Port Development (Mr. Ullman)
 - Commendation of the 1st Prize Winner of IAPH Award Scheme 1978
 - Award of IAPH Silver Medal by President
 - b. Large Ships (Mr. Dixon, Jr.)
 - c. Containerization, Barge Carriers and Ro-Ro Vessels (Mr. Lorimer)
 - d. Legal Protection of Navigable Waterways (Mr. Pages)
 - e. Trade Facilitation (Mr. Vleugels)
 - f. Community Relations (Dr. Bax)
11. Reports by IAPH Liaison Officers
 - a. Liaison Officer with IMCO (Mr. Smith)
 - b. Liaison Officer with UNCTAD (Mr. Ullman)
12. Others

SECOND PLENARY SESSION (Closing)

(16:00/18:30, Friday, May 18, 1979)

1. Address by IAPH President
2. Presentation of Resolutions (if any) derived from the results of the Working Sessions, by Chairman of Resolutions & Bills Committee
3. Report by Chairman of Honorary Membership Committee, to be followed by election thereof
4. Presentation of Scrolls to the newly elected Honorary Members by President
5. Presentation of Nominations of the new President and Vice-Presidents by Board Chairman, to be followed by election thereof (President-Elect)
6. Announcement of Directors and Alternate Directors for 1979-1981 by the President-Elect
7. Announcement of Continuation, Terminations, Establishment, and or Renaming of Special/Standing Committees, and announcement of Chairmen & Vice-Chairmen, and members, by President-Elect
8. Adoption of resolutions of thanks and other resolutions (if any)
9. Announcement of the place and proposed date of the

- 12th Conference by President
10. Invitation address by the Host of the 12th Conference (Including a film or slide presentation)
 11. Take-over of the Presidency (Change of Seat)
 12. Presentation of Gold Badge to the Retiring President
 13. Address by Retiring President
 14. Address by the New President
 15. Declaration of Closing of the Conference by the New President

II. WORKING SESSIONS

- No. 1—"World Ports of the Future"
(09:00/12:30, Tuesday, May 15, at Casino's Conference Hall)
- 09:00/10:30 Speech by Prof. Leontief
(1973 Winner of Nobel Prize for Economy)
- 10:30/11:00 Break
- 11:00/12:30 Discussion and final proposals
- No. 2—"On the Report of the Committee on International Port Development"
(14:30/17:30, Tuesday, May 15, at Casino's Conference Hall)
- 14:30/16:00 Discussion by working groups
- 16:00/16:30 Break
- 16:30/17:30 General Assembly with open discussion
- No. 3—"On the Report of the Committee on Large Ships"
(09:00/12:00), Thursday, May 17, at Casino's Conference Hall)
- 09:00/10:30 Discussion by working groups
- 10:30/11:00 Break
- 11:00/12:00 General Assembly with open discussion
- No. 4—"On the Report of the Committee on Containerization, Barge Carriers, and Ro-Ro Vessels"
(14:00/17:00, Thursday, May 17, at Casino's Conference Hall)
- 14:00/15:30 Discussion by working groups
- 15:30/16:00 Break
- 16:00/17:00 General Assembly with open discussion
- No. 5—"On the Report of the Committee on Community Relations"
(09:00/12:00, Friday, May 18, At Casino's Conference Hall)
- 09:00/10:30 Discussion by working groups
- 10:30/11:00 Break
- 11:00/12:00 General Assembly with open discussion
- Plenary Synthesis Meeting
14:00/15:00, Friday, May 18, at Casino's Conference Hall

III. OPEN SYMPOSIA

- Committee on Legal Protection of Navigable Waterways
17:00/18:30, Monday, May 14, at Casino's Conference Hall
- Committee on Trade Facilitation
17:00/18:30, Monday, May 14, at Casino's Theater

IV. BOARD, EXECUTIVE, SPECIAL & STANDING COMMITTEES

Board and Executive

- Pre-Conference Joint Meeting (Salon Morny)
09:00/11:00, Sunday, May 13
- Post-Conference Joint Meeting (Salon Morny)
09:00/11:00, Saturday, May 19
- Executive Committee (Salon Morny)
Following the above meeting

Special & Standing Committees

Constitution & By-Laws Committee

- 1st 09:00/12:00, Saturday, May 12 (Salon Morny)
- 2nd 16:00/18:00, Saturday, May 12 (Salon Morny)
(If necessary)

Finance Committee

- 09:00/12:00, Saturday, May 12
(Salon Van Dongen)

Membership Committee

- 09:00/12:00, Saturday, May 12 (Salon F. André)

Committee on Legal Protection of Navigable Waterways

- 14:00/16:00, Saturday, May 12 (Salon Morny)

Committee on Trade Facilitation

- 14:00/16:00, Saturday, May 12
(Salon Van Dongen)

Committee on Community Relations

- 14:00/16:00, Saturday, May 12 (Salon F. André)

Committee on Large Ships

- 16:00/18:00, Saturday, May 12
(Salon Van Dongen)

Committee on International Port Development

- 14:00/16:00, Sunday, May 13 (Salon Morny)

Committee on Containerization, Barge Carriers, & Ro-Ro Vessels

- 14:00/16:00, Sunday, May 13 (Salon Van Dongen)

V. MEETING FOR CHAIRMEN & GROUP LEADERS OF WORKING SESSIONS

- 18:00/18:30, Monday, May 14 (Salon Morny)

VI. CONFERENCE COMMITTEES

Nominating Committee

- 15:00/16:00, Saturday, May 12 (Salon Flaubert)

Ways and Means Committee

- 14:00/15:00, Sunday, May 13 (Salon Morny)

Resolutions and Bills Committee

- 1st 14:00/17:00, Sunday, May 13 (Salon F. André)
- 2nd 08:00/09:00, Tuesday, May 15 (Salon F. André)
- 3rd 08:00/08:45, Thursday, May 17 (Salon F. André)
- 4th 08:00/08:45, Friday, May 18 (Salon F. André)
- 5th 15:00/15:45, Friday, May 18
(Casino Meeting Room)

Credentials Committee

- 14:00/17:00, Sunday, May 13 (Salon Mailier)

Honorary Membership Committee

- 08:00/09:00, Tuesday, May 15 (Salon Flaubert)

“ Bienvenue en France ! ”

Your Host looks forward to welcoming You

Honorary Committee



Host president
Mr F. LE CHEVALIER
President of the Board
of Directors of the Port
of Le Havre Authority



Honorary president
Mr J. LE THEULE
Minister of Transport



Conference president
Mr J. DUBOIS
Director of the Port
of Le Havre Authority



Second vice-president
Mr P. OLLIVIER
Director of Sea Ports
and Navigation



Honorary Conference President
Mr P. BASTARD
2nd vice-president of I.A.P.H.



First vice-president
Mr F. ESSIG
General Manager
of Merchant Marine

Ladies Committee



Mrs BASTARD



Mrs LE CHEVALIER



Mrs DUBOIS

Introducing Staff Members of the Organizing Committee



Annie GRUCHY
Ladies'Leisure Time



Jean-Pierre LANNOU
General Co-ordination



Gisèle RAOUL
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Leisure Time



Michel FIDON
Planning of Ceremonies



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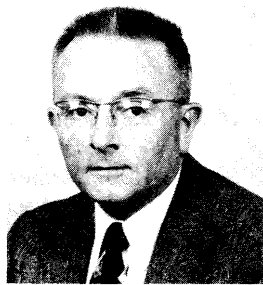
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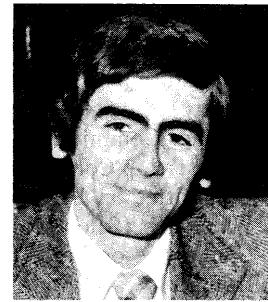
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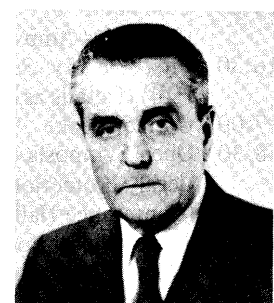
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Ceremonies



Bernard PEAU
Ceremonies and
Transport



François-Joseph RIHOUE
Ceremonies

Daily Program of the 11th Conference

Saturday, May 12, 1979

- 09:00/12:00 Constitution & By-Laws Committee (Salon Morny)
Finance Committee (Salon Van Dongen)
Membership Committee (Salon F. André)
- 14:00/16:00 Committee on Legal Protection of Navigable Waterways (Salon Morny)
Committee on Trade Facilitation (Salon Van Dongen)
Committee on Community Relations (Salon F. André)
- 15:00/16:00 Nominating Committee (Salon Flaubert)
- 16:00/18:00 Constitution & By-Laws Committee (if necessary) (Salon Morny)
Committee on Large Ships (Salon Van Dongen)

Sunday, May 13, 1979

- 09:00/11:00 Pre-Conference Joint Meeting of Board of Directors and Executive Committee (Salon Morny) (Chairmen of Special & Standing Committees & Liaison Officers are invited.)
- 14:00/15:00 Ways and Means Committee (Salon Morny)
- 14:00/16:00 Committee on International Port Development (Salon Morny)
Committee on Containerization, Barge Carriers and Ro-Ro Vessels (Salon Van Dongen)
- 14:00/17:00 Resolutions & Bills Committee (Salon F. André)
Credentials Committee (Salon Mailier)
- 19:00/20:30 Reception by Secretary-General

Monday, May 14, 1979

- 09:00/11:00 Official Opening Ceremony (Casino's Conference Hall) (Details as per agenda)
- 11:30/12:00 Courtesy Call on the Mayoress of Deauville by IAPH Officers
- 12:00/14:00 Luncheon by the Minister of Transport (Salon des Ambassadeurs, Casino)
- 14:00/16:30 First Plenary Session (Casino's Conference Hall) (Details as per agenda)
- 16:30/17:00 Coffee Break
- 17:00/18:30 Open Symposia on:
Legal Protection of Navigable Waterways (Conference Hall, Casino)
Trade Facilitation (Casino's Theater)
- 18:00/18:30 Meeting of chairmen and group leaders for working sessions (Salon Morny)
- 20:00/24:00 Reception & dance at the Salon des Ambassadeurs, Casino)

Tuesday, May 15, 1979

- 08:00/09:00 Resolutions & Bills Committee (Salon F. André)
Honorary Membership Committee (Salon Flaubert)
- 09:00/12:30 1st Working Session on the theme of "World Ports of the Future" (As per time schedule)
- 12:30/14:30 Luncheon at Salon des Ambassadeurs, Casino)

- 14:30/17:30 2nd Working Session: "International Port Development" (As per time schedule)

- 20:00/24:00 Medieval buffet at the Château de Crévecoeur en Auge

Wednesday, May 16, 1979

- 09:30 Departure by motorcoach for a visit of the Port of Le Havre
- 11:00/12:00 Visit to the Port's industrial area
- 12:00/14:00 Luncheon at the Passenger Hall of the Port of Le Havre
- 14:00/17:00 Continuation of the port visit
- 17:00/18:30 Return to Deauville
- 19:30 Departure by motorcoach for Honfleur
- 20:00/23:00 Buffet Normand in Honfleur

Thursday, May 17, 1979

- 08:00/08:45 Resolutions & Bills Committee (Salon F. André)
- 09:00/12:00 3rd Working Session: "Large Ships" (As per time schedule)
- 12:00/14:00 Luncheon at Salon des Ambassadeurs, Casino
- 14:00/17:00 4th Working Session: "Containerization, Barge Carriers and Ro-Ro Vessels" (As per time schedule)
Evening Free

Friday, May 18, 1979

- 08:00/08:45 Resolutions & Bills Committee (Salon F. André)
- 09:00/12:00 5th Working Session: "Community Relations" (As per time schedule)
- 12:00/14:00 Luncheon at Salon des Ambassadeurs, Casino
- 14:00/15:00 Plenary Synthesis Meeting on the Conference Works (Conference Hall, Casino)
- 15:00/15:45 Resolutions & Bills Committee (Casino meeting room)
- 16:00/18:30 Closing Ceremony (Conference Hall, Casino) (Details as per agenda)
- 20:00 Closing Reception & dance (Salon des Ambassadeurs, Casino)

Saturday, May 19, 1979

- 09:00/11:00 Post-Conference Joint Meeting of Board of Directors and Executive Committee, to be followed by a meeting of Executive Committee Meeting for site selection of its 1980 meeting (Salon Morny)
Meeting of various committees (if need be)
- 09:00/10:00 Departure by motorcoach to Rouen
- 10:00/12:00 Visit of Port of Rouen
- 12:00/14:00 Luncheon by Port of Rouen
- 14:00/16:00 Continuation of the port visit
- 16:00/17:30 Transfer by motorcoach to Paris and accommodation in hotels
- 19:30 Departure by motorcoach for Paris
- 20:30 Farewell Reception at "Conciergerie"

Advance Announcements on Four Working Sessions

At the 11th Conference a new format is to be introduced in dealing with four Working Sessions while the given theme of the Conference "World Ports of the Future" is retained as it is.

All Chairmen of the four Committees, according to the agreed upon schedule, completed their reports and sent them to the Organizing Committee of Port Autonome du Havre recently for printing and pre-distributing to the participants who complete registration by March 15, 1979.

Delegates will be divided into groups according to the language they wish to use, each group to be composed of about 100 persons, and to be led by the group leaders. There shall be two English-speaking groups, one each of French-speaking and Japanese speaking group and if there are more than 30 delegates, one Spanish-speaking group as well.

Group leaders as appointed as of February 27, 1979 are as follows.

1. Committee on International Port Development

(1430-1730, Tue. 15th May)

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

Group Leaders:

English: Mr. John Gituma, Managing Director, Kenya Ports Authority

Mr. J. Keith Stuart, Managing Director, British Transport Docks Board, UK

French: Mr. Claude Mandray, General Manager, Port of Rouen Authority

Japanese: Name not yet available

Spanish: Mr. Carlos Salazar, Chief, National Ports Department, Direccion de la Marina Mercante y del Litoral, Guayaquil

2. Committee on Large Ships (0900-1200, Thu. 17th May)

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

English: Dr. Christiaan van Krimpen, Dy. Managing Director (Nautical), City of Rotterdam, Rotterdam Municipal Port Management

1st Lt. Cdr. S.J.T. Masse, U.S. Coast Guard, Washington D.C., USA

Mr. G.C. Moulard, General Manager, Ports of Saint John and Belledune, National Harbours Board, Canada

English: Captain A.T. Young, Harbour Master, Clyde Port Authority, UK

2nd Mr. Norman F. Matthews, Captain Geoffrey T. Monks, Harbour Master, Port Hedland Port Authority

English: Mr. Duane Orr, Director, Industrial Development & Port Planning, Port of Corpus Christi, USA

French: Mr. Louis R. Dumas, Direction du Service des Phares et Balises, Paris, France

Mr. Georges Thebaud, Managing Director, Societe Maritime Shell, Paris

Mr. J. Coune, Director, Des Chantiers de Atlantic, Saint Nazaire

Japanese: Mr. Kiichi Okubo, Director, The Japan Port and Harbor Association

3. Committee on Containerization, Barge Carriers, and Ro-Ro Vessels (1400-1700, Thu., 17th May)

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

English: Mr. William Bowey, U.K.

Mr. Don Welch, Executive Director, South Carolina State Ports Authority

Mr. Richard D. Barclay, Director of Operations, The Australia National Line

French: Mr. Bernard Couvert, Naval Delmas Vieljeux, Paris

Japanese: Mr. Hideo Onishi, General Manager, Port of Osaka

4. Committee on Community Relations

(0900-1200, Fri., 18th May)

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

English: Mr. W. Gregory Halpin, Port Administrator, Maryland Port Administration

Mr. F.M. Wilson, General Manager, Port of Brisbane Authority, Australia

French: Captain H. Allard, Port Manager, Port of Quebec, Canada

Japanese: Name not yet known.

Messages from the respective Committee chairman is introduced on page 14 of this issue. (TKD)

Farewell Reception Site is now Paris "Conciergerie" (Photo on page 29)

Le Havre Organizing Committee announced on March 8th that the site of the farewell party of Saturday, May 19th, has been changed from Chateau Versailles to "Conciergerie" in Paris, another historical palace of France due to inevitable reason. The Organizing Committee provided with the following information on the newly chosen site.

Conciergerie

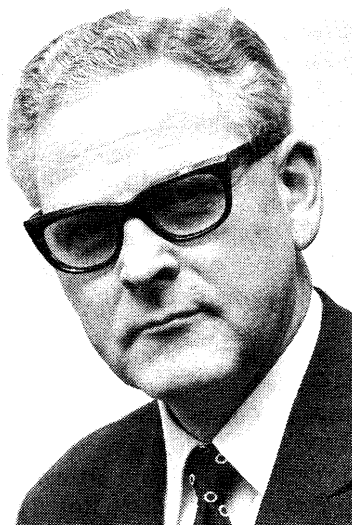
This building whose fine gothic architecture was built under Philip The Fair (1285-1314) and has since been restored, has seen some of the most turbulent periods of French history.

It took its name from the 'conciierge' or master of the King's household, and the person holding this post enjoyed a considerable income from the leasing of shops and stalls in the palace. With the royal family, the royal household numbered some two to three thousand people, most of whom took their meals and relaxation in the "Sall des Gens d'Armes", a magnificent room which rivals in splendour that in the abbey of Mont St. Michel.

Also of architectural interest is the "Sall des Gardes", originally at ground level, this room was made into a basement by the construction of the embankment, and the level reached by the Seine during the flood of 1910 is marked on the pillar nearest the quay.

During the reign of terror, the "Conciergerie" housed the revolutionary tribunal, although it had been used as prison for aristocrats and other unfortunate victims of revolutionary fervour since the beginning of revolution. Among those to have passed through its portals were Queen Marie-Antoinette, Charlotte Corday, Madame du Barry and even the great revolutionaries Robespierre and Danton.

Messages from Working Session



Mr. Sven Ullman

Working Session

"On the Report of the Committee on International Port Development"

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

The Conference theme "World Ports of the Future" has different meanings to all of us but contains the unifying message which is our common objective: **WE ARE ALL AIMING TOWARDS A BETTER FUTURE FOR OUR PORTS.** And so does as well the Committee on International Port Development. This Committee has been happy to realize a growing interest among the members of IAPH for its work, which without doubt is essential for the International Trade and Co-operation of a future world.

A number of important matters have been discussed and treated by the Committee since the 10th IAPH Conference in Houston. It is therefore of interest for the coming work and activity of the Committee to have these matters thoroughly scrutinized and considered during the Panel Sessions of the 11th Conference making it possible to bring forward ideas and setting up guide-lines for the future Committee work.

In this respect I would like to call your attention to the importance of International Training and Exchange of Information which I regard as extremely important and useful elements in the work of the Association. Hereby I mean that I consider as one of the most important questions for the Association the matter of voluntary contributions to the IAPH Technical Assistance Funds from member ports in the developed countries to make it possible to broaden the International Training and Exchange of Information.

Thus I am looking forward to your usual positive attitude in these regards and I expect a massive participation in the discussions in Le Havre/Deauville.



Mr. Francis L. Dixon, Jr.

Working Session

"On the Report of the Committee on Large Ships"

Chairman: Mr. Francis L. Dixon, Jr.
Senior Analyst, Logistics Department
EXXON Corporation
U.S.A.

Prevention of accidents and pollution require the concerted effort of all involved in operating our Ports and Harbors. How can we assure that the World Port of the Future will be a more positive influence—preserving the environment, lives and property of its operators and users?

Your Committee on Large Ships (COLS) has worked on this problem for the last two years and will be issuing its "Guideline for Port Safety and Environmental Protection" which will present some insight on the characteristics of a broad range of ships and their limitations. In addition, the latest in techniques and technology that the port community can use for assuring that vessels of whatever size entering ports can be identified as deficient so that they can be handled with special care will be discussed.

More importantly, however, emphasis is placed on means to identify and upgrade the physical configuration and channel layouts, the navigation aids, active/passive, piloting and tugboat operations and traffic control. In addition, assuring of safety of ships at terminals in their cargo handling and mooring and security is presented.

Teamwork of all in the Port Community is essential—the means to achieving this are covered as well as the methods for port management to appraise how well they are doing. It is anticipated that the COLS will improve the "guide-lines" based upon feedback from all of you as well as from other organizations who participated or were resources in its development—IALA, OCIMF, PIANC, IMPA, etc.

At the Symposium which will embrace the theme "World Ports of the Future" we expect to concentrate on

(Continued on page 16 bottom)

Chairmen at the 11th Conference



Mr. R.T. Lorimer

Working Session

"On the Report of the Committee on Containerization, Barge Carriers, and Ro-Ro Vessels"

Chairman: Mr. R.T. Lorimer

General Manager, Auckland Harbour Board
New Zealand

"My Committee is charged with providing information and technical assistance to all I.A.P.H. affiliates. To be of practical value this information and assistance must be based on sound and successful practice. It must also be as up-to-date as possible.

"For these reasons my Committee urges the study and discussion of benefits that might accrue if some of the more outstanding performance ports give I.A.P.H. the full benefit of the systems and experience which produce their exceptionally fast rates of work.

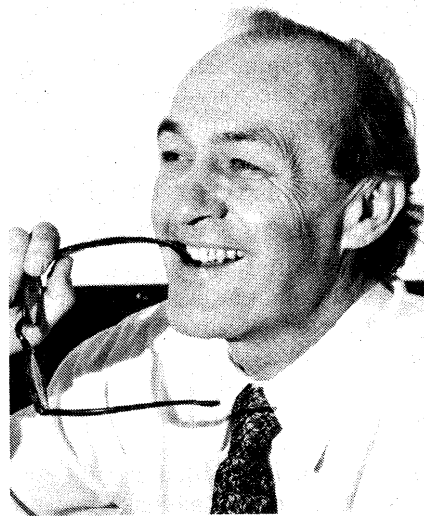
"While fully aware of the trade and operational reservations of some highly competitive ports and terminal companies we make this point: What might have been confidential information a few years ago is now becoming essential public information for the planning and development of future container ports and terminals.

"What we suggest should be discussed is how world ports can pool resources and experience to greater degree in order that I.A.P.H. can come up with logical conclusions of value to all ports anxious to improve existing techniques and thus achieve greater efficiency.

"Before I.A.P.H. can formulate worthwhile recommendations for the future we need to know more about present port handling rates and how these are achieved.

"The operating experience of established ports, the introduction of new and improved equipment, the use of simplified documentation, improved safety devices, and codes and methods ensuring the better education of terminal workers all contribute to greater efficiency.

(Continued on page 16 bottom)



Mr. J. Bax

Working Session

"On the Report of the Committee on Community Relations"

Chairman: Mr. J. Bax

Head, External Affairs Department
Port of Rotterdam
The Netherlands

"The obvious need to explain what should be obvious".

The title of the Committee on Community Relations' report gives a pretty good description of the situation: Ports, undoubtedly, are sources of economic strength, well-being, social security and international cohesion. But how broadly based is the consensus on this point? Not within the IAPH organisation but outside, among the general public. They are partners in our work; if they are not our plans may go sour. As many of us know. On the basis of their own experiences and the results of three questionnaires the committee members found a variety of attitudes ranging from active interest, indifference to plain hostility. Especially when the scales point towards the latter side it is clear that we have to explain why we believe in what we profess, not primarily in our own interest but because we think it would be to the advantage of the communities we serve. We should try to re-establish contacts, to strengthen them if they became loose, or increase the understanding of the actual and potential generating power of the port. The problem is one of great complexity simply because society of which we are part has grown increasingly complex. This makes our task more difficult but the challenge so much the greater. And let us not forget: challenges are the port's sustaining elements. We hope that the report will stimulate lively discussions at the conference and lead to the first steps in a common approach to face the prospect of the future. Confidently.

Financial crisis appealed by Officers

President Altvater, jointly with three Vice-Presidents, addressed to all members appealing for cooperation in overcoming the financial difficulty the Association is confronted with, which will be placed at the 11th Conference in France this May.

Hereunder is the reproduction of the Presidential Letter of Appeal and the Secretary-General's explanatory letter sent to all members prior to the presidential letter.

1. Presidential Letter to all members (Dispatched on February 15, 1979)

The gravity of the financial situation of our Association for the year 1979 cannot be overemphasized; and a modest assessment, supported by all members, should solve this problem. Also, a new system for monetary values worldwide (S.D.R.) as recommended by the Financial Committee of IAPH is a practical means of counteracting the fluctuating exchange rate worldwide.

The growth of our Association over the recent years has been dramatic. More than 72 nations representing in excess of 200 port authorities are now regular members. The purposes of IAPH are essential in establishing better understanding of our port problems on a worldwide basis while providing a cooperative, friendly and warm spirit of

association with fellow port directors on a day-to-day basis. The values to be derived from this Association are bountiful. Contacts abroad, sharing of port problems, exchange of ideas and more personal understanding of markets overseas are but a few of the benefits available. These advantages are at your disposal and as members we are only now beginning to understand this potential. While our financial troubles are temporary, we must overcome these difficulties in order to establish a sound program for future development.

We urge your concurrence in supporting these recommendations which will have top priority on the agenda of the forthcoming Le Havre Conference.

Sincerely yours,

George W. Altvater
President

A.S. Mayne
First Vice-President

Paul Bastard
Second Vice-President

A.J. Tozzoli
Third Vice-President

Hajime Sato
Secretary General

2. Secretary General's Letter to all members (December 20, 1978)

This letter is intended to inform you the present financial difficulty of your Association and obtain your understanding and support for the countermeasures to be taken by the Association at its forthcoming 11th Conference in Le Havre, May 1979.

As you readily know, pursuant to the resolution pertaining to the achievement of the financial self sufficiency of the Association, which was adopted at the 8th Conference in June 1973 at Amsterdam/Rotterdam, the Association has been working on how to achieve the goal.

The Association decided to raise the dues by 10% each for 1978 and 1979, at its 10th Conference in Houston, April 1977, based upon the five year prospects of the financial status (1977-1981), while it was resolved that the Finance Committee should keep working on how to tuck under with the difficulty in future.

The basis of the budget for 1977 and 1978 was US\$1.00=Yen 300, which was the prevailing rate at that time.

However, the global monetary turmoil since the latter part of 1977 has specifically affected the exchange rate of the US\$ and Japanese Yen. The rate presently is being steadied on a level of US\$1.00=Yen 190. This, devaluation of the US\$ and raise of Yen value, directly means that as much as 36% of the revenue has to be vanished.

As for the revenue in 1978, the Association has been fortunate enough to get the average of US\$1.00=Yen 233.05, because the real impact did come after a major portion of the dues payment had already been converted into Japanese Yen. But, this is no more applicable in 1979.

Moreover, this situation is threatening the financial stability of the IAPH Foundation which is in a position to help financially the Association until the IAPH becomes self sufficient.

— Mr. Dixon, page 14

the following topics which are parallel to the "guidelines".

Deficient Ships	Safety
— Identifying them	— In channels
— Coping with them	— In anchorages
— Corrective measures	— In terminals
Environmental Preservation	Teamwork
— Spill prevention	— Organizing the Port Community
— Cleanup measures	— Appraising skills and effectiveness
— Crisis management	— Training

The group leaders will keep things moving on these provocative topics. A report on the group consensus will be given to the entire conference and will possibly give guidance to COLS and the conference at large. We look forward to reflecting your views to the entire conference.

Finally I think you will be as impressed as I am with the Port Professionals who are on the Committee—a great source of pride to IAPH.

— Mr. Lorimer, page 15

"The sharing of experience in these areas can help less developed ports decide how, in their particular circumstances, they can best pursue the benefits offered by the modern unit load system.

"It is hoped debate and discussion on this aspect of our activities will bear fruit.

"Of considerable interest to ports, will of course, be the two lead papers prepared by Dr. Karl Monkemeier from Hamburg and Richard Barclay of Australia on the evaluation, methodology and characteristics of different terminals and their equipment."

The crisis was duly felt, and the matter was discussed by the Finance Committee and Executive Committee at Mombasa in April 1977, reaching to the conclusion that the Finance Committee should submit its final recommendation to Executive Committee by the end of 1978.

In the meantime, in order to keep the Association from the impact of the monetary turmoil as much as possible, a suggestion to adopt the SDR unit of the IMF as the Association's key standard for the membership dues, replacing the present standard of the US currency, was proposed to the Finance Committee from this office.

The SDR (Special Drawing Right) is a unit of monetary value employed by the IMF (International Monetary Fund) and is thought to be the most reasonable and solid monetary yardstick from the stand point of the world financial system.

In response to the suggestion, the Finance Committee, after conducting extensive study by the members, concluded that the suggested SDR system should be employed as the basis of the Association's dues assessment.

Roughly speaking, the adoption of the SDR system means an increase of some 25% revenue to the Association, since one (1) SDR unit presently is fluctuating on the US\$1.25/US\$1.29 line.

Furthermore, the Committee recommended that a temporary levy should be collected from the members under the voluntary basis to suffice the gap in 1979, as the SDR system could only be put into effect from January 1, 1980, even if the matter be so approved by the Association at the Le Havre Conference. Though subject to further study based upon more current and actual figures and data, the amount of the levy per one membership unit will be approximately 25% of the unit amount. Further details and procedures of the systems (SDR system from 1980 and Temporary Levy in 1979) will duly be announced.

Gentlemen, please be assured that we will try our best for the sake of your Association, however, taking this opportunity, I would like to ask for your good understanding on the matter and give your support to the proposals to be raised and passed at the forthcoming Le Havre Conference next May.

Hajime Sato
Secretary General

Mr. Pages proposes Permanent IAPH Representative to IMCO & UNCTAD

Mr. Andre Pages, Chairman of IAPH Standing Committee on Legal Protection of Navigable Waterways, proposed that an office of IAPH's Permanent Representative should be created, assumably in London, to liaise with the international maritime activities carried by IMCO, UNCTAD, UNIDROIT and other international organizations.

In the lights of the fact that the IAPH's position in the maritime field has been much advanced by the efforts exerted by the activities of special committees and liaison officers with UNCTAD and IMCO, it was felt that the matter should be studied by the experts in the direction of advancing the suggested concept, while the possible problematic points of financing and human resources should have to be solved step by step.

The matter will be deliberated by the Executive Committee and Board of Directors at the forthcoming meeting at the 11th Conference in France. (rin)

Mr. Robert Boeuf passes away



Mr. Robert Boeuf

A sad news of Mr. Robert Boeuf reached the Tokyo Head Office from Mr. Paul Bastard, IAPH Vice-President in France, in his letter dated 21st February, 1979. It read;

"It is my sad duty to inform you of the sudden decease of Mr. Boeuf which happened in Paris on Wednesday 31st January. The entire French port world has been deeply affected by this totally unexpected death. Mr. Boeuf assumed new and important duties in an area linked to port activities, that of river transport, a few months ago, and he was putting into this all his energy and talent when he died so suddenly."

"You know as well as I do that Mr. Boeuf has always been a tireless worker both in his professional and in his international activities such as his work linked to the IAPH. I am sure that many of his foreign friends who will be present at the Conference in Deauville will deplore this cruel loss".

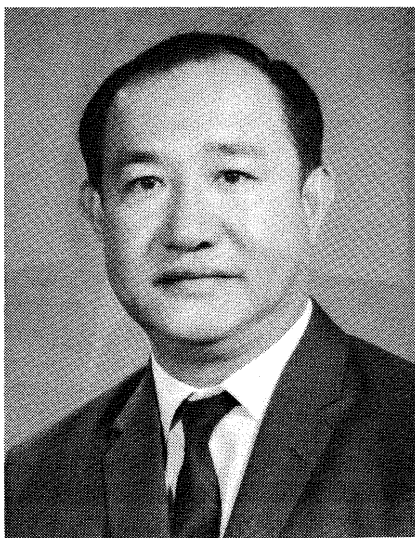
Mr. Robert Boeuf, former General Manager of Port of Dunkerque Authority, and more recently, Ingenieur General des Ponts et Chaussees, was one of the most experienced members of the Association serving as Director from France and Executive Committee member since the 8th Conference held in Amsterdam in 1973. Mr. and Mrs. Boeuf were regular participants to the consecutive past four conferences, namely, the 7th Montreal-71, the 8th Amsterdam/Rotterdam-73, the 9th Singapore-75 and the 10th Houston-77. At these conferences, he served on the Nominating and Honorary Membership Committees, and especially, his leadership as panel chairman on the occasion of the Singapore and Houston Conferences, dealing with the subjects "Port Cooperation Towards Revenue Evaluation" for the former and "Port Contribution to International Trade and Development" for the latter, still remains in our memory.

Secretary General Sato passed on to all Executive Committee members the sad news of Mr. Boeuf and sent to Mrs. Boeuf a message of condolences from IAPH through the Paris office of Vice-President Bastard on February 26th. The following is a curriculum vitae for the late Mr. Boeuf as provided by Mr. Bastard. (TKD)

Born 5th May 1919 in DRAGUIGNAN

• entered l'école Polytechnique in 1938

Mr. Howe Yoon Chong becomes Defence Minister: Former President of IAPH



Mr. Howe Yoon Chong

The Head Office was informed by the Port of Singapore Authority that Mr. Howe Yoon Chong, Chairman and General Manager of PSA and former IAPH President, was recently appointed the Minister of Defence of the Republic of Singapore, as the PSA's press release dated February 16, 1979 on page 48 of this issue refers into details.

It was February, 1970 that Mr. Howe first arrived on the IAPH scene when the Port of Singapore Authority hosted the inter-conference meeting of the IAPH Executive Committee one year prior to the 7th Montreal Conference. Since then Mr. Howe and his PSA's staff have been so lavish of assisting and supporting the Association's various ac-

tivities that IAPH could meet again in Singapore for the 9th Conference in 1975.

As many of the Association members may still remember the superlative hospitality that Mr. Howe Yoon Chong provided for the delegates, the Singapore Conference was one of the most well-organized meetings in IAPH history to bring forth fruitful results.

In Houston, Texas, April, 1977, Mr. Howe as the Association's President, played the most important role in presiding over all plenary and other business sessions and at the closing ceremony, upon his retirement from the office of Presidency, IAPH elected him as Honorary Member and commended with a gold badge and scroll for his meritorious contribution to the growth of the Association.

Secretary General Sato jointly with Secretary General Emeritus Akiyama sent a message of congratulations and wishes for his success as well as his future guidance to be rendered to IAPH. (TKD)

Credentials requested: Regular & Board Members

By-Laws provides that the Credentials Committee, a conference committee, shall have the power and duty to consider and determine the authority of a delegate to exercise the privileges of a member at the Conference and the authority of a person to act as a member of the Board of Directors (Sec. 37). In conformity with the provision, such members are requested to complete the suggested form of credentials from the head office and return it back to the head office by April 30, 1979, or at least send or bring it to the Credentials Committee (c/o Organizing Committee of 11th IAPH Conference, Port of Le Havre, B.P. 1413, 76067 Le Havre Cedex, France) by no later than the first day of the Conference, namely May 11, 1979. (rin)

Attendance by Proxy urged: Regular & Board Members

By-Laws provides that the regular members and members of Board of Directors shall have the right to attend the Conference by proxy (Sec. 14, 37). Those applicable members are requested to complete the suggested form of proxy from the head office and return it back to the head office by April 30, 1979, or at least send it to the Credentials Committee (c/o Organizing Committee of 11th IAPH Conference, Port of Le Havre, B.P. 1413, 76067 Le Havre Cedex, France) by no later than the first day of the Conference, namely May 11, 1979.

Publications (See page 20)

Seminars, Conferences, etc.

1. "Institute on Transient Flow and Hydromachinery" (endorsed by the American Society of Civil Engineers, Colorado Section.)
Colorado State University, June 4-8, 1979
Fort Collins, Colorado, USA
Fee: US\$450.00
Contact: H.W. Shen, Engineering Research Center, Colorado State University, Fort Collins, Colorado 80523 (303/491-8552)
2. "The 2nd Bulk Handling and Transport Conference"
International Congress Centre, RAI/Amsterdam, June 27-29, 1979
Details from: C.S. Publications Ltd., Arun House, 201-205

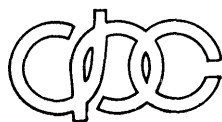
- became engineer des Ponts et Chaussées in 1943.

Professional Career

- 1943-1952: in charge of the Rhône-Rhine Canal service, then of the Marne-Rhine link and the Rhône-Saône Navigation service,
- 1952-1960: elected works manager of the Port Authority of Bordeaux
- 1960-1961: Head of the Department of Maritime Ports and Navigable Waterways in the Ministry of Equipment
- 1961-1963: Director of Northern Navigable waterways and the Dover Straits service
- 1963-1967: Regional manager of the Northern Navigations
- 1967-1976: Director of Dunkirk Port Authority
- 1976-1978: in charge of the 33rd division of the general inspection of the river navigation in the Rhône Basin
- 1978: elected Chairman of the National Navigation Office

Honours:

Chevalier de la légion d'honneur,
officier de l'Ordre National du Mérite
Chevalier du Mérite Maritime



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Executive Director: KAZUHISA NAKASHIMA

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1-4, Shibuya 3-chome, Shibuya-ku, Tokyo
Telex: PORTCON J23536
Cable: HARBORCON TOKYO
Tel.: Tokyo (400) 4155

Branch Offices: Kobe, Niigata, Kyushu, Nagoya, Seoul and Jakaruta

High Street, New Malden, Surrey, KT3 4BH, England.

3. "Ro-Ro 80 Conference" The 4th International Conference and Exhibition on Transport using Roll-on/Roll-off methods.

Monte Carlo Convention Centre, Monaco, April 15-17, 1980

Details from: Ro-Ro Secretariat, BML Business Meetings Ltd, 2 Station Road, Rickmansworth, Herts WD3 1QP, England.

Membership Notes

New Members

Regular Members

Vancouver Port Authority

#2760—200 Granville Street, Vancouver, B.C., Canada

Office Phone: Area Code 604-666-3841

Telex: 04-53310

(Mr. G.W. McPherson, Chairman)

Kandla Port Trust

Post Box No. 50, Gandhidham (Kutch), India

Office Phone: 2146

Telex: 0105-208

Cable: KANDPORT

(Secretary)

Bergen Havnevesen

Slottsgt. 1, 5000 Bergen, Norway

Office Phone: 47 5 219780

Port Authority of Jebel Ali

P.O. Box 3258, Dubai, U.A.E.

Office Phone: 432525

Telex: 45451

Port of Helsinki Authority

Etelaranta 10, 00130 Helsinki 13, Finland

Office Phone: 358 0 169 3801

(Mr. Eljas Muurinen, Managing Director)

Bundaberg Harbour Board

P.O. Box 75 Bundaberg 4670, Queensland, Australia

(Mr. F.H. Wise, Secretary)

Port of Seattle

P.O. Box 1209, Seattle, Wa 98111, USA

Office Phone: (206) 587 4830

Telex: 328058

(Mr. Richard D. Ford, Executive Director)

Haugesund Havnevesen

P.O. Box 186 5501, Haugesund, Norway

Office Phone: (047) 27035

Telex: 42678 hhv n

Cable: HGSD HAVNEVESEN

(Mr. Odd Michael Odland, Port Manager)

Open forum: Port releases:

Shippers' Needs Emphasized

From "Container News" December 1978

The marketing efforts of most American ports need to be oriented more toward the needs of shippers, according to Dr. Leslie Kanuk, newest member of the Federal Maritime Commission.

Speaking at the convention of the American Association of Port Authorities in Nassau, The Bahamas, Kanuk said "I have found that most port marketing efforts are not consumer—or shipper—oriented. That is one of the things that I've been told by traffic managers working for some of the largest shippers in this country."

Dr. Kanuk, emphasizing she was speaking both as an FMC commissioner and former marketing consultant, said port marketing is more important than ever.

"Ports must devise better ways to attract cargo in order to survive. They simply cannot rely on history, tradition, geography or proximity as a way of reserving cargo," she said.

"The naturally tributary concept—if not already obsolete—is rapidly becoming so. We're living in a fast-changing dynamic society in which geographic boundaries have been largely overcome by transportation technology and innovation. We cannot constrain the future within the inflexible limits of yesterday. In my view, the naturally tributary concept is outmoded in a free enterprise economy in which the consumer is king."

Kanuk said every shipper has the right to evaluate and select routes and carriers on the basis of his own best interests. "The port which manages to satisfy the needs of a significant number of shippers will undoubtedly thrive; those that make little effort to discover the shippers' needs—or to figure out ways to better satisfy them—are just as likely to fail."

All Forewarned

Although she acknowledged that some ports do have unique geographic characteristics resulting in some captive cargo, she said a port cannot afford not to market, because some other port will try to find a better way to serve those shippers.

"Clearly then, all of you are forewarned: the naturally tributary concept is no longer a stable bedrock upon which to build a port empire."

Port marketers need to know everything there is to know about their present customers and their potential customers, she said. "They should know these shippers' attitudes towards their own port and towards competing ports; what they perceive to be their advantages and their shortcomings. A port should know its customers' specific shipping needs, and why its prospects don't presently use the port."

Marketing

The commissioner cited the marketing concept used by successful marketers today. "This concept is based on a customer orientation, and calls for the development of products, services and prices designed to meet the predetermined needs of prospective customers."

She added that most port salesmen are not shipper oriented. "And perhaps that is why the recent shipper survey found that less than 13 per cent of the shippers interviewed consider port salesmen to be an important information source for port selection."

Kanuk said she has been asking shippers what they look for in choosing a port. The most important factors, she said, are:

Total door-to-door costs; reliability and consistency of service; total door-to-door transit time; and availability of specialized port equipment.

"The shipper is not interested in your port; he's interested in solutions to his problem," Kanuk said. "Don't expect him to use your port just because you have a big investment in equipment or because you have a large debt service."

Kanuk said the most important advice she could give was "to show a shipper how your port can help him solve his problems—help him move his cargo cheaper or faster—and you'll increase the likelihood of getting his cargo."

Publications

1. "International Maritime Dangerous Goods (IMDG) Code (Amendments)"
Sales No. 78.14.E £10.00 (English)
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Contents

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| A. PART III — SEWAGE | B. PART IV — GARBAGE |
| 1. Introduction | 1. Introduction |
| 2. Estimates of quantities of sewage required to be received | 2. Estimates of quantities of garbage to be received |
| 3. Measures for minimizing the need for and capacity of reception facilities | 3. Measures for minimizing the need for and capacity of reception facilities |
| 4. Technology of the separation process | 4. Technology of the solid waste management process |
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The future of port development in the Rhine, Meuse and Scheldt Delta

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Contents

1. The Increase in the Scale of World Trade
2. The Increase in the Scale of Shipping
3. The Growth of the Traffic of the Seaports of the Delta
4. The Accessibility of the Benelux Ports
5. The Revolution in Cargo Handling Techniques
6. The Trek of Industry towards the Sea
7. Conclusion

"There is a tide in the affairs of men
Which, taken at the flood, leads on to fortune,
Omitted, all the voyage of their life
Is bound in shallows and in miseries.
On such a full sea are we now afloat,
And we must take the current when it serves
or lose our ventures".

Wm. Shakespeare
Julius Caesar Act IV Scene III

In my opinion this declaration by Brutus certainly applies to the postwar developments which have taken place in the delta of the Rhine, Meuse and Scheldt.

A "full sea" of possibilities became available in the fifties and sixties and local as well as national authorities in both Belgium and the Netherlands took advantage of the favourable economic "tide".

It must certainly be stressed—as Shakespeare does—that the opportunities which presented themselves were not only fully used, but even made the most of since the facts are sometimes represented as though recent developments were simply the consequence of a concatenation of circumstances which we simply experienced and did absolutely nothing to bring about or to stimulate.

Various trends and factors in a unique concurrence of circumstances, contributed to create a situation which led to the golden decades for the delta ports.

Among them we should mention the enormous growth of world trade in an exceptional atmosphere of free trade, the abundance of new sources of energy especially mineral oil and of other overseas raw materials, the dynamic postwar reconstruction which after a short period was greatly stimulated by the development of a European common market, etc.

In the delta ports this was expressed in a tremendous increase in traffic, in a far-reaching alteration in the structure of maritime shipping and cargo handling and, last but not least, in an unparalleled industrialization in and around the seaports.

It is our intention here to examine which were the principal economic factors which were at the root of these changes.

1. THE INCREASE IN THE SCALE OF WORLD TRADE.

Since the end of the Second World War world trade has grown at an extraordinarily rapid rate.

Evolution of world trade (in millions of US\$).

Year	Imports (c.i.f.)	Exports (f.o.b.)
1938	25,400	22,700
1948	63,500	57,500
1958	114,500	108,600
1968	252,500	239,700
1976	1,020,836	988,483

Source: United Nations—External trade—p. 424.

These figures (a circa 650% increase since 1960) must naturally be interpreted with the necessary caution since inflation has had a great influence on prices. The unit value (price) index rose from 100 in 1970 to 258 in 1977 whereas with regard to the same base year it was only 90 in 1963 and 93 in 1968.

However, this does not alter the fact that the index of the volume of world trade (exports) rose from 54 in 1963 with regard to 100 in 1970 to 146 in 1977. In the case of imports the index was 46 in 1960, 55 in 1963, 100 in 1970 and 152 in 1977.

In spite of a fall in world trade in the recession year of 1975 trade had nevertheless trebled in about 15 years (cf. Monthly Bulletin of Statistics—United Nations—April 1978, p. xxii)

The development of world maritime cargo traffic over the same period was very similar. It doubled between 1950 and 1960 and grew even more rapidly in the 'sixties.

World maritime cargo traffic (in millions of tons)

Year	Loaded	Index	Unloaded	Index
1937	494	44.5	496	44.8
1950	550	49.6	549	49.7
1960	1,109	100.0	1,105	100.0
1970	2,605	234.9	2,530	228.9
1976	3,352	302.2	3,233	292.5

A recent UNCTAD report estimated that the growth in 1977 was 3.3%.

These overall figures reveal a trend but conceal quite a number of divergent developments.

In the first place the world's maritime cargo traffic is growing even faster if, instead of being expressed in tons, it is expressed in ton-miles.

Thus Fearnly and Egers Chartering Co. Ltd. have estimated that world maritime cargo traffic grew from 1,638 million tons in 1965 to 3,431 million tons in 1977, or with 109.4%. In thousands of millions of ton-miles, the same traffic increased from 5,849 in 1965 to 17,785 in 1977, or with 204%.

In addition the nature of the cargo being transported must be taken into consideration. Mineral oils have accounted for more than dry cargo especially since the mid-'sixties (in 1977 53.7% of world maritime cargo traffic consisted of mineral oils) and it is precisely crude oil which is being transported over increasingly longer distances (1965: 2,480 thousand million ton-miles—1977: 10,800 thousand million ton-miles).

Finally, not every continent is sharing in this growth to the same extent. In the developing countries it is above all the exports of raw materials including oil which set the pace. In the highly developed countries it is imports which have increased sharply. These latter countries account for some 78% of all cargo unloaded and some 33% of all cargo loaded. About 50% of the mineral oil traffic was bound for the European continent as was about 40% of the dry cargo traffic.

2. THE INCREASE IN THE SCALE OF SHIPPING.

The enormous increase in the amount of cargo to be carried—as well as the ever increasing distances involved—has led to an unparalleled increase in the world shipping fleet.

However, in addition to this the carrying capacity of that fleet is greater than before as a result of the increase in the speed of ships and the faster loading and unloading in the ports.

The consequence of this was that in 1970 per ton carrying capacity of the world fleet about 17% more was carried than in 1960. (More recent figures can scarcely be used since as a result of the large number of ships which have been laid up the efficiency of the fleet is in fact declining).

However, the principal result of these increasing and frequently fairly homogeneous traffic flows is the possibility of increasing the scale of the means of transport.

Whereas the T2 tanker (c. 16,000 dw tons) was a standard vessel during the Second World War, today ships of 250,000 dwt are standard vessels for the long distance transport of crude oil and vessels of over 500,000 dwt are in service. This spectacular growth has (temporarily?) been slowed down not for technical but for economic reasons.

The increase in capacity which results from the introduction of such supsize vessels is well illustrated by the following table which compares transport between the Persian Gulf and Western Europe by three different types of vessel.

Type of vessel	Speed in knots	Products in thous. mill.		per year
		Average no. of turnrounds	of ton/km per turnround	
T2 tanker: 16,000 dwt via Suez	16	8.7	193	1,679
250,000 dwt tanker	16	6.5	4,630	30,095
550,000 dwt tanker	16	6.5	10,000	65,000

(Prof. A. Vigarié: *l'espace-coût—Marine Marchande* 73—Paris 1973, p. 35).

Such an increase in productivity per vessel in service makes it easier to understand the enormous decrease in the cost of transport per ton/km as we have to take into account decreasing building, manning and propulsion costs per unit when vessel size increases.

It is thus hardly surprising that the number of supsize vessels has constantly increased. According to Lloyd's Statistical Tables by the end of 1977 there were 656 vessels of over 100,000 GRT—which roughly corresponds to over 200,000 dwt—in service. All of these ships were less than ten years old and together account for over half the tonnage of the entire tanker fleet which at the end of 1977 numbered no less than 6,912 vessels, in all 174 million GRT.

In fact a more graphic picture of the situation can be painted by pointing out that of the 656 vessels of over

100,000 GRT (or c. 200,000 dwt) in service, 414 were 4 years old or less and their total tonnage amounted to c. 57 million GRT, or slightly less than 1/3 of the world fleet capacity.

As a result of the oil crisis many of these tankers have now been taken out of service and laid up. On the basis of the proposition that "abundant cheap energy has become a way of life" the forecasts of the International Energy Agency continue to predict that the Opec oil requirements of both North America and Western Europe, as well as of Japan and the Comecon countries, will be so great that production shortages can be expected in about 1985 (100. Al, the magazine of Lloyd's Register of Shipping, July 1978, p. 3). This would naturally mean a large increase in transport requirements.

Even though these gigantic tankers appeal to the imagination we should not lose sight of the fact that the average tonnage has increased in various other types of traffic as well.

This is, for instance, the case with regard to bulk shipping where vessels of up to 125,000 dwt for carrying ores and coal and vessels of up to 80,000 dwt for grain are becoming increasingly common. Various economic factors (the requirements of the receiver) as well as technical factors (loading and unloading times which are longer than in the case of oil, accessibility of as well loading as unloading ports, storage facilities and costs) have meant that the increases in scale have not been, and probably will not be, so great as in the case of tanker shipping.

In general cargo shipping too the average tonnage increased to a considerable degree, especially in cases where great quantities of uniform or uniformized unit loads could be formed (e.g. vessels with 30 to 50,000 tons of semi-finished iron and steel, 25 to 50,000 tons of forest products, 5 to 6,000 cars, etc.).

All of this has had very odd consequences for the virtual distances which are becoming more and more different from the geographical distances.

If the cost of transporting one ton of crude oil from the Persian Gulf in a 250,000 dwt tanker, or one ton of coal from South Africa in a 125,000 dwt vessel, or one ton of paper pulp from the west coast of Canada via the Panama Canal in a 50,000 dwt ship, or one car from Japan in a car carrier with a capacity of 6,000 units, is compared to the cost of transport for the same commodities by road, rail or barge on the continent of Europe, then it becomes obvious that, expressed in terms of transport costs, the oceans are narrow and the continents very wide so that certain countries are much closer to us than we imagine and that in accordance with Prof. Vigarié's notion of "l'espace-coût" (space-cost) the concepts of geography have been upset.

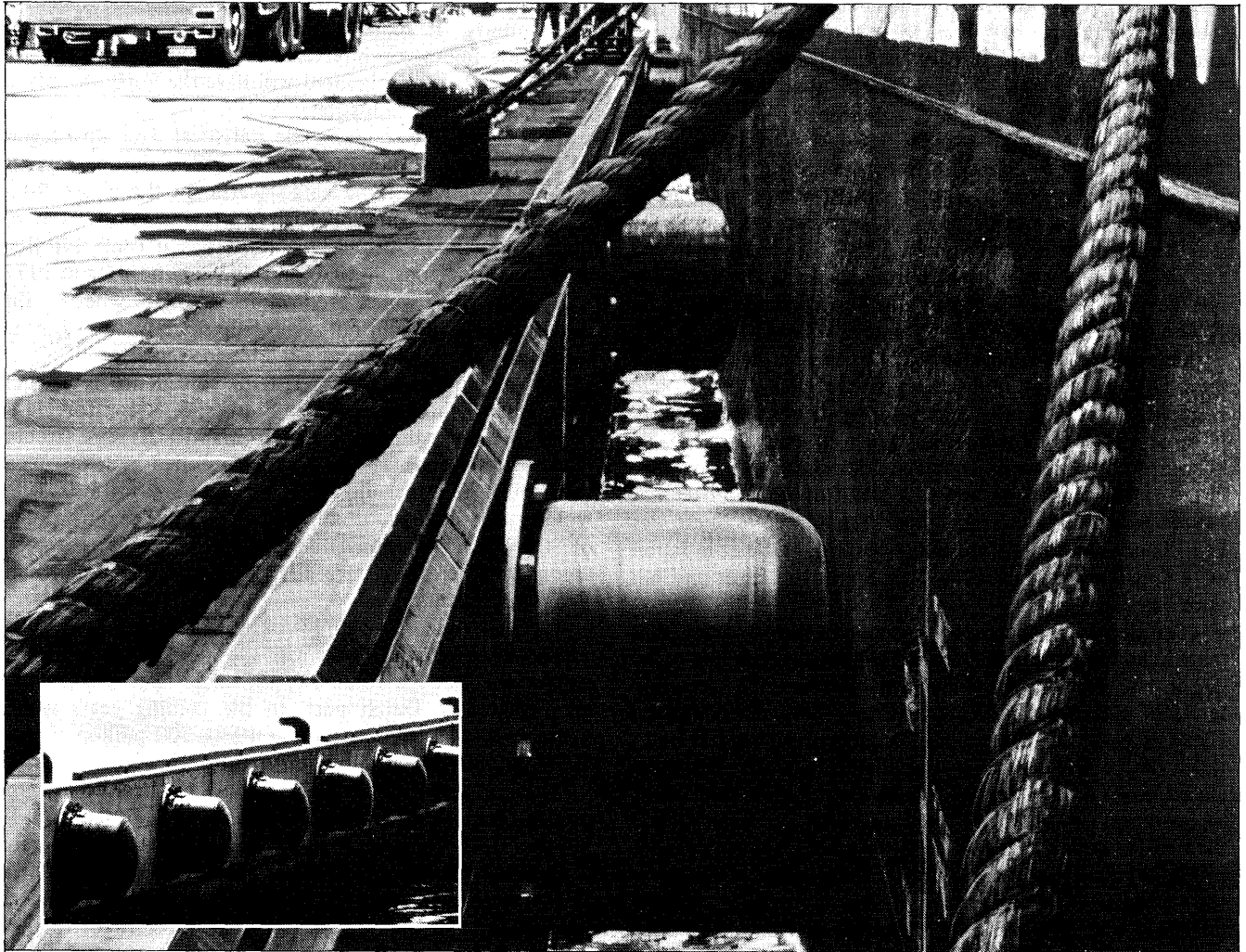
At the moment we are writing this, i.e. November 1978, the maritime freight rates for the transport of iron ore varied in approximately the following proportions:

Route	km	Type of vessel	Maritime or barge freight rate
Australia/W. Europe	±20,000	125/150,000 dwt	4.5 \$
Brazil/W. Europe	± 6,000	125/150,000 dwt	3.0 \$
Monrovia/W. Europe	± 4,000	60,000 dwt	3.0 \$
Narvik/W. Europe	± 2,000	125/150,000 dwt	2.5 \$
Rotterdam/Ruhr	± 250	push-tug convoy 9,000 t	2.5 DM or 1.25\$

This means that Australia is only 1.5 times further from Western Europe than Monrovia and not five times. It

(Continued on page 24)

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(Continued from page 22)

equally means that Brazil is not three times further from Western Europe than Narvik in Norway, but only a few hundred kilometres.

In conclusion this means that expressed in maritime freight rates the transport of one ton of ore 20,000 km from Australia to Western Europe costs less than three times more than the transport of the same ton of ore by the most modern pushing unit 250 km from Rotterdam to the Ruhr.

As the result of the decline in the unit cost of transport which was made possible by the increases in scale of the means of transport which in their turn were the result of and at the same time the cause of greater international trade, the world has become smaller than before and is increasingly becoming one large common market.

Prof. Vigarié has put it as follows (Op.cit. p. 36): "L'abaissement des coûts des transports océaniques signifie que l'homme est en train de maîtriser l'espace-coût, comme il l'a fait avec la vapeur pour l'espace-étendue. En terme d'acheminement il est nécessaire de prendre conscience que Le Havre est plus près des charbonnages de Pennsylvanie que de ceux du Pas-de-Calais; que les hauts fourneaux de Rouen, fermés depuis quelques années, étaient lors de leur dernière phase de fonctionnement plus près des mines de fer d'Orissa (Inde) que de celles de la région de Caen; que Dunkerque est plus près de la Maurétanie que de la minette lorraine et de la bauxite australienne que de celle de Provence. L'on pouvait citer des faits semblables pour des liaisons océaniques destinées à d'autres continents. Les fonderies d'aluminium du Puget Sound, côte ouest des Etats-Unis sont dans le voisinage de Carpentarie et le Japon est aujourd'hui aux portes du Brésil pour son fer et du Chili pour son cuivre".

(The decline in the cost of oceanic transport means that man is in the process of overcoming space-cost just as he did in the case of space-distance by means of steam. In terms of the dispatch of cargo it must be realized that Le Havre is closer to the coal-fields of Pennsylvania than to those of the Pas-de-Calais; that the Rouen blast furnaces, closed down a few years ago, were during their final phase of operations closer to the iron ore mines of Orissa (India) than to those in the region of Caen; that Dunkirk is closer to Mauretania than to the iron ore of Lorraine and closer to the bauxite of Australia than to that of Provence. Similar instances can be cited with regard to the ocean links of other continents. The aluminium foundries of Puget Sound on the West coast of the United States are adjacent to the Gulf of Carpentaria while Japan is next door to Brazil for its iron ore and Chili for its copper).

3. THE GROWTH OF THE TRAFFIC OF THE SEAPORTS OF THE DELTA.

The increase in world trade, more in particular of world shipping trade, has naturally had an enormous effect upon seaports. Port expansion works were carried out which formerly would scarcely have been imaginable. Within a few decades the ports of the delta of the Rhine, Meuse and Scheldt grew to become the largest seaport complex in the world.

After the "golden 'sixties" most of the delta ports had become unrecognizable. In both Belgium and the Netherlands they had been the real centres of the growth of the national economy: "de kurk waarop de Nederlandse economie drijft" (the raft on which the Dutch economy is

floating) as it was once said in Rotterdam.

The result of this success has been that at the end of the 'seventies the national governments for reasons of town and country planning—or of more equitable distribution—or even more perhaps under the political pressure of other regions—have tried to site new traffic flows in alternative places, usually at the cost of very considerable investments.

Thus for the importation of Algerian natural gas preference was given in France to Nantes-St. Nazaire rather than Le Havre, in Belgium to Zeebrugge rather than Antwerp, in the Netherlands to Eemshaven rather than Rotterdam and in Germany to Wilhelmshaven rather than to Hamburg. It remains an open question whether this deliberate policy of intervention in which economic realities are frequently ignored will have the hoped-for effect of attracting other industries.

It is interesting to give some statistical data with regard to the spectacular growth of the large West European ports.

The overall maritime cargo traffic in the above listed four Dutch and three Belgian ports increased from 60 million tons in 1950 to 137 million tons in 1960, and then to 350 million tons in 1970 and 393 million tons in 1977.

The question which everyone is asking is whether this development will continue, especially since Western Europe is increasingly in the grip of a worldwide recession.

At this time when the crisis of confidence is perhaps even greater than the economic crisis, it is comforting to recall the very thorough **Dutch Seaport Report** (Nederlandse Zeehavennota) which was published in 1966. What value must be attached to the forecasts for traffic in 1980 which are included in this explanation of the seaport policy of the Dutch national authorities which was signed, amongst others, by Mr. J.M. den Uyl as Minister of Economic Affairs?

I recall also the study of the Dutch Ministry of Transport and Public Works with the title "TP 2000" which considered that the volume of the cargo flow which could be expected in Dutch ports in the coming years would increase to 400 million tons in 1980, 700 million tons in 1990 and one thousand million tons by the year 2000.

There is also the thorough "**Social Cost-Benefit Analysis of the Outport of IJmuiden**" which was published on 14 March 1975 by the Seaport Consultative Commission (Commissie Zeehavenoverleg) in accordance with which it is estimated that with the construction of an outport an increase in maritime cargo traffic at Amsterdam to 64.9 million tons in 1990 and 102.7 million tons in the year 2000 could be expected.

To sum up we can conclude that all of these studies show that until a few years ago people in the Netherlands were convinced that the great dream of the Golden Delta has not yet come to an end.

There can be no doubt that the lack of confidence prevailing at present is in direct contradiction to that optimism. The over-boldness of yesterday has given way to a certain despondency. André Fontaine, editor-in-chief of "Le Monde" in his book "Le dernier quart de siècle" (Fayard, Paris 1976) speaks of the "weariness of Europe" (la fatigue de l'Europe) and "winded giants" (les géants essoufflés).

Inflation, the energy crisis and the recession have put an end to the growth euphoria of the "Golden 'Sixties".

The danger is naturally from imaginary that just as formerly people could not or would not see any end to the tempestuous growth, so now they will become prey to a

Maritime cargo traffic in some of the principal Benelux ports.

	Total maritime cargo traffic in 1000 t Index			Mineral oil traffic in 1000 t Index			Dry cargo traffic in 1000 t Index		
ROTTERDAM									
1950	29,688	100		9,507	100		20,181	100	
1955	66,215	222		25,212	265		41,003	203	
1960	83,404	280	100	40,099	422	100	43,305	214	100
1965	122,706	413	147	68,577	721	171	54,129	268	134
1970	225,790	760	270	143,881	1513	359	81,909	405	188
1975	273,124	920	327	174,128	1832	434	98,996	491	229
1976	287,745	969	345	183,742	1933	458	104,003	515	240
1977	271,908	915	326	165,771	1743	413	106,137	525	245
AMSTERDAM									
1950	5,234	100		542	100		4,692	100	
1955	7,760	148		705	130		7,055	150	
1960	10,824	206	100	1,464	270	100	9,360	199	100
1965	13,877	265	128	2,085	385	142	11,792	251	126
1970	21,355	408	197	5,223	964	357	16,132	344	172
1975	18,356	351	170	5,145	949	351	13,211	282	141
1976	18,699	357	173	5,206	961	356	13,493	288	144
1977	17,113	326	158	4,226	779	287	12,887	274	138
FLUSHING									
1950	340	100		270	100		70	100	
1955	791	233		637	236		154	220	
1960	526	155	100	465	172	100	61	87	100
1965	923	271	175	747	277	161	176	251	289
1970	784	231	149	516	191	111	268	383	439
1975	3,961	1165	753	289	107	62	3,672	5246	6020
1976	4,670	1374	888	330	122	71	4,340	6200	7115
1977	4,850	1426	922	220	81	47	4,630	6614	7590
TERNEUZEN									
1950	824	100		—			824	100	
1955	2,059	250		—			2,059	250	
1960	1,147	139	100	—			1,147	139	100
1965	1,686	205	147	33			1,653	201	144
1970	3,500	425	305	762			2,738	332	239
1975	4,830	586	421	41			4,789	581	418
1976	5,740	697	500	40			5,700	692	497
1977	5,690	691	496	67			5,623	682	490

Source: Dutch ports: Central Office of Statistics (C.B.S.)

deep pessimism in which all confidence in the future is lost.

Are we really in the declining phase of a Kondratieff-cycle which will last 25 years?

Even Walter W. Rostow supports this thesis in his study "The World Economy—History and Projects" (1978), in which he points out that the beginning of each cycle has been an increase in the prices of primary products compared to the prices of industrial products, as a result of which economic growth declined. The price revolution of 1972-1977 is thus supposed to be the explosive first phase of the fifth Kondratieff cycle since 1783.

It is always dangerous however to rely too much on certain fashionable theories or to draw long-term conclusions from a development which has only been making itself felt for a short term. The collapse of our Western economic system or a stationary economy has been forecast in the past by all too many economists, it is sufficient to cite names such as Malthus and Marx, but also to mention A. Smith, Ricardo and Keynes.

Our Western attitude to life has in contrast to this always been so progress orientated that in the medium term

the economy can hardly but take a turn in the opposite direction. André Fontaine expressed this aptly when he wrote (Op.Cit. p. 5): "C'est l'une des lois de l'histoire que tous les moments de doute et de décadence ont été suivis de périodes de renaissance. Il n'y a pas d'hiver si long et si pénible qu'un jour le printemps ne vienne chasser". (It is one of the laws of history that every period of doubt and decadence has been followed by a time of renaissance. There is no winter so long and so hard that it will not be one day chased away by spring).

In this perspective it is gratifying to know that several recent studies have postulated a further increase in world trade and port traffic in the medium term.

I am thinking of the brochure published by the City of Rotterdam and the Rhine Estuary Public Body (Openbaar Lichaam Rijnmond), with the fitting title "Take heart" (Een riem onder het hart—1977). In the middle of a recession it postulates a further increase in traffic for 1990.

It has carefully calculated that in 1990 the maritime cargo traffic in the ports in the estuary of the Rhine could well amount to more than 500 million tons. Even if this

	Total maritime cargo traffic in 1000 t Index			Mineral oil traffic in 1000 t Index			Dry cargo traffic in 1000 t Index		
ANTWERP									
1950	21,507	100		2,053	100		19,454	100	
1955	32,341	150		6,681	325		25,660	132	
1960	37,525	174	100	9,171	447	100	28,354	146	100
1965	59,391	276	158	21,405	1042	233	37,986	195	134
1970	80,722	375	215	32,165	1567	350	48,557	250	171
1975	60,483	281	161	14,657	714	160	45,826	236	162
1976	66,046	307	176	14,451	704	158	51,595	265	182
1977	70,036	325	187	17,106	833	187	52,925	271	187
GHENT									
1950	2,228	100		158	100		2,070	100	
1955	3,272	146		176	111		3,096	149	
1960	2,983	133	100	105	66	100	2,878	139	100
1965	3,154	142	106	126	80	120	3,028	146	105
1970	10,189	457	342	3,161	2001	3031	7,028	340	244
1975	14,348	644	481	3,683	2331	3531	10,665	515	371
1976	15,098	678	506	3,146	1991	3016	11,952	577	415
1977	14,729	661	494	2,241	1418	2148	12,488	603	434
ZEEBRUGGE									
1955	718	100		54	100		664	100	
1960	1,039	145		39	72		1,000	151	
1965	1,741	243		396	733		1,345	203	
1970	7,871	1096	100	5,328	9867	100	2,543	383	100
1975	8,027	1118	102	4,905	9083	92	3,122	470	123
1976	9,781	1362	124	5,888	10904	111	3,893	586	153
1977	9,336	1300	119	4,982	9226	94	4,354	656	171

Source: Belgian ports: National Institute of Statistics (N.I.S.)

It should be noted that the port authorities of Ghent and Zeebrugge published different "traffic" statistics. However, for reasons of uniformity and the possibility of comparison at a national and Benelux level the data of the National Institute, based on customs returns, have been given in the above survey.

figure is lower than the forecast made in 1970, it nevertheless means an increase of some 200 million tons.

It is true that the tone of the Burgomaster and Aldermen of Rotterdam in this report about the importation by sea of natural gas "L.N.G.?—Rotterdam!" (1 August 1978) is a little more pessimistic and considers that Rotterdam's refining capacity can be expected to decline, perhaps to as low as 75% of present capacity.

I also have many other studies in mind which have been carried out with regard to world trade (see Dr. L. Jolmes "Güterverkehr in einer sich wandelnden Weltwirtschaft—Hansa no. 7, p. 601, 1977) and which are based amongst others on some of the following propositions:

- the world's population is still increasing and as a consequence so is the demand for consumer goods in all parts of the world;
- the economic policy of the highly industrialized countries continues to have further economic growth as its aim. Moreover the OECD-countries account for 66.2% of world trade;
- the growth of the developing countries will influence world trade more than in the past;
- the continuing worldwide division of work will give rise to new traffic flows;
- etc.

The conclusion is that until the year 2000 world trade will continue to increase and will even multiply.

Dr. Beth of the Institute of Shipping Economics at Bremen gave in mid 1977 (Defense Transportation Journal, August 1977) as his considered opinion that "forecasters

rather unanimously believe that the seagoing trade of general cargo in the long term will grow at an average rate of some 4%".

A recent GATT study (R. Blackhurst, N. Marian and J. Tumlin, September 1978) about "Adaptation, Trade and Growth in the Developed and Developing Countries" postulates: As long as three quarters of the world's population remains poor it is pointless to assert that the world economy is approaching the limits to growth and that the motive forces behind this growth are exhausted. The poverty of which the majority of the world's population is a victim not only demonstrates that the world needs economic growth but it spotlights in a more direct and important way the growth potential which is still present in the world economy. Population growth, natural resources or technology do not constitute any restrictions on the growth and the present economic problems which mainly amount to the inflation—unemployment syndrome are principally of a temporary nature".

It is thus not surprising that such an authoritative organ as Lloyd's Register of Shipping has just recently declared: "In spite of the present recession the long-term commercial prospects must be positive. The key factors are an increasing world population and the pursuit of affluence, or at least a reasonable standard of living, which has now become an accepted international goal. International sea-borne trade has risen as a result by some eight per cent per annum since 1950 and, overall, is likely to continue to do so in the 'Eighties". (Ships for the 'Eighties—100 Al—July 1978).

Our ports cannot but feel the repercussions of this. In some ports this will inevitably lead to further expansion of the infrastructure, but in every case and in all of the ports the existing installations will have to be thoroughly adapted to cope.

4. THE ACCESSIBILITY OF THE BENELUX PORTS.

The extent to which shipping has been stimulated by enormous increases of scale has been examined in detail above. This has naturally been of consequence for the access routes to seaports.

Rotterdam:

which is accessible to ships with a draft of up to 68' is preeminently the crude oil supply port not only for the local refineries or those situated in the interior in Germany and Belgium, but also for refineries in other delta ports such as Amsterdam, Antwerp and Flushing.

This is the reason why the plans for the possible deepening of the "oil channel" to take tankers with a draft of 75' are being followed with such interest in all of the delta ports.

Many arguments are cited as to why this project is economically justified. Even if further growth in the size of tankers to 500,000 dwt and more is slowing down it nevertheless remains the case that the oil companies are showing increasing interest in tankers—which in many cases have been laid up—of 350,000 dwt or restricted draft tankers of 400,000 dwt. Both running costs and propulsion costs, taking the increased bunkering costs into account, are considerably cheaper per ton of oil transported so that certain oil companies are increasingly changing over to vessels of 300,000 to 350,000 dwt even if this means that at present two ports have to be called at because of the restricted draft at Rotterdam.

As a result of the important role which Rotterdam plays in supplying a large part of Western Europe the deepening of the oil channel is a project which is of importance to more than just Rotterdam.

Amsterdam:

which is now accessible to vessels of up to 80,000 dwt wanted a few years ago to be able to take vessels of up to c. 180,000 dwt by the construction of an outport. They were afraid that without such an outport bulk cargo traffic might disappear from Amsterdam and the port might lose its multifunctional character.

Few port projects in the world have been studied with such thoroughness as that for the Amsterdam outport. The social cost-benefit analysis which was made in March 1975 by the National Seaport Consultative Commission (Commissie Zeehavenoverleg) is a study which commands respect. Nevertheless in mid 1978 the City authorities seem to have decided not to go ahead with the project and to limit the further expansion of the port into the sea to the construction of berths for deep draft vessels within the already existing piers at IJmuiden.

As far as the maritime accessibility of the **ports on the Scheldt** are concerned the aim was laid down in Belgium of achieving 125,000 dwt at high-water even on a neap tide. This will naturally also benefit the Dutch Scheldt-ports of **Flushing** and **Terneuzen**.

With regard to the improvement of the navigability of the Scheldt and the safety of shipping there is close cooperation between Belgium and the Netherlands and Belgium in particular is making large investments. In the

opinion of both Dutch and Belgian specialists modern technology methods completely justify the expectation of a further improvement in the accessibility of the ports in the Scheldt basin in the future.

The basis of **Antwerp's** present policy is the gradual improvement of accessibility via the Scheldt so that the present maximum of 80,000 dwt (42' on any tide, 45' on a favourable tide) can be raised to fully laden ships of 125,000 dwt (48' on any tide, 50' on a favourable tide). The dredging works in the Scheur and the Scheldt as well as the straightening of the bend in the river at Bath, which is planned in a draft treaty between the Netherlands and Belgium must be seen in this context. There are further plans for providing a better and shorter access to the port zone now under construction on the left bank of the Scheldt by means of the Baalhoek canal. As laid down in the draft treaty between Belgium and the Netherlands, this canal will be 17.5 km long (9 km of which are on Dutch territory); the Baalhoek sealock will have a capacity of the order of 125,000 to 150,000 dwt.

The aim of these improvement works on the Scheldt is to make the ports accessible to the increasingly large vessels which are being put into service in several dry bulk trades such as the ore and coal traffic. In addition the Scheldt must also be adapted to facilitate the safe and rapid passage of the third generation containerships up and down the river on one tide.

The accessibility of the port of **Ghent** was considerably improved as the result of work carried out on the Ghent-Terneuzen canal so that fully laden vessels of up to 70,000 dwt have been able to reach Ghent since 1968. In the new extension plans of the port of Ghent a possible future accessibility for vessels of up to 125,000 dwt is being borne in mind although a definite decision to go ahead with a new lock and canal-link has not yet been taken.

It was decided after a government crisis in Belgium in 1970 to expand the port of **Zeebrugge** to make it a multifunctional deepsea port accessible to fully laden vessels of 125,000 dwt (the capacity of the sealock now under construction), which means that even larger vessels can call at the port as long as they are only partially laden.

The government's decision to construct a L.N.G.-terminal in the outport is very important. This naturally requires very considerable investments. But because of the tourism at the East Belgian coast and possible environmental effects the possibilities for the expansion of operations in the port of Zeebrugge remain restricted.

The **conclusion** which must be drawn from this brief survey of the measures which have been taken in the various delta ports to meet the challenge of the increase in the scale and size of shipping is clearly that there is a better division of tasks or, to put it another way, more cooperation and common interests than is frequently thought to be the case.

Rotterdam is preeminently concentrating on ships with a deep draft and the deepening of the oil channel to 75' will also be of benefit to the other delta ports which are linked to it by pipeline.

The main thing for the Scheldt basin apart from an increase in safety is a reasonable improvement of navigability on the river of up to 48'.

(To be concluded in the next issue)

Recent advances in bulk terminal technology

by Paul Soros, President
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Engineers, USA
New York, N.Y.
Associate Member of IAPH

INTRODUCTION

In recent decades, Soros Associates has been responsible for engineering several of the major bulk ports of the world, in addition to many terminals of modest size. In the course of these efforts, Soros has developed much of the new technology in this field, usually when conventional solutions would not work well or were too expensive. This article describes a number of technological advances, which have been incorporated into projects just completed or now under way.

Multiple Orientation Offshore Berth

The recently completed Sierra Grande ore terminal in Argentina can load whips with headings parallel, at a right angle or at 45 degrees to the shore. By enabling the vessel to head into the waves and winds, which vary seasonally, berth availability is greatly improved.

In this type of off-shore construction the critical path usually runs through those tasks that only a jack-up rig can perform, such as pile driving, socketing, etc. Thus the conveyor trusses were designed for erection with other methods.

Another innovation at this project is a monorail system inside the conveyor gallery for the erection of the conveyor which then remains in place for the transport of operators and spare parts.

In view of the remote location, the reclaim system incorporates two identical bucketwheels.

On this type of project, engineering know how in the organization and management of the construction and manufacturing contracts can have a substantial impact on overall capital costs.

It is worth noting that on the basis of complete designs, 5 lump-sum bids were received, 3 were within 3% of our estimate and the project was completed without extras due to changes in design.

Long-Distance Offshore Berth

Engineering has been completed on the Santa Clara offshore port complex in Gabon, which has an ultimate capacity of 25 million tons per year. The complex boasts numerous advances in off-shore design and construction. From a bulk handling view point, the 10,000 TPH loading berth 7.4 kilometers from shore means that there is a 30-minute time lag before material taken from storage arrives at the loading berth. At any moment, there are some 5,000 tons of material on the conveyors. Obviously, such a system could not be stopped and started every time shiploading is interrupted. There was also the problem of how to switch from loading one grade of ore to another, how to trim ships without excessive time loss, and what to do with the material in the system when loading was

completed.

The solution adopted utilizes a three-compartment booster-bin system in which compartments 1 and 2 serve Material A, with remnants remaining in No. 1; and Compartments 2 and 3 serve Material B, with remnants remaining in No. 3.

In this solution, the main material flow does not go through the bin. This saves considerable power consumption and more importantly, there will be large reductions in the wear and maintenance of the feeders. It also provides a trimming capability at 2,000 TPH instead of 10,000 TPH.

Sampling and Weighing

The new Narvik port of LKAB represents the most advanced state of the art. The 10,000-TPH weighing system produces a certified weight, with an accuracy better than two-tenths of 1%.

The principle behind this is that belt weighing accuracy is sensitive to fluctuations in cross-sectional loading of the conveyors, but not to belt speed. Thus accuracy is obtained by using primary scales to govern the speed of the final weighbelts. Certification and frequent calibration are accomplished, at minimum additional capital cost, through utilizing the booster bin system which provides interruption-free shiploading. The surge bin that receives material while the shiploader switches from one hold to another is on weigh cells. The belt scale reading is thus frequently calibrated against the weigh cell reading. The weigh cells are checked and calibrated against a weigh bin with certified weight incorporated into the booster bin conveyor circuit.

The sampling system not only produces a sample but also incorporates instantaneous analysis of chemistry, moisture and fines content. The results of the sample analysis, available with a short time lag, are used in combination with the weights from the computer input to control the screening plant and quality of cargo as it is being loaded.

Narvik includes a number of other innovations. A linear loader berth for 400,000 DWT ships, that consist only of 5 concrete caissons of 14 m diameter and 4 intermediate vertical supports. A 10,000 TPH bucketwheel incorporates a surge bin and can feed either or both of two yard conveyors. There are no gates. Multiple transfers are via moving head ends or moving rock boxes. The stacker runway has conveyors on top of each other, instead of side by side and incorporates a walk-in tunnel for electrical conduits and wiring, for better maintenance access.

It is of comparable significance that this project was also engineered for multiple lump-sum type contracts, to be let simultaneously and that it was completed within 8% of the budget, inclusive of escalation and currency fluctuations.

Dust-free Loading

The worst pollution problem in handling dusty commodities, such as alumina, occurs at the point of discharge into the vessel. To overcome this problem, the highest-capacity system at present, the 2,200 TPH linear loader at Bunbury, Australia uses a loading spout patented by Alcoa.

An idea of what this means in terms of loads and

stresses, may be gained by considering that the shuttling boom has to be able to support a load of 25 tons at a cantilever distance of 40 meters. This is comparable to the load rating of a 350-ton crane.

Modern Coal Port Design

The new coal port at Port Kembla will have an initial capacity of 15 million tons per year and ultimate capacity of 25 million tons per year in multiple grades. It will incorporate a number of advances.

Trains of 2,000 tons capacity will be unloaded in motion, in half an hour, one after the other. As it takes a long time for a stacker to travel from one pile to another, there are two stackers for each stacking line. While one stacks, the other travels.

Millions of tons of coal per year will arrive by truck, in five different grades. The trucks will unload by driving directly on top of a 200-meter long storage building on a three lane highway.

A multiple compartment booster bin system and linear loader provide interruption-free reclaiming and quick switching between various grades loaded into the same vessel.

Of greatest interest is the integration of engineering and environmental protection in a total system approach. Consequently, when this installation is completed, it will represent a new environmental standard in coal handling.

Conclusion

Bulk terminal projects with capacities of 20 million tons per year and larger are becoming a reality. Environmental protection is becoming an all important criterion in many parts of the world and there is an acceleration in the trend toward greater operating reliability, operations with less clean-up and operations with less skilled maintenance.

In the author's view, many of the technological innovations of our recent and current projects are reflections of these trends.

Annual Report 1977-78: Port of Brisbane Authority (Extracts)

Excerpt from Chairman's Report

The year under review was one dominated by the surge of activity associated with the first stage development of port facilities on the Fisherman Islands. I am pleased to report a period of solid progress and the Authority remains hopeful that the islands' first facilities will be operational by about September 1979.

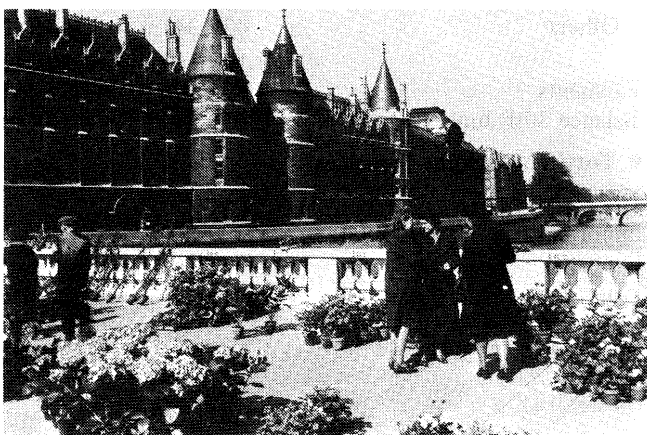
The degree of progress on the islands' development during 1977/78 is best assessed against the knowledge that as at July 1, 1977 there still was no direct access to the islands from the mainland. Five months later, on December 5, 1977 and just one day short of the Authority's first anniversary, the Minister for Maritime Services and Tourism (Mr. A.M. Hodges) officially opened the access causeway.

In his address, Mr. Hodges identified the day as "an historic occasion" and said the Authority had begun to rewrite the history of Brisbane's maritime trade. All of the Authority's staff feel a measure of accomplishment and pride in the islands' project and the Minister's remarks were received with appreciation.

Among the many problems which confronted the Board during the year was the vital matter of seeking proposals from the private sector for the operation of the islands' container terminal. It will be appreciated that decisions on this aspect and the mode of operation, are crucial in the long-term planning of the port. The Board had hoped that finality would have been reached before the conclusion of the 1977/78 financial year, but the total question has proved to be time consuming beyond our early expectations.

In common with many general cargo ports throughout the world, trade faltered during the year and fell 5.6% on the record level of 1976/77. However, there is no need for

— Farewell Reception Site (page 13)



La Conciergerie (Courtesy of French Embassy in Japan)

Consolidated Balance Sheet as at June 30, 1978

	30/6/78	30/6/77
	\$	\$
Current Liabilities:	3,213,875	2,187,826
Loan Indebtedness:	24,148,220	17,467,819
Trust Fund:	25,864	31,372
Accumulated Funds:		
Balance as at July 1	9,272,197	8,745,704
Plus adjustment to fixed assets	3,507,537	—
	12,779,734	8,745,704
Less adjustment to accumulated funds	1,822,863	—
	10,956,871	8,745,704
Grants for capital works	1,000,00	236,000
Surplus for period	5,039,009	290,493
	16,995,880	9,272,197
	44,383,839	28,959,214
Current Assets:	9,591,117	8,642,115
Sinking Fund:	94,887	72,506
Fixed Assets:		
(Less accumulated depreciation \$8,963,262)	34,697,835	20,244,593
	44,383,839	28,959,214

undue concern. Grain exports were affected by drought (falling 47% on 1976/77 results). Were it not for this feature, the port would have registered a steady trade increase. I am advised that there are indications that the port's through-put should make a solid recovery in the year ahead.

Sir Charles N. Barton, O.B.E., E.D.
Chairman

Consolidated Statement of Income and Expenditure for the year ended June 30, 1978

	1977/78 \$	6/12/76 to 30/6/77 \$
Income:	14,588,280	6,122,641
Harbour, slipway, wharf, river dues, and mooring fees	6,672,806	3,802,421
Dock services	2,807,002	1,212,126
Rental	418,718	108,623
Interest	823,759	246,764
Dredging services	3,373,484	404,327
Others	492,511	348,380
Expenditure:	9,549,271	5,832,148
Surplus for the period	5,039,009	290,493

Annual Report 1977-'78: Townsville Harbour Board (extracts)

Excerpt from Chairman's message

In this report I am pleased to report continued development of the Port, but disappointed to record a decrease in total cargo throughput with the consequence of a slight downturn of profitability in the Port revenue accounts.

The policy of continuing development in the areas of more efficient cargo handling and provision for the needs of ships of more varied type and of ever-increasing size, I believe must continue. This is illustrated by the steadily increasing utilisation of the 55 tonne container crane which was installed in 1974, and the record of quick turn-around of cargo ships which for the year under review averaged only 1.77 days per vessel. A total of 494 vessels used the Port during the year—an increase of 57 over 1977.

We believe that the Port of Townsville which is equipped with the only true container handling facility North of Brisbane, must provide the natural and most economic point for shipment of North Queensland's primary products, such as meat and wool, in the future.

During the year the reconstruction of No. 2 Berth has been nearly completed, and the Board now plans to construct a \$420,000 RoRo stern loading ramp at the No. 3 Container Crane Berth. These works will complete the first stage of the dredging and reconstruction programme which has entailed an expenditure of \$11 500 000 over the last seven years.

Cargo throughput for the 1977-78 financial year fell short of expectations by 163 631 tonnes which meant that only 93.77% of the annual cargo budget was achieved.

Imports totalled 929 850 tonnes, 90.94% of budget. All types of cargo, with the exception of meat, cattle and crude lead had fallen short of expectations, resulting in the overall trade position at the end of June being 6.23% below the budget estimate.

Actual cargo revenue for the year amounted to a record of \$3 539 345 representing an increase of 10.6% but operating expenses totalled \$2 723 516, an increase of 21.1%, which reflects the National economic trend. A review of the methods of calculation of dues has been undertaken to determine a more equitable basis of charges for the use of Port facilities rather than making blanket rate increases which may well disadvantage specialist shippers from the Port.

A.G FIELD,
CHAIRMAN

● Balance Sheet

	As at 30th June, 1978 \$	As at 30 June, 1977 \$
Accumulated Funds	8,137,180	7,705,441
Reserves	3,018,925	2,633,033
Total	11,156,105	10,338,474
Represented by		
Current Assets & Investments	450,469	713,765
Deduct Current Liabilities	258,692	241,544
Working Capital	191,777	472,221
Fixed Assets	25,486,011	22,974,363
(Less Redemption Reserve: 7,581,914)		
Deduct Long Term Liabilities	3,921,470	2,828,203
(Less Redemption: 676,195)		
Loans	10,600,213	10,279,907
Accumulated Funds	11,156,105	10,338,474

● Receipts & Payments

Statement for the year ended	1978 \$	1977 \$
30th June		
Harbour Fund		
Balance 1st July	(41,270)	30,219
Receipts	4,210,432	3,986,392
Harbour Dues	2,593,485	2,364,700
Tonnage Rates	596,455	519,689
Rents	205,259	206,246
Advances from Assets Fund	385,892	535,417
Others	429,341	360,340
	4,169,162	4,016,611
Payments	4,434,196	4,057,881
Balance 30th June	(265,034)	(41,270)

● Total Throughput Tonnes

	1978	1977
Imports	929,850	974,589
Exports	1,534,379	1,576,700
Total	2,464,229	2,551,289

International maritime information: World port news:

Report of the Second Session of the Committee on Shipping, Transport and Communications, 14-22 November, 1978, Bangkok, Thailand

by Mr. David Low,
Embassy of The Republic of Singapore
Bangkok, Thailand

Purpose

The Meeting was organised by the Economic and Social Commission for Asia and the Pacific (ESCAP). It served as a forum whereby delegates, many of them senior representatives of national governments, exchanged views and identified solutions to problems facing the shipping, transportation and communications sectors in the region.

Attendance

2. The Meeting was attended by over one hundred representatives from 24 member countries, other United Nations organisations, specialised agencies, inter-governmental organisations.

3. The Minister of Communications of the Royal Thai Government, HE GEN Surakij Mayalarp declared the Meeting opened and the Executive Secretary of ESCAP, HE Mr. J.B.P. Maramis also addressed the Meeting. The main points in the speeches were that in order to sustain and enhance economic vitality and growth, the productivity of commerce and the quality of life, a healthy and responsive transport and communications system was needed. Transport technology was in a state of flux, with major developments setting in. ESCAP members must energetically devote themselves to utilising the advances in transport technology in such a manner as to meet new challenges in the future.

Agenda

4. There were 25 items on the Agenda. As with last year, the Meeting was organised into two wings, with the first three days set aside for the shipping wing. Coverage of the Meeting was limited to the three areas IAPH was interested in. These are:—

Agenda Item No. 4

5. Review of Developments in Shipping, Ports and Inland Waterways

The debate was on recent developments in general foreign trade, shipping and fleets development. Various aspects of regional and subregional initiative were also discussed. Excess tonnage on an international basis was encroaching

on the established trades of the fleets of ESCAP member countries. Developing countries also faced problems from established shipping lines in their efforts to build up viable merchant fleets. It was felt that the principles of UNCTAD code for sharing cargo in the proportion of 40:40:20 should be adhered to.

6. Member countries also faced problems which containerization created for ports and the transport infrastructures. Several ports had been overwhelmed by rapid growths of container shipments, mostly inbound. These countries proposed that an urgent study be made on the cost benefits of such a system in order to formulate the best national policies to limit the adverse effects economically and socially.

7. For future reviews, coverage should also be extended to:—

- a. Ocean-trade volumes of member countries, to be analysed by area;
 - b. The state of containerization of national liner cargo and the general progress of containerization in the region to be reported on;
 - c. The effects of containerization on the costs of transport, on required investment in ports and inland infrastructure and on employment to be surveyed.
 - d. Disparities between the availability of port facilities and the changing demands of world shipping to be considered in the Review;
 - e. A fuller analysis of freight rates and port charges to assist members in their dealings with conference lines;
 - f. Freight preference practices and bilateral measures in ocean transport which affect the ocean trades of member countries to be reviewed and analysed;
 - g. Policy developments to be reviewed, with emphasis on attempts at regulating liner conferences by national legislation and experiences of such attempts.
8. Among other proposals for work envisaged for the ESCAP Secretariat in the field of strategy was that more attention should be paid to the problems of planning, constructing and managing ports.

Agenda Item No. 8

9. Consideration of Activities in the Development of Ports and Port Management

The general consensus was that the ESCAP Secretariat
(Continued on next page bottom)

Piece Rates for Dock Workers

by Mr. Ronobir Roy, ILO Regional Ports Adviser for Eastern Africa in 1978

1. Before one goes in for piece rates in ports at this point of time in the development of the new shipping technologies, one has to consider whether piece rates are in fact in keeping with the very concept of cargo unitisation and the development of the new technologies of shipping. The answer to this question would probably vary not only from country to country but also from one port to another within the same country. The basic need in many ports, however, is to motivate workers and staff to give of their best and this motivation more often than not requires some form of the proverbial "carrot" or the "stick" or both, until a stage of development is reached where sheer pride in one's profession becomes the motivation. Development here does not necessarily have to be connected with the economic development of a country—it is a state of mind which has been achieved irrespective of the level of economic development, as was the case in postwar Japan.

Time Incentives

2. In far too many ports, where no piece rates are functioning or the workers are no longer interested in the piece rates in force, the only way to get improved production is to offer the workers what has come to be known as time incentives. Gangs are offered a quota of work—which could be anything between 25 percent and 50 percent over the low existing full-shift production levels—and allowed to go

(Continued from page 31)

should make every effort to intensify the series of top-level management seminars. It was also felt that more efforts should be made by it to obtain funding and resources in the fields of ports and ports management. A proposal to make use of a task force by the Secretariat was endorsed by the Committee and a seminar series on the management of port congestion was recommended.

10. During the debate, the Committee welcomed the proposal of convening a meeting of regional port associations to discuss ways and means of promoting balanced port development and co-operation. The Committee also felt that it was necessary to implement a mid-management training programme for port personnel in the region.

Agenda Item No. 9

11. Consideration of Activities in Inland Transport

It was felt that this subject was not gaining the attention it deserved and the Committee welcomed the progress report of the Secretariat in implementing the action programme. It was pointed out that the role of inland water transport in national planning was not always well recognised and there were often difficult political and social problems involved in the introduction of new technologies. The Secretariat had decided to carry out a feasibility study on the establishment of a regional centre for inland waterway research in Bangladesh and it was suggested that this activity be included in its work programme for 1979.

home when the quota has been completed. The "quota" is different for different commodities, different shifts, the effort involved, etc., but in most cases they are output levels which are completed in half the shift or less.

3. The same thing happens whenever possible on the wagon loading/unloading side. Gangs are offered a quota of say 6 wagons of bags wheat for a shift, which they do in half the shift and go home, whereas on normal time-rate work they would do only 4 wagons the whole day. The quota in each case, is arrived at after hard horse trading between the employers and the gang/gangs concerned. In the earlier stages the "quotas" differ from ship to ship and shed to shed, but after a time fairly well accepted "quotas" are established and all ships' work and much of the wagon work is performed on these quotas. Work in the port, except for lorry work, therefore virtually comes to a halt around the middle of the shift.

4. In many cases, particularly when ships are nearing completion, the employers offer the workers one more wage—or at times one and a half wages more—to do a second "quota" which they pay for in cash at the end of the shift. If allowed to go on for any length of time, these quotas and the level of unofficial wages paid, tend to become expensive established criteria for any future official piece-rate schemes. This was the case in Calcutta (India) and is a demand being voiced in Mauritius in a rather unique way. Workers there, who have been permitted to complete a self determined quota of sugar loading from barges to ship, and go home after about 3 hours of work, are now demanding overtime rates of wages (time and a half) to do a second "quota". Whilst granting overtime within a 8-hour shift is of course totally untenable, the total wage being demanded for doing twice the established quota is less than what is payable under many formal piece rate schemes.

5. In many ports of developing countries time incentives, or in other words, working only for small fractions of the total available time per day, is seriously inhibiting throughput capability and productivity. Introducing formalised incentives with automatic disincentives against sub-normal work seems to be an urgent necessity in these ports.

Formalised Piece Rate Schemes

6. In many ports today, particularly in developing countries, piece rates may very well be the quickest answer to the solving of urgent productivity problems. By piece rates, what is implied is a system of linking wages to productivity which combines both the "carrot" and the "stick". In detail it means that one has to evolve a scheme where there would be agreed norms for different types of cargo in different packaging, with production at the norm entitling the workers to their existing time rate daily wage. Production above the norms will be rewarded by progressively higher rates of payment and production below the norms would result in automatic reductions of the daily wage. For obvious reasons the reduction has to be stopped at a certain point, normally called the fall-back wage, with the proviso that for productions below the levels of the fall-back wage, the workers would be subject to disciplinary action.

Built-in Disincentives

7. In India the piece rate scheme which produced the best results is the Bombay Datum Scheme which embodies an automatic wage reduction clause with a fall-back wage. In the mid 50's when the scheme was being negotiated, the Unions rejected the proposal totally because of this clause but the employers refused to consider giving higher payment for higher output unless the automatic reduction for sub-normal work was also agreed to. The matter finally went to arbitration and a fall-back wage equivalent to 75 percent of the daily wage was finally adopted. The employers did not like a fall-back wage so close to the daily wage but had to accept the arbitrators award. This Datum Scheme produced dramatic results almost immediately and it was found that the fall-back wage clause was rarely, if ever, applied in actual practice.

8. Some years later when a piece rate scheme was devised for Calcutta the Unions refused the fall-back wage clause and also refused arbitration on this point. The Government of India had to step in finally and after it was seen that in Bombay the fall-back wage clause had virtually never been applied, it was ruled that the Calcutta Scheme could safely delete the clause. The Scheme was introduced with disastrous results because it produced no improvements at all. Schemes without the fall-back wage clause were tried in other Indian ports with similar negative results. As against this the Bombay Scheme has improved productivity substantially in every port that it has been tried in. It seems therefore, that an automatic wage reduction clause is essential in any scheme which seeks to grant higher wages for higher rates of productivity.

The Rewards for Increased Productivity

9. A basic feature on which the success of any piece rate scheme depends is the ability to judge correctly the size of the monetary reward which will enthruse the workers to go beyond the stipulated norms and reach management's envisaged targets. One is naturally tempted to keep total earnings of workers under piece rates as low as possible, but this could be counter productive. If one takes all the gains to the economy into consideration, including the costs of ship-time saved, the improved capability of the ports, etc., it should be possible to pitch the rewards at levels far more acceptable to the workers.

10. The size of the "carrot" of course will again be a matter for considered judgement under the circumstances of individual ports, but an idea of what it is in the Datum Scheme in Bombay may be useful. The daily wage in Bombay is broken down into two components —

- (a) the daily equivalent of the basic wage, and
- (b) the daily equivalent of the sum of all allowances, perks, etc.

— and it is only (a) that snowballs with higher productivity.

11. There are fixed norms for different commodities, different types of packaging, different trade routes, etc. for an 8-hour shift. The daily basic wage is paid for production at the norm or the 100 percent level. For every 50 percent rise above the norm each worker is entitled to one additional daily wage. In other words, at 150 percent he gets two daily wages, at 200 percent three wages, etc., together with the (b) component. For the fall-back part, if he works at 50 percent of norm he will get the wage for the 75 percent

level and be liable for normal disciplinary action. At the time the scheme was introduced, the (b) component in Bombay formed about 25 percent of the total wage. In later years it reached a stage where the (b) component was more than the (a) component and of course the Unions fought for adjustments to the snowballing (a) component. There may be justifications in many situations to have the entire daily wage as the snowballing component.

Progressive Rates vs Flat Rates

12. In the Bombay Datum Scheme as described above, the rate of increment of wages is constant irrespective of the level of output—in other words it is a straight line rise. Whilst flat rate increases do produce results for some time, it has been found necessary to modify payment rates of incentive schemes into what may be called progressive rates. This means improving the rate of wage increases as output increases. In the language of the Bombay Datum Scheme it could mean a rates table something like this —

100 percent level	— 1 wage
150 percent level	— 2 wages
175 percent level	— 3 wages
200 percent level and above	— 5 wages

13. Great care, however, has to be exercised to ensure that the rate of progression does not lead to conditions that may be tantamount to "sweating of labour". In order to prevent this what is done normally is to taper off or stop the rate of growth after what is considered to be a maximum effort level.

Scope of Cover

14. An aspect which needs a great deal of consideration in the light of the experience in many countries is the scope of cover, that is —

- (i) who should be covered by the scheme, and
- (ii) what work should be covered.

The Hook-wise Approach

15. In regard to (i), traditional piece rate schemes tended to cover on a hook-wise basis only the workers directly handling the cargoes on board and ashore, in other words, the gang workers and gang leaders only. It was found, however, that unless the scheme covered all the categories directly connected with the processes of work between the point of rest on board and the point of rest ashore or vice versa, any one category could seriously impede productivity. Later schemes, particularly after the forklift era, therefore covered more and more categories such as —

- (a) gang workers including gang leaders,
- (b) winchmen,
- (c) crane men,
- (d) signal men,
- (e) tally clerks on board and ashore, and
- (f) forklift or other equipment drivers on board and ashore.

16. This improved matters considerably but it was soon seen that the quality of tally reached dangerous levels of inaccuracy because obviously the more the tally clerks showed in their tallies the more they would get. Tally clerks, therefore, had to be taken out of the scheme for workers and put into schemes which linked wages with the level of the accuracy of their tally.

17. It was also found that linking equipment drivers to one

hook militated against say the forklift being used more extensively. The equipment drivers were therefore delinked from individual hooks and allowed to freelance at the berth and serve as many hooks as they could. The results were extremely gratifying, in that it was found that instead of needing a forklift per hook, two forklifts for five hooks were often sufficient. It was the same with tractors and mobile cranes. It was also seen that working equipment rarely went "out of order" during the shift.

The Ship-wise Approach

18. As piece rates caught on, it was the experience in many cases that a hook-wise approach was not enough and categories whose work covered more than one hook—like the foremen of ships—also needed to be included because they were not only connected with the due processes of loading and unloading ships but, as a matter of fact, very often were key personnel controlling the entire production. Such categories if included, are generally paid at the average production of all the hooks supervised by them, but at times it has been found acceptable to pay them on the basis of the highest production of any hook supervised.

The Berth-wise or Terminal-wise Approach

19. In some countries it was found necessary to cover everybody in a berth or a section, i.e. clerical staff, staff of operational offices, junior officers up to the levels of sectional superintendents together with their labour counterparts, maintenance personnel at the berths, etc. This became necessary because in countries where wage differentials between categories are low, the high earnings of piece rated workers were found to completely distort the hierarchical wage structure. In the eastern Canadian ports in the middle 60's, many middle management officers had given up their "desk" jobs to become equipment operators or one or other of the operational categories entitled to the longshoremen's hourly rates of wages and overtime in order to earn more wages. In the pre-independence Mozambican ports, they had a system where the production bonus scheme covered everybody concerned with the port from the director downwards. With the problems faced in keeping equipment working efficiently, increasing ship/day productivity, maintaining an adequate cargo flow, etc., the question of who should be covered by incentive schemes needs very careful consideration.

20. Conventional piece-rate schemes work on the assumption that incentives succeeded best when payments are based on the individual work performed by each gang during the shift. Schemes which averaged the efforts of a number of gangs, watered down the incentives and are found to be much less effective. It makes it necessary therefore, that in evolving ways and means of bringing supervisory and clerical categories under incentives, the basic output of individual gangs as the means of paying them is not interfered with. In some cases what is done is to calculate the average level of output of all the working gangs and use this average for the purpose of calculating the wage level of such supervisory and clerical categories as may be included in the scheme.

The work to be covered

21. Coming to the question of what work should be cov-

ered, it will be seen that in many schemes—the Bombay Datum Scheme for example—the piece rates cover only the work involved in the processes of handling cargoes between the point of storage on board and the point of rest ashore or vice versa. All other work on the terminal such as loading and unloading of road and rail vehicles, restacking or shifting cargo, etc. are outside the scope of the Datum Scheme. Separate "tonnage" schemes were introduced later for other workers concerned with the handling of cargoes in the vehicle loading/unloading process.

22. This very often leads to wastage of manpower which really means more men being employed on the terminal than is necessary. In the Calcutta Scheme, all handlings, i.e. ships' work, wagon work, cargo shifting, restacking, etc., are included in the same Scheme and can be done by members of the hook gang. All the tonnages handled by each gang in the shift is totalled and divided by the number of men working, to arrive at the per-capita handling in the shift—on which the rates table is based. The method not only permits far greater utilisation of manpower but leads to the workers themselves demanding lower manning scales for unitised cargoes, not filling up daily casual vacancies in gangs, etc.

Frequency of incentive payments

23. Another important detail is the question as to when the piece rate part of the wage should be paid or can be paid. Whilst the easiest thing from the point of view of accounting and distributing is to pay at the time of the normal payment of wages whether this is weekly, fortnightly or monthly, the very idea of incentives demands the smallest practicable time-gap between the extra earning for the additional effort and the payment thereof. In some cases, when all else had failed, the payment for additional effort at the end of the shift has produced immediate results. In most cases, however, this may not be administratively feasible. In cases where ports are public bodies and payments to workers concern the distribution of public money, the financial rules of the authority itself would probably make such payments impossible. As a matter of fact, one has to look at this aspect very carefully and in all its details—both practical and commercial—before even starting to devise a scheme, because it could very well have important repercussions on the details of the scheme itself.

Computation of output

24. The most important aspect of any piece rate scheme is the computing tonnages or numbers handled by each gang or unit of workers. Piece rate schemes stand or fall upon the confidence that the workers develop on the correctness or otherwise of what is being paid for. If they once get the feeling that they are not being paid for all that they have done, you are in serious trouble. It is for this reason also that quick payments of incentives become important—it gives the workers an opportunity to check for themselves that they are in fact being paid correctly and if not, to bring things to notice whilst physical verifications are still possible.

25. This brings up for consideration the question as to whether payments under the scheme should be based on numbers of packages handled or the weights handled. In the piece rate schemes of the Port of London Authority—which

worked very satisfactorily for many years before Devlin phase 2 did away with piece rates altogether and almost closed the port of London—payments were based on numbers of packages and not on weights.

26. In very recent times as a result of international agreements, the size of units, particularly bags, were reduced from the traditional 100 kgs per bag to 50 kgs per bag. In many countries—Mauritius for example who paid on weights for bagged rice—the workers have demanded that they be paid for 10 bags (which now weighs half a ton) what they used to be paid for 10 bags which formerly weighed a ton. From the workers point of view there would appear to be some justification in their demand, because in the system of handling bags into the warehouse, the time taken to handle 10 bags from the barges into the warehouse conveyors is the same for both sizes. The matter is still before arbitration and its associated implications are likely to cause management tremendous problems. In organisations where a public undertaking is the paying authority, piece rates linked to numbers rather than weights removes many complications between the practical and the administrative aspects of accounting and reconciliation. No averaging and calculations from manifest are involved and the workers are able to cross-check much more readily.

Piece rates in the era of unitisation

27. This brings one back to the basic question raised earlier as to whether piece rates are in keeping with the concepts of unitisation and the new shipping technologies, specially containerisation. In many cases I feel that 'concepts' here are often confused with the economics of handling cargoes. There seems to be nothing wrong or undesirable in applying piece rates or payment by results to the handling of any type or packaging of cargoes provided norms are fixed to suit the levels of production made possible with the new methods. What is wrong, of course, is to apply the old breakbulk norms to unitised cargoes specially in countries where daily wages are already high. There are always difficulties in getting labour to accept changes of norms, but where piece rates are being introduced for the first time this difficulty will not arise.

28. The important thing is to link wages to desirable production levels which would improve not only worker productivity but also the throughput capability of the port itself and cut down costs both to the port operators and the port users. In dealing with containers, many shipping companies have introduced a per box rate, irrespective of whether a box is empty or loaded. The kind of thinking or the rationale behind this kind of charging could very well be applied to the details of payment by results schemes for unitised cargoes at port terminals. Piece rates in my view are still necessary in port working and many countries, who gave up incentives when unitisation started, have had to come back to them in one form or another, to achieve the efficiency necessary to make them viable.

ADB lowers interest rate on ordinary loans from 7.70% to 7.40%

Pasay City, Philippines:—The Board of Directors of the Asian Development Bank has decided to reduce the lending rate on loans from its ordinary capital resources from 7.70

per cent per annum for the year 1979.

The Board's decision does not affect the terms applicable to loans made from the Bank's Special Funds, which will continue to carry only a service charge of 1 per cent per annum.

ADB approves fourth quarter loan and technical assistance

Asian Development Bank loan approvals during the final quarter of 1978 totalled \$661.79 million. Of 37 loans approved during the quarter, 17 were from ordinary capital resources for \$428.13 million and 20 were from Special Funds resources for \$233.66 million.

These loans will finance development projects in Bangladesh, Burma, the Lao People's Democratic Republic, Indonesia, the Republic of Korea, Malaysia, Nepal, Pakistan, Philippines, Sri Lanka, Singapore, Thailand, Tonga and Western Samoa.

Also approved during the quarter were 31 technical assistance projects at a total cost of \$8.43 million. The 13 countries which received the technical assistance were Bangladesh, Burma, Indonesia, the Republic of Korea, the Lao People's Democratic Republic, Nepal, Philippines, Solomon Islands, Sri Lanka, Thailand, Tonga, Viet Nam and Western Samoa.

The following are brief descriptions of the loan and technical assistance approvals on port development projects in the fourth quarter:

Loan

Indonesia

Fifth Port Phase I: US\$26.30 million from ordinary capital resources for the first phase development of Belawan Port in Northeastern Sumatra. 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.

In addition, under a co-financing arrangement, the Federal Republic of Germany provided a loan of \$40.39 million equivalent to finance quay construction, dredging, reclamation and cargo-handling equipment.

Technical assistance

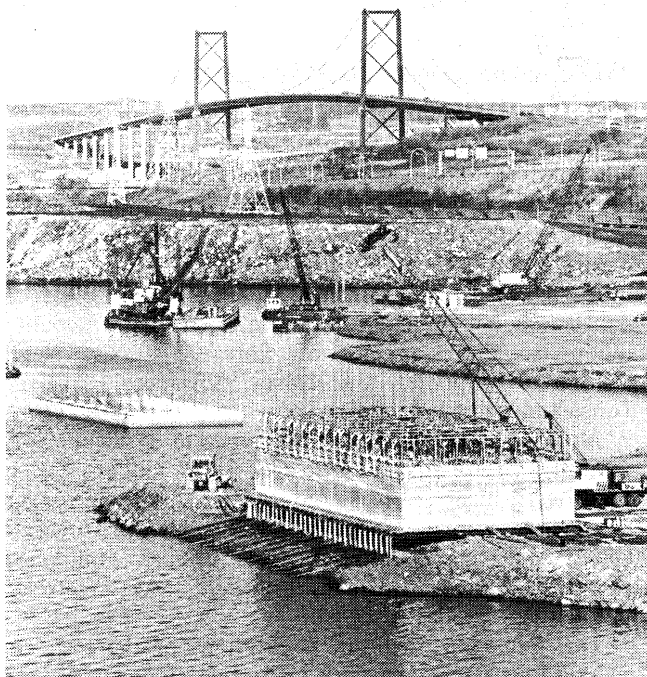
Indonesia

Belawan Port Study (Phase II): (\$150,000) Consultant's services for construction supervision and the preparation of the second phase development of Belawan Port in Northeastern Sumatra.

Korea, Rep. of

Incheon Port (Phase II): (\$150,000) Planning for the future expansion of the Incheon Port through the year 1990. The first stage of the study will review the existing and potentials of the Inner, North Coastal and South Harbors. The second stage involves detailed study of the critical area of the Port and formulation of an investment program. The services of four experts—one each in port engineering, transport economics, port operations and shipping and port planning and land-use—will be provided.

Halifax constructing a new container terminal



A crib is ready for launching. After completion, it will be towed into position beside the first and flooded until it settles onto a prepared base.

A new container facility is taking shape in the Port of Halifax.

Reclamation has created an initial 10 hectares of land and work is now underway on the construction of cribs to form the dockface.

A total of ten cribs will be needed for the dock face and they are expected to be in place by May of this year. After the cribs are all positioned, further infilling will be carried out. When completed, the new facility will cover an area of 20 hectares.

It will consist of a 300-metre berth with a Ro/Ro ramp, and is expected to be operational between the end of 1980 and the spring of 1981.

Funding for the \$35 million project is being provided by the governments of Canada and Nova Scotia through the Halifax Port Authority.

New mill on schedule: Nanaimo

A new sawmill being built for Mayo Forest Products on the Nanaimo Assembly Wharf is on schedule and will be operational at the beginning of 1980.

When the Mayo Forest Products mill is operating it will produce 80 million fbm of lumber a year, which will be shipped through Nanaimo, and employ over 120 people on a two-shift basis. Recent meetings in Nanaimo have invited public discussion on the mill development. Some associations criticised the project on environmental grounds but it was pointed out that the project has received all the necessary permits for dredging and pile-driving. At one of the meetings, Port Manager Lloyd Bingham said that the Harbour Commission had kept both City Council and the Re-

gional District aware of developments through their respective representatives.

Saint John, N.B.: Canada's port of performance (See front cover also)

This unique port on the New Brunswick coast in the Bay of Fundy, at the mouth of the historic Saint John River, is strategically located to serve industrial Canada, Central North America and the U.S. Midwest. It is the closest Canadian Atlantic port to these important trading areas and is served by both of Canada's railways. Over fifty shipping lines provide service to all quarters of the globe on a year round basis.

The huge Brunterm container terminal, with three portainer cranes, handled 950,000 tons of cargo in 1978 and 1,300,000 tons of general cargo were handled by the port's efficient labour force. Almost 5,500,000 tons of dry and liquid bulk cargo passed through the port in 1978. As well as boasting modern facilities, the Port of Saint John has been labour-trouble free for over fifty years, which is a matter of considerable pride to labour and management.

While Saint John serves all parts of the globe the port, due to its geographic location, can naturally serve some areas more advantageously than others. A majority of Canada's trade with South America passes through the port. Services to Japan and the Far East including Australia, New Zealand, Korea and others are frequent and varied. Regular service to the Mediterranean and Persian Gulf is maintained.

With the development of Saint John Deep, a terminal offering depths of up to 150 feet will be available. A new forest products terminal has gone into operation this year providing special handling and 300,000 square feet of shedded space for all forest products.

Other parts of the harbour are being extended to handle the increasing flow of automobiles both set up and completely knocked down and boxed.

In addition to Canada's two railways, more than twenty-one separate trucking lines serve the port. These fast services provide rapid access to and from all inland markets and when coupled with the port's efficient handling system give the customer an excellent service.

Saint John Harbour maintains an active marketing programme and, in cooperation with the City of Saint John, sponsors Saint John "Port Days" in Montreal, Toronto and New York. The port also maintains regular customer services with visits by key personnel to South America, Europe, Mediterranean as well as to Canadian and U.S. customers.

Record year in 1978 for Locust Point Terminal

Baltimore:—Locust Point Marine Terminal-North (LPMT-N), one of the oldest in the port of Baltimore, reached an all time cargo volume high during 1978.

During the year, 843,639 tons of cargo were handled at the terminal, an increase of 50,386 tons over the previous high set in 1974 when 813,253 tons were handled. The 1978 total represents a 15 per cent jump over the 1977 total of 733,336 tons.

Container cargo was a major factor in the tonnage increase. During 1978 185,515 tons of container cargo passed through the terminal as compared to 96,962 tons in 1977, an increase of 91 per cent.

"Crane Lane" at Charleston



Photo news from South Carolina State Ports Authority. Day or night, rain or shine, the Port of Charleston's "Crane Lane" at Columbus Street Terminal is usually a busy place. Here two gantry cranes and a mobile crane help expedite outbound general cargo aboard American Export Lines' "Export Adventurer" on a recent cold, rainy night. In addition to the units shown, the terminal has two container cranes and a 400-ton, shear-leg derrick operating at its 3,875-foot pier.

The port as a whole handled more than 34 million tons of cargo during 1978, almost 3.6 million tons more than 1977. And though virtually all areas of cargo showed marked improvement during the year, the most dramatic were recorded in the port's container activity with total container business surpassing 4 million tons for the first time in a single year.

Tonnage soars to a record high: Houston

Tonnage handled at the Port of Houston soared to a record high in 1978 when 109,246,422 tons of cargo moved across the wharves, a seven per cent increase over 1977's record total.

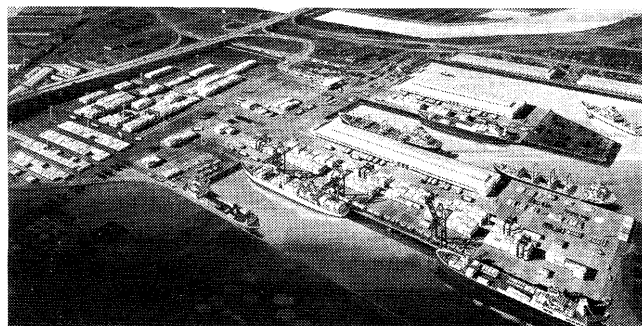
Total foreign commerce handled at the Port in 1978 was 58,543,308 tons, compared to 51 million tons moved in 1977. Houston handles more foreign trade every year than any other port in the nation outside of New York.

General cargo, which includes all goods not moved in bulk quantities and is the money-making tonnage for any port, also showed a dramatic increase at 8,756,491 tons, a 29 per cent jump over the 6.8 million tons handled in 1977.

The significant 153 per cent increase in goods handled at the Port Authority's Barbour's Cut Terminal reflected the many new shipping lines making use of this ultra-modern facility. A total of 864,364 tons were handled at Barbour's Cut in 1978, compared to 341,177 tons the previous year.

Movement of containers showed a 15 per cent increase last year when 183,680 containers were handled as opposed to 160,125 for 1977.

New Omni-Terminal at Long Beach



New omni-terminal in operation at Long Beach: Artist's rendering of nearly-completed omni-terminal on Piers B and C in the Port of Long Beach, operated by California United Terminals, Inc. Three Roll-On/Roll-Off ramps, two new 40-ton gantry cranes (with two more planned) and three Transtainers complement two huge 200-foot clear-span transit sheds and some 100 acres of paved berth and backup area.

Port Council to study economic impact of Florida's ports

Jacksonville, Florida:—The Florida Ports Council is going to let Gov. Bob Graham know how the state's deep-water harbors can be used more effectively to boost his plans for industrial expansion.

The Council serves as a common voice for the ports of Florida, representing its members on issues and matters which concern port and maritime activities.

At its annual meeting in Tampa in late January, the Council asked its retiring president, Frank Donahue, Director of the Port of Palm Beach, to prepare a detailed study of the economic impact of Florida's ports and their potential role in industrial development.

John Mackroth, managing director of the Jacksonville Port Authority, was elected president of the Council, succeeding Donahue.

Mackroth said Florida ports as a group have not done an effective job of keeping the public and the state administration aware of the basic economic influence which the maritime industry exerts within the state.

"We do not feel that if we can demonstrate to Gov. Graham and to the public what the port community means to the state in terms of economic impact and the opportunity for industrial development, we can expect closer association with state agencies in planning and developing major maritime projects throughout Florida," Mackroth said.

The Council, which also includes the ports at Everglades, Fort Pierce, Manatee, Miami and Panama City, reaffirmed its opposition to the creation of a state ports authority, Mackroth said.

"We recognize that as ports we have certain common problems," he added, "and we will continue to approach Tallahassee as a united council to deal with them. But we feel very strongly that insofar as port operations and port planning are concerned, we must handle these matters unilaterally and without outside intrusion."

Sudanese officials study Alabama Port operations

"Port of Mobile":—Three Sudanese officials vitally interested in port development were in Mobile recently to observe operations at the Alabama State Docks.

Abdel Dafie Mohamed Abdel Dafie, an economist, El Fadil El Sadig El Sayed, an accountant, and El Sayed Ibn Omer Abdel Aziz, a mechanical engineer, represent Emirates and Sudan Investment Co., a firm that contains both private sector interest and government in fluence.

The men are involved in an expansion project for the Port of Sudan and are touring various United States ports to become familiar with the equipment and technology used. Upon returning to Sudan, they will apply as much of the technology as possible to the Sudanese port.

In addition to visiting each of the physical facilities at the Docks, the Sudanese officials studied various administrative functions including sales, accounting, personnel, engineering and computer operations.

Port Sudan, the capital of the Red Sea Province, is the only seaport in Sudan and 95 per cent of the country's foreign trade enters the port. Dafie said that Port Sudan is nearly the same size as the Port of Mobile, but does not have all the facilities that are in the Mobile port.

According to Dafie, the major problem with the Sudanese port is congestion. "It is very crowded with goods," he said. Eventually, the men plan on having 200 warehouses at the port, all of them built in phases. Phase One, which calls for 34 warehouses, will get underway immediately.

Three new cranes going up

Los Angeles:—Three new 40-ton Japanese container cranes will soon be erected in the Port of Los Angeles, bringing to 14 the total number of cranes available to shippers. Later this year a fifteenth crane will also be erected as part of the massive expansion of the Matson Container Terminal, Berth 206.

Work is halfway completed on the erection of the first Japanese crane at the Wilmington Container Terminal, Berth 131. This crane will put three cranes into operation on a single track to serve the needs of both the Wilmington Container Terminal and the adjacent Los Angeles Container Terminal. This is the first Japanese crane to be erected in the harbor and it has several improved features including wheels which can negotiate curved tracks, more flexibility and the ability to unload ships at a faster rate.

Roy J. Gross elected president of the Board of Commissioners of New Orleans

Boy J. Gross late January became the first commissioner from St. Bernard Parish to become president of the Board of Commissioners of the Port of New Orleans when he was

Roy J. Gross late January became the first commissioner from St. Bernard Parish to become president of the Board of Commissioners of the Port of New Orleans when he was elected to serve for the coming year, succeeding Michael J. Molony, Jr.

The Board also elected Joseph J. Krebs, Jr, to the office of vice president and Lee N. Bubrig, secretary-treasurer. Krebs represents the east bank of Jefferson Parish on the Dock Board, and Bubrig, the west bank of Jefferson.

Following the election of officers the Board confirmed the continued service of Edward S. Reed in the position of executive port director—general manager.

New longshore workers given safety instruction as prelude to hiring start in harbor

(NYSA-ILA Contract Board):—All members of a new group of temporary longshore workers including women dockers are being given an intensive safety indoctrination course prior to their scheduled entry into the New York-New Jersey waterfront labor force.

This marks the first time in local port history that new industry employees will be given specific safety instruction before they start work, according to Thomas W. Gleason and James J. Dickman, co-chairmen of the labor-management board that administers the longshoremen's contract.

"More than 600 of the new temporaries have already received the indoctrination program and the remainder of the total group of some 750 men and women will be given the instruction before they are activated into the industry hiring system," the two officials said.

The training is being coordinated by Joseph Leonard and Stanley Burdman, the safety directors of the union and New York Shipping Association respectively with assistance of other safety officials from labor and management. The program includes film and slide presentations and lectures describing waterfront work and problems that new workers are likely to encounter on the job. This involves graphic and oral presentations of work inside cargo holds of ships, safe methods of entering and leaving work areas, building cargo drafts on slings and pallets, proper use of hand hooks on bagged cargoes such as coffee and safe methods of lifting weights among other items.

Each of the new workers is also being instructed on proper clothing to keep warm and avoid accidents, the need for special work gloves and special steel-tipped work shoes, and each is being given a hard hat and a winter liner by the industry with instructions that the hats be worn at all times on the piers.

Line trade at West Coast ports favorably increasing

Oakland:—Healthy increases of almost 10 percent in import and 15 percent in U.S. export tonnage aboard liner vessels were recorded at major West Coast port for the first nine months of 1978, the Port of Oakland reported recently.

Total West Coast liner exports grew from 6.2 million short tons for the period January-September 1977 to nearly 7.2 million tons for the same months of 1978.

West Coast liner imports increased from 5.3 million short tons to 5.8 million short tons for comparable nine-month periods of 1977 and 1978, a 9.7 percent rise.

Total value of liner imports was nearly \$13.9 billion for the first three quarters of 1978, while exports aboard these vessels from West Coast ports exceeded \$6.8 billion.

Seatec II

Seminar Program

Singapore, June 11-15, 1979

Session Chairmen

Dr. Ross Robinson, United Nations ESCAP
Mr. A.S. Mayne, Port of Melbourne Authority
Prof. Ir. J. de Koning, Delft University
Prof. Ir. P. Th. Velzeboer, Delft University

Session 1 Monday 09.30, June 11

1. Keynote Address: D. Koludrovic or Dr. Ross Robinson of ESCAP
 2. Interface between ports of industrialised and developing countries: Melvin Shore, Director, Port of Sacramento.
 3. The role of finance bodies: speaker invited from Asian Development Bank.
 4. Problems concerning finance: *Who pays, Port Authority, city or country?* Richard Goss.
 5. Port planning and economics: speaker to be announced.
- LUNCH: followed by visit to World Trade Centre for inauguration of "Marintec Asia 79".

Session 2 Tuesday 08.30, June 12

1. Address of session chairman.
2. The evaluation, selection, training and motivation of human resources:
 - a) Simon Feldman of World/ORT Union, Geneva.
 - b) Practical applications in dredging: F.C.H. Neervoort.
3. Technological requirements for port works in developing economies: speaker invited from Philippines Ports Authority.
4. Port Construction: *can civil engineering contractors contribute long term benefits to a developing country's construction or port industry?* E. Orsoba, Nigerian Ports Authority.
5. Hydraulic research: speaker to be announced.

Session 3 Wednesday 09.00, June 13

1. Address of session chairman.
2. Dredging in tidal basins: Dr. V. Tapasvi, Engineers India Ltd.
Lunch:
3. Operational aspects of dredging fleets:
 - a) Contractors viewpoint: speaker invited from Japan.
 - b) Port services viewpoint: Brig. Narula, Dredging Corp. of India.
 - c) Joint venture viewpoint: speaker to be announced.

Session 4 Wednesday 14.00, June 13

1. Restructuring of existing port facilities to suit future trade requirements: theme presentation by session Chairman S. Mayne of Port of Melbourne.
2. Re-training of labour and management to suit new facilities: Loh Heng Kee, Ports Authority of Fiji.
3. The frame contract as a means of long term port development: Ir. J. van Dixhoorn of Rijkswaterstaat.
 - a) Contractors view: Ir. F. Roelofs, Int'l Association of Dredging Companies.
 - b) Port Authority view: speaker to be announced.
 - c) Consulting Engineers view: speaker to be announced.

Session 5 Thursday 09.00, June 14

1. Technology transfer: *to what extent is the transfer of dredging technology necessary, desirable, technically and commercially possible?*
 - a) Prof. Ir. J. de Koning of Delft University.
 - b) Dr. S.K. Bhattacharya, Ports Consultant, Directorate of Sea Communications, Indonesia.
 - c) Ir. J.U. van der WakZanen & Verstoep.
2. Closing summaries

CARGO HANDLING

Friday 09.00, June 15

Chairman: Patrick Finlay, ICHCA, International Cargo Handling Co-ordination Assn.

Theme: Improving the interface between land and water

1. Chairman's keynote address.
2. Cargo handling requirements in the Asia/Pacific region:
 - a) Shippers viewpoint: speaker from Singapore Shippers Assn.
 - b) Port authority's viewpoint: speaker to be announced.
 - c) Shipowners viewpoint: speaker to be announced.
3. Co-ordination of shipboard and land-based cargo handling requirements: V. Brnicevic, Navire Cargo Gear.
4. Dockside Equipment selection: Ken Dally, National Ports Council, U.K.
5. Increasing the effectiveness of existing tonnage through improved cargo handling techniques: speaker to be announced.
6. Operational training, maintenance, spares and service: speaker to be announced.

19:30 Gala Party- Shangri La Hotel poolside

Note: This program is subject to augmentation/amendment

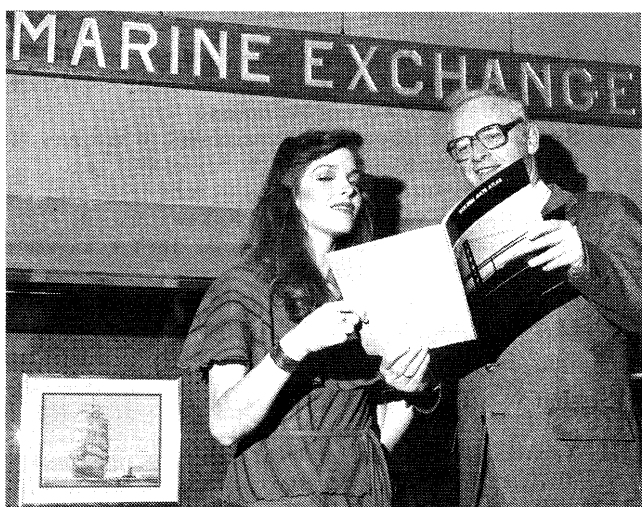
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Coulson, Surrey CR3 2RB, England

The Gold's still there



The Gold's still there—A brand-new "Atlas" describing the resources and services involved in ocean shipping and international trade in Northern California has just been published. Admiring the first issue off the press is Maritime Princess Donna Murray and Bill Wagstaffe, president of the Marine Exchange which sponsors the biennial "Golden Gate Atlas". In almost a hundred pages, the detailed reference and directory spells out most of the information sought in doing business with Golden Gate region ports and to tap both the markets and the resources of the Golden State. All port facilities are mapped and indexed, anchorages shown and described, pilotage and other industry and government services are detailed, and there is a directory of maritime and related services. The Atlas is available from the Marine Exchange, 303 World Trade Center, San Francisco 94111, for \$3.50 which includes postage, handling and sales tax.

Maritime highlights 1978 : Port of Oakland

— Cargo crossing the Port of Oakland's wharves will have exceeded 10 million revenue tons for the first year in history, preliminary figures indicate. Seven new lines began transpacific service through Oakland during 1978, a new container terminal was opened while work began on another, and the last private deepwater facility on the Oakland waterfront was purchased for eventual incorporation into still a third new 48-acre container yard on the Oakland Estuary.

— Four hundred marina berths were opened by the Port to recreational boating enthusiasts at Embarcadero Cove on the Estuary, as a \$4 million redevelopment project there neared completion under low-interest loan funding from the State of California.

— The largest single block of revenue bonds in its history was sold by the Port in late November. The \$20 million issue was purchased at a net interest cost to the Port of 6.1958 percent annually. Some \$10.5 million is earmarked for expansion and modernization of marine terminals, \$5.5 million for enlargement and improvement of Oakland International Airport, and \$2 million for construction of a warehouse in the Oakland Airport Business Park.

With the installation of an ingenious rail transfer system that permits 600-ton gantry cranes to travel around a 60-

degree corner, the Port in December opened its new Outer Harbor Berth Six to full container operations, sharing two of four cranes serving the adjacent Sea-Land Terminal.

The Port also concluded an 11-year lease agreement with the U.S. Defense Department for use of two berths and 38 acres of yards and warehousing at the Oakland Army Base. The site is being operated as Oakland's first large-scale automobile shipping terminal, with an unusual emphasis on exports of Detroit models to the Far Eastern market.

If Oakland's tonnage growth rate far outstrips that of any other West Coast port, forecasts by a variety of agencies indicate that ultimate general cargo volume on San Francisco Bay may have increased by five-fold again by the end of this century.

In the short term, the trade spurt is reflected in nearly \$5 million in added revenues earned by Oakland's marine terminals during fiscal 1978—\$13.6 million against \$8.8 million for 1977.

In all, net revenue from Port of Oakland maritime, aviation and commercial activities in the year ending June 30, 1978 totaled \$31 million. After deduction of operating expenses, that left \$17.2 million for reinvestment and as a pledge against bonded indebtedness of \$88.5 million—an eye-opening 42 percent improvement over the fiscal 1977 net operating income of \$12.1 million!

Irish light goes automatic with a TMG

Eeragh lighthouse, a major light station off the West Coast of Ireland, is operating automatically using an advanced power generating system from AGA Navigation Aids Ltd., Brentford.

The Commissioners of Irish Lights installed this AGA 22-mile range revolving light at Eeragh off the Aran Islands in August last year. It is powered from batteries continuously charged by a 24-volt 60-watt output thermo mechanical generator (TMG) and since last December it has been left unattended. Functions of both the light and the generator are monitored over a radio telemetering link by the lighthouse keepers at Slyne Head.

Developed by the U.K.A.E.A. (United Kingdom Atomic Energy Authority) and AGA, the thermo mechanical generator, when introduced in 1975, had an output of about 25 watts, which was inadequate for major light stations. The new uprated 60-watt version which, when used with the AGA optical apparatus installed at Eeragh, produces 314,000 candelas, is suitable for a very wide range of major lighthouse installations. It consumes less than 450 kilograms of propane gas per year and with very low refuelling and servicing costs, this makes electrically powered automatic lighthouses away from mains electricity services an increasingly attractive possibility.

Antwerp news

• Maritime traffic in Antwerp

From data, provided by the General Management of the Port of Antwerp, it results that 2 million tons more cargo have been transhipped during the first 10 months of 1978 than in the corresponding period of 1977.

This represents a total maritime traffic increase by 3.3% especially owing to the growth of outgoing maritime cargo (+6.4%).

When leaving the oil traffic out of consideration, the results are even more positive. Dry bulk cargo and general cargo together reveal an increase of 5.4 million tons. This was mainly the result of a considerable growth in the exports of these cargoes, i.e. 21%; whereas imports increased by 5.9%.

In the aforesaid period total containerized cargo traffic increased from 4,129,174 tons in 1977 to 4,727,868 tons in 1978, i.e. +14.5%.

• Extension of port infra- and superstructure

The Ministry of Public Works agreed to the carrying out of a study in view of the construction of a new lock besides the existing Zandvliet lock. The Study Department of the Albert Canal has been entrusted with this task. Alderman for the port J. Huyghebaert stated that the public tender could be expected in 1980.

On the other hand, the Minister for Public Works approved of an order of 12 quay cranes for the port. The order, worth 495 million BF, has been confirmed by the Socio-Economical Ministerial Board and will guarantee work for 600 people with "Boomsche Metaalwerken".

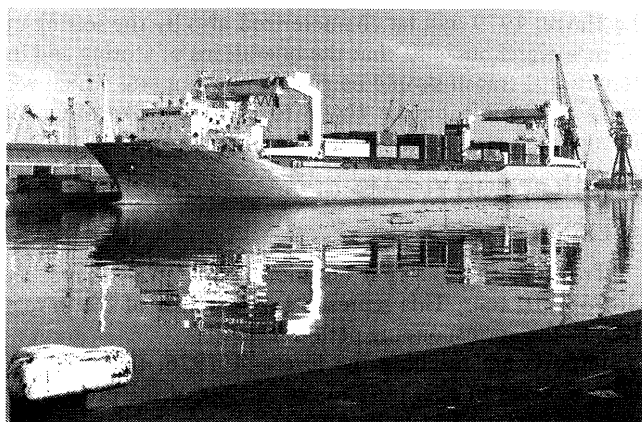
Grimsby to get two new mobile cranes

The British Transport Docks Board are to purchase two new mobile cranes for their port of Grimsby on South Humberside, to re-equip the berth at Union Dock, thus enhancing the port's flexibility and ability to cope with heavier cargoes.

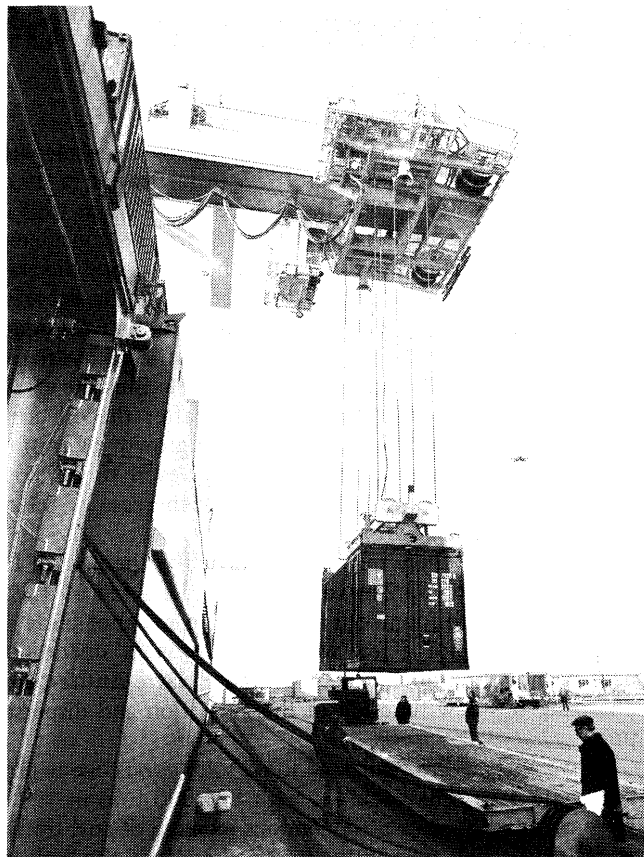
The cranes will initially be positioned on the south side of the Dock, where packaged timber from Russia and Scandinavia, and iron and steel from Belgium and Germany are handled. This will enable the port to deal with timber in 10-tonne packages, which it was previously unable to do.

An added advantage will be the mobility of the cranes which can easily be transferred for use at other berths, primarily the east side of Royal Dock, where large quantities of frozen fish are dealt with.

Bigger ships on Hull-Mediterranean Service (B.T.D.B.)



(1) The 8,979 dwt. Levante Express, at the Adriatica Line berth on Hull's Queen Elizabeth Dock.



(2) One of the portal cranes on the Levante Express, discharging a 20 ft container direct to a mafi trailer, prior to transfer to the stacking.

London, (British Transport Docks Board):—In less than eighteen months since it was started, trade through Hull on the eastern Mediterranean service operated by Adriatica de Navigazione, an Italian Line, has increased by such an extent that two higher capacity vessels have now been introduced.

The first to go into service, the 8,979 dwt Levante Express, arrived at the British Transport Docks Board's Port of Hull at the beginning of February, discharging 96 containers and loading 52. Her beam of 25.32 metres (84 ft) made her the widest ship ever to enter Hull docks.

Introduced after extensive research into high capacity vessels, the ships are the new Boxer class combi type, with a container capacity of 576 TEU's with a ro/ro deck of 678 linear metres. On the weather deck, containers can be stacked three high, whilst on the trailer deck there is room for double stacking. Each ship is fitted with two 38 tonnes capacity portal cranes with their own automatic spreaders for handling 20 ft and 40 ft containers. The side and stern ramps are ideal for all kinds of rolling cargo.

According to Mr. Peter Tod, operations manager for Worms Cargo Service U.K. Ltd., these vessels differ from other ro/ro ships in that their hatches can be removed, enabling the ships' cranes to load containers straight into the trailer deck.

These portal cranes have a sliding beam, giving an outreach on the starboard side of eight metres. Containers are loaded directly from waiting slave trailers and Worms anticipate a loading rate in excess of 20 containers an hour.

Le Havre speaks of their hopes for 1979

Port of Le Havre Series No. 9

1978 figures for the port of Le Havre are somewhat worse than those recorded in 1977: total traffic in 1978 reaches 76.7 m tons, all bulks included, to 79.9 m tons in 1977, i.e a fall of 4%. Therefore 1978 may be considered as a poor year—allowing for this result only—since the traffic has decreased. This is not true, for the traffic decrease similar to that met by other oil harbours such as Rotterdam or Marseille is due to nothing but the traffic of hydrocarbons, for other traffic has increased by 13%: thus the effort of diversification which was necessary after the oil crisis begins to bear fruit. Year after year the growth of traffics other than oil tends to consolidate and even to development. Thus in 1977 we had recorded an increase of 8% of the traffic, oil excluded.

50 m tons of crude oil were imported by the port of Le Havre in 1978 to 52.2 m tons in 1977, i.e a fall of 4.3%. 1979 allows us to found our hopes on the entrepot trade of crude oil since for a few weeks transshipment operations have been carried out in the port of Le Havre-Antifer, emphasizing this new function of this reception and dispersal port.

If we analyse the figures of loose solid goods, we realize that grain traffic has doubled with 821,000 tons in 1978. We particularly notice a tremendous increase of coal traffic since for the first time in the port of Le Havre, the limit of 5 m tons has been exceeded (5,223,000 tons to 3,855,000 in 1977). The putting into operation on April, 1st of a new ore berth accessible to 140,000 dwt vessels has something to do with this outstanding increase.

Le Havre Port Authorities are particularly aware of the basic importance of general cargo traffic, all bulks excluded, because of the "added value" it gives to French economy and of the jobs it generates. It increased in 1978 by 3% (6,835,000 tons to 6,643,000 in 1977 Exports which have reached 3,788,000 tons are much higher than imports which have reached 3,047,000 tons. This trend already noted in 1977 has thus consolidated and developed in 1978 since the port of Le Havre has handled that year some 800,000 more tons general cargo in exports than in imports. Within this category, containerized traffic has increased by 6.3% for imports (1,617,000 tons) and by 15.3% for exports (2,051,000 tons).

The port of Le Havre is by far the first French port in this field and 1979 will be characterized by further engineering works at the 3rd container terminal situated alongside the Ocean dock and works of embanking in the Seine Bay preceeding the extension of the wet dock.

Though there is a wide range of ports served on both French and English coasts, passenger traffic has exceeded by 10% the 1977 figures. As a matter of fact 871,537 passengers, a figure never reached up to that moment, have passed through Le Havre as against 788,784 in 1977, i.e almost 100,000 more than last year. More particularly we shall notice the development of the traffic done by the Irish Continental Line to Ireland which in 1978 has raised to 5 the number of weekly visits to Le Havre between May and October.

With a very hard international competition, the port of



Port of Le Havre—General view.



Port of Le Havre—A container terminal (Bougainville) with three container carriers.

Le Havre will continue to develop general cargo traffic in 1979 with a view to bringing new traffics and new lines to Le Havre. 1979 will be characterized also by the setting-up of new warehouses so that the operations of storing and international transit should be given a new impetus which will make it possible for Le Havre to become —like other big European ports— a gateway of the shipping trade.

Dunkerque news

• EXPORTS: +25%

Traffic during the first ten months of 1978 has reached 28,958,710 tons. This represents an increase of 8% in relation to the corresponding period in 1977.

Imports are reaching the levels of 1976, thanks to the large increase in coal (+42%) and in spite of the drop in imports of iron ore (–1 million tons).

Exports on the other hand, with a rise of 25% on 1977 are showing a marked increase and are well on the way to setting a record.

(Continued on page 44)

Port of *Kure*



The world's largest tanker "NISSEI MARU" (484,337 DWT) assisted by a fleet of 4,000 B.H.P. tugs sides up to discharge a full cargo of valuable Arabian Light at the world's largest (6.6 million tons) storage farm. All are owned and operated by our group of companies. The investment is indicative of the Group's positive outlook and, confidence in the future of the petroleum, tanker and related industries and, as the trained eye will evaluate, we are well prepared to meet the demand for oil in the coming upsurge in the world economy.

TOKYO TANKER CO., LTD.

● Cross-Channel

From January to October, the traffic of the Sealink services between Dunkerque and the three British ports amounted to 894,137 tons. This represents an increase of 16% in relation to the figures for 1977.

The number of containers carried increased by 51% and by 45% in tonnage (200,000 tons) whereas the total tonnage carried on the Dunkerque Felixstowe service amounted to some 248,350 tons.

● Korean officials visit Dunkerque

Last November officials from the port of Incheon, (Korea) visited the port installations.

Among them,

M. CHOI, JUNG HWAN

Vice-president of the Chamber of Commerce and Industry in Korea

M. MOON, SOON MO

President of the Association of the Stevedores of the port of Incheon

M. MOON, KI SEOP

Director of the port of Incheon

M. OH, YOUNG SIK

President of the DONG BANG FORWARDING Co.

M. BAE, KWANG HO

General Manager of the Port of Incheon

held meetings with their Dunkerque counterparts and appreciated the many and varied possibilities which would open up through both technical assistance and the reinforcement of commercial exchanges between Dunkerque and their own country.

Absolute top record 1978 Dunkerque's traffic

Thanks to FRANCE's turning more to foreign countries, and its Labour Relations record getting better, Dunkerque's traffic reached 35,644,195 tons in 1978 i.e., 8.7% growth over 1977 and 6.3% over 1976.

1978 traffic also overtops 1974 which is the highest tonnage reached in the past: 34,588,000 tons.

This goal was achieved through a dramatic boom of exports (+23.8%) which amount to the highest ever total tonnage of 7,287,580T.

Imports also grew compared to both 1977 (+5.1%).

Considering these figures Dunkerque continues to rank first among French Ports excluding petroleum and third for the total traffic.

Hamburg retains position as top West German port

The tonnage of cargo handled at the Port of Hamburg was up 1.5 percent over the previous year and reached 54.9 million tons. The four top categories of cargo handled were liquid, 18.13 million tons, down 5.4 percent from the previous year; general and bagged cargo, 16.98 million tons, up 7.3 percent; grabbable cargo, 10.96 million tons, an increase of 5.9 percent; and suction-type cargo, 8.84 million tons, up 0.6 percent.

The volume of container traffic handled recorded a sharp increase of 27.3 percent over last year and reached 600,084 units on a 20-foot container basis.

The Hamburg Port economy does not see any indication

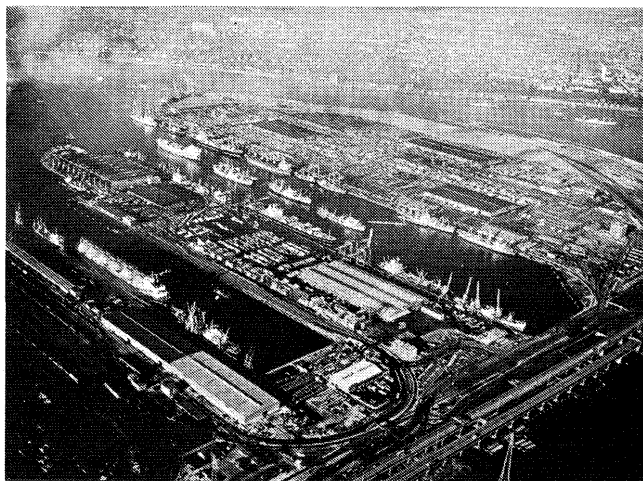


Photo shows Hamburg Port's Eurokai Terminal (center) and the HHLA Burchardkai Container Terminal (right).

of notable growth impulses in the year 1979, but neither does it expect any major setbacks in transport developments. In the general cargo sector it is expected that it will be possible to maintain the level of the past year, with the tendency towards containerization probably continuing.

Chinese-Dutch ties strengthened

"Amsterdam Newsletter":—The People's Republic of China is actively seeking new trade links with the West, and the Netherlands is high on their priority list for closer ties.

The Port of Amsterdam has just hosted a large delegation which included members of the China National Foreign Trade Transportation Corporation and the China National Chartering Corporation. These visitors were especially interested in the port's bulk—iron ore, coal, grain and derivatives—facilities and the container terminal.

Clients join forces for the purpose of curbing cost spiral

Dredging cost up by one-half since 1972

(Rotterdam Europort Delta, 78/4) The development of the port into an industrial nucleus and its function as a distribution centre for large volumes of bulk and general cargoes in ever bigger vessels, have necessitated the construction of Europort/Maasvlakte and the Euro channel in the North Sea. Huge sums of money have been invested in these projects.

The cost of keeping the waterways and harbour basins at their proper depths, have been increasing as well. The sums spent for these purposes have been mounting sharply since 1972. More dredging was required in particular because of increased silt formation in the access route to Europort, in the New Waterway and the western harbour basins. In 1972 maintenance work cost 50 million guilders, an item which has meanwhile risen to over 75 millions. The money is furnished by the State which owns the Waterway, and by the Municipal Port Management which administers the harbour basins.

Cost saving

The recurrent—and mounting—cost of maintenance dredging has induced these authorities to search for ways to

keep expenses within reasonable and acceptable limits. In 1973 the State and Municipal services in charge of maintenance of the waterways and harbours in the Rotterdam region entered into a cooperation.

This cooperation was established in a project called Maintenance Dredging Costs Minimisation (abbreviated to MKO in Dutch) which is calling a spade a spade. The goal of the cooperation was cost control through finding technical, scientific and economic ways to ease the maintenance burden.

Both the State and Rotterdam have been satisfied with this cooperation. There have been extensive exchanges of information and experience and in special cases it will be possible to coordinate or even integrate works. The two partners are convinced that even better results are obtainable if other Netherlands clients of dredging firms join in. To this end a so-called Dredging Day was held by the end of September, at which the initiators explained their intentions.

Dr. F.A.F. Scheurleer, managing director of the Municipal Port Management, listed three possibilities of reducing the cost of maintenance work through closer cooperation. First, through research on factors determining the ways and extent of silt movements and deposits.

Measures

On the basis of the knowledge acquired measures can then be taken to reduce costs. Moreover, dredging methods and contracting registration can be improved; in this way the output of the equipment can be increased, which cuts costs. The third way is a more market-oriented approach by the clients.

Dr. H.H. Kusters, Chief Engineer and Director of the Lower Rivers Division of the State Waterways Department, urged his audience on Dredging Day to shift the accent from incidental exchanges of experience towards a regular flow of information among the clients. 'In this way', he said, 'a better planning and coordination of dredging projects is possible, resulting in greater efficiency and lower prices, if one sees to it that the cost saving benefits the client'.

The MKO project has shown already that preventive maintenance can be improved and that automation of control makes dredging data exchangeable and accessible. And those are only a few of the advantages which make it attractive for clients to join forces for the ultimate goal of curbing the cost spiral.

Busy Suez

(Gulf News from Gray Mackenzie):—Suez canal is now as busy as it was in 1966—the last time it was fully operational—according to Mr. Mansour Suez Canal Authority. The programme to widen and deepen the waterway is well in hand and Mr. Mansour estimates that total income from the canal for 1978 will reach US\$500,000,000.

Gulf Patterns

An up-dated survey of economic trends in the Gulf

by Peat Marwick Mitchell & Co. management consultants.

General cargo to the Gulf from North America and Europe is being containerised, in response to intense competition between shipping lines, to such an extent that penetration of containerisable cargo to an upper level of 85 per cent is expected this year for North American traffic and 1981 for European traffic. A major containerisation programme is now taking place on services from the Far East, and almost a third of containerisable cargo has so far converted.

Services are also being introduced from Australia and New Zealand but, with the exception of India, there is little likelihood of containers arriving from other countries in the immediate future.

Most Gulf ports are now free from congestion; this, together with a reduction in cargo levels has led to improved ship availability and a surplus of container-slot capacity. Each shipping line has cut its rate to an unprecedented level in an endeavour to attract available traffic so as to sustain an economic load-factor. This competition on the North American and European routes "bottomed out" in 1978 and some smaller shipping lines have been obliged to withdraw their loss-making services or have combined them with other routes, e.g. Bombay.

Roll-on/roll-off services continue to play an important but limited role in the Gulf, particularly in being able to beat port congestion by rapid discharge of wheeled cargo, using only limited quay space. General cargo is now cheaper to convey by container than by wheeled trailer, and ro-ro operators are increasingly accepting containers in addition to wheeled traffic. New, large-capacity, combination ro-ro/container vessels are now being introduced on North American, European and Far East routes to cater for both types of traffic.

Container traffic potential

The range of cargo which can be classified as containerisable varies according to prevailing rates and volumes. As the unit cost of container movement falls, a greater proportion of general cargo is attracted commercially to containers. Generally, all easily handled items such as domestic consumer goods and lightweight industrial goods can be forwarded in containers, while dense, low-value goods (in addition to goods that physically cannot be accommodated) continue to be forwarded as break-bulk cargo.

With cargo rates from North America and Europe to the Gulf at artificially low levels, goods for which there is little advantage in using containers (for example bagged cement) are being shipped in containers rather than in break-bulk ships.

The introduction of new handling facilities to accommodate large numbers of containers has to a large extent determined the rate of cargo containerisation at each port. Self-sustaining vessels have allowed containers to be introduced but lack of storage and handling space, and of adequate port control procedures, have been major problems.

LCL (less than container load) traffic, which provides about 20 per cent of containerisable potential, has yet to

expand to the extent of FCL (full container load) traffic because of lack of cargo retrieval warehouses in most Gulf ports. LCL rates have not yet fallen in line with FCL rates but could do so when adequate retrieval arrangements are available.

A significant expansion in refrigerated container traffic is resulting from the improved handling of frozen food-stuffs in the Gulf. This is expected to include substantial trade in meat from Australia and New Zealand.

Most shippers favour the use of containers because of the reduction in damage and pilferage (with substantially lower insurance rates) and because of the general convenience of containers. In particular the "door-to-door" capability of the container, with the supervision of documentation throughout by the shipping lines, is regarded as a major asset.

Consignors most ready to use containers for Gulf traffic are those who already forward goods in containers to other destinations, and who are thus more readily able to standardise their packaging and transport procedures.

Consignees in the Gulf are accepting that imports will increasingly be received in containers and welcome the arrival of undamaged, unpilfered goods with lower transport costs than hitherto. The main problems arise because of the increase in the volume of goods received at one time, since many consignees do not yet have premises large enough to accommodate increased stock holding.

Some containers have been detained by consignees as temporary warehouses but more effective container control is now minimising this practice and, through continuing "education", delays are said now to be improving.

Traffic now shipped in containers to the Gulf ports has been generated from a variety of sources:

- former break-bulk cargo routed through the same ports
- former break-bulk cargo diverted from other routes
- containerised cargo diverted from other routes
- cargo formerly sent overland by road or rail.

Routing and choice of mode for container traffic influences the amount of cargo conveyed on seaborne container services, and is determined by the competitive standing, in terms of cargo rate and service, of the shipping lines serving the Gulf.

Containerisation by origin

It is not possible to express, in absolute terms, the numbers of containers being forwarded on each route to the Gulf. Estimates have been made, however, of:

- the proportion of general cargo considered to be containerisable
- the extent to which penetration of this potential had been achieved by December 1978
- the likely time before maximum penetration.

These estimates are summarised in the table by world trading area.

North America

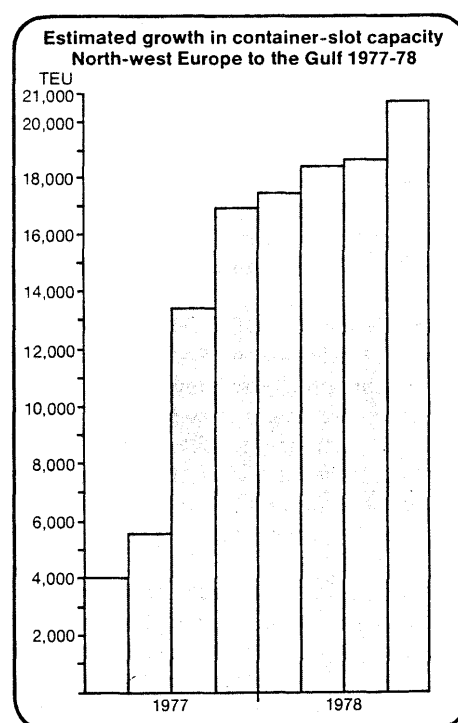
Approximately 80 per cent of the potential containerisable traffic is already estimated to be moving in containers. New ro-ro/container ships and larger all-container ships were introduced in 1978 and have added the impetus which will shortly "complete" containerisation (85 per cent of potential). The remaining potential is expected to continue to be shipped by the break-bulk services carrying project and other non-containerisable cargo.

Containerised cargo potential

Trading area	Proportion of general cargo estimated to be containerisable	Estimated penetration of potential (December 1978)	Estimated time before 85% penetration achieved
North America	n.a.	80%	1 year
Europe	50%	45%	2 years
Far East		} 30%	3-4 years
Japan	40%		
Other	80%		

Europe

For most of the Gulf countries, Europe is the largest supplier of goods and about 50 per cent of the large volume of traffic is estimated to be containerisable. The introduction of containers for Europe is behind that from North America but as traffic, including containers, is also routed overland or via the Eastern Mediterranean ports, estimates vary.



Container-slot capacity is being increased each month as larger vessels and more frequent services are introduced and the quantity of cargo being containerised is therefore increasing rapidly. A reasoned estimate of the penetration of potential, based on the survey which was undertaken in November 1977, would be 33 per cent. By the end of 1978 this penetration was estimated to have reached 45 per cent. With the stabilisation of competition the growth in the number of containers should be at a more steady rate leading to full penetration (85 per cent of potential) by 1981.

The trade between the Far East (Japan, Taiwan, Hong Kong, Korea and Singapore) and the Gulf is now being containerised. Conversion is expected to be largely complete by 1982.

The individual time-scale of conversion from each origin is, however, difficult to estimate. Most of the traffic originates from Japan but, as much of it is vehicles or project cargo, only some 40 per cent is containerisable. In contrast, about 80 per cent of traffic from other Far East origins is containerisable consumer goods. About 30 per cent has already been converted. The introduction of larger container vessels, in addition to the ro-ro vessels previously used, is increasing competition on the route. Greater use of seaborne containers has resulted from the diversion of containers away from the Trans-Siberian Railway, following a substantial increase in rail freight rates.

Other countries

Frozen meat, in refrigerated containers, and canned foodstuffs are increasing the container forwardings between Australia and New Zealand, and the Gulf. These forwardings are now estimated to be about 1,500 TEU per month. There is less certainty in forecasting containers from other origins although potential exists from the Indian sub-continent, particularly Karachi and Bombay.

Estimated percentage of containerisable cargo imported in containers

Country	1976 %	1977 %	1978 %	1979 %	1980 %	1981 %	1982 %
Oman	—	10-20	20-40	40-50	50-60	60-70	80
UAE	5	25-50	50-75	70-80	80-85	80-85	80-85
Qatar	—	6-10	10-20	20-30	30-40	40-50	50-60
Bahrain	—	5	15	35	55	65	75-85
Saudi Arabia	10	25-30	40-60	60-75	80-85	80-85	80-85
Kuwait	—	10-15	30-40	40-50	50-60	60-70	65-80
Iraq	—	—	10	10-20	20-30	30-40	40-60
Iran	—	15-25	25-50	40-65	55-75	70-80	80-85

Containerised imports

The use of containers for general cargo was formerly restrained by the inadequacy of the port facilities in the Gulf. Encouraged, however, by the initial beneficial effects on congestion many port authorities are undertaking major expansion programmes to accommodate the throughput of large numbers of containers. The projected availability of container facilities in each state, and the forecast penetration progress for containers from each world trading area, has enabled estimates to be made of the future percentages of containerisable cargo likely to be imported in containers into each Gulf country.

The future tonnage of containerisable seaborne traffic, that is, the potential market for the use of containers, has been very broadly estimated for each country by deducting from the forecasts of total imports those items, such as grain, cement, steel, timber and vehicles, that are not suitable, for physical or economic reasons, for transport in

Seaborne imports 1982

Country	Container- isable potential (000 tonnes)	Penetration ratio (%)	Container- ised traffic (000 tonnes)
Oman	415	80	330
UAE	3,370	80 to 85	2,695 to 2,865
Qatar	570	50 to 60	285 to 340
Bahrain	1,400 to 1,700	75 to 85	1,050 to 1,445
Saudi Arabia	2,785	80 to 85	2,225 to 2,365
Kuwait	2,650	65 to 80	1,700 to 2,100
Iraq	2,000 or more	40 to 60	800 to 1,200
Iran	4,400	80 to 85	3,520 to 3,740
Total	17,590 to 17,890	—	12,605 to 14,385

containers. The degree to which container services actually penetrate this potential market has been determined on the basis of the recent trend in container (including ro-ro) traffic at each major port and on known plans for the procurement of container handling facilities.

"Gulf Pattern 1977/82" is available in one volume from Gray Mackenzie, 40 St. Mary Axe, London EC3A 8EU.

World Trade Centre to benefit state

Melbourne Port Gazette:—The Melbourne World Trade Centre will open up opportunities for new world markets and generate more trade through the Port. The construction of the Centre will provide jobs for 1500 people who, due to the lack of development projects, are not currently employed. At the same time the engagement of sub-contractors will create additional employment and give work to many small businesses.

The project is not a speculative office block or exhibition area type development. Its function is to bring together, in one location, the people involved in international trade servicing both rural and industrial communities. It will provide specialised information and community services which will lead to greater efficiency of trade operations, expand markets and provide the whole community with a catalyst to help national growth. For the first time small businesses will have facilities and services made available to develop markets and profitability that have previously only been available to large corporations.

Through membership of the World Trade Centres Association, Melbourne will be linked with other World Trade Centres providing the most up-to-date information and communication systems on local markets, potential buyers, regulations etc.

Currently there are nineteen established World Trade Centres, three under construction and more than thirty in various stages of planning around the world.

The decision to establish a World Trade Centre in Melbourne has not been taken lightly as over the past four years a number of in-depth feasibility studies have been undertaken to assess the viability of the Melbourne World Trade Centre.

It has been suggested there may be an over-supply of office space in Melbourne when the Trade Centre is completed. There is no accurate figure as to the exact amount of new or near new space that will be available, but the consensus of opinion is that with limited new buildings now being erected there will be a shortage of good office space in the early 1980's.

To-date some seventy-five organisations have indicated a need for 355,000 square feet, or 57.25 per cent, of the office space available for leasing in the Melbourne World Trade Centre.

The Melbourne World Trade Centre will be financed by longterm borrowing which will be repaid from rental income received from the project. Taxpayers funds will not be used in building the Centre, nor will funds be drawn away from other State projects.

Following unsuccessful efforts in 1976 to seek a private enterprise developer to finance the Melbourne World Trade Centre the Port of Melbourne Authority, with the support of the Melbourne Chamber of Commerce, decided to accept the role of developer. This is in keeping with other major

Port of Adelaide hosts to Japanese port officers



TOKYO BAY PORT DEVELOPMENT AUTHORITY's representatives, Messrs. M. Kojima and T. Karube, accompanied by Mitsui OSK's Australian representative Mr. A. Tokieda (right) were shown the Port by harbormaster and port manager Captain Roy Pearson. . . . Main points of interest included the container terminal, ro-ro facilities and the new A\$2.2 m professional fishing boat facilities at North Arm. Here they are pictured on one of the two main pontoon mooring wharves. A third fixed wharf has handling facilities for catches and also acts as a breakwater to minimise tidal flow effects. The whole installation adjoins the ports shipbuilding and repair yards.

ports such as New York, Singapore, Toronto and Houston where the port authorities were the developers of the Centres in their cities.

The location of the Melbourne World Trade Centre at North Wharf is considered to be one of the best in the world. It has good access to the Port, to Melbourne airport at Tullamarine, Victorian regional centres by a network of modern roads, railways and other public transport.

Kuching Port news

1. The year 1978 in brief

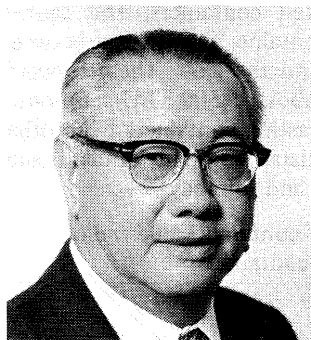
1978 has been a very eventful year for the Port. 1978 saw the following significance happenings:—

- The general revision of salaries and wages and the terms and conditions of service of employee in July and November respectively.
- The good labour relations record broken for the first time by the 'go-slow' which was at its worst on 27th August.
- The lowest handling rates in the history of the port at 8 bill of lading tons per gang hour for conventional cargoes and at 15 bill of lading tons per gang hour for palletised cargoes in August.
- The highest handling rates ever achieved at 57 bill of lading tons per gang hour for conventional cargoes and at 130 bill of lading tons per gang hour for palletised cargo in December.

2. Datuk A.H.Y. Puteh takes over

Datuk Abang Haji Yusuf Puteh took over the Chairmanship of the Kuching Port Authority on 22nd December, 1978. After Tan Sri Datuk Gerunsin Lembat retired as Charman of the Authority on 22nd December, 1978.

New Appointment of Chairman and General Manager for Port of Singapore Authority (PSA)



Mr. Lim Kim San
Chairman



Mr. Wong Hung Khim
General Manager

Mr. Howe Yoon Chong, 55, who held both the posts of Chairman and General Manager of PSA concurrently since January 70, was recently sworn in as the Minister for Defence after being elected into parliament as a by-election early this month.

The government subsequently appointed Singapore's Minister for the Environment, Mr. Lim Kim San, 62, as the new Chairman of PSA for a one-year period with effect from 12 Feb. 1979. Mr. Lim, prior to holding his present portfolio was Minister for National Development. He had also served as Minister for Finance. From 1971 to 78 he was also the Chairman of Singapore's Public Utilities Board.

The post of General Manager has now been filled by Mr. Wong Hung Khim, 40, a government civil servant who has served in the Ministry of Social Affairs and in the Ministry of Labour. In May, 1974, Mr. Wong was seconded from the Ministry of Labour as the Executive Director of Singapore Bus Service Ltd. to reorganize and improve the public bus services in the country.

He is a bachelor of science (honours) degree graduate in physics from the University of Singapore and also holds a certificate-in-education.

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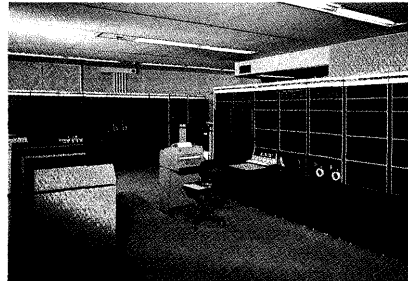
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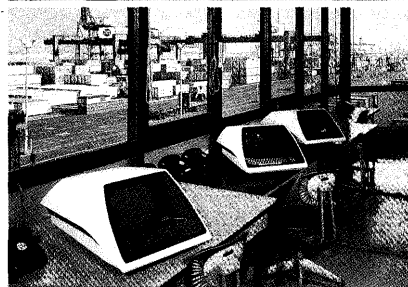
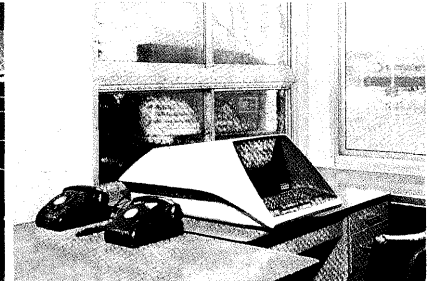
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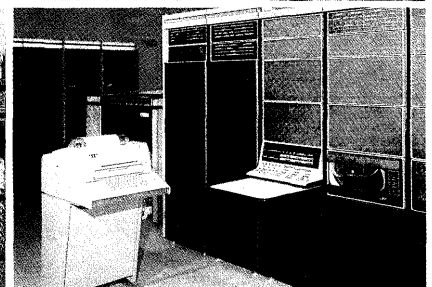
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