

# PORTS *and* HARBORS

March, 1981 Vol. 26, No. 3

**IAPH celebrates the 25th Anniversary.**



**Port of Penang**  
Malaysia

**IAPH Conference Nagoya May 1981**

The Publisher: The International Association of Ports and Harbors

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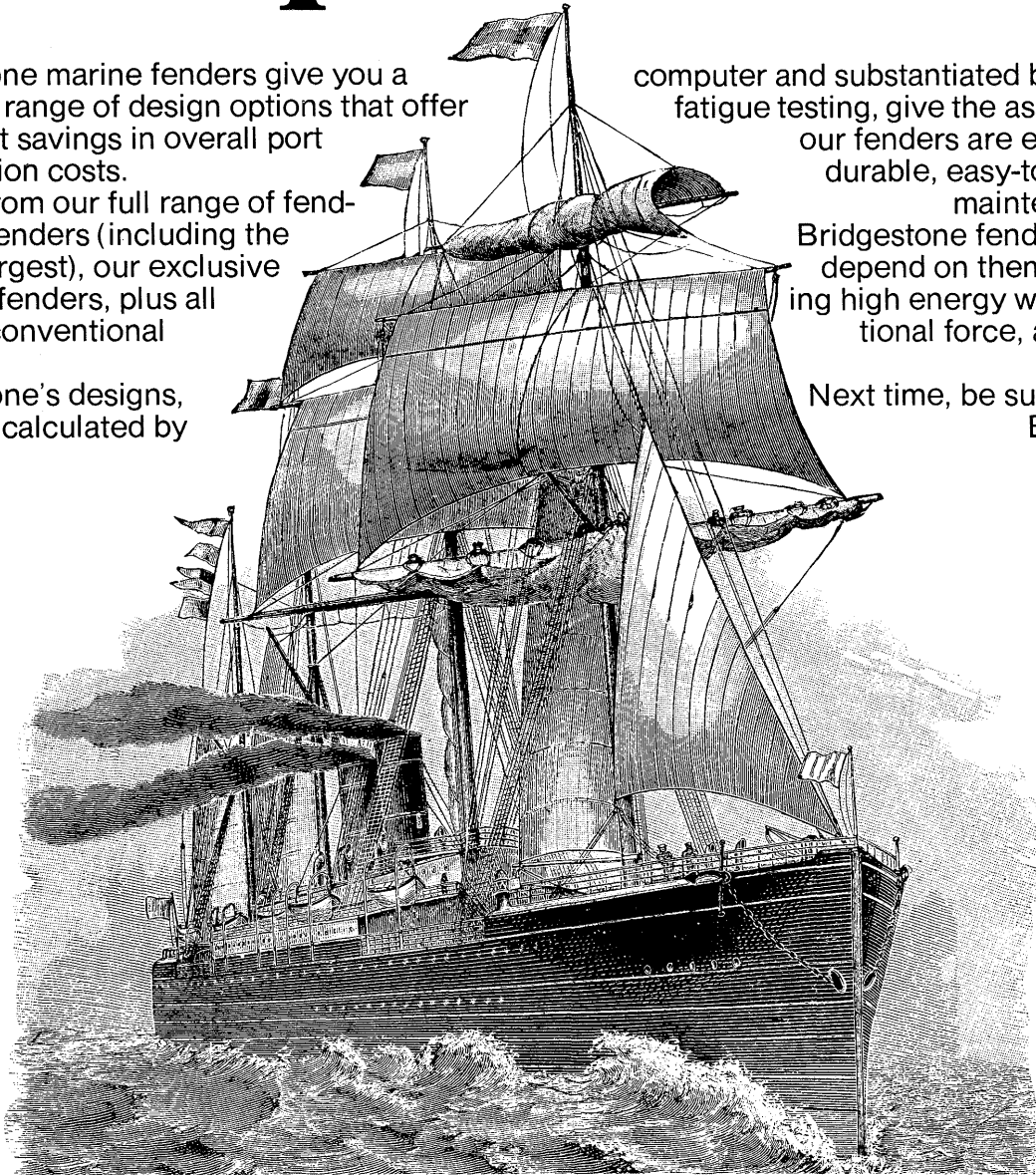
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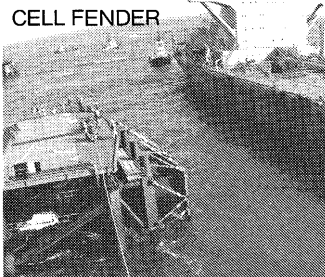
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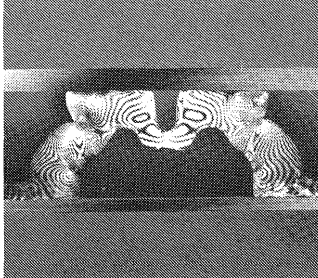
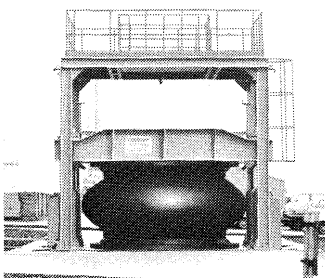
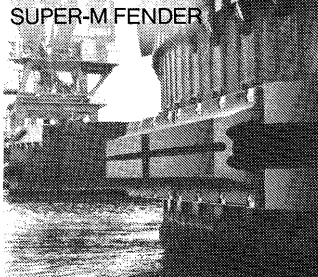
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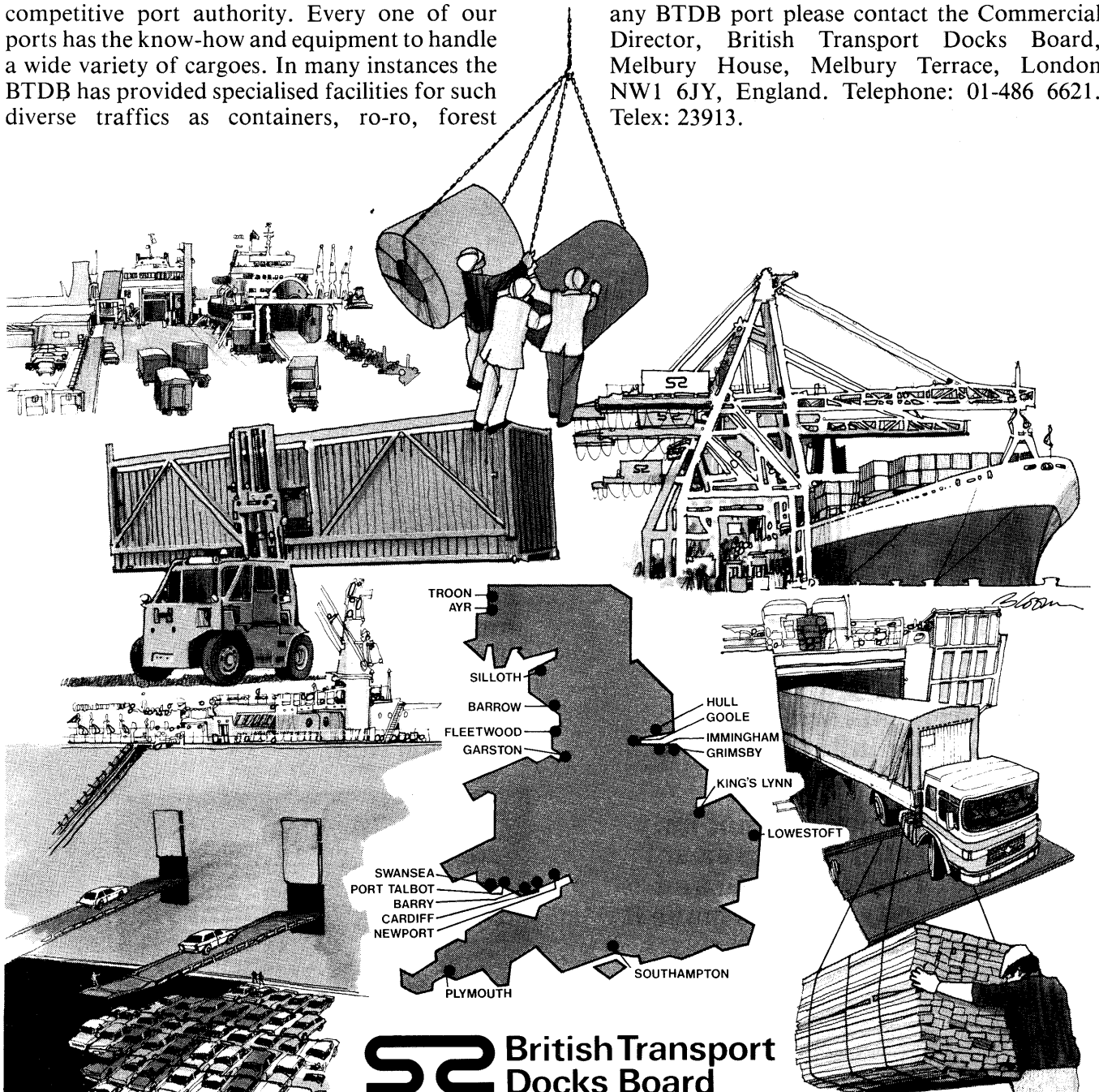
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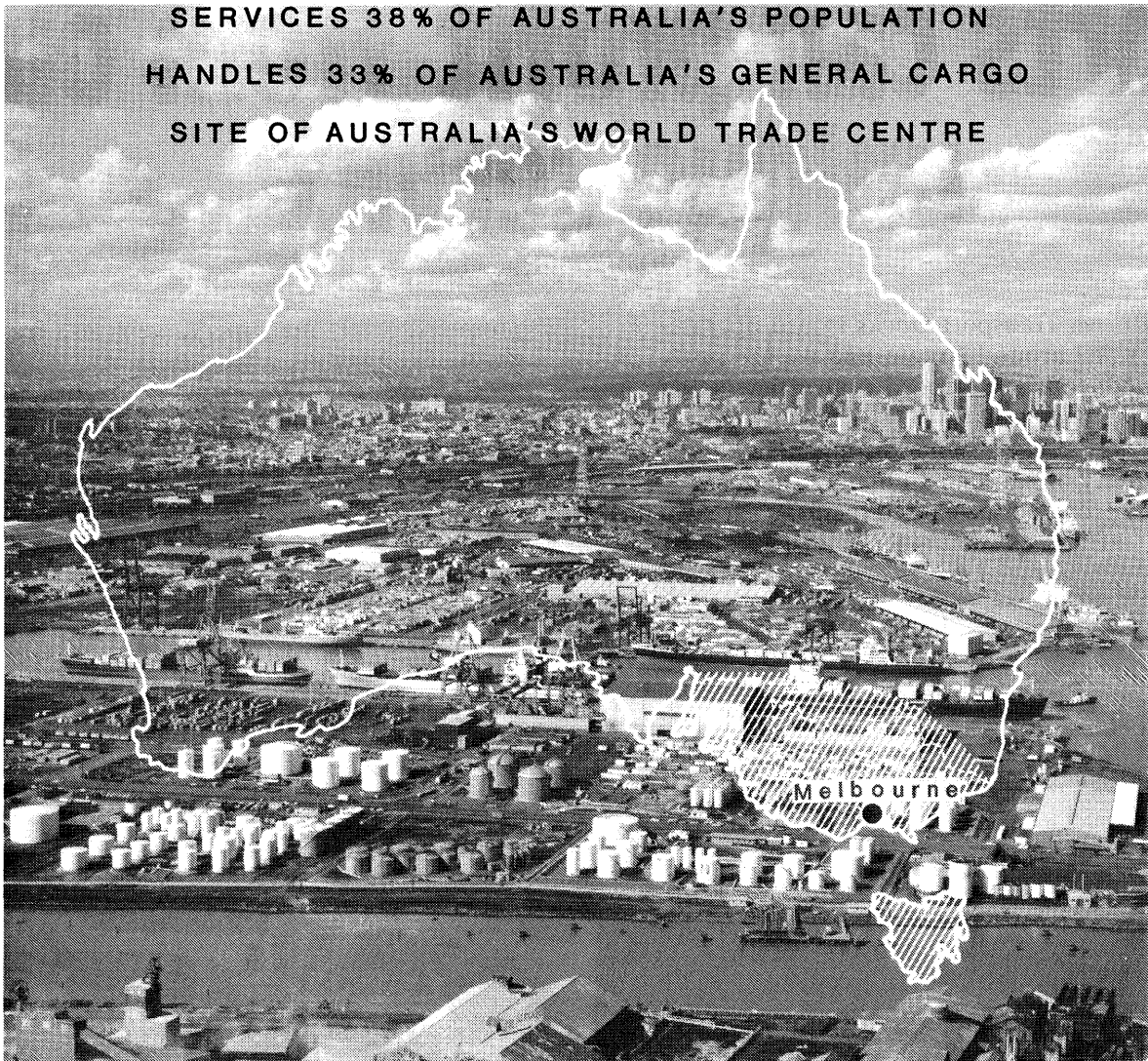
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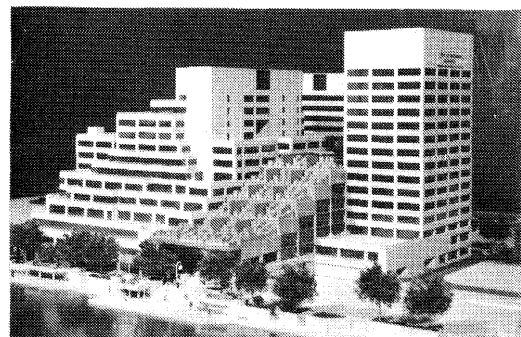
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All enquiries: The Secretary, Port of Melbourne Authority  
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Tokyo 105, Japan

Tel.: TOKYO (591) 4261

Cable: "IAPHCENTRAL TOKYO"

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**The Cover:** An aerial view of Butterworth Wharves, Penang Port Commission, Malaysia

Price US \$3.50 per copy  
US \$35.00 per year

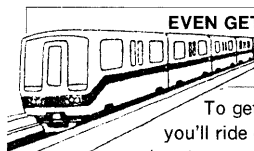
# PORTOPIA '81

## A FUTURE EXPERIMENT IN KOBE

An entire new city is under construction on an artificial island off Kobe, Japan. its name is Port Island and it is the first project of its kind in the world. This ambitious undertaking, scheduled for completion this year, will be an entire self-contained community where people will live, work and enjoy themselves in a 21st century environment. Port Island will also pioneer new modes of urban transportation and is expected to become a living experiment in city planning. To mark its completion, an international exposition will be held starting in March, 1981. Don't miss it.

### SEE THE FUTURE AT PORTOPIA

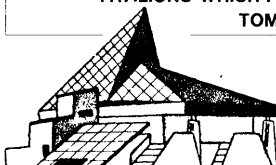
The newest maps show a new island in Kobe Harbor. Big enough to accommodate more than 120 sports stadiums, this new island will be the site of a mammoth international exposition in 1981, where the future will be on display.



### EVEN GETTING THERE WILL BE EXCITING

To get to Port Island, you'll ride one of the most modern transportation systems in the world. It's a computer-controlled, unmanned system of trains which will whisk visitors to and from the site quickly and quietly. On Port Island itself, expect to see other examples of the latest computer wizardry and a preview of how life will be lived in the cities of tomorrow.

### PAVILIONS WHICH PREVIEW TOMORROW



There will be about 30 pavilions on Port Island where Japanese and foreign exhibitors will be showing their ideas of what tomorrow will be like. The most advanced energy systems will be on display, along with models of new systems which can help us turn salt water into fresh water, utilize energy from space and hasten the growth of plants. For the kids, there will be a planetarium and other special attractions. Other exhibits will concentrate on the development of marine resources, trends in ecology and other important aspects of our past, present and future.

### VISIT THE GIANT PANDAS

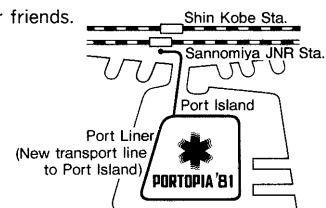
A pair of giant pandas from Tianzin, China will also be visiting Portopia. Children of all ages love their antics. For even more fun, there will be an amusement park complete with roller coaster, and a parade of sailing ships. In short, something for everyone.



### BUY YOUR TICKETS NOW

Adults.....¥2000 Students.....¥1200  
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Visit Port Island and meet the future and your friends.



**Session : March 20 to September 15, 1981**

Theme song "PORTOPIA" by Godiego

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# IAPH announcements and news

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## Winners of IAPH Award Scheme 1980 announced

Mr. J.K. Stuart, Deputy Chairman & Managing Director, British Transport Docks Board and Chairman of the IAPH Committee on International Port Development informed Head Office by telex on January 23rd of the results of the IAPH Award Scheme 1980, a composition contest under the theme of "How could the efficiency of your port improved".

The panel of judges (Messrs. J.K. Stuart, UK as chairman; Claude Mandray, Port of Rouen, France; Sven Ullman, Gothenburg, Sweden; J.K. Mturi, Kenya; Joseph Bayada, Cyprus; and Eric Williamson, Chief of UNCTAD's Ports Section), carefully examined the entries contributed by 20 young officers of the member ports in the developing countries and decided the winners to be as follows.

**1st Prize:** Mr. Carlos Canamero, Port of Callao, Peru  
(To be awarded with a silver medal, US\$750 and an invitation to attend the 12th Conference in Nagoya, Japan, May, 1981, including travelling costs and hotel accommodation)

**2nd Prize:** Mr. Farid Ahmed, Chittagong Port Authority, Bangladesh  
(To be awarded with US\$450)

**3rd:** Mr. Efiang Edet Odiong, Nigerian Ports Authority  
(To be awarded with US\$350)

**4th:** Mr. Nural Islam Majumder, Chittagong Port Authority, Bangladesh  
(To be awarded with US\$250)

The panel of judges were appreciative of the efforts made and the degree of interest shown in the competition by entrants from Nigeria who contributed 50% of the entries and wished to thank all other applicants for their contributions.

In addition to the four prize winners, the panel considered that the entries submitted by the following individuals should be given with a consolation prize (an award of US\$100).

Mr. Ibok Nsa, Nigerian Ports Authority, Nigeria  
Mr. Hyacinth Ofoha, Nigerian Ports Authority, Nigeria  
Mr. O. Babah, Nigerian Ports Authority, Nigeria  
Mr. Md. Ghulam Rasul, Chittagong Port Authority, Bangladesh

Also an entry received from Mr. Eli Tilles of Israel Port Authority was considered to be of a high standard by the panel, but it did not fall strictly within the scope of the competition which requires suggestions for future improvements to be made. The paper will be further discussed by the Committee when they meet at Nagoya.

The respective winners will receive their prizes from the Head Office in due course and the necessary arrangements to be made for Mr. Carlos Canamero, the first prize winner, through his port authority.

The panel and Secretary General jointly expressed their sincere hope that those who have not received a prize on this occasion would feel encouraged to submit entries in future competitions.

The following individuals also participated in the IAPH Award Scheme 1980.

Mr. U.O. Kalu, Nigerian Ports Authority  
Mr. Victor Ike Uche Dunkwu, Nigerian Ports Authority  
Mr. Kolli Venkata Rao, Visakhapatnam, India  
Mr. G.N. Mbah, Nigerian Ports Authority  
Mr. Surendra Kumar, New Mangalore Port Trust, India  
Mr. Hilarius Opiyo, Kenya Ports Authority  
Mr. Charles A. Okeke, Nigerian Ports Authority  
Mr. Bola Adeoye, National Cargo Handling Company, Nigeria  
Mr. I.O. Ibiam, Nigerian Ports Authority  
Mr. Shri N. Chandra Babu, New Mangalore Port Trust, India  
Mr. Francis Wachira, Kenya Cargo Handling Services, Ltd.

(in order of receipt of entries)

### 3 Papers chosen for Personal Presentation at Nagoya

The Organizing Committee of the Nagoya Conference recently announced that in response to their invitation through the "Ports and Harbors" and their own circular, 15 papers as listed on page 13 were contributed by the closing date November 30, 1980.

The Organizing Committee, in accordance with the conditions of invitation, has chosen the papers which will be presented by the authors at the Conference. To screen the papers, the Organizing Committee and the IAPH Head Office members had a meeting on January 21st.

The judges after careful examination have chosen the three papers by:

Professor Fujio Okazaki, Meiji Gakuin University, Japan  
Professor Kurt Grönfors, The University of Gothenburg, Sweden

Mr. Loh Heng-Kee, Director-General, Ports Authority of Fiji

These papers will be presented by the respective authors at the session scheduled at 8:45–10:45 on Friday, May 29th. (20 minutes for presentation and 17 minutes for questions). The Organizing Committee commented that all papers were so excellent and valuable that it was difficult for the judges to choose only 3 papers, however, due to the limited convention hours it was necessary to do so. The 3 papers, as the judges found, well reflected the conference theme—Port Contribution to Human Prosperity—

(Continued on next page bottom)

# IAPH prepares for the Separation from IAPH Foundation effective 1982

## 1. IAPH Resolution Abolishing the Agreement with the IAPH Foundation

As reported in the previous issue, the matter relative to the abolishment of the Agreement has been placed before the IAPH regular members. The matter was approved unanimously at its meeting by correspondence called on December 28, 1980, and a resolution to that effect adopted.

Text of the resolution:

WHEREAS, THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS, at its 8th Biennial Conference held at Amsterdam/Rotterdam in May 1973, accepted an agreement with the INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS HEAD OFFICE MAINTENANCE FOUNDATION relating to maintenance and operation of the Head Office, in order to relieve the critically worsening financial status of the Association all caused by the world prevailing inflationary trend, energy problems and the consequential monetary turmoil; and

WHEREAS, the Association, during the years since then, has made every practicable effort to that end including the adoption of the compulsory dues scheme in accordance with the size of port, the increase in the unit value of the membership dues unit, and the adoption of the SDR unit as the basis of the membership dues unit; and

WHEREAS, the effort thus exerted by the Association has gradually been rewarded and the financial prospect at least up until 1986 seems to be sufficient to maintain self-sufficiency assuming that the Association continues its efforts to absorb those predictable increases in prices; now, therefore, be it

RESOLVED that the Association herewith notifies the IAPH Foundation, in accordance with the pertinent sections of the Agreement, that the Association now intends effective January 1, 1982 to disengage from the Agreement with the IAPH Foundation to defray the expenses of the Head Office as confirmed by the Resolution of the Association adopted at this meeting of Regular Members by correspondence held on this 28th day of December, 1980.

## 2. IAPH Resolution submitted to the Foundation

In the circumstances, Mr. Bastard sent a letter co-signed

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(Continued from page 7)

presenting well thought out proposals and facts based on their own experience regarding the roles and functions of ports or port authorities. The paper by Professor Okazaki deals the socio-economic aspects, the one by Professor Grönfors with the legal aspects, while the third by Mr. Loh Heng-Kee deals with the business aspects from an actual case study, which will be particularly interesting to the participants from the developing countries.

The 3 papers will be published for pre-distribution to the participants while other papers will be also published and distributed at the Conference in May.

The Organizing Committee wishes to thank all the participants for their valuable contributions and are sure that all delegates will also find them interesting and useful in their deliberations at the Conference.

by Dr. Hajime Sato, Secretary-General, under the date of December 28, 1980, to Mr. Toru Akiyama, President of the Foundation, expressing the IAPH position toward the separation effective January 1, 1982, and submitted the resolution.

Text of the presidential letter:

As you know, one of the most important objectives of this Association in past years has been to realize its financial self-sufficiency. In this connection, this Association's unreserved appreciation and admiration go to you and the IAPH Head Office Maintenance Foundation for all the support and facilitation given to this Association since 1973. This was made possible through the Agreement pertaining to the maintenance of the IAPH Head Office, entered into between your Foundation and this Association in June 1973.

Furthermore, the Association's thanks go to the Japanese port community, governmental and public sectors alike, for their cooperation and contribution in support of the activity of the Foundation, for we fully know that their enthusiasm has greatly contributed to the fulfilment of the Foundation's activity in this regard.

As you also readily know, the counter-measures taken by the Association have been well supported by our members and the Association's financial status has gradually improved. At this stage of time, the financial prospect seems to be positive until 1986 but only if the Association keeps up its efforts in absorbing the predictable price increases.

In the circumstances, the Association, based upon the recommendations of the Finance Committee, Executive Committee, and further by the Board of Directors and Regular Members, has agreed to materialize the spirit of the Amsterdam Resolution (1973), which was aimed at the achievement of the Association's financial self-sufficiency, and has decided to disengage from the above said Agreement.

Therefore, we, the undersigned, hereby state, with the sense of profound thanks to you, the Foundation and the Japanese port community for their friendly benevolence shown to us, that the Association now intends to disengage from the Agreement effective January 1, 1982, in accordance with Section 11 of the Agreement, and respectfully submit to you the resolution adopted by the members to this effect.

However, we desire and hope that this intention of disengagement would not mean the end of our friendly affiliation and relationship with you and the Foundation, but would like to confirm that such relationship will continue to exist for the forthcoming years. And, it is sincerely hoped that the scope of activity of the Foundation, which, as we understand, will be re-named the "IAPH Cooperation Foundation", will extend to the support to the Association in time of need, and in particular, when unpredictable crises which may be generated by and from factors beyond the control and efforts of this Association occur.

# CLPPI Questionnaire on Fire and Explosion on Board Unladen Ships circulated

On January 9, the Questionnaire on the above subject was circulated to all IAPH regular members (and to temporary members) from the Head Office, based on the request of the IAPH Committee on Legal Protection of Port Interests (Chairman: Mr. Andre Pages). Furthermore, an addendum, containing an additional four items, was also sent to them.

The questionnaire is intended to collect the basic data needed for IAPH work in cooperation with IMCO Legal Committee's preparatory work for the drawing up of a draft Convention on Liability and Compensation in Connection with the Carriage of Noxious and Hazardous Substances by Sea, which is to be submitted to an IMCO diplomatic conference towards the end of 1982.

Text of the questionnaire:

## Part 1 (Sent on Jan. 09):

1. References of accidents which have happened in ports and which are imputable of insufficient cleaning of the petro tanks.
2. References to other accidents imputable to other circumstances where cargo residues from previous voyage have been insufficiently cleaned out.
3. The extent of the damage caused (corporal, material).
4. The way in which the damage was covered, or where it was inadequately cover by the application of international conventions limiting the liability of the shipowners.

## Part 2 (Sent on Jan. 28):

- a. References of accidents which have happened in ports, and which are imputable to cargo shipped in parcels, packages, unit loads.
- b. References of accidents which have happened in ports, involving fire and explosion damage.
- c. References of accidents which have happened in ports, where pollution is imputable to the spilling of bunkers (tankers, as well as from other vessels), or non-persistent oils.

(Mr. Pages notes: There points are important and in as much as such accidents are supposed at IMCO, to be relatively rare, and preferably to be covered by extensions of the 1969 Convention on Civil Liability of Oil Pollution Damage . . . but not to be included in the scope of the new Convention under consideration.)

With a special emphasis, he raises the following point:—

- d. References of substances which have been responsible of major damage (pollution, or others), in ports.  
(His notes: The definition of the hazardous substances is to be taken into consideration, in the new Convention. The investigation led by IMCO experts have shown that the hazardous substances, responsible for such accidents, and to be taken into consideration, could be included as a limited list.)

Members are kindly requested to send their replies to Mr. Pages at the following address:—

Mr. Andre Pages  
Chairman, IAPH CIPPI  
Ingenieur Général des P. et C.  
Palais de la Bourse, 2 Place Gabriel  
33075 Bordeaux Cedex, France  
Tel: (56) 90.91.21  
Telex: 570617 PORONOM

## Nagoya issues Newsletter No.1 for the Conference Delegates

New Year's greetings from Mr. Yoshiaki Nakaya, President of the Organizing Committee of the 12th IAPH Conference (President, Nagoya Port Authority and Governor of Aichi Prefecture) were sent to the IAPH members and the other parties concerned around the world in the middle of January. They were accompanied by a new set of conference circulars and their newly issued Newsletter No. 1 covering the changes in the program, profiles of luncheon speakers and other travel information, especially the courtesy meeting service the Conference Host is offering to delegates upon their arrival in Japan.

Mr. Nakaya thanked, in his letter, those who have already sent their applications to Nagoya, while he requested those whose applications are not yet made, to do so by the closing date—March 15th, 1981.

## IMCO/ICC Meeting observed by IAPH

Mr. Claude Mandray, General Manager, Port of Rouen, contributed the report on IMCO/ICC Joint Working Group on Barratry, Unlawful Seizure of Ships and Their Cargoes and Other Forms of Maritime Fraud, which was held at the ICC headquarter in Paris, from 24 to 26 November, 1980. The meeting was observed by Capt. R. Fossaert of Port of Rouen. His report is carried on page 10.

## Mr. Ph. Grosse of Le Havre Port reports on ICB Forum

Mr. Ph. Grosse, Plant Manager, Port of Le Havre Authority attended the Forum International Containers Bureau which was held in Basle on November 26, 1980, and contributed the report on the gathering, which is carried on page 12.

## CCC paper on International Trade Facilitation contributed

Mr. James B. Clawson, the CCC Assistant Secretary-General, contributed a CCC paper entitled "The Customs Co-operation Council and International Trade Facilitation" to the journal. He, in his letter of January 16, 1981 (Ref: L/81.140/EO-11), advised that the paper would cause a basis of the CCC position in the issue which is to be discussed at the 12th IAPH Conference in Nagoya. The paper is reproduced on page 20.

# Report on the meeting of the IMCO Ad Hoc Working Group on Barratry, Unlawful Seizure of Ships and their Cargoes and Other Forms of Maritime Fraud

## Captain Fossaert, Harbormaster of Port of Rouen

The working group was formed in accordance with resolution A 461 (XI) of the I.M.C.O. assembly adopted on the initiative of the Lebanon, and the decisions taken by the Council at the 44th session.

The Lebanese government delegate was elected chairman of the working group and the French government representative was elected vice-chairman, but in fact the working sessions at which the draft resolution was prepared were chaired by the delegate from Great Britain.

The most active delegations were those from: the Lebanon, France, Greece, Belgium, and to a lesser extent: Switzerland, U.S.A., Canada, the Netherlands, U.S.S.R., Sweden, as well as those from several non-governmental organizations: of course the I.C.C., but also the International Chamber of Shipping (I.C.S.)—O.C.I.M.F.—the shipping underwriters—U.N.C.T.A.D.

The delegate from the I.A.P.H., speaking on the question of measures being studied with a view to restraining in ports sub-standard ships, pointed out that this might sometimes, by blocking one or several berths, jeopardize the commercial potential of some ports.

It was particularly the delegations from France, Belgium, U.S.A., Great Britain who insisted on airing the problem of sub-standard ships, whereas Greece was very reticent, and the Lebanon a little reserved, but it was pointed out that the fraudulent practices were nearly always perpetrated with sub-standard ships.

It was in any case the Lebanese delegation itself that voted that these acts are generally perpetrated with small tonnage, old ships, belonging to a single owner, of which they often constitute the whole fleet. The same delegation also drew attention to the fact that in the case with which we were concerned, these illegal acts constitute an end in themselves, contrary to the taking of hostages which are but a means to an end, and also that the former are different from classical piracy because the aggression comes from within (captain, crew or owner) and not from the outside.

The delegate from Greece reminded the meeting of the creation of a group of inquiry at Piraeus and observed that there seemed to have been some improvement, since no complaint had been lodged last year.

The future Director of the new International Maritime Bureau, Mr. ELLEN, also a member of the I.A.P.H., insisted on the need for international collaboration because of, among other reasons, the insufficiency of many newly independent countries in police strength and personnel competent to handle such cases, and the non-existence or insignificance of convictions resulting from this.

The delegates from Belgium and Switzerland tried on introduce the idea that all ships should be subject to compulsory insurance similar to that which exists to cover



Capt. Fossaert

the danger of pollution by oil tankers.

Finally, the working group, happy with the measures taken by the International Chamber of Commerce (setting up of and International Maritime Bureau, and publication of a "Guide to prevention of maritime fraud"), drew up the attached project, which should be presented in June 1981 to the I.M.C.O. Council and then to the General Assembly with the request to make it the basis of a resolution. It contains on the one hand recommendations to the non-governmental bodies and on the other hand; recommendations to the governments. It has been deliberately limited to fairly general considerations and is to be presented in a report prepared by the I.M.C.O. secretariat.

**Consideration of the Question of Barratry, the Unlawful Seizure of Ships and their Cargoes and Other Forms of Maritime Fraud with a view to making recommendations as to the action which IMCO should take in the matter (IMCO document WGMF/WP.1).**

**Operative Paragraphs for a resolution of the Assembly Text recommended by the Drafting Group.**

1. RECOGNIZES the important and crucial role which self-regulation by the relevant commercial and industrial interests must play in combating maritime fraud in all its forms;
2. NOTES with satisfaction that these interests are fully aware of the seriousness of the problem created by maritime fraud and the necessity of their co-operating with each other and with Governments and inter-governmental organizations to the fullest possible extent;
3. NOTES with approval the positive results achieved by the various interests and organizations in promoting studies into the nature and consequences of maritime fraud, including the organization of training schemes, seminars and the publication of well-considered information, in particular the ICC Guide to the Prevention of Maritime Fraud;
4. WELCOMES the work of the ICC in combating maritime fraud and, in particular, the positive and constructive initiative taken to set up the ICC International Maritime Bureau;
5. URGES all interests and organizations concerned to

co-operate fully with the ICC and, as appropriate, with its International Maritime Bureau in taking effective measures and exchanging information for the further prevention of maritime fraud, bearing in mind that measures relating to documentation must not prejudice the facilitation of international maritime traffic and trade;

6. RECOGNIZES that the ratification and effective implementation of the IMCO conventions and other appropriate international instruments relating to maritime safety, in particular those dealing with the training and certification of seafarers and the procedures for the control of sub-standard ships adopted with a view to the eventual elimination of such ships, can make a contribution to the prevention and control of maritime fraud; and accordingly invites Governments to give renewed consideration to the ratification of the conventions and instruments and application of the resulting procedures;

7. INVITES Governments to review the provisions in their national law relating to the prevention and suppression of all forms of maritime fraud and to make such additions or improvements as may be necessary for the prevention and suppression of such acts and the safeguarding of the interests of all parties concerned, having particular regard to:

- (a) administration of national registers, including the transfer of ownership or nationality or change of name of ships;
- (b) documentary requirements, bearing in mind that measures relating to documentation must not prejudice the facilitation of international maritime traffic and trade; and
- (c) appropriate penalties for acts of maritime fraud;

8. FURTHER INVITES Governments to examine their national law enforcement procedures and resources, including the availability of appropriately trained personnel, and to take such action as may be necessary for the effective prevention, investigation and detection of all forms of maritime fraud and the prosecution of persons and bodies involved;

9. URGES Governments to take all possible measures of co-operation with each other and appropriate inter-governmental organizations and other interests in order to maintain and develop co-ordinated action in all relevant areas to combat maritime fraud, including the exchange of information and all appropriate co-operation with the ICC International Maritime Bureau;

10. INVITES Governments and appropriate international organizations to inform the Secretary-General of legal, administrative and other actions taken or contemplated to implement the aims of this resolution;

11. REQUESTS the Council to keep the matter under review and to take such further actions, as it may consider necessary in the light of developments.

## **New members are invited to serve on IAPH committees**

Year after year, with the growth of the Association, the committees of IAPH have expanded the scope of their activities thus making an important contribution to our Association.

At every conference, the members of the respective committees are to be appointed by the President in accordance with the applications made, and based on the recommendations of the committee chairmen and the

Executive Committee members.

Members interested to serve on any of the technical and internal committees for the new 2-year term beginning at the close of the 12th Conference are again invited to make an application by writing to the Secretary General specifying the committee or committees he wishes to serve on by March 31, 1981. The applications will be presented to the President for his consideration before appointments are made official. The members who may attend the Nagoya Conference can make an application on the spot.

## **Compilation of the 25 years history of IAPH is underway**

Mr. Toru Akiyama, IAPH Secretary General Emeritus and the President of the IAPH Foundation has long nursed the idea to publish a record of the efforts exerted by the founding fathers of the Association, namely, the late Mr. Gaku Matsumoto and the late Dr. Chujiro Haraguchi as well as other individuals instrumental in forming the Association and in developing it to the important position it holds today as a truly international organization.

He thought the 25th anniversary that the Association is going to celebrate at Nagoya, in May, this year, would be the most appropriate time to publish the book on the IAPH's first 25 years. He believed that what our predecessors did in the formation of the Association and for its later development and how they struggled hard in many difficult situations before the Association attained its present status should be recorded. These records of the past would then be able to serve all IAPH members, especially new comers, in their understanding of how IAPH was born and developed and to further the objectives of the Association in the future.

The book will be published by the May Conference both in English and Japanese and distributed to all participants at the conference and later to other members of the Association from the publisher, the IAPH Foundation. The book will have about 200 pages and will cover the following tentatively.

Tentative contents:

Congratulatory Messages from the IAPH Officers

Chapter I: The Infancy of the Association (1951-1955)

- 1) "Let's hold an international conference in Kobe."
- 2) The resolution to form the Association takes shape.
- 3) Japan and the United States unite in surmounting the initial problems of the Association

Chapter II: The Decade of Construction (1955- 1965)

- 1) Official inauguration: The Los Angeles Conference
- 2) Down to business: The Mexico City Conference
- 3) Introduction of the tri-regional system: The New Orleans Conference

Chapter III: Seven Years of Development (1965-1972)

- 1) Towards an epoch of expansion: The London Conference
- 2) Return to the "mother country": The Tokyo Conference
- 3) Granted consultative status in two U.N. organizations: The Melbourne Conference
- 4) Responding to an age of technological innovation: The Montreal Conference
- 5) The concept of a Maintenance Foundation: A solution to the financial crisis (Japan)

(Continued on next page bottom)

# Report on the Forum International Containers Bureau in Basle, 26 November 1980

## Mr. Ph. Grosse, Port of Le Havre

Theme: Containerized Transport of Bulk Pulverulent or Granular Liquid Goods Expansion and Problems

### Speeches:

#### 1—Mr. Helmut Gerhard—manufacturer of tank containers

According to Mr. Gerhard, there were in 1979 between 9,000 and 16,000 tank containers throughout the world. The great inaccuracy of the estimation is due to the fact that owners, for commercial reasons, are somewhat reluctant to provide the requested information.

Then Mr. Gerhard emphasized the difficulties met because of a lack of standardization in tank containers.

There are ISO and non ISO containers, small and big ones, insulated or heated.

Security conditions are very different as well as special facilities.

ISO standards have started to give rise to an overall view.

Concerning the transport in containers of liquid goods or gas, there are some common characteristics.

#### 2—Mr. Maurice Schleich—Eurotainer Marketing Manager—Paris

Tank containers account for less than 1% of the whole number of containers distributed all over the world.

These are not multi-purpose containers.

As a matter of fact, liquids differ in densities and steady-

ness.

Some are aimed at foodstuff supply, others at various disposals. Some are inflammable, others are aimed at stopping any combustion.

Load characteristics are not the same for sea or land carriage, and differ depending on continents and countries.

Here follows an historical record of tank containers since 1970 in which Mr. Schleicht sees 3 phases:

#### 1—1970—1975

Presentation of tank containers by shipping companies for the carriage of spirits and wines in lieu of bottles and barrels.

This was the marketing stage of the product.

#### 2—1976—1978

Starting of extensive land carriage, in particular in the chemical industry.

Intercontinental trade complies with the need to avoid transshipment of cargo and intermediate storage.

This was the growth stage.

#### 3—since 1979

- strengthening of the positions.
- try to find economies of return journeys empty.
- analysis of optimal capacities.

Choice is made between a "maximum capacity" for a given product and an "average capacity" suitable for a whole range of goods.

(Continued from page 11)

Chapter IV: Eight Years of Expansion (1973—to the present)

- 1) The establishment of the Maintenance Foundation: The Amsterdam Conference
- 2) Improvement of the committee system: The Singapore Conference
- 3) Dealing with a new age: The Houston Conference
- 4) Attendance by 800 members from 66 countries: The Le Havre Conference
- 5) The Silver Jubilee and the outlook for the Nagoya Conference

## Visitor

— On December 26, 1980, a welcome reception was held for the delegates of Saudi Ports Authority, headed by Dr. Fayez Ibrahim Badr, Minister, President & Chairman of the Board of Saudi Ports Authority, was held at Hotel New Otani, jointly hosted by the Overseas Coastal Area Development Institute of Japan (OCDI) and Japan Cooperation Center for the Middle East. The Mission, during their stay in Tokyo, visited Ohi Container Terminals in Tokyo, and met the Transport Minister and other government officials for the promotion of the relationship between the two countries.

## Membership Notes

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(Mr. Luis Alberto Raad Estrada, Gerente General)

**CORRECTION**—In the message from Mr. R.T. Lorimer, Chairman of Committee on Containerization, Barge Carriers and Ro-Ro Vessels published on page 13 of the January-February issue of this journal, the second paragraph from the bottom dealing with one of the papers was erroneously introduced while the whole paragraph should have been up-dated to read as follows:

"A third paper, "Ro-Ro Port Facilities" will be presented by Captain J. Stenberg of the Transatlantic Line, Gothenburg, Sweden, and will discuss the provision of port facilities in this method of transportation. The Paper will demonstrate that the Ro-Ro concept has overall economies which will ensure its continued place in container transportation of the future.

— Editor's Apology.

Afterwards Mr. Schlecht dealt with the viewpoint of letting companies.

He considers that letting companies are industrialists who have relatively sophisticated equipment and that they must keep close relations with inspection organizations.

They are responsible industrialists who offer services.

Packaging must be ensured by the letting companies. They must have a wide range of equipment, and provide the renter with a comprehensive file. Letting companies must be reliable and qualified.

The future of tank containers is closely related to the growth of international trade with respect to goods currently carried. There are still some traffics to be investigated which for the present time are only to/from North Atlantic, not be mention new traffics.

There is currently a new trend which consists in rising the capacity of 20' from 20 to 30 tons. Efforts are being made to analyse the matter.

### 3—Mr. Jürgen Wesen—Operator—Manager of CONTRANS

Mr. Wesen emphasized the fact that letting companies are provided with a wide range of special containers suiting for various purposes.

The variety of goods is great—specific weight, vapour pressure, flash or melting point, compatibility with the container material, viscosity, etc. . . .

"Hazardous goods" are subject to well-defined regulations owing to the inherent danger.

Containers must be approved for goods by the authority concerned.

There is a great variety of tank containers: size, different pressure strengths, and their very sophisticated fittings ranging from relief valves and interruption discs of pressure regulators to reduce pressure when high heating develops, to thermal insulation or solar protection, steam heaters, cooling systems and gravity or depression stripping systems.

Such containers, whose cost is very high, account currently for only 1 p.c. of all ISO containers.

The containers, which can become obsolete very quickly, usually belong to letting companies which can ensure additional technical assistance and consulting services.

The tank containers have broken into the continental market, thus competing with tank trailers and tank cars.

### 4—Mr. Horst Engels—Operator

Short recall of the development of tank containers which the railways tried to get as new traffics.

Tank containers constitute an independent means of transport, intermediate stage between tank cars and tank trailers.

Investments must take 5 to 8 years to produce a profit.

Their life cycle lasts 10 to 15 years, however after 5 years, tanks have become obsolete.

### 5—Mr. André Desselas, Manager sulphur and commercial logistic—ELF AQUITAINE, Paris

SNEA spends 1 p.c. of its railway budget in full trains.

The use of containers depends on the product age.

1st stage: circulation of samples

in bottles or small containers

2nd stage: semi-industrial

in 60 or 200 l barrels

3rd stage: in 3,000 to 5,000 l barrels

4th stage: industrial stage—in tank containers, tank trailers or tank cars

Its use depends also on the goods destination.

Long distance carriages are done by railway (France—

Greece).

Very heavy tank containers are used for very hazardous goods (tare: 7 tons for 11,000 litres).

Tank containers are not necessarily made of metal.

Considerable progress have been made in plastics.

Goods must not be damaged by their packaging, nor the contrary. As far as polypropylenes or polymethylenes are concerned, considerable improvements have been made.

Prospects for the future seem to show that tank containers will be connected with the development of refined chemistry which covers insecticides to cosmetics.

These account for low tonnages but there is still room for new-comers.

## "Port Reference Corner", planned by PSA

PSA (The Port of Singapore Authority) is planning to set up a "Port Reference Corner" in its public relations department to provide information on facilities, services, charges and future developments of the world ports to the shipping and trading communities in Singapore. PSA asks for contribution of publications, leaflets, maps, charts, services, plans and the tariff for the "Port Reference Corner", by member ports, to be mailed to Public Relations Manager, Port of Singapore Authority, P.O. Box 300, PSA Towers, Singapore.

### — 3 papers chosen

(Continued from page 7)

#### Presented Papers

1. "The Geographic Advantages of Mediterranean Ports in relation to the increased Cost of Fuel"—by R. Caillol, France
2. "Port Management in Developing Countries"—by Syed Mansur-ul Haq, Bangladesh
3. "Maintenance at the Port of Vancouver"—by W.E. Royds, Canada
4. "Some Facts and Remarks concerning Communications between Developing Ports and Ships prior to their Arrival"—by C. Bert Kruk, The Netherlands
5. "A Case Study of the Need for the Establishment of a Ports Authority"—by Loh Heng-Kee, Fiji
6. "The Contractual Framework of Marine Transportation of Oil"—by T. Rafgard, Norway
7. "Ultra Carrier System (UCS)"—by Everth Larsson, Sweden
8. "Port of Seattle: The Challenge of Development Planning in the Urban Residential Setting"—by Cliff Muller, U.S.A.
9. "Centralized Automated Maintenance and Control"—by Vernon L. Ljungren, U.S.A.
10. "Maritime Education and Training"—by Charles Bryan, Canada
11. "Legal Rights and Duties of the Port Authority in relation to the Customers"—by Kurt Grönfors, Sweden
12. "A Dredging Conflict 'Ocean Commerce and the Environment'"—by Hervert R. Haar, U.S.A.
13. "A Broad-Based Impact Analysis of a Port using an interregional Input-Output System and a Logit Model of Interregional Trade Patterns"—by Fujio Okazaki, Japan.
14. "Financial Evaluation of Port Projects in Developing Countries"—by Yosio Takeuchi, Japan
15. "Ports and Politics"—by J.A. Raven, U.K.



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## Open forum: Port releases:

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**IAPH Award Scheme 1980: First Prize Winning Paper**

# Port of Callao: A Suggestion for Better Use of Mobile Equipment

**by Mr. Carlos Canamero G.  
Port of Callao, Peru**

### Contents

#### Purpose

1. General
2. The Present Operations System
3. The Suggestion
  - 3.1 Loading and Discharging Operations
  - 3.2 Clearance and Delivery Operations
  - 3.3 Who should be in Charge of the New Job
4. How to calculate the Benefits and Costs involved
  - 4.1 Benefits
  - 4.2 Costs

### Purpose

The use of mobile equipment is a matter of concern for many ports, however, the reference is made mostly in connection with their rate of breakdown, for which the most common suggestion is to apply a preventive maintenance system in conjunction with an appropriate supply of spare parts.

Whereas the above point is always single out, there is another source for improvement in the use of mobile equipment, namely, the assignment of it for cargo handling operations.

This article is an attempt for a better use of mobile equipment in the Port of Callao.

### 1. General

The Port of Callao is the major port of the Republic of Peru. It is located in the West Coast of South America at 12°08' south latitude and 77°14' west longitude. It is an artificial port formed by two breakwaters which enclose a water surface of approximately 250 He. The commercial part of the port has 60.3 He. of land whereas the military and those devoted to shiprepair and shipbuilding areas reach only 40.0 He.

The central part of the commercial port is used for handling import and export of general cargo and include berths 1,2,3,4, 5A, 5B, 11C and 9, as it is shown in Figure 1. The export of mineral in bulk is made by using berth 5 at the north. The import of grain is made in berth 11B through specialized facilities for discharge and storage.

The loading and discharging of general cargoes is performed by using the ship's gear, since the fluctuation of the water level by tides is less than 1.00 M. The port performs the whole operation from and to the hook of the ship's gear

and its liability starts and finishes at that point. The shipowner or ship's agent, is in charge of all operations on board and he contracts and pays the labour and equipment that is necessary to do that work. The port uses its own labour and equipment to do the job on land. The only exception to this rule is the stevedores that the port contracts and pays in order to perform the operation on berth under the ship's gear. Thus, stevedores are working sometimes on board for the shipowners and sometimes on berth for the port.

The movements of cargoes from quay to storage areas is done by tractors and trailers which run at a maximum speed of 3 Km/hour for distances up to 1.5 Km.

The main characteristic of the general cargo facilities is in relation to storage areas, they are not assigned to specific berths in the usual sense. Thus, instead of using storage areas for handling and staking all the cargoes which belong to a vessel, it is used specialized storage areas for drums, cases, steel, general cargo and so on. The consequence of this particular system made necessary to distribute cargoes from a vessel to different storage areas.

This system has developed for many years and it is argued is a convenient one because the long periods which general cargo remains in the port (average 20 days).

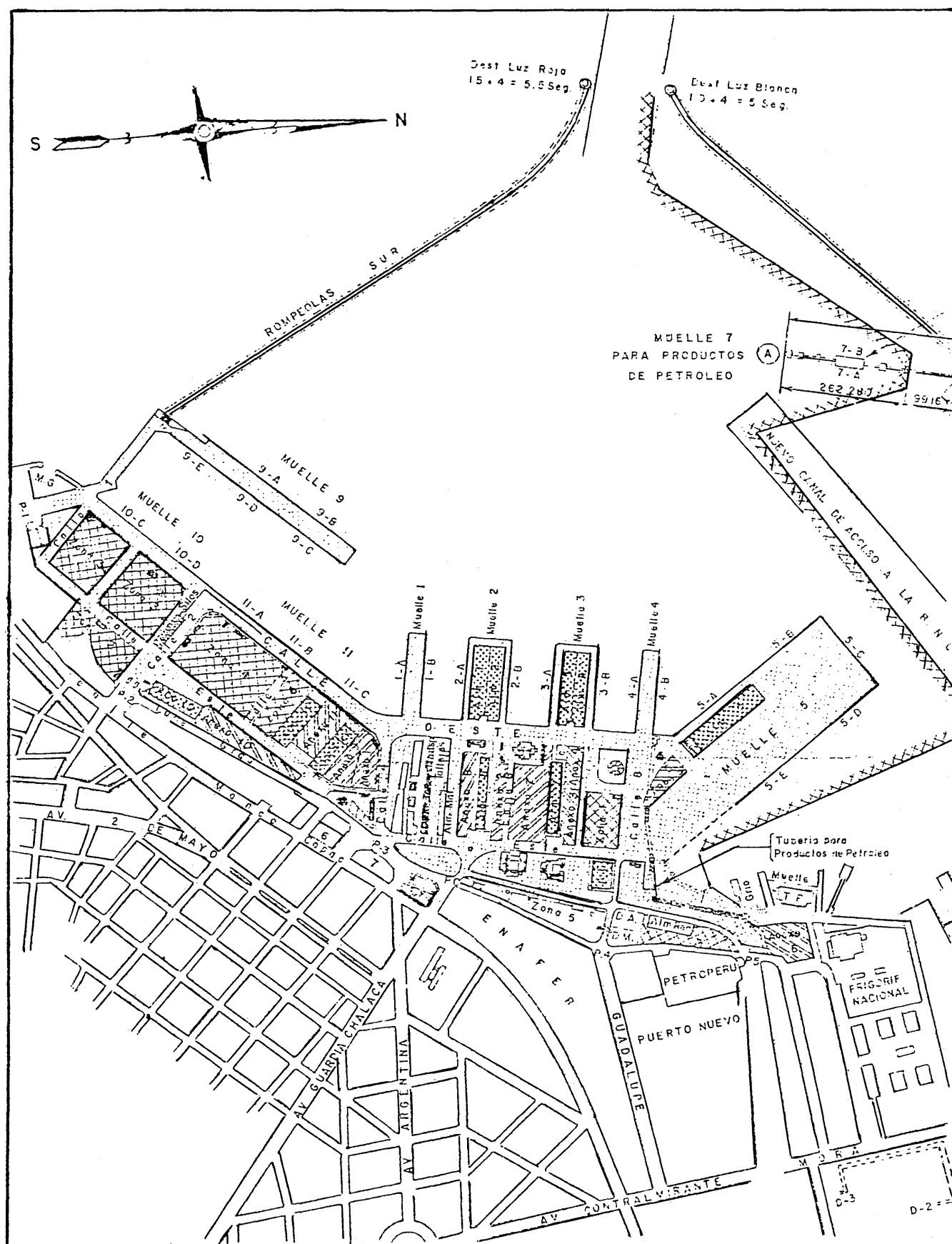
There are two kinds of storage areas, warehouses and open storage areas, the latter being divided into two kinds also, but only for administrative purposes, they are called zone and adjunct respectively, the former is an independent entity for control purposes whilst the latter depends on and works together with a specific warehouse. The reason for this is that warehouses became smaller to cope with the cargoes carried by ships, so the adjuncts can be regarded as an extension of warehouses. The warehouses were designed more than 40 years ago. Each zone is devoted to specific purposes, for instance, drums, bags, cases, vehicles and so on. Each warehouse is handling mixed general cargo and the biggest cargoes are assigned to the adjunct.

After the usual customs procedures in the storage areas, the cargoes are evacuated from the port almost exclusively by lorries. About 70% of the total import cargoes are stored in the port and the remaining 30% is removed directly from the quay by lorries. For export cargoes the proportion which remains in the port is about 30% and the other cargoes are moved by rail or lorries. The free period for storage of cargoes is 10 days for import and 3 days for export. The import cargoes are about 50% of the total, the remaining 50% is due to export.

The port works in three shifts, but it is not compulsory

**(Continued on page 17)**

# F - 1 Puerto del Callao a Fines de 1970



**Table No. 1 Distance-Time Sheet**  
Speed 3 Km/h.

**Legend**  
Distance meters  
Time (minutes)

| Warehouse<br>Adjunct or Zone | B E R T H |      |      |      |      |      |      |      |      |      |      |
|------------------------------|-----------|------|------|------|------|------|------|------|------|------|------|
|                              | 5A        | 4A   | 4B   | 3A   | 3B   | 2A   | 2B   | 1A   | 1B   | 11C  | 11B  |
| War. 1                       | 600       | 500  | 530  | 320  | 400  | 300  | 220  | 420  | 400  | 490  | 640  |
|                              | 12        | 10   | 11   | 6    | 8    | 6    | 4    | 8    | 8    | 10   | 13   |
| War. 2                       | 650       | 550  | 580  | 370  | 460  | 230  | 270  | 350  | 330  | 420  | 570  |
|                              | 13        | 11   | 12   | 7    | 10   | 5    | 5    | 7    | 7    | 8    | 11   |
| War. 3                       | 470       | 370  | 390  | 230  | 280  | 410  | 330  | 530  | 510  | 600  | 750  |
|                              | 10        | 8    | 8    | 5    | 6    | 8    | 7    | 11   | 10   | 12   | 15   |
| War. 4                       | 500       | 380  | 400  | 210  | 290  | 400  | 320  | 510  | 490  | 580  | 730  |
|                              | 10        | 8    | 8    | 4    | 6    | 8    | 6    | 10   | 10   | 12   | 15   |
| War. 5                       | 70        | 300  | 280  | 480  | 400  | 650  | 580  | 770  | 750  | 840  | 990  |
|                              | 2         | 6    | 6    | 10   | 8    | 13   | 12   | 15   | 15   | 17   | 20   |
| War. 9                       | 1000      | 900  | 930  | 710  | 780  | 530  | 610  | 410  | 430  | 420  | 570  |
|                              | 20        | 18   | 19   | 14   | 16   | 11   | 12   | 8    | 9    | 8    | 11   |
| War. 10                      | 1000      | 900  | 930  | 720  | 800  | 560  | 640  | 440  | 460  | 410  | 560  |
|                              | 20        | 18   | 19   | 14   | 16   | 11   | 13   | 9    | 9    | 8    | 11   |
| War. 11                      | 1300      | 1200 | 1230 | 1040 | 1120 | 860  | 940  | 750  | 760  | 670  | 820  |
|                              | 26        | 24   | 25   | 21   | 23   | 17   | 19   | 15   | 15   | 13   | 16   |
| Zone 1                       | 1330      | 1230 | 1260 | 1060 | 1140 | 880  | 960  | 770  | 780  | 470  | 320  |
|                              | 27        | 25   | 25   | 21   | 23   | 18   | 19   | 15   | 16   | 9    | 6    |
| Zone 2                       | 1570      | 1470 | 1500 | 1300 | 1370 | 1120 | 1200 | 1010 | 1020 | 1020 | 1170 |
|                              | 32        | 30   | 30   | 26   | 28   | 22   | 24   | 20   | 20   | 20   | 23   |
| Zone 3                       | 1570      | 1470 | 1500 | 1180 | 1250 | 1000 | 1080 | 880  | 900  | 850  | 1000 |
|                              | 32        | 30   | 30   | 24   | 25   | 20   | 22   | 17   | 18   | 17   | 20   |
| Zone 4                       | 1200      | 1100 | 1130 | 920  | 1000 | 740  | 820  | 620  | 640  | 590  | 790  |
|                              | 24        | 22   | 23   | 18   | 20   | 15   | 16   | 12   | 13   | 12   | 15   |
| Zone 5                       | 600       | 470  | 490  | 640  | 570  | 820  | 740  | 940  | 920  | 1010 | 1160 |
|                              | 12        | 9    | 10   | 13   | 11   | 16   | 15   | 19   | 18   | 20   | 23   |
| Zone 6                       | 1070      | 970  | 1000 | 900  | 970  | 720  | 800  | 600  | 620  | 610  | 760  |
|                              | 22        | 20   | 20   | 18   | 19   | 14   | 16   | 12   | 12   | 12   | 15   |
| Adj. 1                       | 800       | 700  | 730  | 530  | 600  | 350  | 430  | 230  | 250  | 240  | 390  |
|                              | 16        | 14   | 15   | 11   | 12   | 7    | 9    | 5    | 5    | 5    | 8    |
| Adj. 2A                      | 680       | 580  | 600  | 410  | 480  | 230  | 310  | 340  | 320  | 420  | 570  |
|                              | 14        | 12   | 12   | 8    | 10   | 5    | 6    | 7    | 6    | 8    | 11   |
| Adj. 2B                      | 670       | 570  | 590  | 400  | 470  | 380  | 300  | 500  | 480  | 560  | 710  |
|                              | 14        | 12   | 12   | 8    | 9    | 8    | 6    | 10   | 10   | 11   | 14   |
| Adj. 3A                      | 700       | 600  | 630  | 700  | 690  | 560  | 470  | 680  | 600  | 740  | 890  |
|                              | 14        | 12   | 13   | 14   | 14   | 11   | 9    | 14   | 13   | 15   | 18   |
| Adj. 3B                      | 650       | 550  | 580  | 700  | 630  | 660  | 570  | 780  | 760  | 840  | 990  |
|                              | 13        | 11   | 12   | 14   | 13   | 13   | 11   | 16   | 15   | 17   | 20   |
| Adj. 4                       | 380       | 310  | 290  | 480  | 410  | 670  | 490  | 790  | 770  | 850  | 1000 |
|                              | 7         | 6    | 6    | 10   | 8    | 13   | 10   | 16   | 15   | 17   | 20   |
| Adj. 9A                      | 950       | 850  | 880  | 680  | 750  | 500  | 580  | 230  | 250  | 400  | 550  |
|                              | 19        | 17   | 18   | 14   | 15   | 10   | 12   | 5    | 5    | 8    | 11   |
| Adj. 9B                      | 900       | 800  | 830  | 630  | 700  | 450  | 530  | 330  | 350  | 340  | 490  |
|                              | 18        | 16   | 17   | 13   | 14   | 9    | 11   | 7    | 7    | 7    | 10   |
| Adj. 10                      | 940       | 840  | 870  | 650  | 720  | 470  | 550  | 350  | 370  | 320  | 470  |
|                              | 19        | 17   | 18   | 13   | 14   | 9    | 11   | 7    | 7    | 6    | 9    |
| Adj. 11                      | 1130      | 1030 | 1060 | 860  | 930  | 680  | 760  | 560  | 580  | 530  | 680  |
|                              | 23        | 21   | 21   | 17   | 19   | 14   | 15   | 11   | 12   | 11   | 14   |

to work in loading or discharging operations during the three shifts continuously. However, if it is envisaged that there may be some problems with future vessels, the vessels in operations are encouraged to finish their operations quickly. The delivery of cargoes from the port is done only during the first shift, mainly because there are problems for reception of cargo in factories or private warehouses in the city.

## 2. The Present Operations System

The cargo handling activities are performed through three departments of the Operations Division, namely:

- Traffic Department: in charge of movement of vessels and the work which is done on quay.
- Transportation Department: in charge of mobile equipment such as fork lift trucks, trailers, cranes, etc.
- Warehouse Department: in charge of the operation within the storage areas.

The cargo handling activities are planned daily in the Operation Meeting through discussion between port officials and ship's agents. The main task of the Operation Meeting is to allocate each vessel in an specific berth, this is made by taking into consideration factors such as type and amount of cargoes, availability of space in storage areas, availability of equipment and so on. The usual pattern for the Operation Meeting is ship's agents asking for enough equipment (tractors and trailers) to match with the number of gangs which they have contracted before to come into the meeting. Additionally, their requirements of tractors and trailers are presented to the port officials on daily basis. As a consequence, the demand of equipment fluctuates widely from day to day in accordance with demands from ship's agents. The rational underlying this behaviour is that the port must serve shipping interests.

Since port's officials do not know the operation which is planned for vessel, they are not in a position to refuse any

Table No. 2 Working Plan Sheet

Vessel: Wonorato Voyage 21A/104 Date  
Berth : 3B

| Hatch 5                   |               |     |      | Hatch 4                    |               |       |      | Hatch 3                     |                    |     |      | Hatch 2   |                                  |     |      | Hatch 1                                  |                        |     |      |
|---------------------------|---------------|-----|------|----------------------------|---------------|-------|------|-----------------------------|--------------------|-----|------|---|----------------------------------|-----|------|--|------------------------|-----|------|
| Position                  | Cargoes       | ton | hour | Position                   | Cargoes       | ton   | hour | Position                    | Cargoes            | ton | hour | Position  | Cargoes                          | ton | hour | Position                                 | Cargoes                | ton | hour |
| UTD/<br>FWD<br>Lock<br>LH | Cloves bags   | 2   | 0.5  | UTD/<br>AFT<br>LTD/<br>AFT | Special mail  | 1.5   | 1    | UTD/<br>AFT<br>wings<br>LTD | Bags cum-min seeds | 35  | 2    | UTD/<br>AFT<br>General cargo<br>UTD/<br>FWD/<br>LTD/<br>FWD | General cargo                    | 3   | 1    | UTD/<br>AFT<br>LTD/<br>AFT<br>LH/<br>FWD | General cargo          | 34  | 7    |
|                           | General cargo | 32  | 5    |                            | General cargo | 32    | 9    |                             | Pack gen. CKD case | 64  | 14   |   | General cargo                    | 5   | 1    |  | CKD cases              | 41  | 2.5  |
|                           | Truck crates  | 6   | 1    |                            | Pack. gen     | 23    | 7    |                             |                    | 40  | 2    |   | Cargo Cases & Pack general cargo | 113 | 10   |  | Cases & small packages | 58  | 12   |
|                           | Pal. rubber   | 115 | 10   |                            | Bl's rubb     | 13    | 1    |                             |                    |     |      |   | CKD cases                        | 104 | 6    |  | General cargo          | 89  | 24   |
|                           |               |     |      |                            | Bl's rubb     | 71    | 5    |                             |                    |     |      |   | Pal. rubb                        | 295 | 19   |  |                        |     |      |
|                           |               |     |      |                            | Drums latex   | 50    | 4    |                             |                    |     |      |   |                                  |     |      |  |                        |     |      |
|                           |               |     |      |                            | Bl's rubb     | 86    | 6    |                             |                    |     |      |   |                                  |     |      |  |                        |     |      |
|                           |               | 155 | 16.5 |                            |               | 276.5 | 33   |                             |                    | 139 | 18   |   |                                  | 520 | 37   |  |                        | 222 | 45.5 |

| to    | ton    | hour   | Rate of |       | to    | ton      | hour  | Rate of |       | to    | ton   | hour | Rate of |       | to     | ton   | hour  | Rate of |                             |
|-------|--------|--------|---------|-------|-------|----------|-------|---------|-------|-------|-------|------|---------|-------|--------|-------|-------|---------|-----------------------------|
|       |        |        | Disp.   | Trans |       |          |       | Disp.   | Trans |       |       |      | Disp.   | Trans |        |       |       | Disp.   | Trans                       |
| WS 24 | 34 121 | 5.5 11 | 6 10    | 45 15 | WS 24 | 56.5 220 | 17 16 | 3 14    | 45 20 | WS 23 | 99 40 | 16 2 | 6 20    | 45 20 | Z5 23  | 8 217 | 2 16  | 4 13    | 45 20                       |
|       |        |        |         |       |       |          |       |         |       |       |       |      |         |       | Z3 295 | 16 19 | 15 15 | 20 20   | WS 23 181 43 2.5 4 20 45 20 |

## Remarks

1 tractor and 6 trailers with warehouse cargoes: 15 tons

1 tractor and 6 trailers with zone cargoes: 20 tons

Rate of transport were made by using distance and time sheet.

equipment to ship's agents.

The equipment for moving cargoes from quay to storage areas is assigned on a fixed rule: 1 tractors and 10 trailers each 2 gangs. It is easily recognised this rule of thumb for allocation of tractors and trailers does not take into account the distance between quay and storage areas, rate of discharging and loading on quay and rate of reception and delivery on the storage areas.

For the storage areas, the equipment, mainly fork lift trucks, are assigned, also, on a fixed rule, 4 or 5 fork lift trucks for each area. Again, this practical rule does not take into consideration the rate of reception of cargoes from quay, the rate of delivery of cargoes to consignees and the necessary movements for clearance of cargoes.

From visual inspection, it has been concluded that many times there are many gangs on quay which cannot work continuously due to lack of equipment, also in certain storage areas it is not difficult to see fork lift trucks which cannot cope with the flow of cargoes meanwhile other areas there are idle machines.

It has thought that by taking into consideration the factors above mentioned which influence the assignation of mobile equipment, it is possible to reach a better use of port resources.

### 3. The Suggestion

The suggestion is divided in three steps: (i) better use of equipment for loading and discharging operation (ii) better use of equipment for clearance and delivery of cargoes within storage areas (iii) who should be in charge of the new work.

#### 3.1 Loading and Discharging Operations

It is necessary to consider tractors and trailers for moving cargoes from quay to storage areas and vice versa and also equipment for reception (import) and delivery (export) of cargoes within the storage areas. Next, the port must make the complete planning for each vessel in conjunction with ship's agent. The documents which

#### Equipment per shift

| Hatch |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|
| Shift | 5   | 4   | 3   | 2   | 1   |
| 1     | 1/6 |     | 1/6 |     | 1/6 |
| 2     | 1/6 |     | 1/6 | 1/6 | 1/6 |
| 3     | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 |
| 4     |     | 1/6 |     | 1/6 | 1/6 |
| 5     |     |     |     | 1/6 | 1/6 |
| 6     |     |     |     | 1/6 | 1/6 |
| 7     |     |     |     |     | 1/6 |
| 8     |     |     |     |     | 1/6 |

LEGEND Tractor/trailer

Table No. 3 Demand of Tractors without Coordination between two Vessels

| Shift | Vessel "A" |   |   |   |   |   | Vessel "B" |   |   |   |   |   | Total tractors<br>per shift |    |
|-------|------------|---|---|---|---|---|------------|---|---|---|---|---|-----------------------------|----|
|       | Hatch      |   |   |   |   |   | Hatch      |   |   |   |   |   |                             |    |
|       | 1          | 2 | 3 | 4 | 5 | 6 | 1          | 2 | 3 | 4 | 5 | 6 |                             |    |
| 1     | X          |   | X |   | X | X |            | X | X | X |   |   |                             | 4  |
| 2     | X          |   | X |   | X |   |            | X |   | X |   |   |                             | 3  |
| 3     | X          |   | X |   |   |   |            | X |   | X |   |   |                             | 2  |
| 4     |            |   | X |   |   |   |            |   |   | X |   |   |                             | 2  |
| 5     |            |   |   |   |   |   |            |   |   | X |   |   |                             | 1  |
|       |            |   |   |   |   |   |            |   |   |   |   |   |                             | 12 |

Demand of Tractors with Coordination between two Vessels

| Shift | Vessel “A” |   |   |   |   |   | Vessel “B” |   |   |   |   |   | Total tractors<br>per shift |
|-------|------------|---|---|---|---|---|------------|---|---|---|---|---|-----------------------------|
|       | Hatch      |   |   |   |   |   | Hatch      |   |   |   |   |   |                             |
|       | 1          | 2 | 3 | 4 | 5 | 6 | 1          | 2 | 3 | 4 | 5 | 6 |                             |
| 1     | X          |   | X |   |   |   | X          |   | X |   |   |   | 2                           |
| 2     | X          |   | X |   |   |   | X          |   | X |   |   |   | 2                           |
| 3     | X          |   | X |   | X | X | X          |   | X |   |   |   | 3                           |
| 4     |            |   | X |   | X |   |            | X | X |   |   |   | 2                           |
| 5     |            |   |   |   |   |   |            |   | X | X |   |   | 1                           |
|       |            |   |   |   |   |   |            |   |   |   |   |   | 10                          |

must be used for making all calculations of the necessary equipment are the Stowage Plan, the Distance-Time Sheet and the Working Plan Sheet. The Stowage Plan is supplied by ship's agent as well as the rate of loading and discharging per gang. The Distance-Time Sheet is made by the port and it gives the distance from each berth to the different storage areas and also the time which is employed for a convoy (tractor and two trailers) to cover that distance. The Working Plan Sheet is made jointly by port's officials and ship's agent for arriving at the number of tractors and trailers which are necessary to employ.

Table 1 shows the Distance-Time Sheet for the Port of Callao. Table 2 shows how calculations are performed for a vessel with 5 hatches. After the Working Plan Sheet has been made for each vessel, it is necessary to combine all of them in order to find out how many tractors and trailers should be made available each shift. This is particularly important because each vessel has a long or critical hatch, which, in fact, marks the service time of the vessel in port. As Table 3 shows, it is possible to arrange the working of different vessels for getting smooth fluctuation of equipment requirements per shift, even though the example is based on the rule of thumb, previously mentioned.

Also, in this way, the total number of equipment is diminished. For reception (or delivery in case of export) of cargoes in storage areas, it is possible to apply the same technique. Since it is known how many tons will arrive to each storage area from vessels, the fork lift trucks requirements should be made by taking into consideration the average distance which the machine must travel within the area for stacking the cargoes.

### 3.2 Clearance and Delivery Operations

Since the clearance and delivery activities are not subject of a specific vessel but they are connected with activities of consignees or shippers in conjunction with customs officials, it is necessary to make a different approach.

In this case, is advisable to establish a transportation supervisor in charge of equipment for a certain number of storage areas. Thus, this man, by acting on the spot and by consultations with the head of each storage area can reallocate fork lift trucks during the shift in accordance with congestion which can be observed in a particular point.

### 3.3 Who should be in Charge of the New Job

For loading and discharging operations which are related basically with quay activities, there is no doubt that the suggestion should be put on practice by the Traffic Department. Thus, the Transportation Department must make available the equipment which is asked for the Traffic Department at the start of the shift.

For clearance and delivery (or reception in case of export) operations, the Transportation Department must allocate at the start of each shift, three Transportation Supervisors in charge of a certain number of equipment which they can reallocate during the shift as they think fit in order to cope with the flow of cargoes. This point is a sensitive one since it is believed by heads of storage areas that a sign of their authority will be undermined. This point is an important one because involves the Transportation Department as well as the Warehouse

Department.

## 4. How to calculate the Benefits and Costs involved

### 4.1 Benefits

A true measure of benefits should be made on actual data. However, it is possible to make some gross calculations for showing what the amount of benefits which accrue from a better distribution of tractors will be. From Distance-Time Sheet, it has been calculated the average distance from quay to warehouse (and adjunct) and zones.

|         |                          |             |
|---------|--------------------------|-------------|
| from/to | warehouses (and adjunct) | 586.85 mts. |
| from/to | zones                    | 962.28 mts. |

The average capacity of a convoy make up for a tractor and two trailers is:

15 tons carrying warehouse (and adjunct) cargoes.  
20 tons carrying zones cargoes.

By considering an average speed 3 Km/hour, the cycle will be 25 m for warehouses (and adjunct) cargoes and 40 m for zones cargoes. The transfer capacity will be 30 ton/h and 26 ton/h., respectively.

The average rate for discharging or loading vessels is 8 ton/h per gang with warehouses (and adjunct) cargoes, whereas, with zone cargoes 15 ton/h per gang is reached.

The necessary tractors for both types of cargoes will be:

$$\frac{8}{30} = 0.27 \text{ tractor}$$

$$\frac{15}{26} = 0.58 \text{ tractor}$$

The actual practice is to assign 0.50 tractor (1 tractor each two gangs) for both types of cargoes. Consequently, there is idle machines in the first case and lack of them in the second, as it is shown below.

$$0.50 - 0.27 = 0.23 \text{ tractor}$$

$$0.58 - 0.50 = 0.08 \text{ tractor}$$

Port statistics show that 450,000 tons are moved to and from quay to warehouse (and adjunct) whereas 600,000 tons are moved to zones on a year basis.

Then, the number of tractor-hours which are in over-supply will be:

$$\frac{450,000}{8} \times 0.23 - \frac{600,000}{15} \times 0.08 = 12,937 - 3,200$$

$$= 9,737 \text{ hours per year}$$

Since each tractor works 2,500 hours per year, there are four tractors which can be saved only for a better allocation of equipment for transfer cargoes from quay to storage areas. The above statement means savings of about 10%, since there are 45 tractors in the Port of Callao.

The benefits which can be obtained by making a better allocation of fork lift trucks, should be calculated after a period of time. For this, Activity Sampling Technique, is strongly recommended. The above technique is based on random inspection of machines in order to make a register showing how many times those machines were working or not working. The number of observations necessary to make in order to reach a conclusion is obtained from the formula:

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# The Customs Co-operation Council and International Trade Facilitation

by Mr. James B. Clawson,  
Assistant Secretary-General,  
Customs Co-operation Council

## Contents

- I. The Customs Co-operation Council, a brief description
- II. The International Convention on the Simplification and Harmonization of Customs Procedures (the Kyoto Convention)
- III. The Customs Applications of Computers

This paper dealing with the Customs Co-operation Council and its efforts in the field of international trade facilitation is presented in three parts.

The first part is designed to familiarise readers with the functions, working methods and main areas of activity of the Council. All of the Council's activities, whether in relation to the CCC Nomenclature, the Harmonized

(Continued from page 19)

$$N = \frac{4 p (100 - p)}{L^2}$$

In the Port of Callao, it is a common statement and it is supported by on the spot observation that 50% of fork lift trucks are idle at work, then  $p = 50$ . Next, it is believed that 10% of accuracy is enough, then  $L = 10$ .

In accordance with Activity Sampling Techniques, the number of observations which are necessary to make for reaching results with 95% of confidence is:

$$N = \frac{4 \times 50 \times 50}{10 \times 10} = 100$$

Then, 100 observations will be spread over each shift. The difficulty with this kind of evaluation of benefits is that a trained man is necessary. Also, it should be better to talk with drivers before the observation will be made in order to avoid suspicion.

At present, this technique has not been applied yet.

## 4.2 Costs

The Traffic and Transportation Departments should assign a few men to this task. Probably, it will be necessary to add only two men in the Traffic Department. It has been estimated about 6 to 7 vessels per shift which can be handled easily for them. Their task will be to prepare a Working Plan Sheet for each vessel and to combine the operation of all vessels per shift. Since it is necessary a previous knowledge about current cargo handling operation, it is advisable to promote two of the best Quay Supervisors for doing this job.

The actual Transportation Supervisors which at present are performing minor duties, should be instructed to manage the operation of fork lift trucks. In this case, it is considered that a modest raise in their salaries should be sufficient. Obviously, this measure should be explained to the Warehouse Department, since it can be a source of potential difficulties later on.



Mr. James B. Clawson

System, Customs valuation, procedures, law enforcement or other Customs matters, have a direct relevance to the facilitation of international trade.

The second part of the article deals in detail with the Council's greatest single contribution towards international trade facilitation, the Kyoto Convention. The objective of this Convention is to streamline Customs procedures and thus avoid administrative barriers to the smooth flow of international trade.

The third and final part of the article is devoted to the Council's activities with regard to the Customs applications of computers. In view of the increasing frequency of data exchange between the ADP systems of Customs, carrier, forwarding agents and traders at the national level and the likely increase of such exchange at the international level the efforts of the Council in this field should prove to be a further contribution towards the facilitation of international trade.

## I. The Customs Co-operation Council, a brief description Functions

The Customs Co-operation Council (CCC) is the international inter-governmental organization which specialises in the study of Customs questions. Its objective is to improve and harmonize Customs operations and thus it plays an important role in the facilitation of international trade.

The significance of the Council's work can best be appreciated in the context of the growing number of regional economic agreements where one of the first tasks is to seek harmonization of Customs matters, usually on the basis of CCC Conventions and Recommendations.

## Working methods

The CCC works mainly through its technical Committees. There are four such Committees: Nomenclature Committee, Valuation Committee, Permanent Technical Committee and Harmonized System Committee. Based on the work of these Committees, the Council initiates action to establish international Conventions and Recommendations or gives directions to the Committees or to the Secretary General of the CCC on current work or future plans.

Last year the Council established a new body, the Policy Commission. This is a small representative group of Council Members and, as its name indicates, it is meant to consider

and advise on important policy matters.

The CCC has its General Secretariat in Brussels. The Secretariat's task is to study various Customs technical questions and to assist the Council, its Committees, the Policy Commission, and, when requested, national administrations.

### **CCC Nomenclature**

A tariff nomenclature or systematic listing of all goods in international trade is a "must" for Customs administration. The only internationally known system for this purpose is the CCC Nomenclature (CCCN), formerly known as the Brussels Tariff Nomenclature (BTN). It forms part of the Convention on Nomenclature for the Classification of Goods in Customs Tariffs (1959). The current version of the CCCN is that in force since January 1978. The CCCN is also suitable for the collection of external trade statistics.

There are 45 Contracting Parties to the Convention. Over 100 other countries have based their national tariff on the CCCN and it is used by almost all organizations created by regional economic or trade agreements.

### **Harmonized System**

Studies have shown that the repeated description and coding of merchandise during its flow from supplier to consignee in international trade can now occur as many as 17 times in one transaction. If a multipurpose code were available, it could do much to improve this situation.

In view of this, the CCC has set up the Harmonized System Committee to develop a harmonized commodity description and coding System based on the CCCN, which will simultaneously meet the major needs of Customs authorities, statisticians concerned with external trade or production, carriers and producers. The System will also be suitable for automatic data processing and transmission.

The Committee will have completed its basic proposals for the Harmonized System by the end of 1981. The Committee will then commence the process of preparing the various supporting mechanisms (Explanatory Notes, legal framework, etc.) necessary prior to the introduction of the Harmonized System in 1985.

Membership of the Committee includes not only some CCC Members but also a number of international organizations including the UN Statistical Office, GATT, IATA, International Chamber of Shipping and International Organization for Standardization.

### **Customs valuation**

Ad valorem duty collection is known all over the world. Its administration needs a system customs valuation. The CCC had provided the only internationally accepted definition of value (known as the Brussels Definition of Value) through its Convention on the Valuation of Goods for Customs Purposes (1953).

A new system of valuation has since emerged from the Multilateral Trade Negotiations which concluded in Geneva last year. Administration of the technical aspects of the new system, which is due to enter into force on 1 January 1981, will be entrusted to a technical Committee under the auspices of the Council.

### **Procedures, law enforcement and other Customs matters**

Harmonization of Customs régimes must also cover Customs matters other than tariff nomenclature and valuation. The CCC has been equally concerned about this

and has so far established 11 Conventions and 30 Recommendations on Customs procedures and anti-smuggling measures.

The results of the Council's most recent efforts in the field of Customs procedures are now contained within an important international Convention dealing with the simplification and harmonization of all Customs procedures. This Convention, known as the Kyoto Convention (1973), lays down systematically the basic principles of the different Customs procedures, each procedure being covered by a separate Annex to the Convention. A total of 30 separate Annexes to the Convention have now been completed. These relate to Customs clearance for home use, warehousing, drawback, inward processing, rules of origin, etc. Further details on the background to and scope of this Convention are contained in the second part of this article which deals exclusively therewith.

Another new Convention concerns mutual administrative assistance among Customs administrations for the prevention, investigation and repression of Customs offences. This Convention, known as the Nairobi Convention (1977), develops and strengthens the earlier instruments prepared by the Council to foster international co-operation in combating Customs fraud in general and illicit traffic in narcotic drugs in particular. This Convention entered into force on 21 May 1980.

The Council has also established special Working Parties to deal with questions concerning Customs enforcement and Customs applications of computers and also organizes seminars on the methods available for the training of Customs officials.

### **Conclusion**

The CCC has travelled a long way since it was established by a Convention signed by a small number of European countries in Brussels on 15 December 1950. The organization is now truly world-wide with 89 Member countries, from all the continents, and currently manages 14 international Conventions and 41 Recommendations dealing with important Customs questions for the facilitation of international trade.

The Council provides an appropriate forum in which Customs representatives and observers from interested international organizations representing trade, transport, tourism, etc., can meet to discuss problems of mutual interest, consider solutions to such problems and establish the contacts which are essential to successful work at the international level.

## **II. The International Convention on the Simplification and Harmonization of Customs Procedures: The Kyoto Convention**

The objective of the Customs Co-operation Council is to secure the highest degree of harmony and uniformity in national Customs system in the interests of international trade. To this end, the Council has established (apart from the Nomenclature and Valuation Conventions) a number of Conventions and Recommendations on different Customs matters, prepared Comparative Studies and International Customs Norms and compiled a Glossary of International Customs terms.

Despite the important progress made in this way, the Council has been aware of the need for the development of a single international instrument covering all important Customs procedures so as to offer countries a compre-

hensive approach to their simplification and harmonization. The most appropriate instrument was considered to be a Convention the provisions of which would be sufficiently flexible to ensure its adaptability to the constant changes of the commercial world and the evolution of Customs techniques. The Council adopted such a Convention in Kyoto, Japan, in May 1973 and thus its abbreviated title is the "Kyoto Convention".

The Convention is essentially divided into two parts, the first being the body of the Convention which applies to all Contracting Parties whilst the second consists of 30 individual Annexes each dealing with a specific Customs procedure or activity. A list of Annexes to the Kyoto Convention which have been adopted by the Council together with a brief description of the coverage of each Annex is set out hereunder. It is hoped that Annexes F3, F5 and F7 together with all Annexes in the A, B, C, D, E and G series will be of particular interest to shippers and port administrators.

To ensure world-wide harmonization the Convention is also open to non-Members of the Council who are State members of the United Nations or its specialised agencies.

To become a Contracting Party a State must accept the Convention—the body—and at least one Annex. In effect each Annex read with the central body constitutes a separate Convention on its own.

Each Annex consists in principle of an Introduction, Definition, Standards, Recommended Practices and Notes, although some of these elements, for example Notes, may not be present in every Annex.

The Introduction explains the main reasons underlying the Customs procedure in question and summarizes the various questions dealt with in the Annex. It has no legal value and imposes no obligations on Contracting Parties.

In each Annex are definitions of the main Customs terms used, and the defined terms must be interpreted by Contracting Parties in the sense contained in the definition.

Standard and Recommended Practices have the same legal value and impose the same obligations on Contracting Parties which accept them. The difference between the two is that application of the Standards is recognized as necessary for the harmonization and simplification of the Customs procedure in question, whereas application of the Recommended Practices is desirable and is a means of progressing towards that aim. It is expected that in the course of time, Recommended Practices would be converted into Standards. Contracting Parties may enter reservations in respect of Standards and Recommended Practices in the Annexes which they accept. A reservation, however, is not required about a provision which cannot be applied due to the existence of prohibitions or restrictions based on grounds of public morality or order, public security, public hygiene or health, veterinary or phytopathological considerations, or considerations concerning the protection of patents, trade marks and copyrights. If non-application of a provision is due to other prohibitions or restrictions a reservation must be entered.

The Convention contains a review procedure whereby every three years a State which has accepted must review its national legislation in respect of any Standards and Recommended Practices about which it has entered a reservation. It is a fundamental principle that Contracting Parties undertake to apply all provisions of the Annexes as soon as they can.

The Notes simply enumerate by way of illustration the

various possibilities open to Contracting Parties in applying Standards and Recommended Practices. They impose no obligations on Contracting Parties.

Now that the Convention has been completed the Council is hopeful that interested international organizations, and particularly IAPH as regards the world of shipping and port administration, will draw to the attention of their colleagues and of the competent authorities on the national level, the usefulness of the acceptance of the many provision contained in the Annexes to the Convention.

The Convention on the simplification and harmonization of Customs procedures is not intended to become a "World Customs Code". It is addressed to the Customs administrations of Contracting Parties and asks them to align their national legislation on the provisions considered by an international forum to be the most useful for the benefit of administrations and users. The aim of this instrument is therefore rather ambitious: it is to streamline Customs procedures which can otherwise create administrative barriers representing as effective an impediment to the flow of goods and ideas across frontiers as do prohibitive rates of duty.

The Council looks forward to a continuation of the co-operation already in existence with IAPH with regard to matters of mutual interest.

### III. Customs Applications of Computers

Within the Customs Co-operation Council the Customs Technique Directorate and the Committee which it serves (the Permanent Technical Committee (PTC)) are responsible for all Customs questions not covered by the Council's specialist branches dealing with Nomenclature, Valuation and Commodity coding. A major objective of the work of the PTC has been the promoting and strengthening of co-operation among Members and the provision of assistance through meetings on specialised subjects and through the obtaining of information from other Council Members in respect of questions raised by countries. In the context of this objective the development of computerization, as a result of which many Customs administrations are already using computerized systems for data processing and clearance, has given rise to the creation of a special Working Party under the PTC to discuss and examine the Customs applications of computers. The Council's actions in this field are part of its policy of promoting the greatest possible modernization within Customs administrations.

The Council's Working Party on Customs applications of computers has been assisting Members in the exchange of practical information about Customs ADP systems since its inception in 1974. This Working Party was established in order to provide assistance to Customs administrations which are interested in designing or setting up their own ADP system and to identify measures the introduction of which would improve the efficiency and extend the capabilities of existing systems.

Comparative studies effected on the use of computers for particular applications have included the following:

- Implications of the use of manifests in the clearance of goods by computer,
- Determination of dutiable value by computer,
- Use of computers in connection with export value,
- Automated inventory control systems,
- Data validation and credibility checks,
- Organization and management of ADP in Customs administrations,

- Computer procurement techniques, and
- Computerized selection of declarations for checking and of goods for examination.

Comparative studies currently in progress include the following:

- Volumetric control,
- Compilation of external trade statistics,
- Interfaces between Customs and other international trade users, and
- Auditing of commercial ADP systems.

Other subjects being dealt with by the Working Party include:

- The possibility of dispensing with the requirement for handwritten signatures on Goods declarations transmitted by computer,
- The production of Goods declarations by means of computer printers,
- The effects of national privacy/data protection legislation on Customs ADP activities.

The Working Party also examines the problems involved in the exchange of data between ADP systems by means of accounts presented by certain Customs administrations of their experience in this field. To date, such data exchange is effected principally at the national level, i.e. between the Customs ADP system and the systems of carriers, forwarding agents, importers and exporters. As such data exchanges between ADP systems are likely to become more widespread the Working Party has undertaken a detailed study of the IATA Cargo Automation Research Project (CARP).

A major feature of the Working Party's activities has involved a systematic study of Member's ADP systems by means of presentations which afford an opportunity, particularly to developing countries, to see, sometimes by means of on-site demonstrations, the ADP systems of Members which are highly advanced in this field.

Observers of other international and national organizations concerned with international trade and in particular with data standardization and coding (e.g. ECE, UNCTAD, ISO, IATA, ICS, SITPRO) are also actively involved in the Working Party's activities.

On the basis of the various comparative studies and presentations referred to earlier the Working Party has compiled a loose-leaf annually-updated file on the computerization of Customs operations. This world-wide inventory of Customs applications effected by computer contains pertinent facts on the computer equipment and systems which are used or are planned by Members as well as the results of the previously-mentioned comparative studies on various computer topics. The file also contains a list of descriptions for data elements necessary for the accomplishment of Customs formalities and suitable for use in international data exchange and will, in due course, contain recommended coding systems for the transmission the various data elements involved.

In the years ahead this forward-looking group will be a central source of assistance to Customs authorities with regard to the benefits and problems associated with the increasing use of computers for Customs applications.

| NO. | TITLE   | COVERAGE OF EACH ANNEX TO THE KYOTO CONVENTION   |
|-----|---|--|
| A1  | Customs formalities prior to the lodgement of the Goods declaration           | Customs formalities to be accomplished in respect of imported goods from the time they are introduced into the Customs territory to the placing of the goods under a Customs procedure.  |
| A2  | Temporary storage of goods  | Storage of goods in approved areas from the time of their arrival in a country to the time of lodgement of the relevant Goods declaration. Such areas, termed temporary stores, may consist of buildings or may merely be enclosed or unenclosed spaces.   |
| A3  | Customs formalities applicable to commercial means of transport               | Customs formalities applicable to means of transport which are used in international traffic for the transport of persons for remuneration or for the industrial or commercial transport of goods, whether or not for remuneration.  |
| A4  | Customs treatment of stores   | Provisions for exemption from import duties and taxes for stores which are carried on board vessels, aircraft and trains and for exemption from duties and taxes for stores supplied to departing vessels and aircraft.  |
| B1  | Clearance for home use  | Customs procedure under which imported goods may remain permanently in the Customs territory following the payment of any import duties and taxes chargeable and the accomplishment of the necessary Customs formalities.  |
| B2  | Relief from import duties and taxes in respect of goods declared for home use | This Annex specifically mentions a number of forms of relief from import duties and taxes normally granted in most countries provided goods are imported in specified circumstances and for specified purposes.  |
| B3  | Reimportation in the same state   | Customs procedure applicable to goods which are reimported into the country of exportation without having undergone any manufacturing, processing or repairs abroad.   |
| C1  | Outright exportation  | Customs procedure applicable to goods in free circulation which leave the Customs territory and are intended to remain permanently outside it. The Annex sets out a variety of facilities which may be offered to international trade.   |
| D1  | Rules of origin   | Rules for the determination of the origin of goods according to two basic criteria: that of goods "wholly produced" in a given country and that of "substantial transformation" where two or more countries have shared in the production of goods.  |
| D2  | Documentary evidence of origin  | The aim of this Annex is to restrict the use of documentary evidence of origin to the granting of preferential Customs duties, the application of economic or trade measures, or of those adopted for reason of health or public order. The Annex also contains a model form for certificates of origin. |
| D3  | Control of documentary evidence of origin                                     | This Annex stipulates that, subject to reciprocity, requests for control of documentary evidence of origin may be made when there are reasonable grounds to doubt the authenticity or accuracy of documents produced.  |

| NO. | TITLE   | COVERAGE OF EACH ANNEX TO THE KYOTO CONVENTION   |
|-----|---|--|
| E1  | Customs transit   | This Annex deals with all the basic elements of national and international Customs transit including the Goods declaration for Customs transit, security, examination and identification of consignments, Customs seals and identification marks.  |
| E2  | Transshipment   | Customs procedure applicable to goods which are imported into a country in a means of transport in order to be transferred to another means of transport on which they then leave the country for their final destination, the importation, transfer and exportation all taking place within the area of a single Customs office.  |
| E3  | Customs warehouses  | Customs procedure under which imported goods may be stored under Customs control in a designated place (a Customs warehouse) without payment of import duties and taxes.   |
| E4  | Drawback  | Customs procedure which provides, when goods are exported, for a total or partial refund of the import duties and taxes charged on the goods or on materials contained in them or used up in their production.   |
| E5  | Temporary admission subject to re-exportation in the same state | Customs procedure under which goods may be imported into the Customs territory on a temporary basis conditionally relieved from the payment of import duties and taxes.  |
| E6  | Temporary admission for inward processing                       | Customs procedure under which conditional relief from import duties and taxes is granted in respect of goods that are to be re-exported after undergoing specified manufacturing, processing or repair.  |
| E7  | Duty-free replacement of goods                                  | Customs procedure which permits the importation, free of import duties and taxes, of goods equivalent to those which were in free circulation and which were processed into products previously exported outright.   |
| E8  | Temporary exportation for outward processing                    | The Customs procedure which enable goods in free circulation to be temporarily exported for manufacturing, processing or repair abroad and then to be reimported with total or partial exemption from import duties and taxes.   |
| F1  | Free Zones  | The Customs procedure applicable to goods introduced into part of a State's territory in which they are generally regarded, insofar as import duties and taxes are concerned, as being outside the Customs territory and are not subject to the usual Customs control.   |
| F2  | Processing of goods for home use                                | The Customs procedure of processing of goods for home use, which permits the processing under Customs control of specified categories of imported goods so that the products thus obtained may be declared from home use under the tariff classification applicable to them in their processed state.  |
| F3  | Customs facilities applicable to travellers                     | Provisions for the minimum Customs facilities applicable to all travelers irrespective of whether they are non-residents or departing or returning residents.  |
| F4  | Customs formalities in respect of postal traffic                | Special Customs formalities applicable to postal traffic at exportation, in transit and at importation.  |
| F5  | Urgent consignments   | This Annex deals with facilitation measures for goods which require rapid clearance as a matter of priority due to their nature, their being relief consignments or their meeting a fully justified urgent need.   |
| F6  | Repayment of import duties and taxes                            | This Annex deals with the accepted principle that the persons concerned should be able to obtain a refund, in whole or in part as appropriate, when import duties and taxes have been overpaid.  |
| F7  | Carriage of goods coastwise                                     | The Customs procedure under which certain goods are loaded on board a vessel in the Customs territory and are transported to another place in the same Customs territory for unloading.  |
| G1  | Information supplied by the Customs authorities                 | This Annex deals with various types of information provided to persons by Customs authorities and contains different sections relating to general principles, duties and taxes, Customs valuation, obtaining of binding tariff classification information, etc.  |
| G2  | Relations between Customs authorities and third parties         | This Annex deals primarily with the relationship which exists between professional Customs clearing agents and the Customs as well as those third parties performing the functions of Customs clearing agents as an incidental part of their main commercial activities. The Annex provides that persons concerned shall have the choice of transacting business with the Customs either directly or by designating a third party. |
| H1  | Appeals in Customs matters                                      | This Annex deals with the situation in which a decision or omission of the Customs authorities is not acceptable to the person affected and provides in the final instance for a right of appeal to a judicial authority.  |
| H2  | Customs offences  | This Annex deals with the conditions under which the Customs authorities investigate and establish any breach or attempted breach of the statutory or regulatory provisions which they are responsible for enforcing.  |

# Ports in Japan: A Profile of Port Development Policy

by Mr. Yoshio Takeuchi, President  
The Overseas Coastal Area  
Development Institute of Japan  
(OCDI)\*

(Extracts from his speech at a meeting  
of the Council for Urban Problems in  
Great Cities, held in Yokohama,  
November 1980)



Mr. Yoshio Takeuchi

## 1. General situation

The number of ports and harbors in Japan, under the Law for Ports and Harbours (Law No. 125, 1950), is more than 1,000, including commercial and industrial ports. And, the total cargo tonnage handled in 1978 is about 2.7 billion tons, including 761 million tons of international traffic.

As much as 51.8% of the national commodity movement (in term of kilo-ton) is carried by coastal shipping, followed by trucks (38.1%) and railways (10.1%).

Since Japan is mountaineous and hilly, the land available for general use is very limited, with most of the population, commerce and industry settled in coastal plains. This trend is particularly significant in the three major bay areas, namely Tokyo Bay, Ise Bay (Nagoya as its center) and Osaka Bay. The development of coastal areas has been extensively carried out for many years at various places by means of reclaiming land from the sea.

The powers and duties of port management lie in the local autonomous government body where ports are located. Therefore, the port management body is a subdivision of such local government, prefectural, municipal, town or village, except in a few special cases where a plural number of local autonomous bodies comprise a sort of independent port management body just like a 'port authority' as generally understood.

The central government is in a position to guide and assist the port management body, in accordance with national policies for economic development, land use, transport, environment, energy and other factors.

## 2. Port development and port management body

In order to cope with an ever increasing demand for seaborne traffic, international or domestic, particularly since the 1950s when Japan's economic growth rate picked up, the range of responsibility entrusted to the port management body has been diverse. Port management bodies of major ports are, admitting a certain deviation, inseparably intermixed with the development of the waterfront area intended for industrialization.

More importantly, port management bodies are closely involved in accommodating those varied facilities needed to satisfy urban requirements, such as sewage processing plants, waste-dumping areas, commodity distribution centers, green areas and even housing developments. Port planning thus constitutes an important part of urban and regional planning.

In view of the diversity involved, deficits in the running of ports are made up from taxation by the local auto-

nomous body concerned, and funds necessary for new development are financed from the general accounts, subsidies from the central government, bonds, and/or investment by private sector where applicable.

At those mature ports like Kobe, Yokohama, Nagoya and others, the financial status is stabilized in that they can cover their operation expenses from port revenues, while the investment by the central government into such mature ports has decreased considerably in recent years.

## 3. Important underlying concept

To act as the interface-junction of land and sea transport undoubtedly comprises the central function of ports, as generally understood worldwide, and this role has been one of the greatest contribution to the development of many Port Cities all over the world.

In Japan, however, ports are considered not only as the interface-junction of the two different modes of transport, but also as the creator of the basis of industry and commerce, and more importantly the catalyst for urban development, by providing land and services on the waterfront with good accessibility to sea and land.

Port development planning, thus, incorporates the national policies for land use, transportation, industrial development, energy, and more importantly the policies for an improved way of life for people.

## 4. Port development and regional development—in case of Kashima Port

Within the area of some 80 km. radius from central Tokyo (Kanto Area), nearly 30 million people live. A majority of this vast population settle within a 10-15 km. belt-zone from the coastline of Tokyo Bay. Land traffic is already congested to accommodate the daily movement of people and goods, without counting those 400-450 million tons of cargoes loaded and unloaded at ports in the Bay.

In 1962, the construction works of Kashima Port (Located outside Tokyo Bay some 90 km. east of Tokyo, in Ibaragi Prefecture, facing the Pacific Ocean) was started, following an ardent request by the Prefecture for developing an area which was a sparsely populated sand dune area.

Today, Kashima Port handles some 60-70 million tons of mostly industrial material which are processed and manu-

(Continued on page 27)

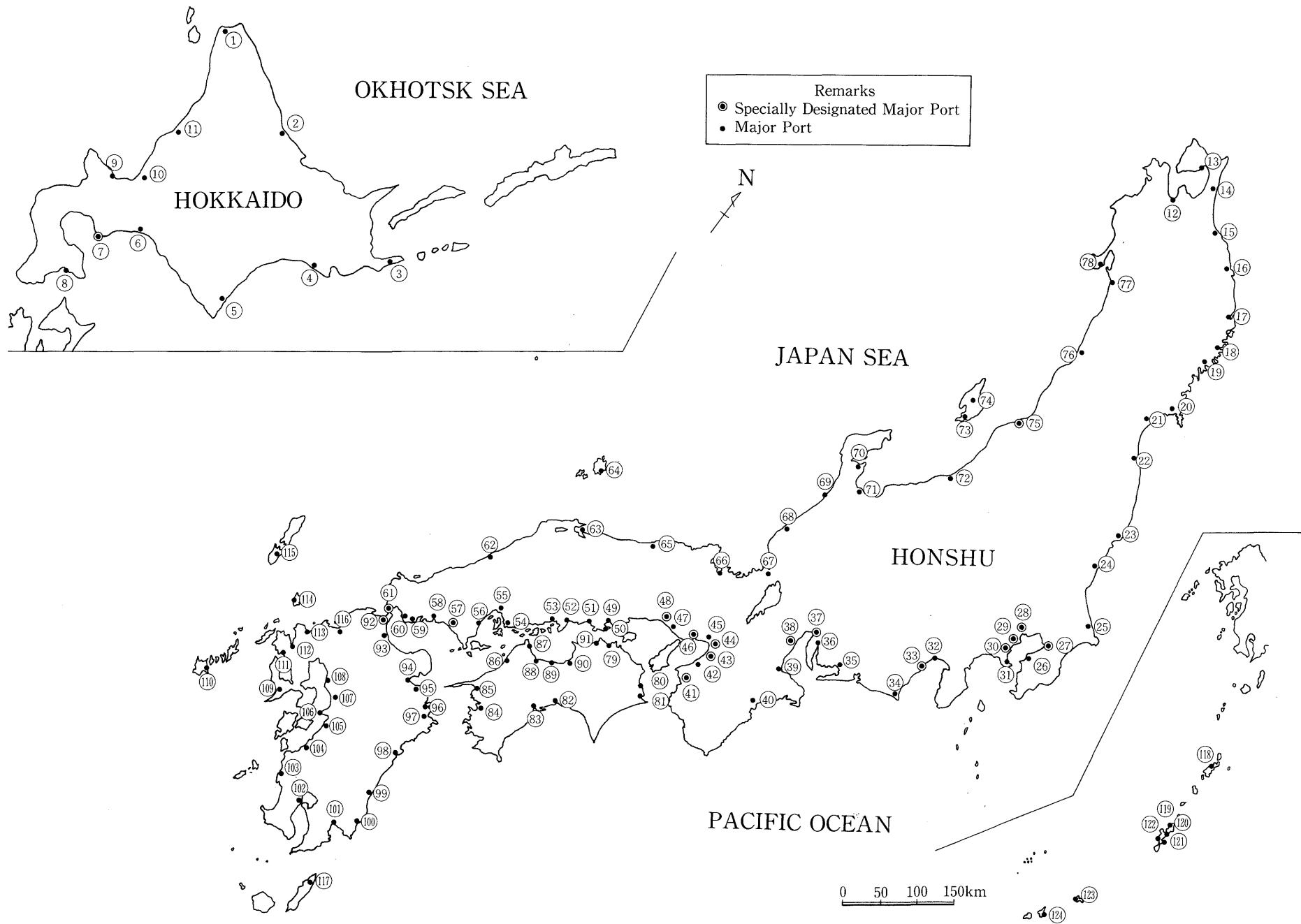


Fig. 1 Principal Ports in Japan

(Continued from page 25)

factured by various industries newly settled in the industrial complex immediately situated in the waterfront area.

The effect of this new development in the area has been beneficial, but also if it were not for Kashima Port, ports in Tokyo Bay would have been more congested and delayed the various development plans in the Bay area which were intended for the advancement of not only the ports but also for people and their environment.

## 5. Conclusions

Depending on the natural conditions and patterns of human settlement, the potential of ports should be recognized with more consideration of the port's roles in regional development.

In particular, emphasis should be given to the point that the investment in ports should be considered not only from the issues directly related to the transport sectors but also from the social/regional infrastructure aspect like roads and city planning.

Thus the fundamental point is that investment in the port should be assessed not only by reference to the rate of return but also in connection with the long term impact on regional development, and this is especially true in developing countries.

### List of Special Major Ports and Major Ports

#### HOKKAIDO ISLAND

- |              |                       |
|--------------|-----------------------|
| 1. Wakkanai  | 36. Kinuura           |
| 2. Mombetsu  | 37. NAGOYA            |
| 3. Nemuro    | 38. YOKKAICHI         |
| 4. Kushiro   | 39. Toba-Matsusaka    |
| 5. Tokachi   | 40. Owase             |
| 6. Tomakomai | 41. WAKAYAMA-SHIMOTSU |
| 7. Muroran   | 42. Hannan            |
| 8. Hakodate  | 43. SAKAI-SENBOKU     |
| 9. Otaru     | 44. OSAKA             |
| 10. Ishikari | 45. AMAGASAKI         |
| 11. Rumoi    | 46. KOBE              |
|              | 47. Higashi-Harima    |

#### HONSHU ISLAND

- |                   |                        |
|-------------------|------------------------|
| 12. Aomori        | 48. HIMEJI             |
| 13. Ominato       | 49. Okayama            |
| 14. Mutsu-Ogawara | 50. Uno                |
| 15. Hachinohe     | 51. Mizushima          |
| 16. Kuji          | 52. Fukuyama           |
| 17. Miyako        | 53. Onomichi-Itozaki   |
| 18. Kamaishi      | 54. Kure               |
| 19. Ofunato       | 55. Hiroshima          |
| 20. Ishinomaki    | 56. Iwakuni            |
| 21. Shiogama      | 57. TOKUYAMA-KUDAMATSU |
| 22. Souma         | 58. Mitajiri           |
| 23. Onahama       | 59. Ube                |
| 24. Hitachi       | 60. Onoda              |
| 25. Kashima       | 61. SHIMONOSEKI        |
| 26. Kisarazu      | 62. Hamada             |
| 27. CHIBA         | 63. Sakai              |
| 28. TOKYO         | 64. Saigo              |
| 29. KAWASAKI      | 65. Tottori            |
| 30. YOKOHAMA      | 66. Maizuru            |
| 31. Yokosuka      | 67. Tsuruga            |
| 32. Tagonoura     | 68. Fukui              |
| 33. SHIMIZU       | 69. Kanazawa           |
| 34. Omaezaki      | 70. Nanao              |
| 35. Mikawa        | 71. Fushiki-Toyama     |
|                   | 72. Naoetsu            |

- |              |                    |
|--------------|--------------------|
| 73. Ogi      | 98. Hosojima       |
| 74. Ryotsu   | 99. Miyazaki       |
| 75. NIIGATA  | 100. Aburatsu      |
| 76. Sakata   | 101. Shibushi      |
| 77. Akita    | 102. Kagoshima     |
| 78. Funakawa | 103. Sendai        |
|              | 104. Minamata      |
|              | 105. Yatsushiro    |
|              | 106. Misumi        |
|              | 107. Kumamoto      |
|              | 108. Miike         |
|              | 109. Nagasaki      |
|              | 110. Fukue         |
|              | 111. Sasebo        |
|              | 112. Imari         |
|              | 113. Karatsu       |
|              | 114. Gounoura      |
|              | 115. Izuhara       |
|              | 116. Hakata        |
|              | 117. Nishino-Omote |
|              | 118. Nase          |

#### SHIKOKU ISLAND

- |                     |  |
|---------------------|--|
| 79. Takamatsu       |  |
| 80. Komatsujima     |  |
| 81. Tachibana       |  |
| 82. Kochi           |  |
| 83. Suzaki          |  |
| 84. Uwajima         |  |
| 85. Yahatahama      |  |
| 86. Matsuyama       |  |
| 87. Imabari         |  |
| 88. Touyo           |  |
| 89. Niihama         |  |
| 90. Mishima-Kawanoe |  |
| 91. Sakaide         |  |

#### KYUSHU ISLAND

- |                |
|----------------|
| 92. KITAKYUSHU |
| 93. Kanda      |
| 94. Beppu      |
| 95. Oita       |
| 96. Tsukumi    |
| 97. Saeki      |

#### OKINAWA ISLANDS

- |                    |
|--------------------|
| 119. Unten         |
| 120. Kimmuan       |
| 121. Nakagusukuwan |
| 122. Naha          |
| 123. Hirara        |
| 124. Ishigaki      |

Notes: 1) Listed clock-wise on each island  
2) Special Major Ports are listed in capitals

Table 1: Ports in Japan

(As of Jul. 01, 1980)

| Designation        | Number         | Type of Port Management Body |                     |                 |                       | Total       | *Others |
|--------------------|----------------|------------------------------|---------------------|-----------------|-----------------------|-------------|---------|
|                    |                | Prefecture                   | City, Town, Village | Port Commission | Joint Management Body |             |         |
| Special Major Port | 17             | 8                            | 7                   | 0               | 2                     | 17          | —       |
| Major Port         | 110            | 86                           | 20                  | 1               | 3                     | 110         | —       |
| Local Port         | 958<br>** (35) | 504<br>(29)                  | 364<br>(6)          | 0               | 0                     | 868<br>(35) | 90      |
| Total              | 1,085<br>(35)  | 598<br>(29)                  | 391<br>(6)          | 1               | 5                     | 995<br>(35) | 90      |

Notes: \*: Legal space designation is being made. No. actual port is in existence.  
\*\*: Refuge ports

Table 2: Movement of Cargo Handled through Ports

(Unit: 1 m. F/T)

| Items                     | 1965  | 1975    | 1976    | 1977    | 1978    |
|---------------------------|-------|---------|---------|---------|---------|
| GRAND TOTAL               | 808.3 | 2,527.3 | 2,605.6 | 2,679.0 | 2,738.8 |
| Overseas Traffic (Export) | 241.7 | 703.3   | 751.7   | 774.1   | 761.6   |
| (Import)                  | 29.9  | 95.6    | 116.2   | 125.6   | 130.5   |
|                           | 211.8 | 607.7   | 635.5   | 648.5   | 631.1   |
| Coastal                   | 515.7 | 1,041.0 | 1,071.6 | 1,117.1 | 1,160.6 |
| Coastal Ferry             | 50.8  | 783.0   | 782.3   | 787.8   | 806.6   |

Note: Source: "Annual Port Statistics" by Ministry of Transport

Table 3: Movement and Proportions in Land/Sea Transport

(Unit: 10 m. Ton x Km.)

|                  | 1955    |      | 1965    |      | 1975    |      | 1976    |      | 1977    |      | 1978    |      |
|------------------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
|                  | Ton Km. | %    | Ton Km. | %    | Ton Km. | %    | Ton Km. | %    | Ton Km. | %    | Ton Km. | %    |
| Gross Ton Km.    | 8,179   | 100  | 18,635  | 100  | 36,078  | 100  | 37,341  | 100  | 38,691  | 100  | 40,946  | 100  |
| Rail             | 4,325   | 60.4 | 5,730   | 30.7 | 4,735   | 13.1 | 4,631   | 12.4 | 4,133   | 10.7 | 4,120   | 10.1 |
| JNR              | 4,256   | 52.4 | 5,641   | 30.3 | 4,658   | 12.9 | 4,553   | 12.2 | 4,059   | 10.5 | 4,041   | 9.9  |
| Private          | 69      | 0.8  | 89      | 0.5  | 77      | 0.2  | 78      | 0.2  | 75      | 0.2  | 79      | 0.2  |
| Vehicles         | 951     | 11.7 | 4,839   | 26.0 | 12,970  | 36.0 | 13,262  | 35.5 | 14,310  | 37.0 | 15,507  | 38.1 |
| Truckers         | 374     | 4.6  | 2,239   | 12.0 | 6,925   | 19.2 | 7,279   | 19.5 | 8,002   | 20.7 | 8,687   | 21.2 |
| Own hauling      | 577     | 7.1  | 2,601   | 14.0 | 6,046   | 16.8 | 5,983   | 16.0 | 6,308   | 16.3 | 6,919   | 16.9 |
| Coastal Shipping | 2,902   | 35.5 | 8,064   | 43.3 | 18,358  | 50.9 | 19,432  | 52.0 | 20,229  | 52.3 | 21,197  | 51.8 |

Notes: a: Air-cargo carried by liners is included in the Gross Ton Km.

b: Source: "Transport Economics Annual" by Ministry of Transport

Table 5: 10 World Major Ports

| 1              | 9         | 7        | 7         | 1         | 9         | 7        | 8         |
|----------------|-----------|----------|-----------|-----------|-----------|----------|-----------|
| Port           | Total     | Loading  | Unloading | Port      | Total     | Loading  | Unloading |
| 1. Rotterdam   | 271,908   | 61,711   | 210,197   | Rotterdam | 264,025   | 56,313   | 207,712   |
| Holland        | (271,908) | (61,711) | (210,197) | Holland   | (264,025) | (56,313) | (207,712) |
| 2. Kobe        | 137,386   | 66,817   | 70,569    | Kobe      | 137,792   | 66,464   | 71,528    |
| Japan          | (43,912)  | (22,127) | (21,785)  | Japan     | (43,323)  | (21,456) | (21,867)  |
| 3. New York    | 132,048   | 41,216   | 90,832    | Chiba     | 134,413   | 43,695   | 90,718    |
| U.S.A.         | (64,070)  | (5,198)  | (58,872)  | Japan     | (69,770)  | (3,756)  | (66,014)  |
| 4. Chiba       | 124,818   | 40,952   | 82,866    | Yokohama  | 118,359   | 55,086   | 63,273    |
| Japan          | (66,541)  | (3,582)  | (62,959)  | Japan     | (53,260)  | (22,627) | (30,633)  |
| 5. Yokohama    | 116,990   | 54,446   | 62,544    | Nagoya    | 99,416    | 35,717   | 62,699    |
| Japan          | (54,039)  | (21,834) | (32,205)  | Japan     | (50,543)  | (18,362) | (32,181)  |
| 6. Nagoya      | 99,078    | 35,134   | 63,944    | Marseille | 93,407    | 12,082   | 81,325    |
| Japan          | (51,242)  | (18,494) | (32,748)  | France    | (90,506)  | (9,671)  | (80,835)  |
| 7. New Orleans | 97,875    | 50,271   | 47,604    | Kawasaki  | 88,008    | 30,597   | 57,411    |
| U.S.A.         | (39,676)  | (17,791) | (21,885)  | Japan     | (40,257)  | (903)    | (39,354)  |
| 8. Marseille   | 97,604    | 14,424   | 83,180    | Le Havre  | 74,943    | 13,045   | 61,898    |
| France         | (94,674)  | (11,962) | (82,711)  | France    | (68,188)  | (7,740)  | (60,448)  |
| 9. Houston     | 90,030    | 44,077   | 45,953    | Osaka     | 74,852    | 25,929   | 48,923    |
| U.S.A.         | (46,304)  | (14,086) | (32,218)  | Japan     | (15,005)  | (5,324)  | (9,681)   |
| 10. Kawasaki   | 87,886    | 30,777   | 57,109    | London    | 61,973    | 17,905   | 44,068    |
| Japan          | (41,023)  | (801)    | (40,222)  | U.K.      | (43,246)  | (9,350)  | (33,896)  |

Notes: 1: Quoted from the UN Statistics (1980 Feb.)

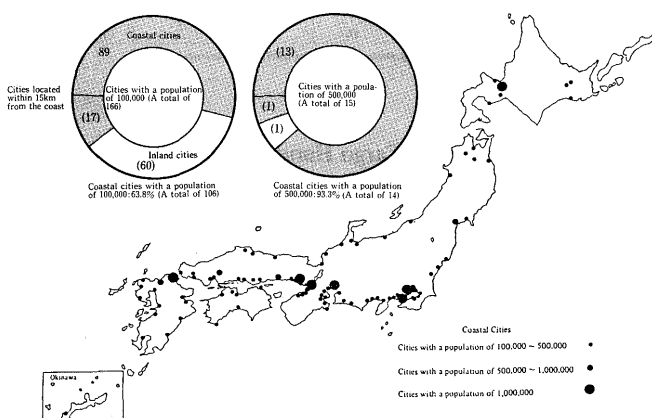
2: Figures in ( ) show domestic traffic

3: Data of New York, New Orleans and Houston are not listed in the UN Statistics 1978.

Table 4: Movement of Cargo at Three Major Bay Areas

| (Unit: Million F/Tons) |            |            |            |            |
|------------------------|------------|------------|------------|------------|
| Area Port              | 1975       | 1976       | 1977       | 1978       |
| <b>Tokyo Bay Area</b>  | <b>420</b> | <b>421</b> | <b>446</b> | <b>446</b> |
| Port of Yokohama       | 113        | 114        | 117        | 118        |
| Port of Chiba          | 114        | 116        | 125        | 134        |
| Port of Kawasaki       | 86         | 80         | 88         | 88         |
| Port of Tokyo          | 50         | 55         | 59         | 60         |
| Other ports            | 57         | 56         | 58         | 60         |
| <b>Ise Bay Area</b>    | <b>144</b> | <b>159</b> | <b>163</b> | <b>162</b> |
| Port of Nagoya         | 87         | 99         | 101        | 101        |
| Port of Yokkaichi      | 42         | 43         | 43         | 42         |
| Other ports            | 15         | 17         | 19         | 19         |
| <b>Osaka Bay Area</b>  | <b>296</b> | <b>305</b> | <b>315</b> | <b>315</b> |
| Port of Kobe           | 134        | 136        | 143        | 143        |
| Port of Osaka          | 74         | 79         | 79         | 79         |
| Sakai Semboku          | 62         | 62         | 65         | 64         |
| Other ports            | 26         | 28         | 28         | 29         |

Fig. 2 Distribution of Coastal Cities



## \* OC DI

## Organization

The Overseas Coastal Area Development Institute of Japan (OC DI) was established in July 1976 as a non-profit organization under the close cooperation between the Government and private business circles in order to make available the methods and techniques of the coastal area development originally developed in Japan through her various experiences and researches and to meet the needs of developing countries.

The OC DI comprises a group of experienced engineers, economists and specialists of related fields provided by the Ministry of Transport as well as the civil sectors such as banks, construction industries, consulting firms and steel industries, and undertakes survey, investigation and research works with the knowledge and experience of such specialists joined together.

The OC DI contributes to the formation of comprehensive port and regional development plans in developing countries and to plan implementation under close cooperation with the consultants concerned as well as the Port and Harbour Research Institute, Ministry of Transport.

## Scope of Activities

- Master planning and feasibility study of ports
- Introduction of Japanese port and regional development technology
- Organizing seminars and lecture meetings and publishing materials
- Collecting, exchanging and disseminating information on domestic and overseas ports and harbours
- Providing information, advices and consulting services

# The Port of Tomakomai, the First Man-Made Port in Japan; Tomakomai East District Project starting to step forward

by Atsuyuki Tanaka, Director General,  
Port and Harbor Department,  
Hokkaido Development Bureau,  
Japan

## Preface

Tomakomai is located near the central part of Hokkaido, the northern island of Japan. It has a population of 150,000 and faces on the Pacific Ocean.

One hundred years ago Hokkaido was a virgin land inhabited by only a small number of aborigines eking out a primitive existence. But with development the population has reached the current level of 5,400,000.

The largest city and capital of Hokkaido, Sapporo, is still fresh in people's minds as the site of the Eleventh Winter Olympic Games in 1972, and the Sapporo Snow Festival, held in February every year, attracts over 1.5 million local and foreign visitors with its huge and elaborate snow statues.

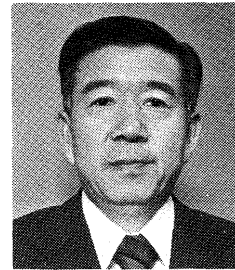
The exploitation of Hokkaido in its early stages emphasized the development of agriculture and the supply of mineral resources such as coal to the industrial areas of Honshu. But since World War II government policy has put a great amount of effort into developing Hokkaido as a base of food supply for the country and also as a location for industry.

Since the Tomakomai area possesses a large flat infertile plain and is rich in water for industrial use, the development of this area was given a priority position in plans for the industrial development of Hokkaido.

With this as a background, the construction of the Tomakomai West Port was begun in 1951 and the Port was opened in 1963, and has rapidly developed since as an industrial and commercial port. Tomakomai City has grown with its port and has changed in thirty years from a city with a population of 40,000 with one main industry of paper manufacturing at the time that port construction began, into a city which supports 9% of all of Hokkaido's industrial manufacturing.

While Hokkaido makes up 20% of Japan's total land area, its population is only 5%, the income from manufacturing by secondary industry is only 4% of the nation's total, industrial shipments is only 2.4%, revealing it as the most under-developed area of the country.

Under these conditions, in order to stimulate industrial and economic growth in Hokkaido, the East Port was planned for heavy chemical and vehicle industries in 10,000 hectares of the Yufutsu plain next to the West Port. In 1976 the construction of the east breakwater was begun and large-scale construction was rapidly and successfully carried out in the rough waters offshore. And, in October, 1980, after only some four years since the commencement of construction, the first ship entered the port initiating the use of port facilities even while construction continues.



Mr. Atsuyuki Tanaka

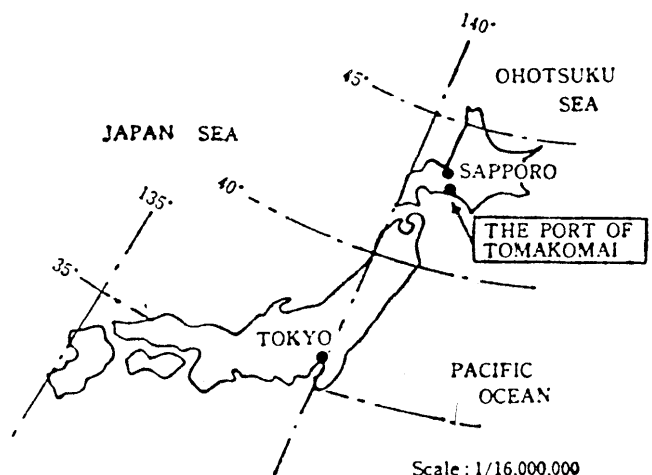
In addition to these developments, a 350,000 Kw thermal-electric power plant is already in operation at port-side, and port development has moved into high gear with the locating of vehicular and petrochemical industries having been settled.

## West Port—the largest port in Hokkaido

Although the idea of a Tomakomai industrial port utilizing the vast untouched inshore lands first was considered more than 50 years ago, it was only examined fragmentally owing to, among other things, the adverse condition of a coastline with continually drifting sand. At long last, after World War II, the concept was concretized and the construction of an experimental pier was begun in 1951, and at the same time solutions to the drifting sand problem were actively pursued, such as using radio-isotopes ( $Zn^{65}$ ,  $CO^{60}$ ) in the artificial sand trace method.

From the very beginning, with the prospect of effective utilization of the inshore land, a system of dredging was considered, and in 1957 a plan having very nearly the present dimensions was settled upon. The dredged channels are bounded by the coast on one side and the Japanese

Fig. 1 Location of the Port of Tomakomai



## A Panorama of the West Port of Tomakomai



National Railways Muroran Line on the other; extending six kilometers along the ocean front and inland from two to four kilometers in a shape of deformed trapezoid, forming an elongated backward 'L' as can be seen in Fig. 3.

The plan calls for a dredged commercial district channel extending northward two kilometers with a width of 600 meters, and an industrial district channel extending eastward six kilometers with a width of 350 meters. The industrial port district channel is to have 600 meter turn-around basins at its middle and terminal points. Also, for purposes of safety there is to be signal traffic control at the point where each channel intersects the main channel.

The construction of the west port was begun in 1951 and is now about 90% complete. The breakwater, ship lanes, anchorages and public wharf were constructed as public works under the direct control of the government. The mooring facilities for the exclusive use of private companies were constructed by the companies themselves. The public investment in the port construction up to the present has amounted to 4.4 billion yen, and private investment 12.8 billion yen. 2,800 meters of breakwater, wharfs for large vessels, forty berths, (deepest in-port depth is 14 meters, off-port sea-berths is 22 meters), 21 warehouses and transit sheds, and 43 kilometers of port railway have been completed.

In coordination with the development of the port, the third sector, the Tomakomai Port Development Corporation, has been preparing and selling land for industrial sites. There is 1,500 hectares of industrial land on the coastal area and 600 hectares in the area north of the railway line, adding up to a total of 2,100 hectares. Of this 1,670 hectares (public-use land excluded) has been prepared and 1,170 hectares of that has been sold.

Today there are 48 companies operating on the coastal area, including oil (70,000 bbls/day) and aluminum (300,000 tons/year) refineries, chemical, lumber and machine industries. In the inshore areas there are mainly tertiary industry such as transportation, motor vehicle and machine repair companies.

Since the port has the city of Sapporo with its population of 1.4 million, 60 kilometers inland, it plays an important role as a distribution base for that city. Since the opening of the port in 1963 there has been an annual increase of 29% in the amount of material handled. In 1979 the port handled 45.5 million tons of material, 30% of that handled by all Hokkaido ports.

The domestic freight loaded at the port is mainly the industrial products of the coastal and adjacent inland districts, and the freight unloaded there covers a wide range of products such as structural steel, motor vehicles, cement, chemicals, medicine and miscellaneous daily necessities.

The main foreign freight is petroleum, bauxite, wood chips and other raw materials for industry. There are four sea lanes for ferries to four different cities of Honshu, including Tokyo and Nagoya, and seven ferry sailings per day; perishable food products being the main articles of transport.

## From a Paper Mill Town to a Modern City—an assessment of the effects of a development

Almost all of the area of Tomakomai, which is 562 Km<sup>2</sup>, is barren plain unfit for agriculture, and, at the time when construction of the port was begun in 1951, 93% of the city's produce was from manufacturing; there being almost no other kind of industry. Further, 96% of this manufacturing output was paper and pulp. Tomakomai was really a castle town with the paper mill as the castle. A quarter of a century later, in 1975, after port construction had progressed and industries in the coastal area had developed, the nominal industrial output had increased forty-fold, and employment five-fold. During this period the population rose from 40,000 to 130,000 inhabitants, and reached 150,000 at this date. Figure 2 shows in various categories the changes in the city accompanying the progress in port construction.

The shipments of industrial produce shows a tremendous increase with the progress in development of the port. This is entirely due to the development of the coastal area. Consequently, there is a very close correlation with the increase in freight handled by the port. Opposed to this, the population has shown a steady increase from the start of construction of the port because of increases in all kinds of investment as well as the expectation of future development in the area. After the port was opened to use, the rate of increase in population rose somewhat.

Also, the composition of industrial shipments shows that paper and pulp, which made up 96%, fell to 34%, while a large share was taken up by the categories of petroleum and non-ferrous metals, which rose to 36% and 8% respectively.

**Fig. 2 Trends in population, industrial shipments, handled cargo in port and total annual expenditure**

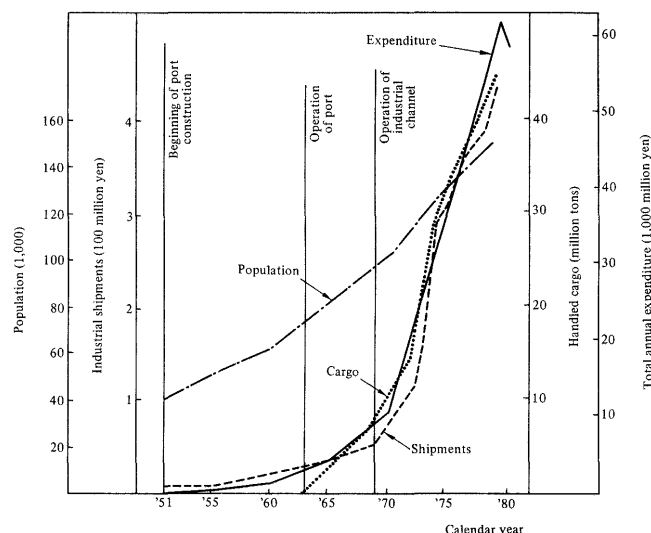
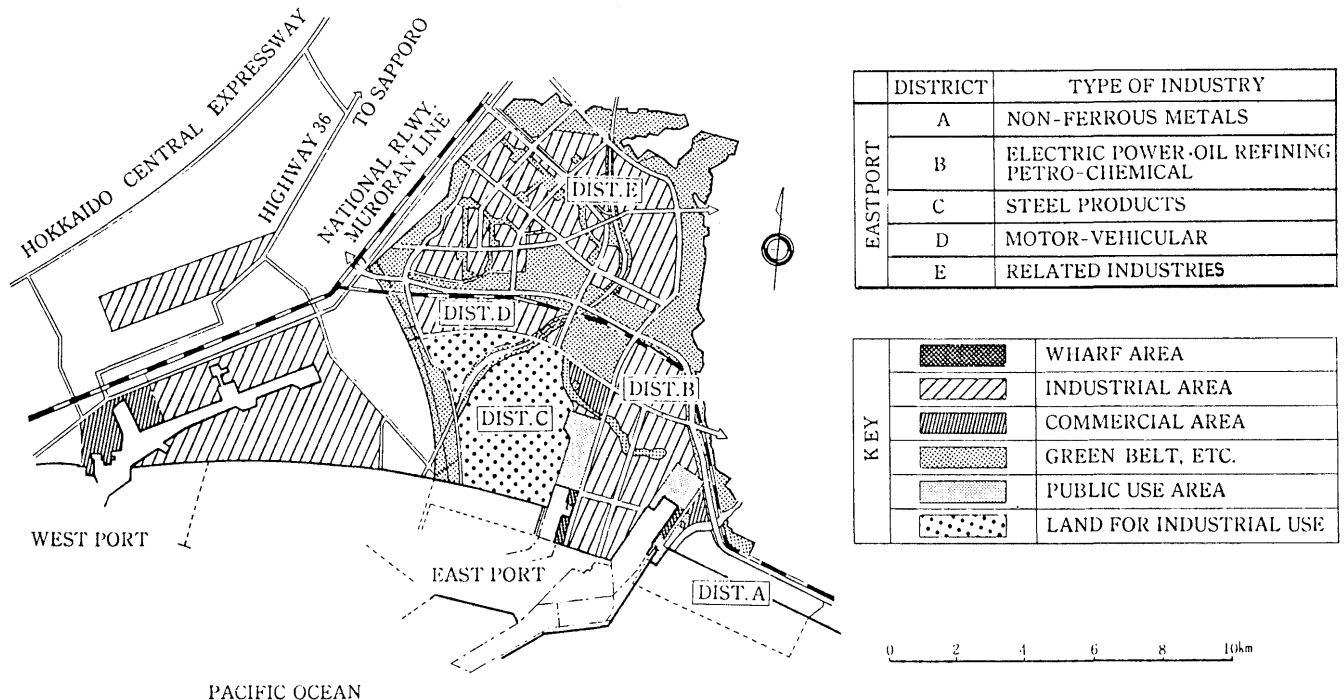


Fig. 3 The Port of Tomakomai



In the same way, in the area of employment, paper and pulp, which formerly employed 77% of the manufacturing labor force, dropped to 32%, while the miscellaneous category increased to a figure of 68%.

Meanwhile, how was the livelihood of the citizens affected? In the beginning, basic urban facilities such as sewers and roads tended to lag behind the increase in population, but since about 1965 there was a rapid increase in civil investment and provision of these facilities has progressed well.

At present, the sewage system covers 74% of the urban area, which is well above the national norm and the Hokkaido average of 26%. Also, there is six times the Hokkaido average of park area per person, and the provision of cultural and sports facilities has shown rapid advance, so that it can be said that Tomakomai has a living environment which has reached a level far above the norm for other cities.

Besides subsidy from the national government, these facilities and works have been provided and carried out with financial resources acquired through city taxes which have shown an annual increase of 29% since 1965. The increase in city tax income derives from the rapidly increasing property taxes received from companies which have located in the area.

The development has also increased the income of the citizens. Currently the per capita income is 102% of the national average and 110% of the Hokkaido average.

The progress of the City of Tomakomai has certainly come from the development of the port, and what was once a paper mill town has been reborn as a modern industrial city. There is probably no other case where the effect of port development on the local community can be so straightforwardly evaluated, and we should continue studies on this aspect hereafter.

#### East Port—basic plan for development

The Tomakomai East Basic Development Plan is one

that shows a total concept for the comprehensive and planned evolution of the basic facilities of all kinds; the harbor, residential land, roads, railway, rivers, water supply, communication equipment, etc. inside the port area itself and in the surrounding district. It is one that aims at the realization of an ideal industrial city providing large scale industrial production functions and a superior living environment.

The concept of the industrial development as shown in Table 1, is one that attempts to bring in heavy chemical industry of an international scale, motor vehicle industry, etc., and projects an industrial production total of three thousand three hundred million yen at the time of completion. This is approximately the same as the current total of all of Hokkaido's industrial production together. The distribution of industry in the plan was made taking into consideration the connection between various kinds of industry, frequency of use of waterfront, environmental pollution prevention, etc. Basic industry is located in the coastal area, other related industries in the natural forest inshore. Also, green buffer zones and parks will be provided around and within the port area. Green area and other open space will actually amount to 32% of the total area.

The port plan foresees handling 160 million tons of freight and cumulative 38,000 ships entering the port. An aggregate 33 km of waterfront will be utilized, employing a combination of dredging and land-fill techniques. The largest ship planned for in the port is a 250,000 DWT ore carrier, and tankers of the same draught weight, while supertankers will be taken care of in off-shore sea berths.

Since the development will require an extended period, it will be a rule that the plan be carried out in stages, all the while discussing the progress of the development with the related local organizations.

The operations of the current development are being carried out based on First stage of the plan, which has a goal of 1983 as a completion date. In First stage of the plan, while steel and non-ferrous metals are not yet deter-

Table – 1 Industrial Development Concept

| Type of Industry   | Total Plan          |                                 |                          |                      | First Stage Plan (1983) |
|--------------------|---------------------|---------------------------------|--------------------------|----------------------|-------------------------|
|                    | Production          | Shipping Value<br>(billion yen) | Industrial<br>Area (ha.) | Number of<br>Workers | Production              |
| Iron and steel     | 20 million tons     | 860                             | 1,700                    | 10,000               | currently in abeyance   |
| Oil refinery       | 1 million barrels   | 430                             | 760                      | 1,000                | 300,000 barrels         |
| Petro-chemical     | 1,600 thousand tons | 640                             | 800                      | 6,500                | 400,000 tons            |
| Non ferrous metal  | 1,450 thousand tons | 510                             | 830                      | 14,200               | currently in abeyance   |
| Motor vehicles     | 500 thousand tons   | 250                             | 400                      | 8,000                | 180,000 vehicles        |
| Related industries | —                   | 610                             | 2,030                    | 10,300               | —                       |
| Electric power     | 6 million KW.       | —                               | 150                      | —                    | 950,000 KW              |
| Total              |                     | 3,300                           | 6,670                    | 50,000               |                         |

Note: Shipping value is as of 1968

mined, there is an estimate of 300,000 bbls/day output from petroleum refining, 400,000 tons/year output from petrochemicals, 180,000 motor vehicles handled per year, and 950,000 Kw of electric energy, etc., for a total yearly production output of 920,000 million yen. Figure 3 shows the total plan and the black line shows First stage of the port plan.

#### October 1980—initiation of port operations and those of located industries

The construction of the east port began with the eastern breakwater in 1977, and up to the present 3,900 meters of the planned 5,350 meters have been completed. Simultaneously, the third sector, the Eastern Tomakomai Corporation carried out land preparation operations for industrial sites and the Hokkaido Electric Co. completed the first coal fueled thermal-electric power generator in District B and began operation in October, 1980. And on the 24th of the same month, the Kimishima Maru, a coal carrier from Kushiro, became the first ship to enter the east port and initiate the operations of this giant development.

Currently, tanks for a cooperative petroleum storage base (5 million kiloliters) are under construction in District B and construction has also begun on the 100,000 DWT crude petroleum pier and the underwater pipeline necessary for the base. The location of the six million kiloliter government petroleum storage base which stretches from District B into District E; the Isuzu Mortor Corp. in District D; and the petrochemical plant of the Mitsui Group have been recently settled, and a part of these are expected to begin operations by 1984. Up to now there has been 51,400 million yen of public and 12,800 million yen private investment in the port construction, while investment in factory installations has amounted to 122,500 million yen.

The Tomakomai East Development is an attempt to raise the level of the Hokkaido's industrial configuration in which Hokkaido, with 20% of Japan's land area and 5% of the population, has only 2.4% of the industrial production. Undoubtedly, this development will continue steadily in the future as a pathfinding project building toward a prosperous tomorrow.

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## International maritime information: World port news:

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# Progress of Port Activity in the ESCAP Region

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Extracts from "Review of Developments in Shipping, Ports and Inland Waterways in the ESCAP Region 1980", "Containerization in Developing Countries of the ESCAP Region" by United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

There has been a significant recovery in the volume of cargo handled through the major ports of the developing ESCAP region following the 1974/75 slump in world trade. The aggregate tonnages for 1977 for most of the developing countries of the region were 29 per cent higher than those for 1975. In the longer term, 1977 tonnages were 54 per cent higher than those for 1971.

For a number of ports the rate of change has been much higher. Busan, for example, almost trebled its cargo throughput in the 1970-1978 period and Bangkok's throughput increased one and a half times in the same period. Both Hong Kong and Tanjung Priok also doubled throughput figures. For other ports, for example Chittagong and Colombo, there has been only modest expansion of tonnage over the long run, though there has been significant recovery since 1974/75.

Despite fluctuations in port throughput, related both to domestic policies and conditions and to the fluctuations of business and trade cycles, it is clear that for ports of developing countries of the ESCAP region there has been continuing expansion in the longer term and significant recovery from the cyclical downturn in 1974/75. This expansionary pattern has meant that for most of the ports there has been constant pressure on existing capacity and a number of ports in the region have become chronically congested. This expansion has resulted also in a continuing need for adaptation and modification of existing facilities and operating practices as well as in plans for new development.

Despite increasing vessel size and the rationalization of shipping services, expansion of activity is also reflected in an increase in vessel numbers. Several ports including Hong Kong, Tanjung Priok, Port Kelang, Busan and Singapore have shown continuous increases in the number of vessels using the port over the 1970-1978 period. For others the rate of growth in the past 1974/75 period has exceeded the over-all growth rate for 1970-1978, reflecting increased activity in the latter part of the decade—for example Bangkok, Colombo, Manila, Bombay and Chittagong. In Calcutta the decline in the number of vessels over the 1970-1978 period is quite marked—a 24 per cent loss—and reflects, inter alia, the progressive deterioration of the port's competitive position in the light of changing shipping technology and the navigability of the River Hughli. In

Suva, by contrast, the longer term decline in vessel numbers is a reflection of the major rationalization of shipping services which has been characterized by a significant increase in ship size and in new types of ships.

### 1. Port congestion

That there is a fragile balance between the demand for port capacity and its supply in many of the ports in the region is now well known. Table 1. illustrates all too clearly that for 1978 and 1979 congestion levels were beyond those which might be reasonably expected in ports where, for example, problems of seasonality give rise to bunching of ship arrivals. The magnitudes of delay are not of the order of those of 1975 and 1976 for some of the Arabian Gulf ports nor are they related to the high levels of imports consequent upon the increased purchasing power induced by higher oil prices.

Nonetheless, for a number of ports in the region congestion has been so much a feature of operations over several years that it can hardly be regarded as anything less than chronic nor anything but a "normal" condition for the port. In these circumstances, the problem is never simple.

The introduction of new cargo types into a port, or sudden surges in the volume of cargo may create problems which may be or may not be amenable to solution in the short run—large imports of timber into the port of Bangkok in 1979 for example created problems of storage and dispatch not met with earlier. Similarly, the sudden growth of container traffic in several of the ports led in 1978 to chronic problems of landward congestion, as happened for example in the port of Manila. In the port of Bombay an increase of 270 per cent (and almost 620,000 tons) in the import volume of edible oils between 1976/1977 and 1977/1978 created critical problems of handling, storage and dispatch.

Inadequate storage and shed space, often due to the underpricing of storage services leads to significant decreases in handling productivity and to increases in time which ships spend alongside. In conditions of high demand for port services this attenuates waiting time and adds to the length of the vessel queue. Commercial practices of one sort or another—the payment of company tax in a certain month, for example with consequent tightening in the flow of liquidity—are quite rightly blamed for vessel and cargo delays.

Ports listed in Table 1. suffer from some of these problems and in fact from numerous others that are, by-and-large, quite well known to the port authorities. For chronically congested ports, and for some others, "cosmetic", short-run changes—new operating rules, longer working

hours, more equipment—may ameliorate conditions but it is more likely that real improvement will only come with basic structural and administrative changes—not simply, for example, a change in the structure and levels of port tariffs but a fundamental change in legislation which provides ports with greater flexibility of action; or basic revision of port acts or constitutions which allows ports to act decisively and autonomously.

Inadequate capacity in a single port has serious implications for a national economy when that port operates virtually within a monopolistic framework, as do many of the major ports in the developing countries of the region. There is some evidence however, that a more serious, probably less tractable and certainly less well understood problem has given a new dimension to the problem of port congestion in some countries of the region. It is the disequilibrium in national systems of ports characterized by the failure of individual ports in the system to capture and handle efficiently those commodity flows for which they have a competitive advantage, or for which, under rational pricing and efficient operating conditions, they ought to have a competitive advantage. As a result traffic concentrations appear in a small number of ports whilst other ports in the national system are underutilized. Such appeared to be the case in India in 1978 and 1979.

The solution to the problem of port congestion under these circumstances lies not only in a variety of ad hoc and long-term measures to reduce delays in each port but also in defining appropriate capacities for individual ports within the national system of ports and implementing measures to achieve such capacities.

**Table 1. Vessel delays in selected ports in the ESCAP region for December 1978, March and September 1979**

| Port                                  | Cargo              | December 1978 |                  | March 1979 |                  | September 1979 |                  |
|---------------------------------------|--------------------|---------------|------------------|------------|------------------|----------------|------------------|
|                                       |                    | Days delay    | Vessels in queue | Days delay | Vessels in queue | Days delay     | Vessels in queue |
| Calcutta                              | General Fertilizer | 5-6           |                  |            |                  |                |                  |
|                                       |                    | 35            |                  |            |                  |                |                  |
| Visakhapatnam                         | General            | 8             |                  | 10-15      |                  | 5              |                  |
|                                       | Fertilizers        | 65            |                  | 50-60      |                  | 45-50          |                  |
|                                       | Cement             |               |                  |            |                  | 10-12          |                  |
| Mangalore                             | General            | 6             |                  | 1-5        |                  | 3-5            |                  |
|                                       | Fertilizers        | 7             |                  | 10-15      |                  | 7              |                  |
| Bombay                                | General            | 45            |                  | 70         |                  | 22             |                  |
| Indira dock                           | General            | 15            |                  | 20-25      |                  |                |                  |
| Princes and                           | Fertilizers        | 60            |                  | 45         |                  | 30             |                  |
| Victoria                              | General            | 20            |                  | 3-4        |                  |                |                  |
| Kandla                                | Fertilizers        | 60            |                  | 10-20      |                  | 25-30          |                  |
| Paradip                               | General            | 5-6           |                  | 15-20      |                  |                |                  |
|                                       | Fertilizers        |               |                  | 30-40      |                  |                |                  |
| Madras                                | General            |               |                  | 7          |                  | 25             |                  |
|                                       | Fertilizers        |               |                  | 10         |                  | 45             |                  |
| Bandar Abbas                          | General            | 5-8           | 6                | 5-7        | 4                |                |                  |
|                                       | Charter            | 15-20         |                  |            |                  |                |                  |
|                                       | Direct delivery    | 10-15         |                  | 10-15      |                  |                |                  |
|                                       | Bulk               |               |                  | 15-20      |                  |                |                  |
| Bandar Shahpour (now Bandar Khomeini) | General            | 20-25         | 35               | 5-7        | 5                | 2-4            |                  |
|                                       | Bulk               |               |                  |            |                  | 20-30          |                  |
| Bushire                               | Alongside          | 15-25         | 10               | 8-15       |                  |                |                  |
|                                       | Dolphins           | 10-15         |                  | 1-3        | 1                |                |                  |
| Khorramshahr                          | Bulk               | 18-22         | 38               | 12-15      | 12               |                |                  |
|                                       |                    |               |                  | 15-20      |                  |                |                  |
| Karachi                               | General            | 20            | 60               | 38-40      | 69               | 26-28          | 42               |

The problem underlines the need for the formulation of appropriate policies for integrating ports into the existing transport networks and into sectoral, regional and national development plans. This is a particularly pressing need also for those countries of the region which are planning and implementing new ports and almost certainly requires new policy and administrative frameworks.

## 2. Containerization

The expansionary pattern of cargo traffic through the

region's ports described in the first section of this chapter is also evident for container traffic. In 1978 six ports in developing countries of the region handled 2.7 million containers (TEUs) containing 26.8 million tons of cargo (see Table 2). Significantly also, the port of Busan in 1979 became an important focus of mainline services, reducing its dependence on feeder operations.

For the first time since the opening of the Kwai Chung Container Terminal Hong Kong, one of the two major entrepôt ports of the ESCAP region, registered a decrease in traffic for 1978.

For all other ports in the developing countries of the region, growth rates for 1977/78 have continued to be high. The port of Bangkok increased its throughput to more than 120,000 TEUs with a 1977/78 growth rate of 65 per cent; the port of Manila in 1978 exceeded 200,000 TEUs and continued to grow rapidly (24 per cent) as did the port of Singapore (43 per cent) despite its already considerable throughput when somewhat lower rates of growth may be expected. In ports in which the process of conversion to containerization is only beginning, very high growth rates are the rule rather than the exception. Bombay, with explosive growth (148.5 per cent) exemplified the principle.

Such continuing growth in container traffic places heavy demands on ports for new facilities and equipment. In several of the ports a substitution of container traffic for conventional shipping has relieved pressure on conventional facilities.

**Table 2. Container traffic in the six leading container ports in the developing countries of ESCAP, 1978**

| Port        | Tons of cargo in containers | Number of containers (TEUs) | Rate of growth of TEUs 1977/78 (percentage) |
|-------------|-----------------------------|-----------------------------|---|
| Hong Kong   | 8,379,026                   | 1,226,256                   | -2.6  |
| Singapore   | 7,947,700                   | 562,287                     | 43  |
| Busan       | 6,652,617                   | 506,556                     | 6.7   |
| Manila      | 1,966,076                   | 209,542                     | 24  |
| Bangkok     | 1,048,663                   | 120,169                     | 65  |
| Port Kelang | 831,837                     | 92,811                      | 21  |
| Total       | 26,825,919                  | 2,717,621                   |   |

In most of the ports of the developing ESCAP region, the provision of landward storage and processing areas has been quite inadequate, with resulting congestion, slow clearance of cargo and decreased handling productivity. Thus whilst modern and fast container vessels move containers quickly from one port to the other, clearance of cargo may be unacceptably slow nullifies much of advantage that containerization can bring to shippers.

Moreover larger container freight stations (CFS) in developing country ports are required for similar levels of traffic in developed ports. This reflects fundamental differences in the structure of the traffic and the much larger proportion of less than container load (LCL) traffic for developing countries. Large and efficient CFSs are essential and their operation, whether controlled by the port or by private interests, must be totally integrated with that of the port.

One further point is of some interest in this brief note and it is the trend towards increasing penetration of small container feeder vessels into the inter-island shipping networks and the development of container traffic in

outlying ports. This trend is evident in the Philippines and in 1979 the port of Manila was linked by services to Cebu, Dadiangas and Davao. Initially, the service to Cebu relied heavily on the movement of imported containers brought to Manila on foreign lines though now the service relies largely on locally generated container traffic. Whether this trend will manifest itself in other island environments remains to be seen.

### 3. The state of containerization in 1979

The progress of containerization in the developing ESCAP region has benefited from the proximity of some of the world's densest intercontinental container flows and from the related development, on these routes, of two major transshipment ports.

According to a recent estimate, 40 per cent of the world's container capacity is currently employed on intercontinental routes lying along Asian coasts. The first place is occupied by the route from Japan and east Asia to North America which alone accounts for 22 per cent of the world container flows, and the routes connecting Japan and east Asia with Europe, Australia and the Middle East. The spread of containerization in south-east Asia in particular was aided by the relatively intense competition that has developed on the route from Japan and east Asia to North America. Competition has also risen above customary levels on the routes to Australia and New Zealand and to Europe.

Hong Kong and Singapore and major container ports on these major routes, occupying respectively the fourth and twelfth place among the world's ports in terms of annual TEU throughput. Transshipment containers accounted in recent years for about 40 per cent of Hong Kong throughput (or 45 per cent for its throughput of full containers) and for 36 per cent of throughput in 1979 at the Singapore container terminal (or 42 per cent in 1978). The transshipment business of these ports is highly competitive, and the low charges levied account in part for what appears to be the relatively low cost of container transshipment in the region. Much of the transshipment traffic through these two ports is provided by feeder links with other parts of the region: in Singapore an absolute majority of container vessels using the terminal in 1979 were feeder ships to and from south-east Asia.

Even those ports which lie sufficiently close to the main intercontinental routes to have frequent calls by mainline container vessels—such as Hong Kong and Singapore themselves, Busan, Incheon, Kaohsiung, Port Kelang, Penang, Keelung, Manila, Bombay or Colombo—have supplementary services through feeders. As an illustration one may take the container services connecting Manila with North America, in March 1980:

| Ships         | Frequency of connexion per month |        |
|---------------|----------------------------------|--------|
|               | Direct                           | Feeder |
| Full cellular | 5                                | 35.5   |
| Others        | 3.5                              | 7.17   |

Certain ports, notably Bangkok, the Indonesian ports and ports in the Bay of Bengal depend chiefly or wholly on feeder services. The reasons for this include difficulties of access, the expected size of cargo flows and also the location of the ports relative to major international trade flows

which have invariably proved to be major stimuli of containerization.

Containerization proceeded during the second half of the 1970s at very uneven rates. In terms of total throughput assessed by international standards, five of the countries or areas represented in Table 3 appear to have reached the stage of mature containerization: Australia, Hong Kong, Japan, the Republic of Korea and Singapore. But the annual rate of growth of container throughput in these countries or areas has differed significantly in recent years: some 9 per cent in Australia, 13-14 per cent in Hong Kong and Japan, 19 per cent in the Republic of Korea and 35 per cent in Singapore which reflects the growth of container movements to and from countries within its transshipment radius. A second group—Malaysia, Papua New Guinea, the Philippines and Thailand—appear as countries of recent containerization, with annual rates growth of throughput of loaded TEUs ranging from 19 per cent in Malaysia to 21 per cent in the Philippines and over 45 per cent in Thailand. Finally, India, Indonesia and Pakistan represent countries which still stood in 1979 on the threshold of the new technology.

**Table 3. Throughput of full containers in countries of the ESCAP region (Major ports) in 1979 and recent growth of throughput**

| Country or area and ports          | Throughput of TEUs, 1979 |       |              |
|------------------------------------|--------------------------|-------|--------------|
|                                    | TEUs                     | Index |              |
|                                    |                          | Base  | Index number |
| Japan:                             |                          |       |              |
| Kobe, Nagoya, Tokyo, Yokohama      | 2 284 346                | 1975  | 166          |
| Hong Kong                          | 1 105 214                | 1975  | 174          |
| Australia:                         |                          |       |              |
| Adelaide, Brisbane, Fremantle      |                          |       |              |
| Melbourne, Sydney                  | 711 760                  | 1975  | 136          |
| Singapore                          | 581 707                  | 1975  | 329          |
| Republic of Korea: Busan, Incheon  | 547 354                  | 1976  | 169          |
| Philippines:                       |                          |       |              |
| Manila South Harbour, Port of Cebu | 166 951                  | 1978  | 98           |
| Thailand: Bangkok                  | 146 432                  | 1977  | 217          |
| Malaysia: Port Kelang, Penang      | 119 109                  | 1977  | 234          |
| India: Cochin, Calcutta, Bombay    | 28 457                   | 1977  | 456          |
| Indonesia: Tanjung Priok           | 23 642                   | 1977  | 114          |
| Papua New Guinea: Port Moresby     | 6 571                    | 1978  | 91           |

In the major container ports of the region, the fastest growth of throughput in the late 1970s occurred on the routes to and from the United States of America and on the relatively new interregional trades.

The largest imbalances in container flows occur in ports where containerization was only recently adopted or where it is yet in its initial stage. Such imbalances raise the cost of container shipping and unless they are a passing phenomenon they will be reflected in the long-run level of freight rates paid on imports. Marked imbalances are also found on certain routes to and from the mature container ports. In Japan, the Republic of Korea and also in Australia, inbound movements from North America markedly exceed outbound movements and this should account for at least a part of the high level of competition on the eastbound route to America. The excess of outbound movements from Japan and the Republic of Korea to Europe, on the other hand, should make for competition on the eastbound

route from Europe and keep rates low and conferences under competitive pressure at the various Asian stations along that route to east Asia.

#### 4. Bulk cargo

For many of the ports in the region a limited range of bulk commodities constitutes a high proportion of total tonnage. In Calcutta for example, five commodity groups—petroleum, fertilizer, salt, cement and edible oils—made up about two thirds (65 per cent) of the import flows in 1978/79 and three commodity groups, coal, jute and jute products and petroleum accounted for only slightly less (62 per cent) of the export trade. The concentration of tonnage into a few commodity groups is even more marked for Chittagong where foodstuffs, petroleum, fertilizer and cement made up about three quarters (76 per cent) of the import tonnage, and jute and jute products and naphtha accounted for a similar proportion (78 per cent) of the export trade.

More significant, however, is the fact that the volume of bulk commodities has now reached such proportions as to necessitate more efficient port handling in order to contain the rapidly escalating costs of ship's time. Table 1. indicates that a large proportion of ships waiting for a long time in congested ports are those with bulk cargoes. The implication is of course that the developing countries are paying much more, by way of congestion surcharges, demurrage and higher freight rates for such commodities as fertilizer (which is presumably basic to strategies of agricultural development and for which the cost burden may fall on that sector of the population, the farmers, who can least afford it).

There is therefore now some urgency for ports to increase their ability to handle the increasingly large tonnages of bulk commodities more efficiently and for ship-owners to achieve greater economies of scale by using larger, more cost effective vessels.

The difficulties of handling bulk cargoes in the ports of developing countries in the region are compounded however by a number of factors which are worth noting.

First, there is likely to be a high degree of variability in tonnages involved. This complicates determination of the capacity and the type of handling methods required. Poor harbours, adverse market conditions for exports, sudden changes in policy and new aid agreements for example, give rise to fluctuations in throughput and hence the capacity needed. The port of Tanjung Priok for example, imported 180,000 tons of flour in 1970; in 1973 the tonnage was only 12,353 tons and in 1974 the import of flour was discontinued. In the port of Colombo the export of copra declined from 45,461 tons in 1972 to 447 tons in 1978; in 1973 the tonnage of rice imported was 291,270 tons and in 1978 less than half that figure (141,106 tons). It would not be difficult to multiply these examples but the principle is clear.

Secondly, labour and employment policies of developing countries, together with entrenched attitudes towards manning scales in ports, normally lead to labour-intensive methods of cargo handling. This results in low levels of productivity compared with those achievable in developed countries and therefore to extended berth times for vessels. This will be reflected in higher levels of freight rates than would be otherwise necessary.

Thirdly, high volume throughputs of bulk commodities demand high levels of capacity in back-up systems in the port, especially in terms of road, truck and rail wagon capacity and the availability of large storage areas. Bottlenecks in these systems severely limit productivity and increase the time which vessels must spend alongside waiting to load or unload.

Nonetheless, under conditions of rapidly increasing, large tonnages of bulk commodities greater efficiencies must be sought in the region's ports in order to contain transport costs. Already there is an increasing trend towards rationalization of traditional quasi-bulk commodities into unit loads. In Port Kelang for example, the amount of rubber shipped by container in 1978 was 23 per cent more than in 1975 and amounted to over 170,000 tons. Plywood is also moving in containers, and in 1978 and 1979 considerable volumes of tea were exported from Colombo in containers.

Bulk handling equipment systems may be both sophisticated and expensive and in the long run—and for some ports in the immediate short run—their installation will be necessary. There are however ways and means of improving productivity which can be achieved quickly. Irrational operating practices—such as bagging grain etc. in the hold of the ship—serve only to delay the ship. Overside handling to barges can free berths for higher cost vessels. In intermediate stages there is need for investigation of a technology which is both appropriate, flexible and capable of adapting to fluctuations in the trade flows.

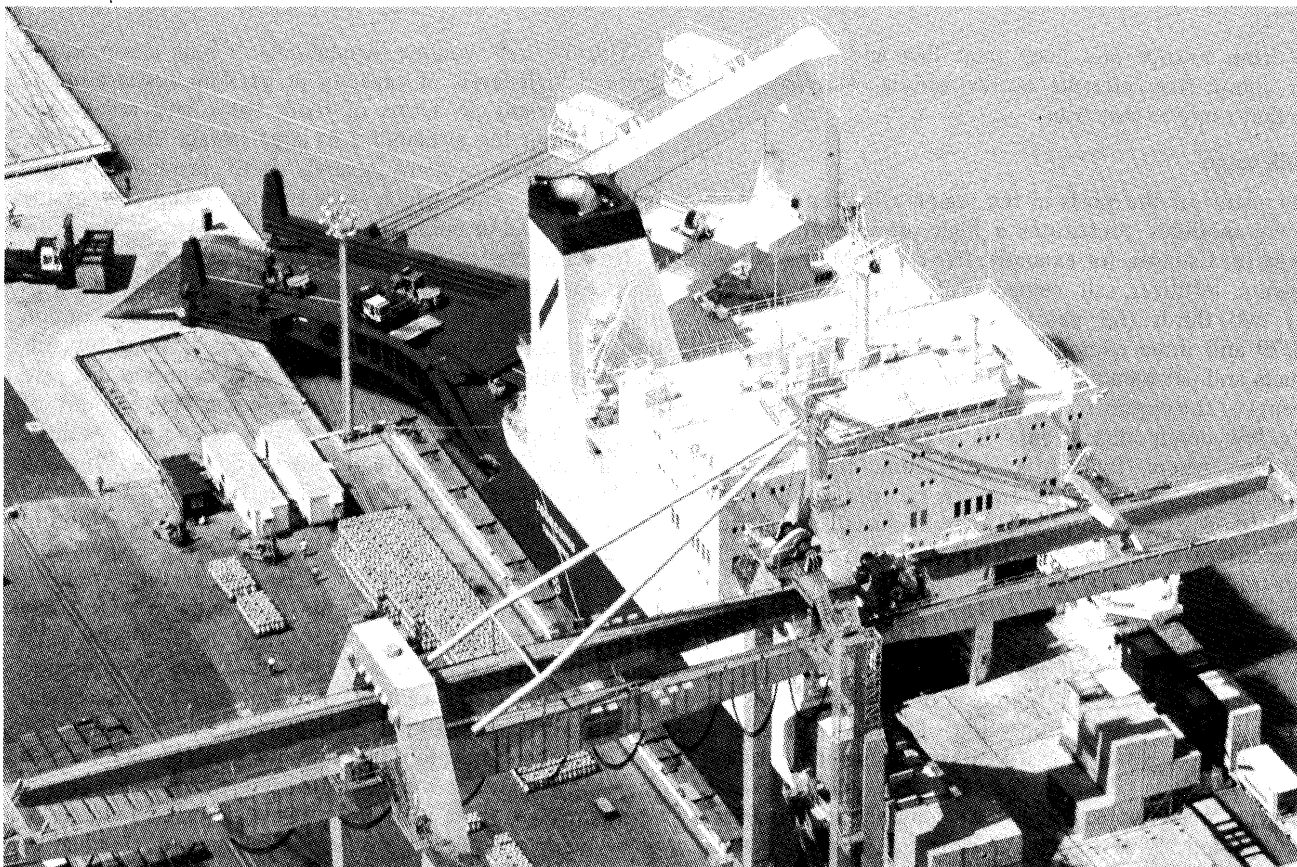
As a final point it is worth stressing, in this context, the urgent need for the integrated planning of port bulk handling systems with capacities on other modes and in other parts of existing and proposed transport systems.

## Publications

1. "Safety Recommendations on the Use of Ports by Nuclear Merchant Ships"  
Sales No. 80.90.E, Price £L £1.25
2. "Code of Safe Practice for Solid Bulk Cargoes"  
Sales No. 80.10.E, Price £3.00
3. "Crude Oil Washing Systems"  
Sales No. 80.11.E, Price £5.50
4. "Inert Gas Systems for Oil Tankers"  
Sales No. 80.15.E, Price £2.50  
IMCO Secretariat, Publications Section  
101-104 Piccadilly, LONDON W1V 0AE
5. "The Tonnage Measurement of Ships" by Michael Corhill and revised by Andrew Moyse—A Guide to the new Convention and its effects  
Price £9.00 U.K., £10.00 Overseas  
Fairplay Publications Ltd.  
52-54 Southwark Street, LONDON SE1 1UJ
6. "Shipping Markets in 1980 and Seaborne Trade Forecasts" by H.L. Beth and B. Volk  
32 pages, Price DM 15.00 plus postage

The booklet within its first part is analysing the situation and development of the world shipping markets as they present at the end of the year 1980.

(Continued on page 39)



## It's easier for shippers to use Townsville for Minerals, Wool and Meat than any other Australian Port.

Cargoes of North Queensland products can be centralised at less cost ready for shipment than at any other Queensland or Australian port.

And combined with the record of the Port of Townsville for quick turn-around of shipping, there's no waiting or 'tie-up' time lost by using Townsville.

The average time for all types of cargo vessels using Townsville over the last year was as low as 1.7 days per vessel. Add that up in costs when you calculate your ship's waiting time for berths, and the other problems associated with big ports.

Moreover, the major part of Queensland's wool and meat production is grown in North Queensland, so the centralising costs to the producer or the shipowner must show savings.

North Queensland can claim the most modern meat processing

abattoirs as well as wool dumping and handling facilities which makes the overland surface haul to Sydney and Brisbane unnecessary.

Look at the map — if you are a shipowner serving West Coast U.S.A. ports, Asia, Japan and even European ports via Suez, North Queensland's precious primary products are saved a lot of bumping and shoving when they are shipped through Townsville.

This means that when you ship directly out of Townsville the products are in better condition and are less costly to the end buyer than if shipped from decentralised ports away from the centre of production.



For further enquiries, contact the  
Townsville Harbour Board,  
Townsville, North Queens-  
land. Cables: 'Nausport'.  
Telex: NAPORT — 473344.

### TOWNSVILLE HARBOUR BOARD

## (Continued from page 37)

Reference is made to the general economic situation which is considered to be representative and characterizing for shipping demand. As tonnage supply at present is lacking dynamics, scrappings are partly offsetting new deliveries, existing overcapacities may be eliminated only by impulses from demand. But in the short-term perspective a considerable improvement is not to be seen.

In the medium—and long-term, however, a growth of the demand is outlined. This within the second part of the contents is stated by a comparison of results from respective recent forecasts. In line with the bulk of forecasts special attention is given to the liquid and dry bulk scene. By tabling the results information is made easy to the readers.

7. **"Ship Casualties—An Analysis of Causes and Circumstances"** by D. Rother  
66 pages, Price DM 15.000 plus postage  
Institute of Shipping Economics  
Werderstrasse 73, D-2800 Bremen 1
8. **"Status of Deep-Sea Ro/Ro Services"**  
Price US\$95.00/£40.00 UK only  
H P D Shipping Publications  
34 Brook Street, LONDON W1Y 2LL
9. **"Ports of the World 1981"** 34th Edition  
Port details include: Position, Authority, Approach, Accommodation, Charges, Towage, Pilotage, Traffic, Cargo worked, local airport and officials  
Ports of the World  
25 New Street Square, LONDON EC4A 3JA

## Seminar, Course, Exhibition

### 1. "XVIIth International Seminar on Port Management"

Delft/Rotterdam/Amsterdam, 21 April–30 May 1981

It is a study programme of the International Institute for Hydraulic and Environmental Engineering, Delft,—which forms part of the NUFFIC organisation—with observation periods offered by the port authorities of Amsterdam and Rotterdam.

The programme consists of two lecture periods, a two-weeks' period of visits to and around the ports of Amsterdam and Rotterdam and study visits to ports in Belgium and France.

The lectures and exercises at Delft deal a.o. with transportation and shipping, port management and operation, port labour, management information systems and legal affairs and include the port management simulation game: Simportoe.

The seminar is open to government officials and other qualified candidates with long-time practical experience with regard to problems of port management. Participants should have a university degree although in special cases experience can replace a university background. The language of the seminar is English.

The participation fee is Dfl 2,500.—, which includes the tuition fee, travel costs for the fieldtrips and lodging during the fieldtrip outside the Netherlands. The other expenses, hotel accommodation during the stay in the Netherlands as well as lunch and dinner expenses, have to be borne by the participants. Netherlands Universities Foundation for International Co-operation, P.O. Box 90734, 2509 LS The Hague, Netherlands.

### 2. "ICHCA and Cantrade '81"—International Canadian Trade Fair

Edmonton, Alberta, Canada, June 3-6, 1981  
CANTRADE '81, Suite 310, Macdonald Place  
9939 Jasper Avenue, Edmonton, Alberta  
T5J 2W8

### 3. "Summer Short Course on Flood Prediction, Estimations and Forecasting"

Colorado State University, June 29-July 3, 1981  
Fort Collins, Colorado, USA  
Fee: US \$540.00

Contact: H.W. Shen, Course Director, Engineering Research Center, Colorado State University, Fort Collins, Colorado 80523 (303/491-8552), Telex: 910 930 9000, ENGR CSU FTCN.

Lectures will cover types of floods and climatic conditions, precipitation patterns, maximum probable floods, standard project floods, distributions, statistical tests, estimations, Water Resources Council; Log Pearson Type III, special problems; outliers, missing data, etc., transfer of information, regression, geomorphology, empirical methods, unit hydrographs, watershed modeling, forecasting; long- and short-term, and computer programs. Representatives of leading consulting firms, government agencies and universities will be lecturing.

## Program of IMCO meetings 1981

- |                  |   |
|------------------|---|
| 5-9 January      | Sub-Committee on Safety of Navigation—25th session                                |
| 12-16 January    | Sub-Committee on Ship Design and Equipment—23rd session                           |
| 19-23 January    | Sub-Committee on Standards of Training and Watchkeeping—14th session              |
| 26-30 January    | Sub-Committee on Containers and Cargoes—22nd session                              |
| 19-20 February   | Intersessional Working Group of the International Oil Pollution Compensation Fund |
| 23-27 February   | Sub-Committee on the Carriage of Dangerous Goods—32nd session                     |
| 2-6 March        | Legal Committee—45th session  |
| 16-20 March      | Facilitation Committee—14th session   |
| 30 March–3 April | Maritime Safety Committee—44th session  |
| 6-10 April       | Marine Environment Protection Committee—15th session                              |
| 11-15 May        | Sub-Committee on Radiocommunications—23rd session                                 |
| 18-22 May        | Sub-Committee on Subdivision, Stability and Load Lines—26th session               |
| 9-10 June        | Assembly Working Group on the Assessment of Contributions                         |
| 11 June          | Committee on Technical Co-operation—20th session                                  |
| 12 June          | Pre-Council Budgetary Working Group   |
| 15–19 June       | Council—46th session  |
| 22-26 June       | Sub-Committee on Fire Protection—26th session                                     |
| 29 June–3 July   | Sub-Committee on Life-Saving Appliances—16th session                              |
| 14-18 September  | *Sub-Committee on Bulk Chemicals—9th session                                      |

|                            |  |
|----------------------------|--|
| 21-25 September            | Legal Committee—46th session   |
| 28 September—<br>2 October | International Oil Pollution Compensation Fund—Assembly—4th session   |
| 5-9 October                | Sixth Consultative Meeting of Contracting Parties to the London Dumping Convention   |
| 12-16 October              | *Sub-Committee on Ship Design and Equipment—24th session   |
| 6 November                 | Council—11th extraordinary session   |
| 9-20 November              | Assembly—12th session  |
| 20 November                | Council—47th session   |
| 30 November—<br>4 December | *Marine Environment Protection Committee—16th session  |
| 7-11 December              | *Sub-Committee on the Carriage of Dangerous Goods—33rd session<br>Programme of Intersessional Working Groups and Ad Hoc Working Groups as Approved by the Council 1981 |
| 17-18 September            | *Working Group to Study Certain Aspects in Relation to the Provisions of the Facilitation Convention   |

\*Tentative.

## World Bank loan for Bangkok Port expansion

The World Bank has approved a \$47 million loan for improving and expanding port facilities in the Bangkok and eastern seaboard areas of Thailand. The ports project, estimated to cost \$109.2 million, will create additional port capacity and improve services at the Klong Toei facilities of Bangkok Port and convert the ex-naval port of Sattahip for commercial use.

Included in the project are civil works at Klong Toei and Sattahip; mechanical equipment for both ports; floating equipment for Sattahip; and container freight stations and bondhouses at Bang Su, near Bangkok. To improve operation efficiency at Klong Toei, the project provides for the reallocation of berths between conventional cargo and container ships and the streamlining of cargo handling and container yard operating procedures. Technical assistance, training, and financial studies to help improve the organizational efficiency of the Port Authority of Thailand and a study for the development of ports on the eastern seaboard will also be provided.

## Tri-Port seminar discusses on port modernization: Port of Seattle

Recently, the Port of Seattle hosted the Eighth Biennial Tri-Port Seminar on port technology and shipping innovation. The purpose of the seminar, hosted on a rotating basis by the sister ports of Seattle, Kobe and Rotterdam, is to share common problems and knowledge on changing technology, marketing and other port-related matters. Attendance was not limited to port personnel, but also included government representatives, shipping and trade interests who participated in discussions on topics such as the UNCTAD liner code, terminal productivity, ship technology, international economics and marketing techniques. Some of the predictions for the future of the port industry call for much larger ships, larger terminals and the implementations of continuous loading and unloading systems at ports. These new demands will result in even

greater financial pressures on ports according to several of the speakers. In looking ahead to the next 20 years, R.P.M. DeBok, managing director of the Rotterdam-based shipping firm of Ruys & Company, sees a continuing increase in container usage from the present 50 percent of current liner trade to 80 percent by the year 2000. The availability and cost of financing the necessary port improvements were identified as key problems for port planners and managers. (AAPA ADVISORY)

## Brazilian ports news brief

- The new Planning Program of Portobrás, covering from 1980 through 1983, foresees the investment of 50 billion cruzeiros in expansion and modernization works of Brazilian ports.
- During the first six months of 1980, cargo handling of the twelve largest Brazilian ports has shown an increase of 16% with respect to the same period of last year, the main feature being the corridors of Paraná—Santa Catarina and of Amazonia.
- Cia. Docas de Santos, whose concession expires on the 7th of November, to be replaced by CODESP (to be subordinated to the Portobrás System) shall receive an indemnity of 1.1 billion cruzeiros. The Gaffré-Guinle Group, which so far was exploiting the Port, intends to invest these resources in other activities like agriculture and cattle breeding and information.

## Modern container terminal to be open for business in 1982: Port of Halifax

The new Fairview Cove Container Terminal presently being completed by the National Harbours Board at the Port of Halifax in Nova Scotia is to be operated by Ceres Stevedoring Company Ltd.

The lease for the 50-acre, one berth, container, RoRo facility was signed on last October 24th. in Ottawa, and was formally announced by the Hon. Gerald A. Regan, federal Minister of Labour and Minister for Fitness and Amateur Sport who is a Member of Parliament representing a Halifax riding.

Although all the terms of the lease have not been disclosed; it is known that the time period covers many years, and requires Ceres to provide container cranes and handling equipment.

In an announcement from Montreal, Ceres Vice-President Ron McBrearty says they expect the terminal to be open for business in April 1982, when two modern high speed container cranes, and ancillary equipment will be completely installed.

The Fairview Cove site is capable of being expanded in stages to eventually comprise three berths, with well over 100 acres in backup land. The site is directly serviced with CN Rail container-on-flat-car trains that move containers to CN inland terminals overnight to Montreal and then to other interior intermodal points in the CN system at Toronto, Hamilton, Windsor (Detroit), and Chicago.

The Port of Halifax increased its container traffic to 2.1 million metric tonnes in 1979 representing 32 percent of the total traffic at eastern Canadian ports, and a 1 percent increase in market share.

## Copper: an important traffic for Port of Montréal

Canada is one of the world's leading producers of copper. The average annual production of newly mined copper in Canada exceeds 700 000 metric tonnes, placing it in fourth place in the world after the United States, the U.S.S.R. and Chile. Canada is also a large exporter of copper, both as primary metal and in the form of copper and copper alloy products, and the Port of Montreal plays an important role in this exportation.

In the case of copper products such as rod, wire, sheet and strip, tube, forgings and castings, the major exports are in copper wire rod and tube and the total tonnage, about 60% is shipped through the Port of Montreal.

From these export figures, the significance of the Port of Montreal in the international trade of the Canadian Copper Industry is very apparent. These exports are of vital importance in the balance of payments and to the Canadian economy as a whole.

## South Carolina State Ports news

### • Budget slightly higher

A \$23,758,779 budget was approved August 19 by the State Ports Authority's governing board for fiscal year (FY) 1980-81, which began July 1.

This figure exceeds last year's actual revenues by only \$377,096. However, tariff increases to be implemented October 1 are not included in the new budget.

Operating expenses, including depreciation, are budgeted at \$22,348,146. Non-operating income, which includes interest earned, is expected to be \$1,053,900.

Total budgeted net income is \$2,464,533, before the effects of tariff increases, compared to FY 1980 actual income of \$4,937,925.

FY 1981 cargo volume is projected to total 4,388,499 tons at Charleston, Georgetown and Port Royal, compared with 4,367,911 recorded during 1979-80. Break-bulk tonnage forecast to decrease by 10,663 and container tonnage to increase by 27,443. Bulk handling is expected to increase by 3,758 tons.

Also approved was a \$3,453,446 capital budget to provide funds from authority operations for equipment upgrading and facilities improvements.

### • Tonnage record for fiscal year '79-'80

Another fiscal year tonnage record has been established by the State Ports Authority, surprising in view of world economic conditions. The fiscal year runs from July 1 to June 30.

Terminal facilities at Charleston, Georgetown and Port Royal handled 4,367,911 tons of cargo, 87 percent of which was general (containerized and break-bulk). The 1979-80 figure exceeded that of a year earlier by just 2,766 tons but easily surpassed the budget forecast of 4,316,439 tons.

It was not a good year for imports of containerized and break-bulk commodities, that total dropping 287,852 tons. Exports, however, climbed 187,822 tons, and bulk commodities (fresh fruit is included in break-bulk) were higher by 102,796.

Exports at all SPA terminals totalled about 2.9 million tons and imports 1.5 million, continuing the state's favora-

ble trade balance. Percentage-wise, the ratio was 67-33.

Although not record highs, containerized cargoes totalled 1,819,230 tons; break-bulk, 1,352,740, and bulk, 1,195,941. SPA tonnage at Charleston totalled 3,701,284; at Georgetown, 606,599, and Port Royal, 60,028.

## Labor cargoes remain strong: Corpus Christi

The labor-intensive business of handling bagged commodities going into export markets continues strong at the Port of Corpus Christi.

About half of the 150,000 tons of bags moved during the first 10 months of 1980 were sacked locally. This provided significant employment in the bagging operations, in transportation and in vessel loading.

General cargo dock utilization has been high in 1980 with total tonnage moving over the them through October topping 208,000 tons. That is ahead of the pace in 1979 when 199,000 tons were recorded during 12 full months.

For the second year in a row the Port has moved more than 160,000 bales of cotton—another cargo that sparks employment. An important new commodity in 1980 has been foreign steel imported for construction projects in Mexico. During 10 months this accounted for 35,000 tons moved over the general cargo docks.

A third facility for bagging commodities for export was opened at the Port in 1980. Mahone Grain Co. is utilizing rail unloading and grain storage facilities which were formerly operated by CPC International. Grain bagged at the new plant is trucked to the Port's cargo docks for shipment.

While the Port remains ahead in those cargoes that produce a significant number of jobs on the waterfront, 10-month figures showed an overall tonnage decline of 12 per cent. The January-October total for all port divisions was 44.3 million tons compared to 50.5 million for the same period in 1979.

## \$61 million Los Angeles Main Channel Deepening Project

A lengthy quest for approval to deepen the Main Channel of the Port of Los Angeles from -35 to -45 feet culminated last October with the beginning of work on an over \$61 million dredging project by the Port and the U.S. Army Corps of Engineers.

In the joint endeavor, the federal government will provide \$26.7 million while the Port's portion amounts to \$34.6 million. Included in the latter figure is a five million dollar sewer outfall facility being financed by the Department of Public Works of the City of Los Angeles.

The dredging project is vital to the Port's continued leadership among West Coast harbors. When dredging is completed, the harbor will be able to accommodate the 35% of the world's container vessels which cannot use the -35 foot channel.

The 30-month project will involve removal of 14 million yards of dredge material from the channel bottom which will be used to create 190 acres of new landfill and an additional 190 acres of shallower water habitat in the Port's Terminal Island District.

The Port of Los Angeles' attempts to obtain the necessary approvals for the channel deepening are traceable to 1964 when the Harbor Department first requested authori-

ty for the Corps of Engineers to study the feasibility of the project.

In July 1968, the Corps initiated the use of a hydraulic model study for San Pedro Bay at its Vicksburg, Miss. facilities. This model enables Corps personnel to simulate the effect proposed projects such as the dredging and landfill will have on tidal surges, wave action and circulation.

In the ensuing 16 years, Port officials have consulted with various governmental agencies including the office of Congressman Anderson, to assure that the proposed project will not adversely affect environmental conditions in the harbor. In so doing, approvals have been obtained for the deepening from the U.S. Fish and Wildlife Service, the California Department of Fish and Game, the National Marine Fisheries Service, Least Tern Recovery Team, California Coastal Commission, California Water Quality Control Board and, of course, the Corps of Engineers.

The final obstacle to the project was eliminated in June when the Port and the Corps elected to use an electric rather than a diesel dredge to reduce air pollution during construction.

Historically, the Port's dredging can be traced as far back as 1871 when the Main Channel entrance and parts of the harbor were deepened to 10 feet. Ten years later, another five feet were removed. Dredging to the current Main Channel depth of -35 feet was completed in 1928.

The Port of Los Angeles has the distinction of being one of the world's largest man-made harbors. The current project will assure that even the largest of the world's fifth generation containerhips will have access to the harbor's diverse facilities.

## **SAVE OUR PORT programs for 1981: Port of New York & New Jersey**

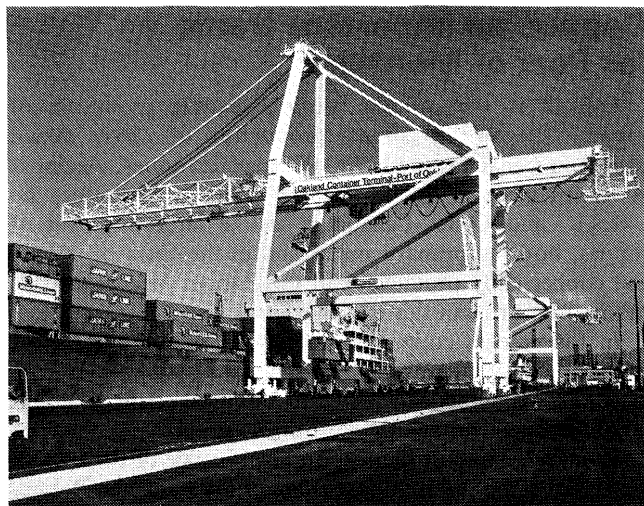
Herbert J. Buehler was reappointed Chairman of SAVE OUR PORT! by its Executive Board at the last December meeting. In other actions, Chairman Buehler announced a restructuring of the Executive Board and committee assignments.

Committee assignments for the year 1981 are as follows:

| CHAIRMAN            | COMMITTEE                          |
|---------------------|------------------------------------|
| Daniel B. Curll III | Disposal Alternatives              |
| John Wilson         | National and International Affairs |
| Allan Tumollilo     | Legislation and Regulation         |
| Edward Harrington   | Permits                            |
| Joseph McNamara     | Public Information                 |

"These organizational changes were necessary to carry out the programs planned for the coming year," stated Chairman Buehler. "They will enable us to utilize better the various skills and expertise of our members. Our goal is to find a permanent solution to the problem of the disposal of dredged material—one of the most serious problems to face our port during the 1980's. I believe this new committee alignment will greatly enhance this important effort."

Chairman Buehler also discussed some of the accomplishments of SAVE OUR PORT! during the past year. "One of our primary objectives was to bring to the attention of key government, business and labor leaders, the media and the general public the serious economic consequences of this situation."



Second Paceco Portainer® crane for Universal Maritime Services at Red Hook Terminal, Brooklyn, New York will be similar, with the addition of a box girder boom, to this Modified 'A' frame model at the Oakland Container Terminal, Port of Oakland, California.

"Our message is simple," Buehler continued. "If we cannot dredge our channels and berths, the greatest port in the nation will close. The economic vitality of this region depends on it. The growing list of members of SAVE OUR PORT! demonstrates our success in carrying this message to the leaders of this region."

Chairman Buehler then outlined some of the major objectives of SAVE OUR PORT! for the coming year:

- Develop specific recommendations for streamlining the dredging permit process.
- Promote the continuation of ocean disposal of dredged material as being the only viable economic and environmental alternative.
- Provide guidance to individual companies experiencing problems in obtaining dredging permits.
- Stress the need to suspend bio-accumulation testing pending refinement of the testing procedure and the establishment of reasonable criteria for evaluating the level of containment in dredged material.
- Monitor and assist the progress of the State of New York in cleaning up the PCB "hot spots" in the upper Hudson River.
- Intensify our efforts to increase public awareness of this problem both in this region and across the nation.

## **BTDB Chairman re-appointed**

The Minister of Transport, the Rt. Hon. Norman Fowler, M.P., has announced the re-appointment of Sir Humphrey Browne, C.B.E., as Chairman of the British Transport Docks Board (in accordance with the Transport Bill proposals to be re-named British Ports) for a further period to the 31st October 1982.

## British ports can make progress, profits despite problem: BTDB Managing Director

"The port industry in the UK is operating against deep-seated, structural, historical and commercial disadvantages. Nevertheless, it is possible for port authorities to make progress over a period of time and to operate profitably, provided they are prepared to take hard decisions early enough".

These were the main conclusions presented by Mr. Keith Stuart, Deputy Chairman and Managing Director of the British Transport Docks Board, in his talk entitled "Ports in the Market Place" delivered in London recently to a meeting of the Chartered Institute of Transport.

Comparing the British port industry to a market place, Mr. Stuart pointed out that the dramatic improvement in internal communications—motorway and freightliner—had increased competition between ports. At the same time, UK port authorities could do little to increase the total size of the business available to them, thus limiting their marketing efforts to fighting for market share.

These facts, combined with the size and power of the major shipping companies and conferences which make up the ports' prime customers, meant that demand for port services had become very much a buyer's market.

The container revolution of the past 15-20 years had also brought special pressures to bear on port operators. "We have been asked," said Mr. Stuart, "to tear down the stalls in the market place, uproot their foundations, build entirely new structures to meet the demands of the unit

load revolution, and to do all this while still trading in the same locations for the pre-containerisation trades."

The rigidity of the Dock Labour Scheme and the deepening recession brought other problems which some ports were failing to cope with.

Nevertheless, Mr. Stuart continued "My main theme tonight is that despite all these problems it is possible for the port industry to survive and to contribute positively to the national economy." Mr. Stuart went on to explain how the BTDB, Britain's largest port authority, were still managing to operate profitably "despite the adverse legacy from the past, and the bitterly cold wind of recession now."

The key elements in BTDB policy, said Mr. Stuart, had been the phasing out of obsolete capacity and investment in new technology, partly by risk investment and partly by expenditure based on firm guarantees from customers. Another key element had been the determination of BTDB to apply continuous pressure to keep the size of the workforce adjusted to match requirements, in order to avoid the build-up of crises.

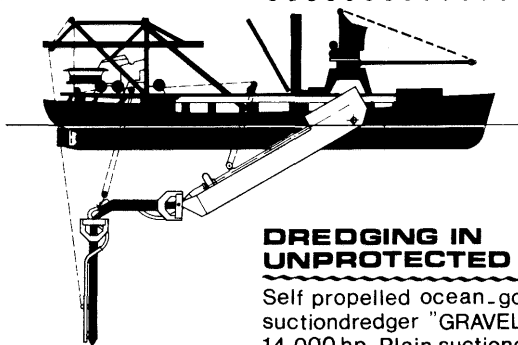
The BTDB had also expanded its participation in stevedoring in order to make the best use of the substantial investment in port facilities, and in order to encourage improved industrial relations.

It was also BTDB policy, said Mr. Stuart, to get in quickly when new market opportunities presented themselves.

Turning to the results of these policies, Mr. Stuart presented figures showing the progress made from 1970 until last year: profit up from £4½ million to £27 million,

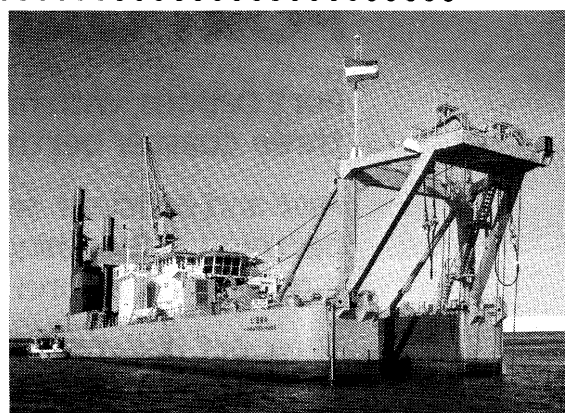
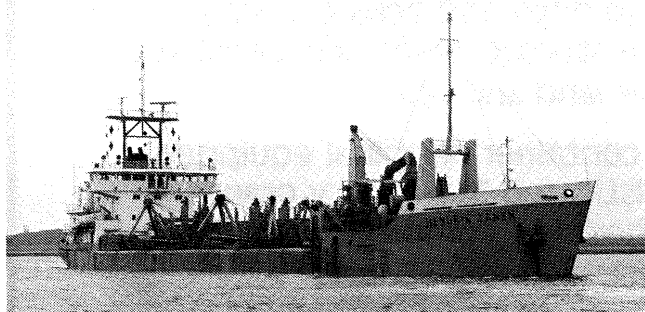
(Continued on page 45)

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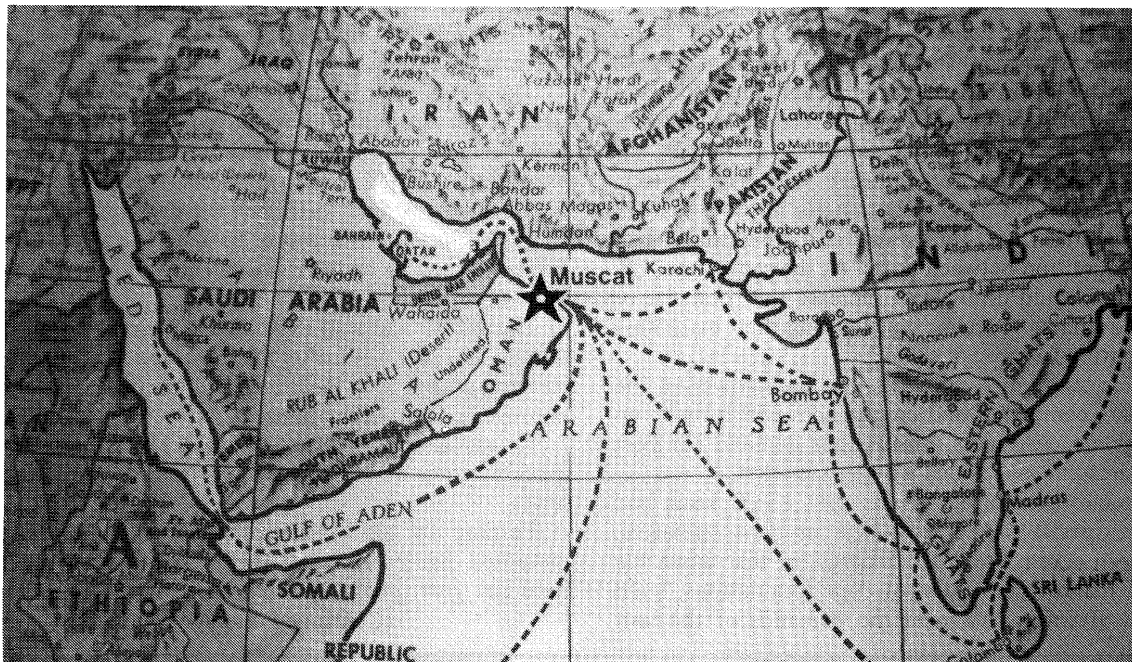
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The construction of a container terminal equipped with two highly sophisticated 35T gantry cranes is well ahead of its scheduled completion date of November 1981.



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**The General Manager**

Port Services Corporation Ltd. P.O. Box 133, MUSCAT Sultanate of Oman

Tel: 772191, Telex: 3233 MB Muscat

(Continued from page 43)

return on capital from 3.5% to 15.1%, reserves up from £8 million to £86 million, and market share from 19% to 25%.

Dealing with the up to date situation in the industry, Mr. Stuart said "The BTDB are not immune from the effects of recession, but our business is soundly based, with the emphasis on the new technologies and a continuing programme of investment. We continue to make a positive contribution to the national economy."

### **Port management conferences: Port of Le Havre**

The Teaching and Research Institute for Port Affairs, set up by the Port Authority and the Havre Chamber of Commerce, will shortly be holding, in association with the Ecole Nationale des Ponts et Chaussées, a series of conferences devoted to the organisation, management and day-to-day running of ports.

The conferences will be held in Le Havre during the five weeks from March 9th to April 11th and are intended for senior management from ports, government departments and private firms connected with ports and shipping. They will be backed by visits to port facilities in Rouen, Rotterdam and Le Havre.

Full details of the programme and how to enrol can be obtained from I.P.E.R., 1 rue Emile-Zola, 76090 Le Havre Cedex.

### **Mr. Mohd Hashir bin Hj. Abdullah appointed new Director-General: Kelang Port Authority**

Encik Mohd Hashir bin Hj. Abdullah, the Deputy Director General has been appointed the new Director General of the Kelang Port Authority. He takes over from Encik Harun Din who has been transferred to the Public Services Department. Encik Hashir's appointment is effective from 1st January this year.

He joined the port in 1964 as its Chief Accountant. In 1970 he was appointed the Managing Director of the Cargo Handling Corporation, a subsidiary company of the Port Authority. He also served as Chairman of the Port Transport Industry Joint Council. When the Port Authority took over the provision of wharf handling and stevedoring services in May 1973, Encik Hashir returned to the Port as the Director Operations until his appointment as Deputy Director General in 1977.



### **HANSHIN (OSAKA BAY) PORT DEVELOPMENT AUTHORITY**



Kobe C. I. T. Bldg.

1-14, 5 - chome, Hamabe-dori, Chuo-ku, KOBE, JAPAN.

# Observation Tour to Toyota and of the Traditional and Fascinating Attractions at the Port of Nagoya

During the forthcoming IAPH Conference in Nagoya, on May 28, Thursday, the Host is planning to conduct a guided tour for the Conference participants to Toyota Motor plants and in the afternoon to show "Raftman's log-rolling", a traditional cultural art of the City of Nagoya, following the tree planting ceremony at the Garden Pier of the Port of Nagoya. So we wish to introduce you to the background of Toyota Motor Co., Ltd. and "Raftman's log-rolling".

## Toyota Motor Co., Ltd.

Toyota Motor Co., Ltd. was founded in 1937. Its history of less than half a century has seen a great war, an unprecedented defeat for the country and its consequential social conditions, all of which the company had to squarely face.

Nevertheless, Toyota has kept on producing automobiles with its efforts directed to surpassing international standards of quality and emerging as "Toyota of the world".

It now has attained sufficient status to be so called and was, if traced back to its origins, a small automobile research laboratory lying in an obscure corner of an automatic loom plant which supplied weaving machines to the then flourishing local textile industry.

In 1959, the Motomachi Plant specializing in passenger vehicles started operation with a system of mass production, and Japan's motorization age commenced. However, the total number of the cars produced in that year was only 50,000.

In 1980, Toyota's ten plants produced altogether a variety of automobiles totalling 300,000 units per month. Toyota has achieved phenomenal growth and the variety of automobiles which Toyota now produces ranges widely, from diversified types of passenger vehicles to trucks and even to forklifts which operate at ports and harbors.

Toyota vehicles to be exported are loaded at and shipped from Nagoya Port, so we decided to introduce its factories to our conference participants, and it is through them that we wish you to have a good understanding of Nagoya Port.

## Raftman's Log-Rolling

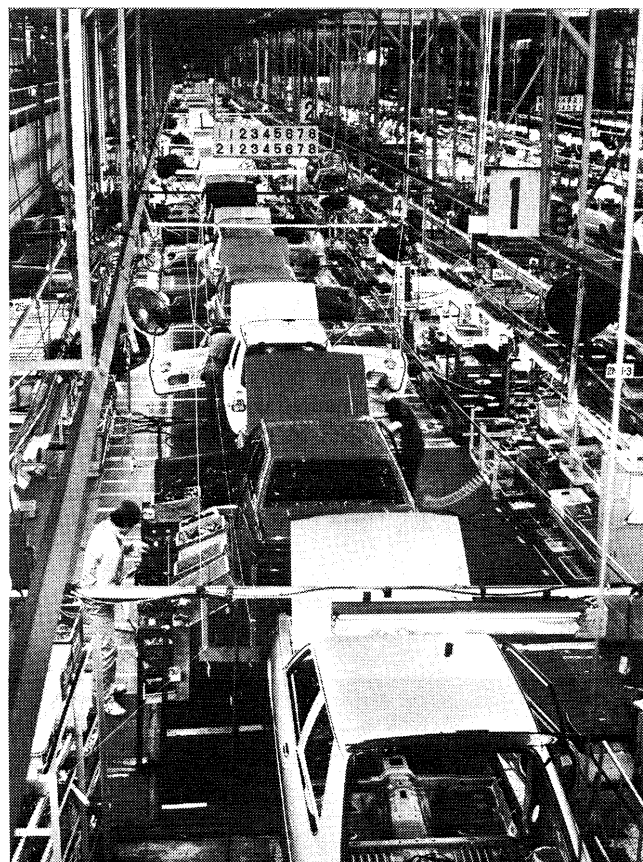
### Introduction

The performance of the feat of "raftman's log-rolling" is a local tradition, and in 1954, Nagoya City Government designated it as an intangible cultural asset.

Its history goes back a very long time. Far behind the City of Nagoya lies Mt. Kiso. The thickly forested mountains have long been counted as a leading timber production area in Japan, and the quality is outstanding and rarely comparable even throughout the world.

Nagoya forms a distribution center for this timber. It is assembled into many rafts which run down the rivers Kiso and Hida which originate in Mt. Kiso and emptying into the Port of Nagoya.

Raftmen in Nagoya have been trained how to roll and



**An automobile assembly plant**

twirl logs, how to assemble them together into a raft, and how to maneuver a raft along a swift river and so on.

These skills have, notwithstanding the advent of modern cargo handling methods, been handed down from one generation to the next.

The performance of the log-rollers and their eye-catching feats are always carried out with traditional elegance, and the art will be passed on for many years to come.

This traditional Japanese feat was introduced at the timber festival of the Montreal EXPO in Canada in July 1967, and drew thunderous applause.

Again, in 1974, a world championship was held in Canada, where the honor of the world championship was won by Nagoya rafters providing their excellent skills to the whole world.

The demonstrations for the Conference participants will include the following performances which were developed from their day-to-day work skills:

### Hook and paddle log riding

This is the most basic art for a rafter. He jumps on a log 3.8 meters long and 28 cm across. On the center of the log he stands firm with two feet. Then he paddles

across the water with a long bamboo pole with a hook on one end and tries to reach the other side as quickly as possible.

### Square log rolling

The rafter keeps balance with a long bamboo pole in his hands. He rolls a square log 6 meters long and 30 cm wide in a manner of stepping water-mill vanes using his waist and leg strength. The rolling square log rushes forward splashing water behind.

### Fast-running on a foot-hold

Seven to eight logs, each measuring 3.8 meters long and 28 cm across are arranged in a long line and the rafter runs swiftly from one end to the other end of the line. If he does not run swiftly enough, each joint rises and falls throwing him off balance. This is why he keeps long bamboo pole in his hands. A speedy, thrilling and heroic game.

### Log rolling match

This is a pleasant-to-look-at game.

Two contestants go on the same log. Each player tries to roll the log back and forth, rocking it up and down, kicking water against the opponent and so on. By thus doing, if a player can throw the opponent twice into the water, he wins.

In this game, logs come in three kinds; one measuring 4 meters long and 38 cm across, the second; same length and 34 cm across, and the third; same length and 30 cm across. For the first 2 to 4 minutes, log rollers compete on the heaviest and when no decision is made, they shift to the second log, and so the game goes on to the third, the lightest.

Competitions are conducted in the U.S.A., Canada and some other countries. In the world championship in Canada in 1974, Nagoya Port rafters participated, and gained the honor of being the first Japanese champions.

### Acrobatic rolling

On a round log 4 meters long and 45 cm across stand a clown wearing a pair of spiked shoes, a gentleman wearing a morning coat and roller skates and a farmer carrying on his shoulder a pole with a water-melon hanging from each end.

While the clown rapidly rolls the log with his spiked shoes, the gentleman tries to reach his wedding place and the farmer the market.

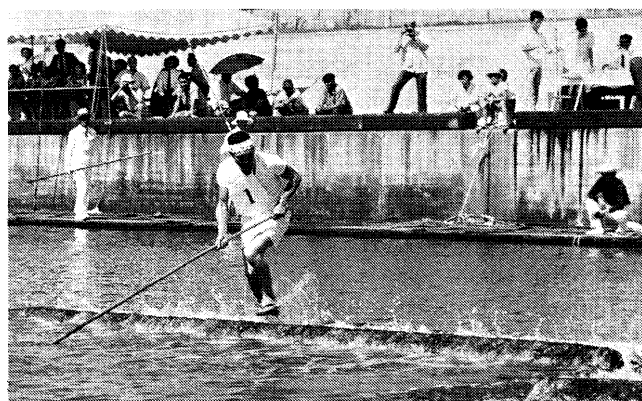
### Palanquin bearing

A "Palanquin" is a sort of box wagon made with split bamboo pieces hanging from a long pole. When being transported, a passenger rides in it and two bearers carry the pole on their shoulders. Until about 1860, it was one of the typical transportation modes in Japan.

Now in this performance, a palanquin with a young lady in it is borne on the shoulders of two bearers each standing on a different square log which is hard even for a single person to ride on.

Keeping good balance and in tune with each other, they carry their passenger in the palanquin, which is a next-to-impossible difficult skill.

At the championship held in Hayward, U.S.A. in 1965, the Japanese team won victory in the acrobatic rolling section.



Square log-rolling



Log-Rolling



Palanquin bearing

## PSA Training Course for 1981-1982

1. The Port of Singapore Authority (PSA) offers to share its experience in port management and operations through a number of training courses designed especially for participation by local and overseas personnel who are in the port and port-related industries. These courses provide a useful forum for participants from various countries to exchange ideas and experiences.
2. See chart below.
3. Methods of instruction include lectures, discussions and programmed visits to operational and administrative departments of the PSA and other institutions/organisations in the Republic. Training aids will be extensively used and participants will be provided with comprehensive lecture notes on subjects covered.
4. The medium of instruction is ENGLISH and participants are expected to have a good working knowledge of the English Language.
5. Should you have further enquiries regarding these courses, please write to:—

Manager (Training), Port of Singapore Authority  
Tanjong Pagar Complex, 280, Tanjong Pagar Road,  
Singapore 0208, Republic of Singapore  
Telex: RS 21507; Cable TANJONG Singapore  
Tel: 2217711

### 6. PSA Course Calendar 1981-1982

| COURSE TITLE                                      | FEES<br>\$S | Duration<br>in weeks | 1981 |     |     |     |     |     |     |     |     | 1982 |     |     |     |     |     |     |     |     |
|---|-------------|----------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
|   |             |                      | MAR  | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | MAR  | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV |
| MANAGEMENTS & ADMINISTRATION COURSES              |             |                      |      |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |
| Port Management & Operations                      | 1,200       | 3                    |      |     |     |     |     |     | 14  | 2   |     |      |     | 31  | 18  |     |     |     |     |     |
| * Port Policing & Security                        | 1,000       | 3                    |      |     |     |     |     |     | 5   | 23  |     |      |     |     |     |     |     |     |     |     |
| PORT OPERATIONS COURSES                           |             |                      |      |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |
| * Training for Operations Instructors             | 1,600       | 6                    | 2    | 10  |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |
| Attachment Training at PSA's Conventional Wharves | 600         | 2                    | 2    | 13  |     |     |     |     | 5   | 16  |     | 1    | 12  |     |     |     |     | 4   | 15  |     |
| Attachment Training at PSA's Container Terminal   | 600         | 2                    | 16   | 27  |     |     |     |     | 19  | 30  |     | 15   | 26  |     |     |     |     | 18  | 29  |     |
| Cargo Operations at Conventional Wharves          | 1,200       | 4                    |      |     | 4   | 29  |     |     |     |     |     |      |     | 3   | 28  |     |     |     |     |     |
| Ships' Lifting Systems                            | 1,000       | 3                    |      |     |     | 1   | 19  |     |     |     |     |      |     | 31  | 18  |     |     |     |     |     |
| Planning & Operations of a Container Terminal     | 1,200       | 4                    |      |     |     |     | 13  | 7   |     |     |     |      |     |     | 28  | 23  |     |     |     |     |
| SAFETY COURSES                                    |             |                      |      |     |     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |     |
| Ship Inspection                                   | 400         | 1                    | 2    | 6   |     |     |     |     | 5   | 9   |     | 1    | 5   |     |     |     |     | 4   | 8   |     |
| Principles of Fire-Fighting                       | 400         | 1                    |      |     |     |     |     |     | 12  | 16  |     |      |     |     |     |     |     | 11  | 15  |     |
| Shipboard Fire-Fighting & Prevention              | 400         | 1                    |      |     |     |     |     |     | 19  | 23  |     |      |     |     |     |     |     | 18  | 22  |     |
| Oil Spill Control                                 | 400         | 1                    |      |     |     |     |     |     | 26  | 30  |     |      |     |     |     |     |     | 25  | 29  |     |
| Oil, Chemical & Liquefied Gas Tanker Safety       | 1,000       | 3                    |      |     |     |     |     |     |     | 2   | 20  |      |     |     |     |     |     |     | 1   | 19  |

NOTE: (a) \*These courses are offered once in every two years.  
(b) No courses are offered during the months of December to February.  
(c) Dates and fees for 1982 training courses are subject to changes.

## New Chairman: Wellington Harbour Board

Mr. John King—The member for Feilding and the five countries of Kiwitea, Oroua, Pohangina, Kairanga and Manawatu—is the new chairman of the Wellington Harbour Board.

His election as chairman was made at the last November meeting of the board, following the retirement of the former chairman, Mr. H.A. James.



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the way we fly.**



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the 12th Conference of IAPH  
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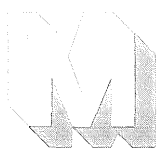
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