

# PORTS *and* HARBORS

March, 1982 Vol. 27, No. 3

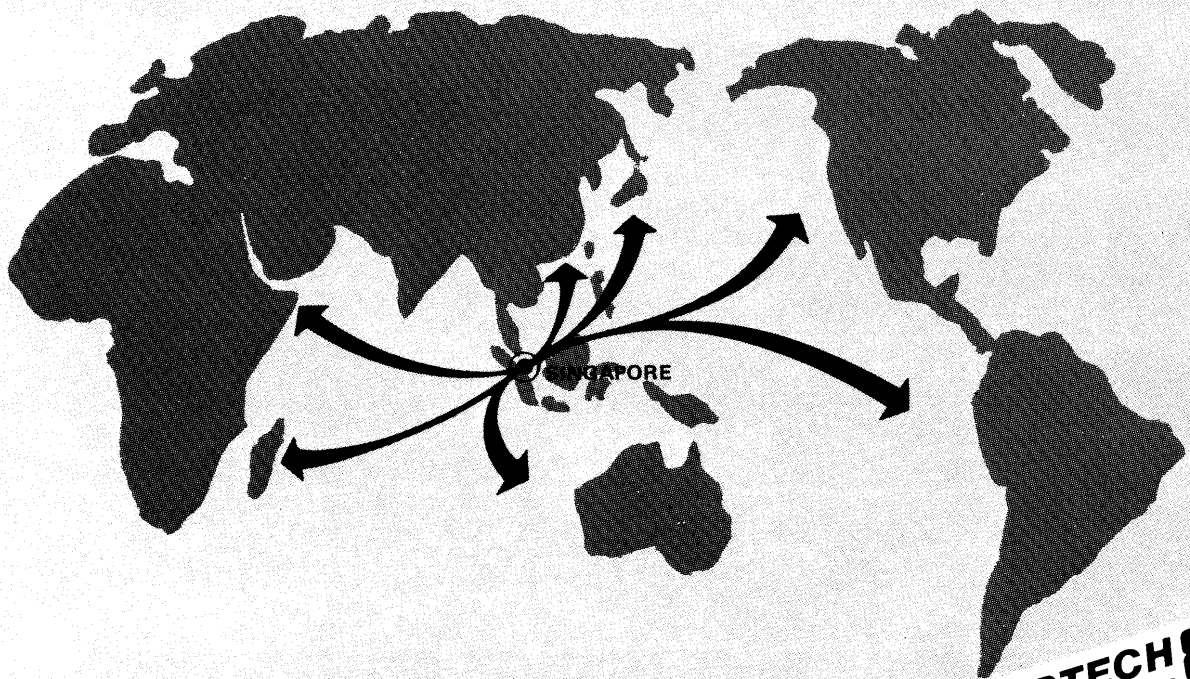


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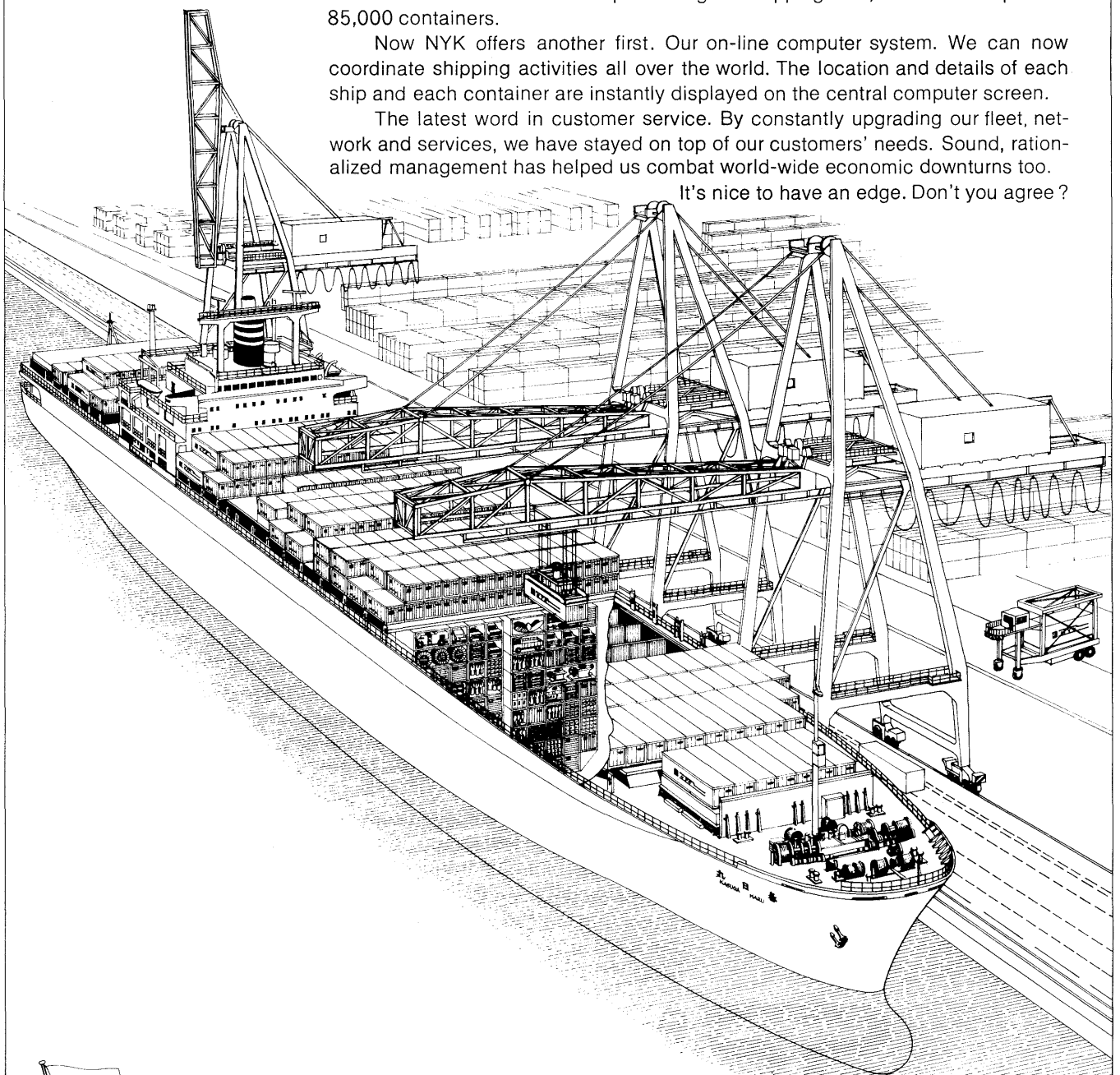
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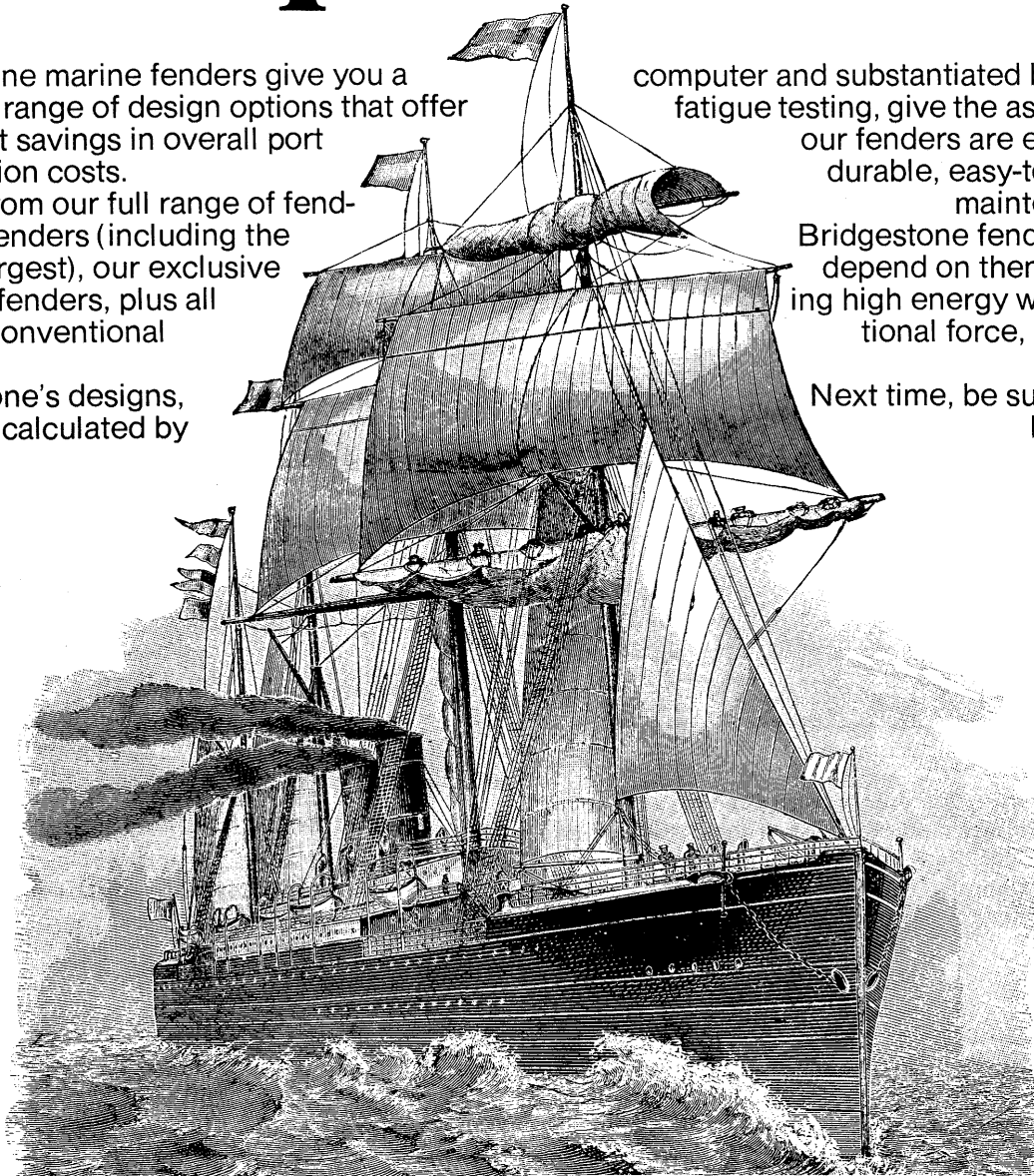
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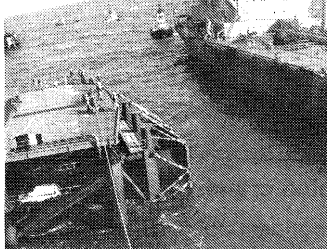
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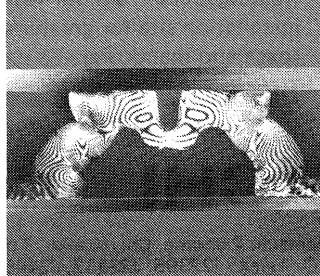
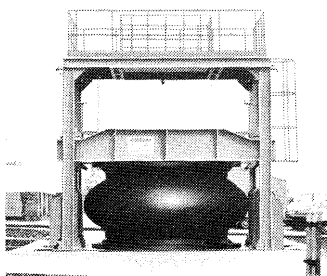
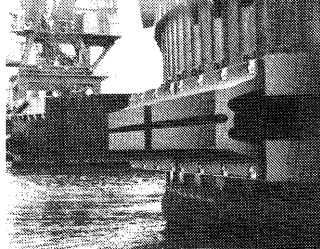
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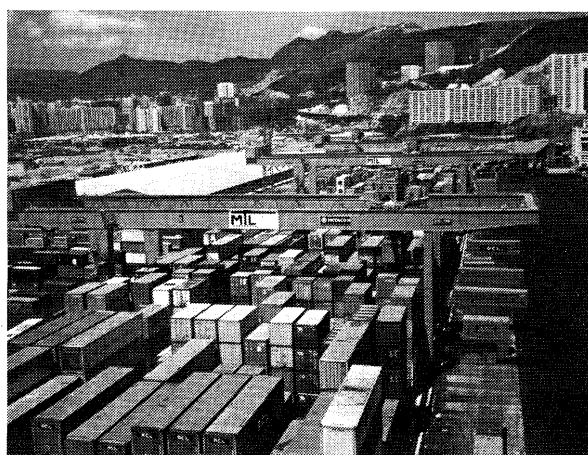
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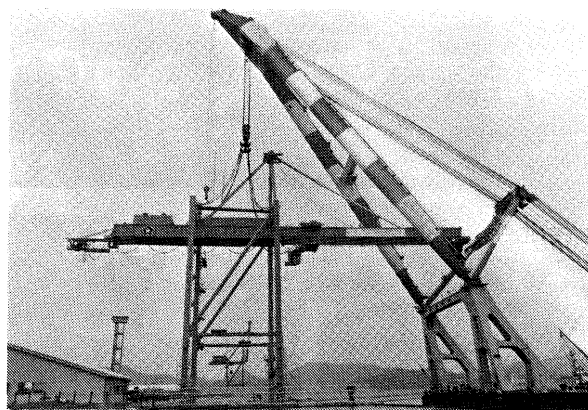
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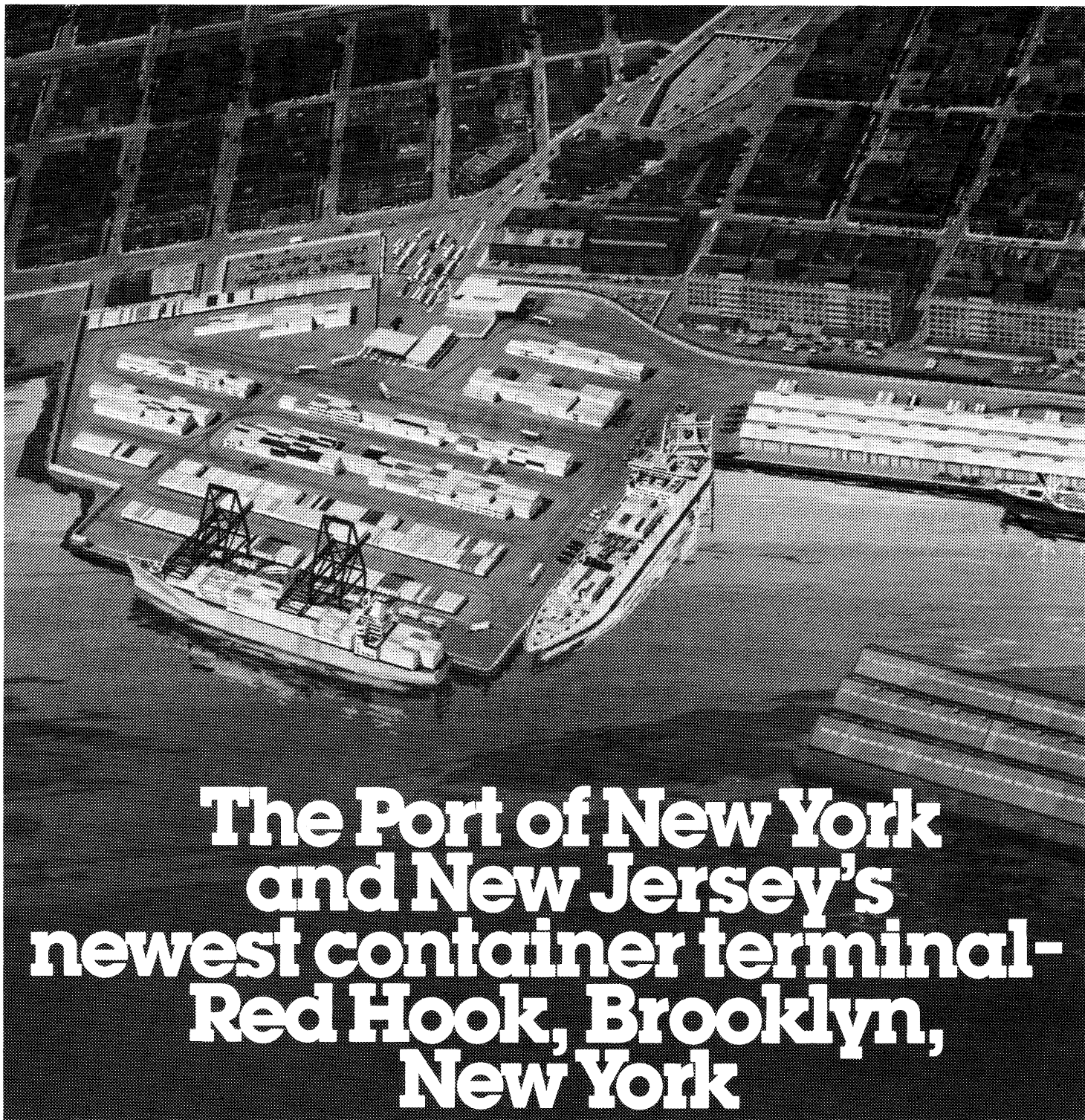
## CONTENTS

	Page
<b>IAPH announcements and news:</b> . . . . .	7~14
Container Handling Statistical Return, Mail completed forms now to Houston please—Mr. W.C.N. van Horsen of Rotterdam appointed a member of the Public Affairs Committee—IAPH Representatives at IMCO's Informal Meeting of Working Group in Stockholm—President Mayne to be a main representative at the Portech 82 at Singapore—UNIDROIT: 3rd Session on Draft Convention on the ITO Liability attended by IAPH Representative—ICC Paper: "The Dynamics of Development" by Sir Arthur Lewis, Nobel Prize Winner—Quadrennial Report (1978/1981) of IAPH submitted to U.N.—A big X'mas present from the Nagoya Conference Organizing Committee—Mr. Yoshio Hayashi retires—Membership Notes	
<b>Open forum, port releases:</b>	
Port Development in N.S.W. in the Eighties (By John M. Wallace, President, Maritime Services Board of N.S.W., Sydney) . . . . .	15
The Dynamics of Development (By Sir Arthur Lewis) . . . . .	20
<b>International maritime information:</b>	
<b>World port news:</b>	
Report on the 10th Conference of the International Association of Lighthouse Authorities, Tokyo, November 1980 (By Ribadeau-Dumas, French Lighthouse Service) . . . . .	28
Container Berth No. 4: Georgia Ports Authority . . . . .	35
East Asian container handling at HHLA may exceed a quarter of a million TEU: Port of Hamburg. . . . .	38
PSA Training Courses for 1982/1983 . . . . .	47

**The Cover:** Sydney Harbour on a Sunday afternoon is NSW's favourite pleasure boating waterway. (Photograph by John Early of Aerovision).

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# The Port of New York and New Jersey's newest container terminal- Red Hook, Brooklyn, New York

Through the combined efforts of the State of New York, the City of New York and The Port Authority of New York and New Jersey, construction is now nearing completion on the new 1,000,000-ton capacity Red Hook Container Terminal in Brooklyn, New York, which has been leased to Universal Maritime Service Corp. This new container terminal, capable of handling Ro/Ro, as well as container and breakbulk vessels, is being completed at a cost of \$20,000,000. It will have a 1,000-foot-long container berth supported by two cranes and

40 acres of upland area. Approximately 30,000 containers are expected to move via Red Hook each year and the facility will have the capability of handling trucks on a 100 percent appointment system. The site enjoys exceptional navigational advantages since it is located along Buttermilk Channel where the Corps of Engineers maintains a depth of 40 feet.

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# IAPH announcements and news

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## Container Handling Statistical Returns — Mail completed forms to Houston now please

The technical committee on Cargo Handling Operations (formerly called the Containerization, Barge Carriers and Ro/Ro Vessels), whose chairman since the Nagoya Conference is Mr. Richard P. Leach, Executive Director, Port of Houston Authority, agreed at the 12th Conference that the above survey should be continued and that the objectives of the study would remain the same. These are;

- (1) To enable the comparison of berth and crane performances of various terminals throughout the world.
- (2) To ensure uniformity of definitions.
- (3) To encourage maximum involvement of the ports handling cellular ships.
- (4) To achieve the above while still preserving confidentiality.

The survey was originally initiated by the Committee under the chairmanship of Mr. Ben E. Nutter in 1975 and taken over after the 10th Conference (1977) by Mr. R.T. Lorimer (Auckland, New Zealand) who as chairman continued and extended the survey and regularly made available a quarterly report during the periods 1978/1980 to all participating members.

The new Chairman, Mr. Leach, continuing that already achieved by his predecessors, wishes to up-date the basic information form in the simplest way, thereby encouraging maximum involvement of the Association's membership. To that end the Committee plans to revise this form at its meeting at Aruba, May, this year and Mr. Leach wishes all members to mail the statistical return, covering the periods after January, 1981 and using the existing form, to his office at the following address until a new form is agreed upon, by the Committee.

Mr. Richard P. Leach, Executive Director

Port of Houston Authority

P.O. Box 2562, Houston, Texas 77001, USA

It is hoped that members will give their continued cooperation to the committee's survey programs.

## Mr. W. C. N. van Horssen of Rotterdam appointed a member of the Public Affairs Committee

Under the date of January 21, 1982, President Mayne appointed Mr. W.C.N. van Horssen, who is working in the External Affairs Department and specializes in the field of public affairs, as a member of the Committee on Public Affairs for the term until the forthcoming Vancouver Conference.

Mr. Wilson, Chairman of the Committee expressed great satisfaction in having a new representative from the Port of Rotterdam which has supported the committee with great zest through Mr. J. Bax, former chairman who recently retired for medical reasons.

## IAPH Representatives at IMCO's Informal Meeting of Working Group in Stockholm

Mr. A.J. Smith, IAPH Liaison Officer with IMCO, in his recent communication to the Head Office, informed that he and Mr. Sven Zetterstedt (Port of Gothenburg) attended IMCO's informal meeting of Working Group to discuss revision of the Civil Liability Convention 1969 and the Fund Convention 1971, which was held at Stockholm, Sweden, from 7th to 11th December 1981.

Outline of questions which were raised during discussions on the Civil Liability and Fund Conventions were:—

### A. Treaty law questions

1. Form and number of new instruments
2. Conditions for the entry into force of the new instrument/s
3. Denunciation of the old Convention
4. Acceptable combinations of instrument/s
5. Procedures for revising the new instrument/s

### B. Coverage of new instrument/s

1. Extension of application to
  - a) Unladen tankers
  - b) Non-tankers
  - c) Non-persistent oils
2. Extension of geographical scope of application
3. Extension of "preventive measures" to threat situations
4. Scope of the notion of "pollution damage"
5. Compensation in respect of damage caused by oil from unidentified ships

Mr. Smith further informed that the outcome of discussions will shortly be made available for consideration, in the first instance, by members of Committee on Legal Protection of Port Interests.

## President Mayne to be a main representative at the Portech 82 at Singapore

IAPH has been invited to send a representative to the Portech 82 Exhibition to be held June 22-26, 1982, organized by MarIntec S.E.A. (Pte.) Ltd, the publisher of "Maritime Asia" (a sister journal of "Dredging & Port Construction", U.K.) and sponsored by the Port of Singapore Authority.

Recently, Mr. A.S. Mayne, President of IAPH and Chairman of the Port of Melbourne Authority communicated to Mr. Hugh Stanton, the organizer, informing him that, on behalf of IAPH, he accepted his invitation to officiate at the opening ceremony on June 22, 1982 at the Exhibition Hall which is located alongside the World Trade Centre, Singapore.

IAPH co-sponsored jointly with UNESCAP and ICHCA the first three phases of a series of "seminars and exhibitions" known as "Seatec" in 1977, 1979 and 1981 respectively.

If any member is interested in the Portech 82, further information will be available from MarIntec S.E.A. (Pte.) Ltd. 864, World Trade Centre, Telok Blangah Road, Singapore 0409 (Tel: 278/81000/1/2. Telex: 26418 MARTEC).

### **UNIDROIT: 3rd Session on Draft Convention on the ITO Liability attended by IAPH Representative**

Mr. Lennart Bergfelt, Legal Adviser of Port of Gothenburg, in his recent communication to the Head Office, informed that he attended the third session of UNIDROIT Study Group on Draft Convention on the Liability of International Terminal Operators, which was convened from 19th to 21 October, 1981, at Rome.

For the convenience of IAPH members' reference, the text of the preliminary Draft Convention is reproduced in this issue. (See page 9.)

### **ICC Paper: "The Dynamics of Development" by Sir Arthur Lewis**

By courtesy of ICC, which was given to the Association from Mr. E. Leveus of ICC Paris Headquarters (Telex: Dec. 14, 1981), the Association gladly presents Sir Arthur Lewis' paper entitled "The Dynamics of Development", which was presented to the 27th ICC Congress, Manila, November 1981. (See page 20.)

### **Quadrennial Report (1978/1981) of IAPH submitted to U. N.**

In accordance with the provisions set out in paragraphs 35, 36 and 40 of U.N.'s Council Resolution 1296 (XLIV), IAPH, being a non-governmental organization to which Categories I and II consultative status have been granted, submitted a quadrennial report describing IAPH activity towards the enhancement of objectives of U.N. and its affiliated agencies, on December 11, 1981, to Miss Virginia Saurwein, Chief, Non-Governmental Organizations Unit/DIESA, United Nations (New York).

### **A big X'mas present from the Nagoya Conference Organizing Committee**

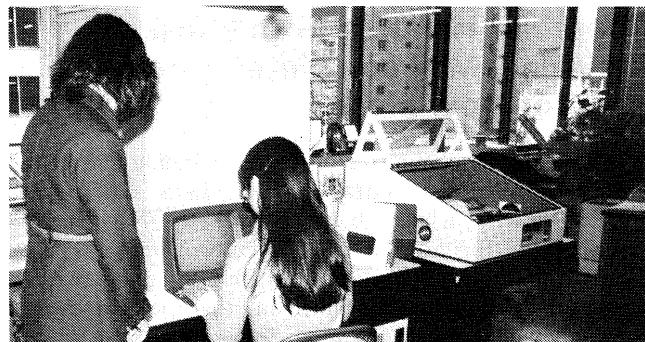
On Christmas day last year, the Head Office staff had a happy surprise when the Nagoya Conference Organizing Committee presented IAPH with a formidable present—an English word processor. This wonderful gift was presented to the Head Office to commemorate the successful 12th Conference marking the 25th anniversary of IAPH held in Nagoya, May, 1981 by its Organizing Committee. The Committee decided to use some surplus money from the unexpectedly generous donations received towards the Conference from local enterprises in order to contribute to the improvement of the efficiency of Head Office work.

The word processing system presented from Nagoya is a WPS-5 model, WANG (U.S. made) and has functions such as, automatic glossary generator, decision processing, mathematical support package, sort package, automatic paragraph numbering/retrieval, column editing, selective retrieval, as well as printing and storage of data.

With the installation of the word processing system, it is hoped that the Head Office work of administering the membership directory and of preparing the various docu-

ments and reports and also the editing of the journal will become much easier and the total efficiency of the office will be greatly improved.

The picture shows the Head Office staff being taught how to use it by an instructor dispatched from the service office, C. Itoh Data Systems Co., Ltd.



### **Mr. Yoshio Hayashi retires**

Mr. Yoshio Hayashi, Under Secretary who served as editor of "Ports and Harbors" until January, 1978, has retired from full time service at the Tokyo Head Office effective January 1, 1982.

Mr. Hayashi officially became a member of the Head Office staff in July, 1967 although he had already been assisting the late Mr. Gaku Matsumoto, a founding father and the first Secretary General of IAPH in editing the IAPH journal (it was then quarterly but became monthly from 1968) and the monthly "News Letter" while he had at the same time been assisting with Mr. Matsumoto's preparatory works for the establishment of the World Trade Center of Japan.

Mr. Hayashi made an outstanding contribution to the affairs of the Association, and in particular maintaining and improving the Association journal and thus uniting our members all over the world, and we are deeply grateful to him for his loyal service, without which the sustenance and present prestige of our journal would have been difficult.

As from 1st January 1982, however, Mr. Hayashi remains as a part time staff member continuing to assist with editing under the Executive Editor and Deputy Secretary General Hiroshi Kusaka.

Mr. Hayashi would like to take this opportunity of sending his best wishes to all members of IAPH and thank them for their cooperation and friendship he received during his tenure of office which he knows will continue to be accepted to our editorial group headed by Mr. Kusaka to ensure the continued progress of IAPH.



### **Membership Notes**

#### **New Member**

#### **Associate Member**

Mr. J. Hope (Class E)

Deputy Chairman, The Townsville Harbour Board  
P.O. Box 1031, Townsville Qld. 4801, Australia

Office Phone: 793254

Telex: AA47334 NAPORT

Cable: NAUSPORT



# **Report from Meeting of UNIDROIT Study Group on Draft Convention on the Liability of International Terminal Operators, Rome, October 19–21, 1981**

**By Mr. Lennart Bergfelt, Legal  
Advisor, Port of Gothenburg**

## **1. Participants**

See list of participants (annex I).

## **2. In general**

The study group discussed the preliminary draft convention on the Liability of Internal Terminal Operators from March 1979 on the basis of views and comments given by states and international organizations.

IAPH was invited by UNIDROIT to give views and comments on the draft convention. Therefore the convention was distributed to the members of IAPH for views and comments in December 1979. The 26th October 1980 the Secretary-General Dr. Sato wrote to the president of UNIDROIT Mr. Mario Matteucci and gave preliminary views and comments on the draft convention.

The discussions in Rome resulted in a new draft convention (annex II).

## **3. Observations and comments**

The wording and definitions were further discussed with a view to more fit for the Liability of Terminal Operators than the warehousing people. Please observe that the warehousing is just a very little and special part of the handling and safekeeping of the goods between various transports. It was pointed out that the ancillary services like loading, stowage, discharging or other similar services in Art. 2 for people in port business in fact were the main purpose for the liability and not just the safekeeping.

One of the main problems has since long been the different opinions within the study group about the conventions character. Should the convention be mandatory as most conventions are, or could some sort of "semimandatory" convention be accepted. (Art. 17 in the previous draft and art. 18 in the new one.) The two German members of the group favoured a mandatory convention of the ordinary type, but could finally accept a reservation clause after the new art. 18 meaning that international terminal operators who expressly or impliedly undertake to apply the convention should have a guarantee for the effect of those rules. The use of the name "International Terminal Operators ITC" shall constitute such an express undertaking. Much resistance have been shown from states and particularly from freightforwarders against the idea of a special authorization. The new idea means in fact that a terminal operator could choose between the liability and other rules in the convention and other laws and regulations in his country.

An incentive for a terminal operator to accept the convention is the proposed general lien in the previous

art. 4. It was very much discussed to delete this article and refer to national law in various countries. The general lien was however kept (art. 5) but restricted to costs and claims related to the actual goods. It was stressed that in standard conditions a wider general lien might be suggested.

The possibility to delete the right in art. 6 (new art. 7) to make agreements on a higher limitation of the liability was discussed. However, the study group found that the interest in following the main principles of the Hamburg-rules made this very difficult, even if the group understood the IAPH position on the matter.

## **4. Standard conditions**

Under the discussions it was more and more obvious that the success for a convention would to a great extent depend on the possibility to reach an agreement between international organizations about standard conditions to be recommended. The CMI representative Professor Rahmberg, stated that CMI in the near future will present a first draft set of standard conditions for international terminal operators. Professor Rahmberg is now also appointed member of the study group, which shows that the two parts—the convention and the standard conditions—really depend on each other and together must be seen as parts of an undivided whole.

## **5. The future**

As mentioned a draft set of standard conditions would soon be elaborated by CMI and circulated and discussed by both the study group and the international organizations. It was proposed that UNIDROIT arranges seminars on the item with people from the practical field—port and stevedoring people. This idea was strongly supported by IAPH who has the problem of not being able to represent most of the terminal operators, which are in most countries the stevedoring-companies. The idea of UNIDROIT taking contact with the informal terminal operators conference for arranging a seminar together was submitted to UNIDROIT and the chairman of the study group Professor Grönfors.

## **UNIDROIT International Institute for the Unification of Private Law Study Group on the Warehousing Contract**

Third session, 19 to 21 October 1981

### **List of Participants**

#### **Members**

M. Kurt GRÖNFORS

— Professor of Law, Institute of Legal

Science, Gothenburg University  
Chairman of the Committee  
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- Conseiller  
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- Organisation of American States (OAS)
- M. Didier OPERTTI BADAN
- Director de la Oficina de Desarrollo y Codificación de la Secretaría General de la OAS  
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- M. François MENGIN,  
Research Officer

### **Text of the Preliminary Draft Convention on the Liability of International Terminal Operators (ITOs) Adopted by the UNIDROIT Study Group on the Warehousing Contract at its Third Session, Held in Rome from 19 to 21 October 1981**

#### Preamble

The States Parties to the Present Convention,  
HAVING RECOGNISED the desirability of determining by agreement certain rules on the liability of International Terminal Operators,  
HAVE DECIDED to conclude a Convention for this purpose and have thereto agreed as follows:<sup>(1)</sup>

#### Article 1

##### Definitions

For the purposes of the application of this Convention:  
1. "International Terminal Operator (ITO) means any

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(1) It will be necessary at a later date to expand the Preamble. In the meantime, the Group has decided to include a provision corresponding to the basic principle (d) to be found in the Preamble to the 1980 Convention on International Multimodal Transport of Goods to the effect that "the liability of the multimodal transport operator under this Convention should be based on the principle of presumed fault or neglect".

person acting in a capacity other than that of a carrier, who undertakes against remuneration the safekeeping of goods before, during or after international carriage, either by agreement or by actually taking in charge such goods from a shipper, carrier, forwarder or any other person, with a view to their being handed over to any person entitled to take delivery of them.

2. "Customer" means the other party to the contract concluded by the ITO.

3. "Goods" includes any container, pallet or similar article of transport or packaging, if supplied by the consignor.

4. "International carriage" means any carriage in which the place of departure and the place of destination are situated in two different States.

## **Article 2**

### **Scope of Application**

This Convention shall apply whenever the operations for which the ITO is responsible under Article 3 are performed on the territory of a Contracting State.

## **Article 3**

### **Period of Responsibility**

1. The ITO shall be responsible for the safekeeping of goods from the time he has taken them in charge until their handing over to the person entitled to take delivery of them.

2. The ITO shall also be responsible for the goods during such additional operations of loading, stowage or discharging as he has undertaken to perform or the performance of which he has procured.

## **Article 4**

### **Issuance of Document**

1. The ITO shall, at the request of the customer, issue a dated document acknowledging receipt of the goods and stating the date on which they were actually taken in charge.

2. Such a document shall indicate any inaccuracy or inadequacy of any particular concerning the description of the goods taken in charge as far as this can be ascertained by reasonable means of checking.

3. Such a document is prima facie evidence of the contract for the safekeeping of goods and the taking in charge of the goods as therein described.

4. The document issued by the ITO may, if the parties so agree, and the applicable national law so permits, contain an undertaking by the ITO to deliver the goods against surrender of the document. A provision in the document that the goods are to be delivered to the order of a named person, or to order, or to bearer, constitutes such an undertaking.

5. Nothing in this Convention shall prevent the issuing of documents by any mechanical or electronic means, if not inconsistent with the law of the country where the document is issued.

## **Article 5**

### **Security Rights in the Goods**

1. The ITO shall have a right of retention over the goods he has taken in charge for costs and claims relating to such goods, fees and warehousing rent included. However, nothing in this Convention shall affect the validity under national law of any contractual arrangements extending the

ITO's security in the goods.

2. The ITO shall not, be entitled to retain the goods he has taken in charge if a sufficient guarantee for the sum claimed is provided or if an equivalent sum is deposited with a mutually accepted third party or with an official institution.

3. The ITO may, after giving adequate and timely notice, cause to be sold the goods retained by him up to the amount necessary to satisfy his claim. The conditions and procedures of the sale shall be governed by the law of the place where the operations for which the ITO is responsible under this Convention are performed.

4. The internal law of the place where the operations for which the ITO is responsible under this Convention are performed shall determine the effects which third party rights may have on the ITO's rights of retention and sale and on the proceeds of such sale.

## **Article 6**

### **Basis of Liability**

1. The ITO is liable for loss resulting from loss of or damage to the goods for which he is responsible under Article 3 of this Convention, unless he proves that he, his servants or agents took all measures that could reasonably be required to avoid the occurrence which caused the loss or damage, and its consequences.

2. If the ITO does not deliver the goods at the request of the customer within a period of /60/ consecutive days following such request, the person entitled to make a claim for the loss of goods may treat them as lost.

3. The ITO is liable for securities, money or valuable articles only if a special agreement to that effect has been entered into in writing.

4. Where fault or neglect on the part of the ITO, his servants or agents combines with another cause to produce loss or damage, the ITO is liable only to the extent that the loss or damage is attributable to such fault or neglect, provided that the ITO proves the amount of the loss or damage not attributable thereto.

## **Article 7**

### **Limits of Liability**

1. The liability of the ITO for loss resulting from loss of or damage to goods according to the provisions of Article 6 is limited to an amount equivalent to 2.75 units of account per kilogramme of gross weight of the goods lost or damaged.

2. Unit of account means the unit of account mentioned in Article 13.

3. By agreement between the ITO and the customer, limits of liability exceeding those provided for in paragraph 1 may be fixed.

## **Article 8**

### **Non-Contractual Liability**

1. The defences and limits of liability provided for in this Convention apply in any action against the ITO in respect of loss of or damage to goods caused by any act or omission within the scope of the ITO's obligations provided for in Article 3, whether the action is founded in contract, in tort or otherwise.

2. If such an action is brought against a servant or agent of the ITO, such servant or agent, if he proves that he acted within the scope of his employment, is entitled to avail himself of the defences and limits of liability which the ITO



is entitled to invoke under this Convention.

3. Except as provided in Article 9, the aggregate of the amounts recoverable from the ITO and from any person referred to in paragraph 2 of this article shall not exceed the limits of liability provided for in this Convention.

#### **Article 9**

##### **Loss of the Right to Limit Liability**

1. The ITO is not entitled to the benefit of the exclusion or the limitation of liability provided for in Article 6, paragraph 4 and in Article 7 if it is proved that the loss or damage resulted from /an/ /a personal/ act or omission of the ITO done with the intent to cause such loss or damage, or recklessly and with knowledge that such loss or damage would probably result.

2. Notwithstanding the provisions of paragraph 2 of Article 8, a servant or agent of the ITO is not entitled to the benefit of the limitation of liability provided for in Article 7 if it is proved that the loss or damage resulted from an act or omission of such servant or agent, done with the intent to cause such loss or damage, or recklessly and with knowledge that such loss or damage would probably result.

#### **Article 10**

##### **Notice of Loss or Damage**

1. Unless notice of loss or damage, specifying the general nature of such loss or damage, is given in writing to the ITO not later than the working day after the day when the goods were handed over to the person entitled to take delivery of the goods, such handing over is prima facie evidence of the delivery by the ITO of the goods as described in the document issued by the ITO or, if no such document has been issued, in good condition.

2. Where the loss or damage is not apparent, the provisions of paragraph 1 of this article apply correspondingly if notice in writing is not given within 15 consecutive days after the day when the goods were handed over to the person entitled to take delivery of the goods.

3. If the state of the goods at the time they were handed over to the person entitled to take delivery of the goods has been the subject of a joint survey or inspection by the parties, notice in writing need not be given of loss or damage ascertained during such survey or inspection.

4. In the case of any actual or apprehended loss or damage the ITO and the person entitled to take delivery of the goods must give all reasonable facilities to each other for inspecting and tallying the goods.

#### **Article 11**

##### **Limitation of Actions**

1. Any action under this Convention is time-barred if judicial or arbitral proceedings have not been instituted within a period of two years.

2. The limitation period commences on the day on which the ITO has delivered the goods or part thereof or, in cases where no goods have been delivered, on the last day on which the goods should have been delivered.

3. The day on which the limitation period commences is not included in the period.

4. The person against whom a claim is made may at any time during the running of the limitation period extend that period by a declaration in writing to the claimant. This period may be further extended by another declaration or

declarations.

5. An action for indemnity by a person held liable may be instituted even after the expiration of the limitation period provided for in the preceding paragraphs if instituted within the time allowed by the law of the State where proceedings are instituted. However, the time allowed shall not be less than 90 days commencing from the day when the person instituting such action for indemnity has settled the claim or has been served with process in the action against himself.

#### **Article 12**

##### **Contractual Stipulations**

1. Any stipulation in a contract for the safekeeping of goods concluded by an ITO or in any document evidencing such a contract is null and void to the extent that it derogates, directly or indirectly, from the provisions of this Convention. The nullity of such a stipulation does not affect the validity of the other provisions of the contract or document of which it forms a part.

2. Notwithstanding the provisions of paragraph 1 of this article, an ITO may increase his responsibilities under this Convention.

#### **Article 13**

##### **Unit of Account or Monetary Unit and Conversion**

1. The unit of account referred to in Article 7 of this Convention is the Special Drawing Rights as defined by the International Monetary Fund. The amounts mentioned in Article 7 are to be converted into the national currency of a State according to the value of such currency at the date of judgment or the date agreed upon by the parties. The value of a national currency, in terms of the Special Drawing Rights, of a Contracting State which is a member of the International Monetary Fund is to be calculated in accordance with the method of valuation applied by the International Monetary Fund in effect at the date in question for its operations and transactions. The value of a national currency in terms of the Special Drawing Rights of a Contracting State which is not a member of the International Monetary Fund is to be calculated in a manner determined by that State.

2. Nevertheless, those States which are not members of the International Monetary Fund and whose law does not permit the application of the provisions of paragraph 1 of this article may, at the time of signature, or at the time of ratification, acceptance, approval or accession or at any time thereafter, declare that the limits of liability provided for in this Convention to be applied in their territories shall be fixed as 41.25 monetary units per kilogramme of gross weight of the goods.

3. The monetary unit referred to in paragraph 2 of this article corresponds to sixty-five and a half milligrammes of gold of millesimal fineness nine hundred. The conversion of the amounts referred to in paragraph 2 into the national currency is to be made according to the law of the State concerned.

4. The calculation mentioned in the last sentence of paragraph 1 and the conversion mentioned in paragraph 3 of this article are to be made in such a manner as to express in the national currency of the Contracting State as far as possible the same real value for the amounts in Article 7 as is expressed there in units of account. Contracting States must communicate to the Depositary Government the manner of calculation pursuant to paragraph 1 of this

article, or the result of the conversion mentioned in paragraph 3 of this article, as the case may be, at the time of signature or when depositing their instruments of ratification, acceptance, approval or accession, or when availing themselves of the option provided for in paragraph 2 of this article and whenever there is a change in the manner of such calculation or in the result of such conversion.

#### **Article 14**

##### **Other Conventions**

This Convention does not modify the rights or duties of a carrier which may arise under any international Convention relating to the international carriage of goods.

#### **Article 15**

##### **Interpretation of the Convention**

In the interpretation and application of the provisions of this Convention regard shall be had to its international character and to the need to promote uniformity.

#### **/ Article 16**

##### **Signature, Ratification, Acceptance, Approval and Accession**

1. This Convention shall be open to signature /by all States/ at ..... from ..... 19 .. to ..... 19 ..
2. This Convention shall be subject to ratification, acceptance or approval by the signatory States.
3. After ..... 19 .., this Convention shall be open indefinitely for accession by /all/ States which are not signatory States.
4. Instruments, of ratification, acceptance, approval and accession shall be deposited with the Government of ....., which shall be the Depositary Government./

#### **/ Article 17**

##### **Entry into Force**

1. This Convention shall enter into force six months after the date of deposit of the /fifth/ instrument of ratification, acceptance, approval or accession, with the Depositary Government.
2. For each State which become a Contracting State to this Convention after the deposit of the /fifth/ instrument of ratification, acceptance, approval or accession, this Convention shall enter into force six months after the deposit of the appropriate instrument on behalf of that State./

#### **Article 18**

##### **Reservations**

1. Any State may, at the time of signature, ratification, acceptance, approval or accession, declare by notification addressed to ..... that it will guarantee effect to the rules on the liability of international terminal operators contained in this Convention in respect of any operators who expressly or impliedly undertake to apply those rules. The use of the name "International Terminal Operator (ITO)" shall constitute such an express undertaking.
2. Any State may recognise operators who apply the rules of this Convention as "International Terminal Operators (ITOs)".

#### **/ Article 19**

##### **Federal States**

1. If a State has two or more territorial units in which different systems of law apply to matters respecting the

safekeeping of goods, it may, at the time of signature, ratification, acceptance, approval or accession, declare that this Convention shall extend to all its territorial units or only to one or more of them, and may modify its declaration by submitting another declaration at any time.

2. These declarations shall be notified to the Depositary Government and shall state expressly the territorial units to which the Convention applies./

#### **/ Article 20**

##### **Revision and Amendment**

1. At the request of not less than one-third of the Contracting States to this Convention, the Depositary Government shall convene a Conference for revising or amending it.
2. Any instrument of ratification, acceptance, approval or accession deposited after the entry into force of an amendment to this Convention shall be deemed to apply to the Convention as amended./

#### **/ Article 21**

##### **Revision of the Limitation Amounts and Unit of Account or Monetary Unit**

1. Notwithstanding the provisions of Article 20, a Conference only for the purpose of altering the amount specified in Article 7 and paragraph 2 of Article 13 of this Convention or of substituting either or both of the units defined in paragraphs 1 and 3 of Article 13 by other units shall be convened by the Depositary Government in accordance with paragraph 2 of this article. An alteration of the amounts shall be made only because of a significant change in their real value.
2. A revision Conference shall be convened by the Depositary Government when not less than one-fourth of the Contracting States so request.
3. Any decision by the Conference must be taken by a two-thirds majority of the participating States. The amendment shall be communicated by the Depositary Government to all the Contracting States for acceptance and to all the States signatories to the Convention for information.
4. Any amendment adopted shall enter into force on the first day of the month following one year after its acceptance by two-thirds of the Contracting States. Acceptance shall be effected by the deposit of a formal instrument to that effect, with the Depositary Government.
5. After the entry into force of an amendment, a Contracting State which has accepted the amendment is entitled to apply the Convention as amended in its relations with Contracting States which have not, within six months after the adoption of the amendment, notified the Depositary Government that they are not bound by the amendment.
6. Any instrument of ratification, acceptance, approval or accession deposited after the entry into force of an amendment to this Convention is deemed to apply to the Convention as amended./

#### **/ Article 22**

##### **Denunciation**

1. Any Contracting State may denounce this Convention by written notification to the Depositary Government.
  2. Such denunciation shall take effect twelve months from the date on which the Depositary Government has
- (Continued on next page bottom)**

# Reports on Port Training by Recipients of IAPH Bursary Scheme

## 1. Report by Mr. Vrionis

### Themistocleous, Safety Officer, Cyprus Ports Authority

During the period 20 September–3 October, 1981 I went to Holland for a training course in safety in ports. The course was sponsored by the IAPH Bursary Scheme and was organized and executed by the Port of Rotterdam.

The course was very well organized and suitable for a safety officer. For this I would like to express my thanks and appreciation to the staff of the Port of Rotterdam, the staff of the Private Enterprises involved in the course, and the municipal officers for all the efforts they made, so that I could have this interesting and beneficial training.

During my training, special attention was paid to the following matters:

- (a) Methods and procedures for dealing with safety problems arising during loading and unloading operations.
- (b) Methods and measures for the prevention of accidents.
- (c) Inspection and testing of machinery and equipment in port areas.
- (d) Investigation of accidents.

Through this training in the Port of Rotterdam I gained a good and useful experience on port safety aspects. Based on this experience my recommendations for improvements in Cyprus Ports in connection with safety could be summarized as follows:

- (1) Fencing and making the appropriate arrangements, so as to prohibit unauthorised persons and vehicles from moving in the container terminal.
- (2) If justified from an economic point of view, to equip the container terminal with container gantries for enhancing both efficiency and safety.
- (3) To equip the ports with the appropriate machinery and equipment for loading, unloading and transport operations, with a view to minimizing accidents.
- (4) To introduce a Road Barrier for checking the

entrance and exit of the port.

- (5) If justified, to introduce a closed circuit system for monitoring the operations in the port.
- (6) To establish a training school or training facilities for portworkers.
- (7) To establish a work-shop for testing the lifting gear used in the port area.
- (8) To supply port-workers with uniforms, safety shoes and gloves.
- (9) To introduce safety regulations.

## 2. Report by Mr. Michael Argyrides, Technical Assistant, Cyprus Ports Authority

At the outset I would like to express my thanks and appreciation to the staff of the Port of Rotterdam, the staff of the Private Firms involved in the training as well as the municipal officials, for the hospitality and kindness extended to me during my training in the Netherlands.

During this period I was given the opportunity to observe operations in the port areas and discuss with the staff the problems encountered and the way these problems are being solved.

On the whole I am of the opinion that the experience gained during my training in Holland will prove very useful for myself but also for the Ports Authority in general.

The assignment was well organized and the programme prepared was such that all time available was spent in an interesting, pleasant and useful way.

Based on my observation in Rotterdam and considering the particular applications for the Port of Limassol my recommendations on the technical improvements which could possibly be brought about in the port, could be summarised as follows:

A careful study for the replacement of part of the existing mobile cranes with modern and bigger diesel-

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received the notification./

### / Article 23 Depositary

1. The original of this Convention, in the . . . . languages, each version being equally authentic, shall be deposited with the Government of . . . . , which shall transmit certified copies thereof to each of the signatory and Contracting States, and to the International Institute for the Unification of Private Law.

2. The Depositary Government shall give notice to the signatory and Contracting States, and to the International Institute for the Unification of Private Law, of:

- (a) any signature;
- (b) the deposit of any instrument of ratification, acceptance, approval, or accession;
- (c) any date on which this Convention enters into force in accordance with Article 16;

(d) any declaration received in accordance with Article 17.

(e) any declaration received in accordance with Article 18, paragraph 2, and the date on which the declaration takes effect;

(f) any requests for the revision or amendment of this Convention and the convening of a Conference for such revision or amendment in accordance with Articles 19, paragraph 1 and 20, paragraph 2;

(g) any denunciation received in accordance with Article 21, paragraph 1, and the date on which the denunciation takes effect./

/IN WITNESS WHEREOF, the undersigned Plenipotentiaries, being duly authorised to that effect, have signed this Convention./

/DONE at . . . . , this . . . . day of . . . . one thousand nine hundred and . . . . /.



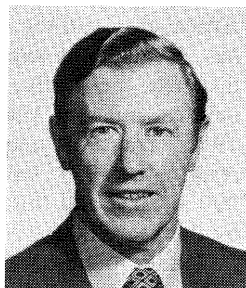
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## Open forum: Port releases:

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# Port Development in N. S. W. in the Eighties

by John M. Wallace,  
President, Maritime  
Services Board of  
N. S. W., Sydney



### SUMMARY

The Maritime Services Board is the Port Authority for the State of New South Wales. As such its primary function is the management and development of the Ports within the State's boundaries. This paper focuses on Port Development in N.S.W. in the coming years, by relating changing port needs and shipping technology to the development plans of the Board for the four major ports under its jurisdiction; Sydney, Port Botany, Newcastle and Port Kembla. Almost 79 million tonnes of cargo passed through the Ports of N.S.W. during the 1980/81 financial year and the trends towards increasing volumes of goods continues. The challenge of the eighties, for the Board at least, is to create ports and port facilities capable of efficiently handling these increasing trade volumes.

### 1. INTRODUCTION

The aim of this paper is to set out the Maritime Services Board's proposals for the development of N.S.W. Ports in the 1980's. Whilst the paper is in essence descriptive it also aims to show the complexities involved in providing optimum port development.

In a complicated and often contradictory economic, and social environment the role of the port planner becomes at the same time both more vital and more complex.

This paper will be presented in terms of broad planning objectives and will avoid undue detail of any individual projects.

Port planners must develop general policy statements and pursue these in a flexible way. There is no benefit

served in making binding decisions setting out detailed long term development of a particular area only to discover that in 5 years time changing markets, ship technology or cargo handling methods, dictate alternate plans. Nevertheless, it is important to be receptive to long term trends and develop plans accordingly.

This paper will be divided into 3 sections, each of them contributing to an overall picture of port development in N.S.W. in the 80's. The first section will focus on world wide shipping trends and changes in cargo handling and shipping technology in general. The second section will deal with port development in New South Wales—a recent history and an outline of plans for the 1980's. This will be followed by a general overview of port development on a longer term in N.S.W.

In terms of general policy the Board has adopted the following guidelines:—

Port Development throughout the State is aimed at:—

- (a) Modernisation of facilities;
- (b) Keeping pace with changes in shipping and cargo handling technology, and the application of most modern safety and
- (c) Maintaining the economic cost effectiveness of individual port facilities and services as well as the particular ports in general;
- (d) Development of an integrated port network in N.S.W.
- (e) Encouraging decentralisation of general cargo imports and exports in the State to the maximum extent economically practical.

There will be many occasions when these policy guidelines will be in conflict with each other. For example, whilst modernisation is seen as an overriding concern for port development in N.S.W. the Board also recognises the need for the preservation of historically significant port facilities, as reminders of both the achievements of former port administrations and practices that have fallen out of use. Two fine examples of such preservation can be seen in

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(Continued from page 14)

electric mobile cranes should be undertaken. This will reduce maintenance and repair costs.

The introduction of maintenance cards for each machinery to show:

- a) The working hours of the machinery,
- b) The parts which need regular maintenance,
- c) The work carried out on the parts.

Preferably the maintenance card of each type of machinery to be of different colours.

In addition to the maintenance cards to keep records for major repairs carried out of each machine.

To rearrange the reference numbering of the machinery to indicate their lifting capacity.

To consider changing the existing ropes sheaves with fiber glass ones which will extend the life-time the ropes.

The existing workshops should be provided with more sophisticated equipment. This will enable the port technicians to better maintain the new equipment.

To improve the efficiency of the spare parts stores to appoint a store-keeper with technical back-ground.

The establishment of a school for technical training of port personnel should be seriously considered.

Port Jackson with the restoration of Moore's Wharf Store and No. 1 Walsh Bay Berth.

Australia has always depended heavily on ports for its continued economic prosperity. This dependance is no less today than it was in the early days of the colony. As the Australian society develops so does the level of community awareness of the role of ports and other public and private developments. There is a growing awareness of the need to justify all developments not only in economic but also in social terms.

Ports and foreshore areas in N.S.W. are also used for recreational, residential, commercial, industrial and transportation purposes by various sectors of the community. The impact of any new port development must be designed to minimise the impact on the community in general. This may mean that special consideration will need to be given to the appearance of the facility, the noise generated, modes of receipt and dispatch of goods and environmental factors.

Finally, in major developments it is necessary for planners to be aware of the views of the local community. Such views may be obtained formally through displaying Environmental Impact Statements or through Port Advisory Committees, Public Meetings and the like.

## 2. WORLD-WIDE TRENDS

### Bulk Transport

World-wide development in bulk trade has varied quite markedly from commodity to commodity. In the larger volume, longer haul iron ore and coal trades for instance the pace of change—reflected in the introduction and utilisation of larger bulk vessels, larger ports and terminals and faster handling equipment—has been extremely rapid whereas the overall growth in scale evident in the other cargoes such as wheat and phosphate rock trades has been far less marked.

The oil boom of the late 60's and early 70's saw the first moves to larger tankers on any significant scale. With the closure of the Suez Canal, and the continued growth in the dependance of the developed countries on oil for energy needs, the emergence of larger tankers of up to 500,000 d.w.t. became economic necessities for shippers.

At the price of oil increased rapidly and supplies from Arabian countries became more uncertain during the late 70's many countries began to consider alternate energy supplies. The rate of increase in world-wide consumption continues to decline. In such a milieu it is perhaps inevitable that trends towards larger and larger tankers will also ease.

**Shipping Distance**—The utilisation of larger ships and more distant supply sources has had a major influence on trade on a world-wide basis.

Over the period 1960/1977, the international iron ore trade very nearly trebled in terms of cargo volumes, this extension of trade being accompanied by an increase in the average shipping distance of some 2,400 nautical miles, sufficient to increase tonne/mile transport requirements by a factor of five. These rapid rates of growth must be viewed in the context of the overall importance of iron ore in bulk trade.

While varying, sometimes quite markedly, year on year in response to regional production/consumption balances, international grain trade volume growth in the period since the early 1960's has also been sustained. Shipment volumes world-wide have increased from a level of 55M tonnes in

1960 to some 149M tonnes in 1977—equivalent to some 23 per cent of total major bulk trade in that year. Average grain shipping distances over the period have remained relatively constant at around 5,500 nautical miles—higher than that of any other major bulk commodity—and transport requirements have resultantly increased much in line with the growth of seaborne grain trade volumes.

The past development of world-wide seaborne coal trades has been no less rapid. Shipment volumes have increased from some 47M tonnes in 1960 to 134M tonnes in 1977.

The exploitation of new and more distant sources of world supply—in countries like Australia, Canada, South Africa, etc.—and the accompanied restructuring of the trade has, as might be expected, increased average coal shipping distances markedly, these increasing from some 2,500 nautical miles in 1960 to the 4,600 nautical miles level in 1977. Transport requirements virtually quadrupled as a result. In 1977 world coal exports were estimated at 200 m.t.p.a. and this is expected to reach over 550 m.t.p.a. by the year 2000.

Trade volumes of bauxite/alumina trebled from some 17M tonnes in 1960 to 47M tonnes in 1977—equivalent to a further 7 per cent of the total world bulk trade. Average bauxite/alumina shipping distances also grew rapidly over this period, an increasing proportion of the trade emanating from more distant suppliers such as Australia. Haul length increased from an average of around 2,000 nautical miles in 1960 to some 3,600 nautical miles in 1977, transport requirements increasing fivefold over the period.

**Increased Vessel Size**—The trend towards larger vessels is expected to continue, particularly vessels engaged in the coal and iron ore trades. This world-wide trend has already had marked effects on Australian ports and will certainly be a major determinant to development in the 80's.

In receiving countries, particularly in Japan and Europe, ports are already expanding to accommodate larger bulk vessels. In Japan, five coal discharging facilities already exist capable of handling vessels in the 150–160,000 d.w.t. range and one facility can accommodate vessels to 250,000 d.w.t. In Europe, several ports are planning development for coal carriers up to 250,000 d.w.t.

A number of authoritative sources have estimated that many future large bulk carriers to be used for major coal trades will be in the 140,000–160,000 and 190,000–200,000 d.w.t. ranges. Two general purpose bulk carriers of 191,650 d.w.t., the "Senwa Maru" and the "Shin-Ogishima Maru", have already been placed in service within the last year. The obvious cost advantages of such large vessels becomes even more apparent as the volume of bulk cargo expands.

These trends impose quite specific pressures on ports. The most obvious result is the demand for deeper water in navigation channels and at the berth face. As vessel size increases so does the length and breadth of ships and both berths and channels must be adequate to safely accommodate these dimensions.

Further with larger vessels, new design dimensions are applicable to loading facilities to enable more rapid loading and faster vessel turnaround times. Larger stockpile areas and greater outreach on loaders and unloaders are just two of the many changes needed to accommodate larger vessels.

Trends towards larger vessels are less evident in general cargo and container vessels. General cargo and cellular container vessels are not likely to undergo size increases

within the near future. The growth in tankers evident during the early 70's has now stabilised and it appears unlikely that in the foreseeable future many tankers of over 160,000 d.w.t. will be seen on the Australian coast.

### 3. N.S.W. PORT DEVELOPMENT

**Development of Port Botany**—The inevitability of the need to develop a container complex at Port Botany became apparent to those with an awareness of the physical limitations of Port Jackson, as the trend towards increasing containerisation became evident over a decade ago.

In May 1961 Botany Bay became the responsibility of the Maritime Services Board and investigations were started into an ambitious multi-million dollar port development programme.

The next year the Board, in conjunction with its consultants, investigated the Bay's hydraulic characteristics. After four years of study, it became evident that still-water port facilities of world standard could be economically developed on the northern foreshores of the Bay.

A large-scale Hydraulic Model was constructed on the foreshores of the Bay, completed in 1971, and in that year a contract was awarded by the Board to a consortium of Atkinson-International (Australia) and Leighton Contractors Pty. Ltd. for the dredging of the port approach channel, initial reclamation work and construction of an armoured revetment wall some 2 kms in length.

Now Port Botany is an ultra-modern maritime facility of 260 hectares (65 acres), centred around the largest container complexes in the Southern Hemisphere. The V-shaped approach channel has a maximum depth of 21.3 m, depth of water at the container berths is 15.2 m.

There are six container berths (three with RO-RO ramps) situated along two kilometres of wharfage. The complex, served by both rail and road links, is expected to be handling up to 60% of Sydney's container traffic by 1985.

In addition to the extensive areas for port development, 40 hectares of land at the Port has been set aside for parkland and this, together with a scenic roadway, will enable considerable public use of the foreshores to take place without conflict with port use.

**General Cargo**—The development of containerisation in the late 60's has, of course, had an effect on the design of both ships and berths. Large backup areas are required for the stacking of containers. Such areas exist at Port Botany. Together the 6 container berths cover an area of 80 hectares (200 acres).

The Port Botany container berths meet the unique requirements of the container trades. With 15.2 m of water at the berth faces, large area of "backup" land, comparative remoteness from built-up residential areas, and with both road and rail links, Port Botany provides features in excess of current shipping technology.

The total capacity of the Australian National Line and Container Terminals of Australia Ltd. terminals at Port Botany is in the order of 600,000 T.E.U.'s. In total, Port Jackson container capacity will remain at between 250–300,000 T.E.U.'s (inclusive of the Darling Harbour Berths).

Considering that presently less than 400,000 T.E.U.'s are handled each year in the Sydney Ports, a capacity of 900,000 T.E.U.'s will carry Sydney well into the future.

**Bulk Liquids**—The Port Botany development has also included the development of a Bulk Liquids Berth for the importation of bulk chemicals and petrochemicals into New

South Wales.

This berth can accommodate vessels of up to 70,000 d.w.t., well in excess of current vessels using the facility. Bulk liquids entering through this berth are pumped directly to a storage area and hence distributed to various customers.

The berth is the most modern of its kind in Australia today and has greatly enhanced the efficiency and safety of bulk chemical handling in Sydney.

**Crude Oil Berth**—As there will be a continuing need at least during the next 20 years, for large volumes of crude oil to be imported into Botany Bay on a regular basis, a proposal has recently been approved to construct a new crude oil discharge facility at the site formerly reserved for a coal loader at Port Botany.

This \$11.5M berth will accommodate Long-Range 2 type tankers of between 80–160,000 d.w.t. The berth will service the expanding capacities of the refineries at Matraville and Kurnell.

The present oil discharging facilities have always posed difficulties due to their exposed nature making them vulnerable to rapidly deteriorating weather conditions, often necessitating the rapid departure of vessels from the Bay. Thus it has been impossible to satisfactorily boom vessels discharging crude at the Bay. The sheltered and long-shore nature of the new berth will overcome these difficulties. Further as the new berth will be located in the Port Botany area, it will be away from the environmentally sensitive areas on the southern foreshores such as Quibray and Weeney Bays.

**Port Jackson**—Whilst much attention has been focused on Port Botany during recent years this has not resulted in a lack of activity in Port Jackson. The Port continues to be Sydney's principal port, catering for a wide variety of trade requirements in Sydney and New South Wales.

Containerisation of cargo has now reached the point where it is rare to see a general cargo vessel enter the Port without at least a few containers on board. Hence conventional cargo handling barely exists in total isolation from container handling.

Port Jackson's fine natural harbour makes the port and its foreshores of value as a residential, recreational, tourist and transportation setting as well as serving as a commercial port handling the greatest diversity of goods and together with Port Botany, the largest volume of general cargo of any city in Australia.

**Darling Harbour**—In April of this year, No. 3 Berth, Darling Harbour, was opened. This event marked the completion of the redevelopment of the northern end of Darling Harbour to provide modern facilities for general cargo vessels.

Over the past 10 years, the throughput of cargo through the Sydney ports has increased by 40% from 24.8M tonnes/annum to 34.5M tonnes/annum. During the same period, however, general cargo throughput has increased by almost 50%. We expect this trend to continue and this will necessitate the Board, in the years ahead, redeveloping all commercial wharfage areas presently available that are suitable for reconstruction.

**Pymont**—Following this the next stage in modernisation in Port Jackson will be the redevelopment of the Pymont wharfage areas.

This plan envisages as a first stage the demolition of Berths 19 to 23 and the subsequent reclamation of the waterway area between these berths.

At present, the Pymont wharves lack the stacking area

required for modern cargo handling. They have limited wheel load capacity, small wharf sheds and other difficulties exist which result in poor utilisation of the area. Over the last three years, a 25% drop in throughput has occurred at the Pyrmont Berths. All the berths, most of which were constructed between 1914 and 1919 will be in need of major costly repairs within the next five years. Many modern vessels cannot be accommodated because of length or draught constraints at the berths. Further, by comparison the Darling Harbour berths have a significantly higher throughput of cargo per hour of nett working time, than do the Pyrmont Berths. One reason for this efficiency at Darling Harbour is the capacity of the berths to accommodate RO-RO or stern quarter ramp vessels, which cannot be accommodated at Pyrmont.

Whilst drawbacks exist, Pyrmont has many attractions for port development. Land access to the general area is quite good and will be improved further with the completion of road works in the area. Rail connections already exist, a major plus in favour of the area.

The approach to the area by water, like that to Darling Harbour, is deep and easily navigable. These, among other considerations, have led the Board to approve of the demolition and redevelopment of the 19 to 23 Pyrmont Berths. The new wharfage line will be determined so as to improve the width of channel available to vessels entering and leaving White Bay and Johnstons Bay.

The ultimate redevelopment of No. 19 to 23 would provide a single span shed, stacking area and improved rail access. Further investigation is at present being undertaken by the Board into the upgrading of Nos. 7/10 and Nos. 24/25 Berths for modern cargo handling operations.

**Balmain Coal Loader**—In Port Jackson work is also currently under way on the upgrading of the Balmain Coal Loader. In the order of \$20M will be spent on the upgrading so as to permit the annual throughput of the facility to be increased from 2.8 m.t.p.a. to 4.5 m.t.p.a.

The project will be completed this year. Vessels of up to 55,000 d.w.t. will be able to use the upgraded facility.

**Newcastle**—As the Port for the Hunter Region, Newcastle will perform a major role in the development of Australian mining and other industries in the 80's. The rapidly increasing demand for coal in Japan and Europe has resulted in large scale expansion of mining in the Hunter Area. The abundance of coal is also attracting industry to the area, notably aluminium smelting and this, in turn, is placing pressure on the Port.

Sufficient land still exists on Kooragang Island for the provision of a number of additional deepwater long-shore berths to service the needs of the Hunter into the 80's. Additionally both the harbour and some existing facilities will undergo redevelopment in the 80's to meet the region's expanding demands.

**Harbour Deepening**—This project, commenced in October 1977, is expected to cost in the vicinity of \$100 million and will provide access to shipping of up to 120,000 d.w.t., i.e. a depth of water of 15.2 m. The completion of the first stage, reached during January 1981, has provided shipping with a depth of water of 12.5 m suitable for vessels up to 80,000 d.w.t. Dredging to 15.2 m is expected to be completed by the end of 1982.

As has already been mentioned the trend to larger dry bulk carriers has placed pressure on ports to provide facilities and channels capable of accommodating these larger vessels. This trend has been intensified with the

emergence of what has been termed the "resources boom" in Australia. This boom as it affects New South Wales and, particularly the Hunter Region, will result in the rapid expansion of "energy exports", particularly coal.

The present contract for deepening the harbour at Newcastle will end in 1982 when a depth of water of 15.2 m will be achieved. At this depth fully laden vessels of 110,000 to 120,000 d.w.t. will be able to use the port. The Board has been investigating the possibility of deepening further to accommodate larger vessels particularly as already stated to cater for rapidly increasing coal exports from Newcastle.

Whilst vessels up to 250,000 d.w.t. requiring a channel depth of 20.2 m may be used in the future for export of Australian coal, particularly to Europe, the relatively limited number of facilities presently available for such vessels would indicate that further deepening to accommodate these vessels is not essential at the present time.

Instead the Board favours the further deepening of the harbour to 18.2 m for vessels up to 170,000 d.w.t. to 180,000 d.w.t. In addition the Board considers that whilst this deepening is in progress drilling and blasting of the rock area to 20.2 m over the 210 m channel width should be undertaken although the rock would only be removed to 18.2 m. This additional work would minimise the cost of further deepening and eliminate any disruption to shipping.

**Coal Loading**—The Steelworks Channel Loader, owned by Port Waratah Coal Services, and operated by the Board, is being upgraded by the Company to give a capacity in the order of 20 m.t.p.a. by 1982, the capacity of the Basin Loader owned and operated by the Board is 5 m.t.p.a. and hence by 1982 total port capacity will be 25 m.t.p.a. The tie-up berth at the Loader is being equipped with an extra loading head to give 3 loaders in all over two berths. The middle loader will be capable of working both berths.

The upgrading will also involve increased loading speeds, the provision of 2 new reclaimers, a new stacker and associated equipment.

**Kooragang Island Coal Loader**—A further major project at the Port of Newcastle will be the construction of a third coal loader on Kooragang Island, to meet the increasing need for greater coal loading capacity at the Port.

The new loader will be designed to be completed in stages. Final completion of the first stage, involving a capacity of 15 m.t.p.a. is scheduled for December 1984 although the first coal load will take place perhaps 6 months prior to this date. Figures based on 1981 prices estimate the cost of this first stage to be \$230M.

When fully completed the Loader will have a capacity of 50 m.t.p.a. and this will lift the total port capacity at Newcastle to 75 m.t.p.a. It will also be capable of development to accommodate vessels up to 250,000 d.w.t.

This third loader for Newcastle is being developed by a new company (Kooragang Coal Loader Ltd.) especially formed for this purpose. To ensure Government equity, the Board has a 20% interest in the company. Management of the shiploader operations will be the responsibility of the Board and the new company will manage the stockpile area. Employees engaged for the total complex will be members of the traditional Maritime Unions at the Port of Newcastle.

During the last 12 months the Board with its consultants have undertaken a detailed study of the area including the preparation of an Environmental Impact Statement. At time of writing, in August 1981 this Statement was due for public display by November 1981.



As the company has now been formed responsibility for all aspects of the project has passed to it. Following this, B.H.P. as the new company's major shareholder has agreed to act as project managers.

**Alumina Berth**—Work has also commenced at Newcastle on a new Alumina Berth to serve the needs of the rapidly expanding smelters in the Hunter Region. The final cost of the berth will be in the order of \$3 million and it is anticipated that work will be completed by August 1982.

The berth is designed to accommodate coast trade vessels from the major mining areas in northern Australia. As a final product, aluminium is expected to be loaded and exported through the general cargo wharves at Newcastle.

**Kooragang Island Bulk Berth**—One bulk berth has already been established to handle alumina, cement clinker and products for the fertilizer industry, at Kooragang Island. Modifications to the existing loaders at the berth have recently taken place to enable woodchips to be exported from the berth. A stockpile area for this product has been obtained just south of the berth which is connected by a conveyor system.

**Mineral Concentrates**—Modification of the No. 2 Dyke Berth at Newcastle has commenced to cater for additional mining operations of E.Z. Industries in the north-west of the State, due to begin in approximately 18 months time. The berth will be used to load vessels of up to 40,000 d.w.t. with zinc concentrates bound for Tasmania and lead concentrates for overseas export. Modifications to the berth will effect the loading facilities, stockpile area and rail receival systems.

**Port Kembla**—Port Kembla continues to grow as a major port in Australia. In the last ten years total trade through the port has risen by almost 60% to over 18 million tonnes in 1980/81. Port Kembla is also feeling the effects of the "energy/resources boom" in Australia. Recent down-turns in the world-wide market for iron and steel have been a cause of concern but as yet have not significantly effected trade at the Port.

**New Coal Loader**—Growth in coal exports and the development of the southern coal fields continues to be a major determinant of growth at the Port. Work on the new coal loader at Port Kembla commenced in 1979 and the new facility is due for completion mid-1982. The new loader will have a capacity of 15 m.t.p.a. and a capacity for future expansion to 20 m.t.p.a. accommodating vessels up to 150,000 d.w.t.

Initially the berth will be capable of accommodating vessels of up to 110,000 d.w.t. and will have a shiploading capacity of 5,000 tonnes per hour. The final cost of the loader is estimated at \$140M.

The loader will receive coal from the State's southern and western coal fields. Like many other facilities in the State's ports increasing emphasis will be placed on rail receival of product and on environmental controls.

**Multi-Purpose Berth**—With the expansion of activities at Port Kembla there is a need for a berth within the inner harbour capable of accommodating deeper draught bulk and general cargo vessels. The berth and associated facilities which are now under construction will be completed in August 1982 and are estimated to cost \$14 million. Vessels up to 120,000 d.w.t. can be accommodated at the berth which will be used for discharging bulk cargoes, general cargo transfers, ship repairs and for tie-up purposes.

#### 4. THE FUTURE

Whilst I have in the foregoing covered current development plans and those for the immediate future for N.S.W. ports, I will conclude by mentioning some general considerations regarding the longer term development trends for N.S.W.

The major determinants of development will be the "energy/resources boom" which will bring with it major changes to the Australian economy and rapidly increased energy exports notably coal.

As most of these exports are destined for markets in Japan or Europe, it will be inevitable that shipping will attempt to maximise economies of scale by transporting their products in the largest vessels capable of operation in the initiating and receiving ports.

Ports in Japan and Europe are already planning or undergoing expansions to meet the demands of larger bulk carriers. This will inevitably place pressure on Australian ports such as Newcastle and Port Kembla to upgrade to similar dimensions.

In this regard as far as Newcastle is concerned the Port should be deepened to accommodate vessels up to 180,000 d.w.t. within the next 5 years and in addition in its overall planning of the channels and the Kooragang Island coal loader berths the Board has made provision for widening and deepening commensurate with vessels of up to 250,000 d.w.t. using the port at sometime in the future. These issues are currently under discussion with the industries likely to use the deeper channels.

Recent port capacity simulation studies for Newcastle show that the port has capacity to handle all known trade until at least the year 2000.

Development of an offshore facility at Newcastle for the handling of dry bulk products is not economically feasible given present technology.

The need for further expansion of facilities at Port Kembla is currently the subject of a Board investigation.

The Grain Handling Authority is actively considering the provision of an additional grain loader in the State, to accommodate larger vessels and increased volumes of grain exports.

#### 5. CONCLUSION

As the Port Authority for N.S.W., the Board's challenge for the 80's is to keep-pace with shipping and cargo handling needs and to plan for the appropriate future development of the Ports in N.S.W.

During the next 10 years, the main impact on Australian Ports will come from the increase in size and number of dry bulk carriers exporting energy/resource commodities to Japan and Europe. The Board's development plans will more than adequately cater for these changes, in a way which will further enhance the State's economy as a whole.

For port planners and designers the real challenge of the years ahead will be not only to keep pace with technological and economic changes in the maritime industry but also to ensure that the impact of any development on the community is minimised.

# The Dynamics of Development

**By Sir Arthur Lewis  
(Reproduced by  
courtesy of ICC)**



**Sir Arthur Lewis**  
(Photo-The Kyodo  
News Service)

Why do some countries develop more rapidly than others? The industrial revolution that started in Britain at the end of the eighteenth century had still made little progress in Eastern and Southern Europe at the end of the nineteenth century, and did not take off in Latin America for a further 50 years, despite basic cultural similarity. Even countries within the same geographical regions develop at different speeds, thereby demonstrating that their circumstances are not identical.

The world economy stagnated between the two world wars, but from about 1950 to 1973 it experienced a period of unprecedented prosperity. The response of today's developing countries (those with per capita income of less than US \$3,000) to this prosperity has been astonishingly diverse. In about one-third of the countries the gross domestic product (GDP) has grown at 3% per annum, while in another third the gross domestic product (GDP) grew at 5% or more in both the 1960s and the 1970s, which exceeds the average for developed countries, and also indicates persistence in high level performance.<sup>1</sup> The success of so many countries has laid to rest fears that tropical countries were not capable of using resources effectively, had a low absorptive capacity, and must inevitably lag behind developed countries. At the same time the diversity of the experience offers an opportunity to distinguish between helpful factors and those that retard development.

## Natural resources

Some countries have become quite rich with very little by way of natural resources: Switzerland and Japan are the standard cases. Nevertheless it helps to have exploitable resources, and is a handicap to be barren.

The two chief resources are agricultural and mineral. But accessibility through geographical location may also be the basis of a trading fortune, as in Singapore; and inaccessibility may be a hindrance to development (whatever other advantages it may have) as in Afghanistan, Ethiopia or the countries of the Sahel. Part of the tourist industry also depends on geographical features, and part on history.

Mineral wealth is useful, if the price of the mineral is high. But if the Middle East oil exporting countries are excluded, only two of the countries in the upper third of growth rates owe their prosperity to minerals. This helps to explain why countries with minerals have lately been articulate in seeking a larger share of the proceeds of mining.

Mining is self-destructive unless new ores are found. In

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*Born in St. Lucia. British West Indies, Sir Arthur taught economics at London and Manchester Universities from 1938 to 1958 and was Vice-Chancellor of the University of West Indies 1958-63. He also has administrative and advisory experience with various British and Jamaican government agencies, with the United Nations, and in Ghana.*

any case some part of the proceeds of mining should be reinvested in other physical capital, to be the basis of continued productive capacity. This does not always happen in developing countries.

Agriculture has played the leading role in developing the tropical countries since the last quarter of the nineteenth century, and continued to do so after the second world war, even while yielding a greater place to mining and to manufacturing. The big change is that plantation investment has moved out of favour, and more effort is now put into stimulating peasant production. This has important distributional effects as well, since the income generated is spread more widely through the economy.

The stimulus to economic growth from exporting primary products is easily demonstrated by argument, but not by statistics. To be sure, the statistics point in the same direction. For example, exports from the upper third (see note n° 1) and fastest growers came (unweighted) to 24% of GDP in 1978, compared with 17% for countries in the lowest third, but regression analysis cannot tell us whether countries grow slowly because of exporting less, or whether they export less because they grow more slowly.<sup>2</sup> What seems certain is that exports yield a superior income, both to private persons and to the public sector, and that even if the private sector reinvested nothing, expenditures in the public sector on infrastructure, on education and on health significantly raise the absorptive capacity of countries with a greater export trade.

## Unfavourable terms of trade

It must, however, be noted that the terms of trade are unfavourable to exports from tropical countries, and that this is not necessarily remedied by raising productivity in the export industries. The terms of trade are unfavourable because the opportunity cost of labour spent in producing exports is alternatively to produce food on small farms with low productivity. Hundreds of millions of people who work for very small incomes producing food for themselves and the domestic markets are alternatively available to produce exports for minuscule returns. Neither does it inevitably

help to raise productivity in an export industry since the effect, once the new technology is generalised all over the world, is simply to reduce the price of the commodity while holding constant the income of the producer. The way out is to raise the productivity of the food farmers, thereby raising at every step the minimum remuneration that they will accept for work on export commodities.

The unfavourable terms of trade for tropical products help to explain why some less developed countries (LDCs) that have been developing for over a century (e.g. India, Brazil, Sri Lanka, Jamaica) still had such low per capita incomes in 1950, before the recent outburst of world trade. But it is not the whole explanation. Equally important is that in each case a half of the labour force or more was engaged in growing food by primitive means, with very low productivity. Also, these countries were failing to develop their manufacturing sectors.

### **Dependency theory**

According to "dependency" theory, as developed in Latin America, failure to make use of opportunities is itself one of the evil consequences of relying on exports as an engine of growth. The economy becomes over-specialised. People acquire a taste for foreign goods and foreign demands, at the expense of their own productive capacity; lively native minds look to foreign technology instead of developing techniques more in accord with local circumstances; and so on. Add that in the first half of the nineteenth century imports of textiles and of iron from England destroyed native industries all over the world; and also add the pressure of colonial government in favour of exports and against import substitution, and we are some way towards understanding why it took Latin America and Asia and Africa so long to begin to copy the industrial revolution by building plants to satisfy their own domestic demand.

Dependency theory is a useful approach to the failures of the nineteenth century, and part of the twentieth, but it doesn't have much relevance today. The ideology which, along with imperialist power, kept the tropical countries tied to exports of primary products is now dissipated. LDC governments are anxious to maintain such exports because their economies need the foreign exchange. Simultaneously they keep shaving their imports of manufactures and (more recently) are also trying to simulate productivity in food. The rationale of reducing the propensity to import is not that this will lead to a decline in imports (whose level is set by the level of exports) but that the propensity raises the export multiplier.

### **Countries poor in resources**

We have been analysing countries well endowed with natural resources. At the other extreme are countries or parts of countries where population is not matched by natural endowment. Such countries figure prominently in the list of the bottom third (slowest growing) economies,<sup>3</sup> but do not dominate it, since they are outnumbered at the bottom by countries whose development has been arrested by internal war or political insecurity.

The largest concentrations of poverty in the world are among the peoples living on the fringes of the great deserts of Asia and Africa, perhaps some 500 million people. Rainfall is inadequate or uncertain, and food output is insufficient in the years of failing rains. Until the first world war or later, populations were kept stable by high

death rates, supplemented by periodic insufficiency of food, but in recent years governments have taken steps to reduce the death rate, and the resulting growth of population increases soil erosion, destroys the few trees, and threatens reduced food output.

These areas have been bypassed by the green revolution, which depends on water. They need some breakthrough in dry farming, to double or treble current yields per acre. Temporary progress is possible, through better cultivation, control of livestock numbers, planting of trees, conservation of water and such; but these measures are easier to talk about than to make effective. To enable some of these people to move to more favourable climates would also be helpful, but this too is a formidable task, given the numbers involved and the hostility with which the migrants would be received. In the end the only remedy is a sharp decline of the birth rate, but this also seems a distant prospect.

In recent years some people who did not believe that tropical development was possible in the first place have been seeking to deny that it is occurring, despite what the figures say, or have been asserting that it has only benefited a handful of persons, most of them foreigners, while the poor have got poorer. It is certainly true that these poor—the people living on the fringes of the African and Asian deserts—have got poorer, and will get poorer still until some means is found of releasing them from the grip of inadequate natural resources.

### **The market**

Historically, a country moves up from exporting primary products into processing raw products for export, and also into import substitution. LDCs have been late in both these spheres.

Processing occurs automatically at the site of production rather than at the site of consumption if the raw material would spoil during transportation, or would diminish in weight or size during processing. It occurs automatically at the site of consumption if the material expands on processing, or has a high fuel cost, and if fuel is not available at the site of production. What happens to commodities which neither gain nor lose bulk in the course of processing? The developed countries take care to ensure that these be processed within their borders, by imposing higher import duties on the processed than on the raw material. This is one of the grievances of the LDCs, listed in their demands for a New International Economic Order.

The lateness in import substitution of manufactures has now been made up, and there may even be cases where substitution has gone too far. The formula for equilibrium is that the domestic resources absorbed by producing one more unit of an importable commodity shall thereby save in foreign exchange just as much as they would earn in foreign exchange if put into export industries. This is subject to the usual caveats about economies of scale, learning by doing, or other good reasons for challenging the representativeness of prices. However, given the height of tariffs, commonly up to or over 100%, some domestic production of goods that it would be cheaper to import (in the real meaning of "cheaper") is inevitable.

### **Three alternatives**

Even so the limited scope for import substitution of light consumer goods came as a surprise, as did the speed with which the domestic market was saturated. With consumption growing typically at 5% per annum, and

manufacturing typically at 7% per annum or more, output would have to catch up with consumption, and its growth rate would then be challenged. To maintain its industrial momentum unchecked the economy must then move in one of three directions.

### 1. The first direction

The first direction is to continue along the line of import substitution in partnership with other LDCs—the **Customs union** route. The *raison d'être* is that because of economies of scale there are several industries where a plant of economic size could serve say five countries, while being too large for any one of them. These “integration” industries are distinguished from other industries that are economic on a small enough scale for each country to have its own plant.

Customs unions have not gone well.

- In the first place the reduction of all trade barriers between member states opened up a whole range of small plants to competition from inside the union, and as some of these plants made losses there was an outcry against the union itself. The remedy is to concentrate on bringing the integration industries into existence, since this is where most of the additional benefits reside; but this requires some prior understanding as to how member countries will share these industries among themselves, and such agreement is difficult to secure.
- In the second place, even among adjacent countries, some are more attractive to new industry than others, so the customs union tends to promote the development of some members at the expense of others.
- In the third place, world trade in manufactures was booming in the 1960s and 1970s, and it was frequently simpler to export to the developed countries than to tangle with the bureaucracy of partner in the customs union. So manufacturers in LDCs concentrated on European and North American markets while customs unions languished. If the world market in manufactures does not revive, we may expect customs unions to take on renewed significance.

### 2. The second direction

The second direction that would permit maintenance of the growth rate of manufacturing at 7% or more would be to **raise the productivity of the farmers**, so that they could buy more manufactures and offer more food and raw materials in exchange. This would have to be a real increase in productivity and not just a change in the terms of trade. To raise farm prices would also raise urban wages, and if industrial prices did not rise proportionately industry's profits would fall, and so would industrial output. India illustrates this in the period following the two bad monsoons of 1965 and 1966. Also it is not enough to raise productivity by itself since higher output of food would reduce farm prices disproportionately, and therefore reduce the farmers' demand for manufactures. What we need is higher farm output at constant terms of trade, and this requires that some farmers leave farming as productivity per head increases.

More food is important to LDCs not only to maintain the momentum of manufacturing (and of service industries) but also to feed the people, including poorer farmers and landless labourers. It is also important to the foreign exchange situation, since LDCs are mounting significant import deficits. According to United Nations (UN) figures,

the average growth rate of GDP for all LDCs is at least 5%, and population grows at 2.3%. This gives an annual growth of demand for food of at least 4%. But according to the Food and Agricultural Organization (FAO), LDC food production is increasing at less than 3%. So there is a substantial gap to close.

Technological research has been in progress for about a century in export crops, with some spectacular results, as in sugar, rubber, oil palm, bananas and cocoa. Major work on tropical foodstuffs did not begin until after the war, but is already proving effective, especially in wheat, maize and irrigated rice. Some eleven international research centres are at work on tropical foods and livestock, and we may look forward with some confidence to results over the next two decades.

Output depends not only on science but also on the social framework of agriculture. There is general agreement on a packet of measures that LDC governments must undertake for their small farmers, including agricultural extension, credit, irrigation, rural infrastructure, storage facilities, research and so on. Economists also agree that land reform would contribute to output as well as to equity, and point to results in Korea and Taiwan, but the political power of landowners in Asia and in Latin America continues to be a formidable obstacle.

### 3. The third direction

The third direction that permits the economy to maintain more than a 7% growth rate of manufactures is to **export manufactures**. For many LDCs this turned out to be easier than either to enliven the customs unions or to increase agricultural productivity. Starting from a small trickle in the early 1950s, LDC exports of manufactures accelerated in the 1960s and 1970s to become, by 1978, as much as 38% of the exports of LDCs, excluding the Organization of Petroleum Exporting Countries (OPEC).

At first the number of countries in this trade was small, but by 1978 all countries (in our set of 55) where value added in manufacturing was 20% or more of total production (11 countries) showed exports of manufactures in excess of 20% of total exports. In another 12 countries, not so highly industrialised, exports of manufactures ranged from 17 to 55%.<sup>4</sup> The simplest “explanation” as to which countries export manufactures and which do not seems to be historical. The movement started in East Asia, spread quickly to Southern Europe and North Africa, and is now moving slowly in Latin America; it has not yet established itself in sub-Saharan Africa, where import substitution began only after independence was attained in the 1960s.

The movement from import substitution to the export of manufactures involves a change of policy climate. Plants producing for the home market can be efficient, behind the protection of tariff and quota restrictions. Even if efficient, they may be unprofitable because profits, wages, salaries or the prices paid to local suppliers are excessive in terms of foreign prices, at current exchange rates. Instability of prices is always a nuisance, but it is a special nuisance to manufacturers, who can rely rather little on futures markets, and whose business is therefore extra risky if domestic prices or the rate of exchange are subject to continual change. For all these reasons the progress that LDCs have made in exporting manufactures is remarkable, and suggests that the foundations for solid industrialisation are being laid. As the number of people dependent on



industrial exports increases, we may expect an increasing commitment to price and exchange stability.

### **Restrictions aimed at LDCs**

The big problem for LDCs is whether the markets of the industrial countries will remain open to them. Starting as early as 1961, the industrial countries made their first international agreement restricting imports of textiles from LDCs. It had loopholes, through which LDCs made their way. But restrictions grew, until the 1974 Multifibre agreement, which is watertight. LDCs also spread from textiles and clothing into other manufactures, only to be followed by new restrictions on trade in some of these commodities as well.

All these restrictions violate both the letter and the spirit of GATT since they are discriminatory, i.e. they place limitations on imports from LDCs which are not placed on imports of the same commodities from more developed countries (MDCs): the illegality was met by special resolutions, but the violation of the spirit remains. The situation is especially anomalous, since MDCs were spending the three decades from 1950 reducing obstacles to trade with each other, while those same decades have been spent increasing the obstacles to trading with LDCs. It is further anomalous in that imports of manufactures from LDCs constitute less than 2% of consumption of manufactures in the industrialised countries; so the source of this heated dispute is rather small.<sup>5</sup>

LDCs have advanced the orthodox argument that their trade benefits the industrial countries by destroying low-wage jobs and moving workers into high-wage jobs where they can manufacture for export to the same LDCs. The validity of the argument, however, depends on the mobility of those who are displaced. The industrial countries argue that the particular industries affected employ older workers and women, neither of whom are particularly mobile, so that the trade causes long-term unemployment. Although LDC imports are less than 2% of total consumption, they are concentrated on a few industries, where the effect is much greater. The required adjustments can no doubt be made with time but, it is argued, the rate of change must be manageable.

### **United States position**

The position of the United States was particularly strained in the 1960s. Exports of its manufactures were growing at 6% a year but imports of manufactures were growing at 13% a year. Add to this that U.S. investors were buying foreign assets in great quantity. So the U.S. domestic market was weak, domestic investment was low, and the growth rate of industrial production depressed. In these circumstances imports should be cut, and the classical remedy of devaluation, which President Nixon applied in 1971, had just this purpose. However, the industries that justified expansion were those in machinery and heavy chemicals, not textiles and light electronics. Also, since 1970 the value of the dollar has fallen by one-third in terms of the Deutsche Mark so, despite domestic inflation, the arguments that were valid in 1970 are not necessarily still applicable today.

### **Making more space for LDCs**

The industrial countries must make more space for LDCs in world trade in manufactures. Some of the LDCs that are relatively short of natural resources (e.g. India, Egypt,

Indonesia) will be driven by comparative advantage to import agricultural products in return for manufactures (like the United Kingdom and Japan). In addition, LDCs cannot solve their oil problem without exporting more manufactures. Currently their bill for oil equals about 5% of gross domestic product. They cannot pay for this indefinitely by increasing debt by 5% of GDP each year. Neither can they pay by exporting more primary products to the industrial countries, since the inelasticity of prices would reduce rather than increase their earnings. In theory the problem could be solved by LDCs cutting imports other than oil by 5% of GDP. They could do this by buying more manufactures from each other and less from the industrial countries. This also counts as making more space for LDCs, since it means that the industrial countries surrender part of their LDC markets for manufactures, in favour of other LDCs.

LDCs could fairly easily trade more with each other and less with the developed countries. They could do this, in the first instance, in foodstuffs. Taken as a group, LDCs could become self-sufficient in food if they applied the correct policies. We are making progress, but slowly. They could also easily reduce their dependence on manufactures. In 1978 LDCs imported from the industrial countries \$56 billion of machinery and transport equipment (Standard International Trade Classification—SITC-7) and \$46 billion of other manufactures (SITC 5, 6 and 8). The comparative advantage of the industrial countries is in making machinery, so the LDCs would concentrate on "other manufactures"; but even in machinery LDCs are coming along, since in 1978 some 34% of their exports of manufactures were classified in SITC 7.

One may presume that over the next 10 years the attitude of the industrial countries to LDC trade in manufactures will depend to a large extent on whether the world economy is prosperous or depressed. If world trade continues to grow slowly, protectionism will flourish. Yet if we could get back to an 8% annual growth of world trade it might be easier to settle some of the problems of international trade now in dispute between rich and poor countries, especially freer trade, a return to non-discrimination, the location of processing facilities, and the terms of trade.

## **The labour force**

Skilled and unskilled labour present different problems. Nowadays a shortage of unskilled labour is rare. It occurs in plantation economies, where land was available for plantations in the first place only because the man/land ratio was low;<sup>6</sup> or in mining country, also sparsely settled. Parts of West Africa are also still underpopulated, and depend on migrant labour, seasonal and otherwise. But in general nowadays the combination of high population growth rates and an acquired taste for the outputs of modern factories keeps most labour markets in LDCs offering more unskilled labour than can be hired at current wages.

In other words unemployment, not shortage of unskilled labours, is typically the problem. It has many causes, centering around the proposition that LDC labour markets work very inefficiently.

### **Causes of unemployment**

In the first place, in any one location there tends to be not one unskilled labour market but several, where labour:

of similar quality is hired on very different life-cycle terms, ranging from what is paid by "the best" firms (those that offer permanent employment, training, promotion opportunities, fringe benefits) to casual labour without commitment. How these big discrepancies are maintained is not clear, but presumably they diminish employment.

### 1. Too many machines

This they do by promoting excessive capital intensity: there is a *prima facie* case that LDCs use too many machines (and especially imported machines) to do what could otherwise be done by human labour. Machines have special advantages in manufacturing; they sometimes work with greater precision, save raw materials by reducing wastage, and even do things that labour by itself cannot do (e.g. make aluminum). But when it comes to moving things around, labour is strictly competitive with cranes, bulldozers, or conveyor belts, and would presumably find more employment if such machinery were taxed.

### 2. Rural overpopulation

Overpopulation in the countryside also results in unemployment there, as well as in the towns, to which people migrate in search of work. The countryside would be more competitive:

- if the government spent more there, instead of concentrating so much of its spending in the towns.
- or if the industrialisation programme did more to spread jobs around the country, instead of supporting a few "growth poles,"
- or if the small farmers could find some other occupation to combine with farming, especially in the agricultural off-season, just as the Japanese farmers found silk reeling, at the end of the nineteenth century, and the Thai farmers found silk weaving in the middle of the twentieth.

Whatever the deficiency may be, there is evidence that an overpopulated countryside tries to keep its population stable, i.e. tries to export to the towns all of its natural increase. If population is growing at 1.25%, and the urban population is about 50% of a country's overall population (as in Western Europe in the middle of the nineteenth century) the urban population is required to grow at 2.5% and this is manageable. If the population is growing at 3%, an urban population of 50% would need to grow at 6% a year (as it does in Latin America); or an urban population of 20% (as in Africa) would need to grow at 15% a year, which is not feasible. Since it is very hard to produce work for all in urban centres growing at 5%, the prevalence of high and mounting rates of urban unemployment is not surprising.

Rapid population growth contributes distinctly to keeping LDCs poor. It reduces output per head on the farm, and keeps real wages low in the inferior urban markets. It reduces the savings ratio, and eats up capital in providing houses and equipment for extra hands, instead of better equipment for fewer persons. It is at the core of the unemployment problem. The best news from the LDCs is that the birth rate is now dropping steadily.

### 3. Is education compatible with employment?

Some of the blame for unemployment is also placed on the schools, whose curriculum is said to be inappropriate. LDCs are committed to universal primary education, and this goal is not subject to economists' cost-benefit analysis. The obstacles in its way—lack of teachers, buildings and

equipment, and costs—keep down the numbers actually enrolled, especially in rural areas. Urban areas are better provided. There is little evidence in the labour market of a shortage of primary school leavers; on the contrary there is some evidence of that pile-up of unemployment among teenagers which is becoming a world-wide phenomenon.

Beyond the primary school level, the surprise is how few educated people an LDC economy can absorb. The determinants are the proportion of the labour force still in agriculture, the size of the government sector (especially education and public health) and the ratio of professional salaries to per capita national income. The first of these ratios, the size of agriculture, is crucial because agriculture employs very few graduates of secondary or higher education. The principal employer of such graduates in LDCs is the government, especially in the teaching and nursing services. And how many the government can afford to employ depends on whether the professional earns very little (as in India) or very much (as in Ghana) when compared with per capita income. The poorest LDCs can absorb only about 1% of the age group graduating each year from the university, and about 5% from the secondary school; the wealthier LDCs can multiply these proportions by two or three without running into surpluses.

Beyond the high schools and universities are the special training institutions, some of which are linked to on-the-job instruction. It is not unusual for an LDC to be short of persons with special skills while having a surplus of high school or university graduates of the appropriate ages. On-the-job training is also not adequately developed. Greater investment in specific training, on the job or otherwise, would have a substantial payoff in higher productivity.

## Entrepreneurship

Entrepreneurship is needed at all levels, and we shall start at the bottom, with **the peasant farmer**. His low productivity is at the core of the economy's problems. The package, including land reform, for improving his productivity, is well known, and was described on page 8 (under The second direction).

**The small workshop producer** also plays a significant role. He provides employment in the overcrowded part of the labour market. He experiments in using locally produced materials. He may sell directly to consumers, or he may work on the fringes of larger businesses, as a subcontractor, or a provider of parts or services. There is some experience, especially in India, of a package for strengthening his effort, including capital, technology, marketing and consulting services, but most governments have not yet got around to making significant plans for this sector.

Next come **the middlemen**, who buy the peasant's produce with one hand and sell him factory commodities with the other. In many countries these have been the decisive innovators: travelling in the interior of West Africa to introduce and purchase the peanut; doing the same for cotton in Uganda; making a market for peasant coconuts in Sri Lanka; and so on. In many of these countries the government has only to build a road, and within five years trucks are travelling up and down on it, full of produce and traders.

### Competition is not always levelling

Trouble arises where these middlemen are of a different

ethnic group from the rest of the population (Greeks and Armenians in the Middle East, Ibos in Northern Nigeria, Chinese in Southeast Asia, et al.). The trouble arises because competition is not always levelling, as the books assert, but may also cause cumulative differentiation. If a group excels in trade, its children grow up learning the ropes from the earliest ages. They are taught very young that the success of the group is due to its culture, or its religion, or its standards. The group becomes clannish, hires only its own members, and takes risk only with or for its own members. Outsiders too discriminate in favour of the group; bankers who would not lend to members of other groups lend to them; overseas manufacturers choose them as commission agents; and so on. It becomes difficult for persons outside the group to get a foothold.

Special measures are needed in a situation where one group gets much better (or worse) results than do other groups of equal native capacity when set objective and relevant tests. As long ago as 1484, King Richard III of England, coping with an influx of religious refugees, decreed that a foreigner might take no other foreigner as apprentice except his own son—thereby ensuring that the high industrial skills which these foreigners were bringing in would be passed on to Englishmen. Henry VIII amended this decree in 1523 to prohibit foreigners from taking even their own sons as apprentices. Our century is rougher than that of Henry VIII and has resorted, in nearly every such situation, to inflicting murder and violence upon these intermediate peoples, where a package of special measures supporting native middlemen could have broken the cumulative chains.

### Large scale entrepreneurship

We move into more difficult territory as we move into large scale entrepreneurship, since we have to grapple with the proposition that LDCs are incapable of generating enough entrepreneurs of their own at this stage of their development.

The proposition takes off from Max Weber's question: where did all those entrepreneurs come from in previously non-capitalist societies? The economist's answer is: the elasticity of supply of entrepreneurs is high, so the economy generates as many as are needed. This is denied by, for example, McClelland, who sees the entrepreneur as having a special kind of personality derived from childhood experience and training.<sup>7</sup> An increase in numbers would require changes in childhood experience that would take a very long time to bring about. At issue is not native intelligence or genetic differences between groups. At issue are differences in cultural patterns that produce people with different ways of living.

According to the economist, the number of entrepreneurs coming forward is primarily a function of the profitability of the economy. This has several elements.

- First, the country must be at peace. Of the 18 countries is the bottom third of our 55 (i.e. failing to average 3.5% growth) 13 had been involved in internal wars, violent *coups d'état*, or other breakdowns of law and order. Internal war has in practice been the greatest menace to LDC prosperity.

- Next, profitability requires that domestic costs, international prices and foreign exchange rates be consistent with each other, in the sense that exports will grow at a rate not below 6% per annum. Domestic costs are hard to control in these days of continual inflation of the prices

of imports that enter into the cost of living. But at least the government should be trying to hold prices down, and not be on the side of jacking them up. Some leeway is provided by the fact that the international prices of exports also tend to rise. When costs and prices get out of line, devaluation becomes inescapable; otherwise imports increase and exports decline. Failure to manage the foreign exchanges effectively was especially common in Latin America in the 1960s.

- Finally, profitability depends on the government's attitude to private enterprise. If prominent members of the governing party or of the opposition are forever denouncing private enterprise; or if output cannot be maintained without obtaining a string of licences (to build, invest, purchase foreign exchange, purchase controlled raw materials, etc.) from an obstructive bureaucracy; or if the courts cannot be relied on to apply the law—then investment is risky, and entrepreneurship will be scarce.

### Ambivalence: domestic vs. foreign entrepreneurship

Many LDC governments are ambivalent towards their own domestic entrepreneurs. They fear the emergence of a new source of political power that may evade their control; or if Marxist, they prefer to foster state enterprises, even where the evidence of corruption and inefficiency emphasises Marx's idea that socialism should follow and not precede a mature capitalism, which had created rules and a cadre of administration. Such governments may even find themselves favouring foreign enterprise, which they see as temporary, rather than domestic enterprise, which they fear may be permanent.

Other LDC governments are anxious to build up domestic enterprise, and have a package for the purpose, which includes business schools, provision of capital, and marketing and consulting services. Training on the job is enforced by limiting the number of expatriates that a business may employ, and reducing this number each year. Whole sectors are reserved to domestic and denied to foreign enterprise, or at least the government confines its own purchases to domestic producers. Such measures are effective in the sense that there are now a lot of rather prosperous entrepreneurs. Whether these measures are contributing to entrepreneurial efficiency will take some time to assess.

In the meantime the domestic effort is supplemented by expatriate entrepreneurship. This is a very old pattern; German industry was developed in this way in the middle of the nineteenth century, and Russian industry at the end of the century. Moreover there is far more foreign capital and entrepreneurship inside the developed countries than there is in the LDCs. But foreign entrepreneurship was identified with colonial government in the struggle for independence, and subsequent experience shows that its interests are not identical with those of the host government, so it is everywhere under a cloud of suspicion.

There is less foreign entrepreneurship than people imagine. Excluding OPEC, private foreign investment in LDCs in 1978 came to about 1% of the GDP of LDCs.<sup>8</sup> Profits, including reinvested profits, were of about the same amount. That the amounts are so small comes as a surprise to people who are meeting the figures for the first time. The area of foreign investment in LDCs has contracted since the war. It is now extensive only in mining and in manufacturing. It used to be significant in plantations, in public utilities and in wholesale trade, but has largely

disappeared trade. Mining and manufacturing are the only two sectors where it may still have an expanding future.

LDC attitudes to these two are quite different. Foreign investment in mining is tolerated as inescapable, but it is not welcome. Up to 1950, investment in LDC mines was not noticeably profitable, but the unprecedented growth of industrial production after the war drove up the demand for minerals and led to substantial profits in mining. It then became clear that many mining companies had acquired their right to mine in return for quite inadequate compensation. This led to spectacular disputes with unions and with LDC governments, and in several cases to nationalisation at less than stock exchange prices. This in turn had the consequence of slowing down new investment in mining. All parties would like to find some solution: the industrial countries because they need the minerals, and the LDCs because they lack the technology to do the more complex kinds of underground mining on their own.

The LDC attitude to foreign investment in manufacturing is much warmer, judging by the efforts that LDC governments make to attract it. Foreign investment brings technology, management and, for commodities to be exported, established channels to market. Since LDCs have been giving the highest priority to industrialisation, the foreign investor in manufacturing is seen as an ally.

### 1. United Nations Code

The fact that LDC and foreign interests do not exactly coincide may be resolved in the forthcoming UN Code of Behaviour for Transnational Corporations, or in negotiations with individual states. Here are some of the issues:

1. Governments will insist that transnational corporations train native managers and promote them. One path is to limit the number of work permits for expatriates, and to reduce the number progressively.
2. There are various issues in the determination of profits (especially the issue of transfer pricing) which may have to be negotiated case by case.
3. Governments may wish to control the rate of flow of profits remitted to the headquarters, especially in LDCs where foreign exchange earnings fluctuate widely from year to year.
4. Whether a new factory subsidiary is to produce for sale only in the local market or will also seek maximum foreign exports may be in dispute, especially if the transnational corporation is planning to supply neighbouring markets from some other source. This has to be sorted out in the context of the regional customs union, and its plan for sharing out integration industries.
5. Since the profitability of a new mine cannot be determined in advance, governments desire that the royalties payable reflect changes in profits. They are interested in sliding-scale systems, or profit-sharing systems, or even in a right of review—say, once every seven years. This adds to the risks of corporations in inflationary decades, though it is helpful in seeing them through depressions.
6. In industries where technology changes rapidly the host government needs assurances that the foreign subsidiary will be kept abreast of the latest changes, and will not lose markets to other more favoured subsidiaries. This is not difficult for most factories, which incorporate standard or widely known technologies (textiles, cement, bicycles) but it can be an issue where new technology is secret. Only the most advanced LDC economies are involved with this.

### 2. Alternatives to a Code

We cannot guess how many outstanding issues will be settled in a UN Code, if such a Code is ever completed. A Code is desirable, since in its absence corporations can set one LDC bidding against another to attract their business, at the expense of the LDC's interest. In the absence of a Code, the larger LDC governments can reach agreement with corporations without much difficulty, relying if necessary on the World Bank's International Convention for the Settlement of Investment Disputes. Transnational corporations have this same safeguard, and can further protect themselves by insuring with a national scheme, such as the U.S. Overseas Private Investment Corporation (OPIC).

### 3. Partnership

One of the ways through this tangle is partnership between foreign and domestic capitalists, where subsidiaries are owned jointly by a foreign corporation and either domestic private investors or the local government. The foreigner's capital contribution may range anywhere from near zero to near 100%, but he is responsible for management. As we have seen, the amount of capital provided by foreign investment is small—it is about 5% of total capital formation in LDCs. Management and market access are what the foreign investor most usefully brings, and this can be absorbed into many different kinds of mixed economy.

## Capital

Development is more expensive now than it was in the nineteenth century. The pace is faster because of faster population growth, and especially because of one of its consequences, namely faster urbanisation. Also, it is desired to narrow the gap between developed and developing countries, and this implies that the latter must grow faster, not merely absolutely (which they are doing) but also per head (which they are not doing).

### Reducing private consumption

LDCs need to spend about 15% of national income on recurrent government services (education, research, health, etc.) and about 25% of national income to attain a growth target of about 6% a year. The countries in the upper third (those which grew at 5% or more in each decade) averaged a growth rate of 6.9% and in 1978 were investing 27% (both rates unweighted) of GDP. If 15% is absorbed by "public consumption" and 25% is absorbed by capital formation, what is left for private consumption is 60% of gross domestic product, apart from any capital import. The upper third got private consumption down to 64% in 1978, from 72% in 1960. To have reduced private consumption by eight percentage points is really quite an achievement. Even the middle third of LDCs reduced private consumption by seven points (from 74 to 67% of GDP). This testifies that LDCs have really been making an effort of their own, in spite of what their critics may say.

Gross investment was partly sustained by the gap in the balance of payments, averaging, for the top third, 4.3% of GDP in 1978. As a guess, 1% was from private investment in enterprises, 1.5% in concessional finance from other governments (Official Development Assistance, ODA, loans and grants, which averaged 2% over all LDCs) and the rest from various sources, mainly borrowing to pay for oil. The oil problem will get worse before it gets better, but this is



not the place to explore it.

### Distribution of income

If the upper third of LDCs continue their current pace, by 1990 they should no longer need external financial assistance, since they will by then have brought the ratio of private consumption down to 60% or less. The speed with which this can be done is constrained by the need to sustain and increase the material well-being of the masses of the population (especially the small farmers and the urban workers) *pari passu* with capital formation. There is a normal tendency for the distribution of income to worsen in the early stages of development. The standard of living of skilled workers and of farmers with export crops improves along with the salaries of the middle classes and the profits of the capitalists, while the earnings of persons below the median remain for some time unaffected by what is taking place at the growth points of the economy. Progressive governments try to counteract this tendency, especially by creating and expanding the social services, such as education and health, by spending on agricultural extension and other elements of the small farm package, and by combinations of taxes and subsidies that are more favourable to the poor. The target of 60% for private consumption is not inconsistent with measures to sustain mass consumption, since it involves not an absolute fall in consumption, but only a small difference in the growth rates of output and consumption. For example, private consumption is brought down from 64 to 60% of GDP in 10 years, if consumption grows at 5.3% per annum while GDP grows at 6.0%.

### Public and private saving

The responsibility for raising the ratio of domestic saving towards 25% (plus 15% for public consumption) falls, it is generally agreed, on LDC governments. LDCs have no **rentier** class. The urban middle classes are investing in housing and in education, but not in much else. Saving by small farmers and by workers is important to those groups, but is a small percentage of national income. No doubt all these flows will increase with time, but meanwhile the shortage of private saving must be met by a growing contribution of public saving. Public saving is defined as the difference between government revenue and expenditure on current account, plus the profits of public enterprises.

Since it is not feasible, for political reasons, to raise tax rates every year, the **modus operandi** is a tax structure such that any increase in national income brings a greater percentage increase in government revenue. This is achieved partly by having progressive taxes on income, and partly by having a structure of indirect taxes such that the levies are greatest on the commodities for which consumption increases most rapidly (with exceptions for food and clothes).

LDCs in the middle and bottom thirds need more financial help than those in the top third. The United Nations has recognised and listed the 25 countries most needing assistance, and developed countries have undertaken to give priority to these countries, with technical assistance and financial aid.<sup>9</sup> If countries are helped now, they can grow faster and become financially self-sufficient all the sooner.

## Conclusion

We can now set out the dynamic factors in development as follows:

1. The largest obstacles to development have been political insecurity and inadequate rainfall. Most of the countries at the bottom of the growth league have been afflicted by one or the other. In the absence of these, the stage is set for economic development.
2. The average rate of growth of LDCs had depended on the average rate economies were prosperous. Whether high LDC rates can be sustained over a long period of worldwide recession is now being tested. Other issues include: the removal of restrictions in MDCs on import from the LDCs; the terms of trade; and the amount of concessional aid.
3. In the middle and upper thirds of developing countries the dominant factors are:
  - the rate of growth of market demand, whether through growth of exports (which averaged 6.9 and 4.6% per annum in the upper and middle thirds respectively)<sup>10</sup> or through growth of agriculture (4.3 and 2.3%, respectively).<sup>11</sup>
  - the growth of investment in human and physical resources, signalled by the decline in the relative share of private consumption (to 64 and 67% of GDP in upper and middle thirds respectively).
  - the climate for entrepreneurship, private and public; and
  - the quality of the government, whose decisions affect each of the above.

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<sup>1</sup> Data are from World Bank Development Report, 1980. The partition into thirds excludes Middle East oil exporters and countries with less than five million people. Together, the three thirds total 55 countries. Comparable growth rates for developed countries over 1960-1970 were: United Kingdom, 2.9%; United States, 4.3%; Federal Republic of Germany, 4.4%; and France, 5.7%. Developing countries in the upper third were: Ivory Coast, Kenya, Tanzania, Syria, Turkey, Yugoslavia, Korea, Malaysia, Philippines, Taiwan, Thailand, Bolivia, Brazil, Colombia, Costa Rica, Guatemala, Mexico, Venezuela.

<sup>2</sup> Statistics show that the poorest countries grow the most slowly, spend least on education, trade least, invest least, and so on; but they throw no light on which is cause and which is effect. If they did, this essay could be reduced to a couple of pages. Instead, we still need to devise theoretical explanations.

<sup>3</sup> The bottom third (countries which did not average a growth rate of 3.5% over 1960-78) were: Angola, Ethiopia, Ghana, Madagascar, Mozambique, Niger, Senegal, Sudan, Uganda, Upper Volta, Zaire, Afghanistan, Bangladesh, Burma, Nepal, Argentina, Chile, Uruguay.

<sup>4</sup> The universe is the 55 countries referred to in notes 1 and 3 above. It should be remembered that Hong Kong and Singapore are not included. The middle third consisted of: Cameroon, Guinea, Malawi, Mali, Morocco, Nigeria, Zambia, Zimbabwe, Dominica Republic, Paraguay, Peru, Algeria, Egypt, Portugal, Tunisia, India, Indonesia, Pakistan, Sri Lanka.

<sup>5</sup> The estimate of 2% is from United Nations Conference on Trade and Development, Handbook of International Trade and Development Statistics: Supplement 1980, page 412.

<sup>6</sup> Some plantations have coincided with abundance of labour, using colonial power to acquire the land; e.g. Java.

<sup>7</sup> David C. McClelland, *The Achieving Society* (New York: Von Nostrand, 1961).

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## International maritime information: World port news:

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# Report on the 10th Conference of the International Association of Lighthouse Authorities, Tokyo, November 1980

**By Mr. Ribadeau-Dumas, French  
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### Summary

The 10th Conference of IALA was held in November 1980. Such conference allow the Association to review current question, to take decisions or to prepare proposals. Moreover numerous reports (200 in 1980) are submitted by Lighthouse Authorities and constructors; they are discussed and conclusions are made. These reports dealt with 12 topics and it seems that this year the most important ones concerns radio and marine traffic service. However a new aspect has come to light, namely the general use of modern mathematical methods, analysis and statistics for determining navigators' needs and corresponding aids. Important advanced steps may be expected in coming years but a similar effort is required for ship equipment and crew training in order to ensure the desirable degree of navigation safety.

The Conference also adopted the rules of the IALA new maritime buoyage system.

At present I.A.L.A. organize an international Conference every five years. The aim of these meetings is twofold:

- so that the Association may take stock of matters under discussion, examine the work of the committees created for this and then adopt definite positions and make decisions.
- so that the maritime signalling departments and constructors may give the results of their most notable studies and realizations discuss them and draw the necessary inferences.

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(Continued from page 27)

<sup>8</sup> Data from OECO, Development Cooperation, 1980 Review, Paris 1981.

<sup>9</sup> Some of these are very small. Seventeen of the 25 have populations of less than 5 million, and are therefore not included in the 55 countries whose data we have been using.

<sup>10</sup> Growth rates for exports are for 1960/70, except for Taiwan and South Korea, where the rates for 1970/78 are used instead because the 1960/70 rates are abnormally high. Without these two countries the rate for the upper third of countries would average 5.4%.

<sup>11</sup> Expansion of the numbers in service industries would also increase demand, but is constrained by the supply of commodities, since service workers have to be fed and equipped.

The five year delay adopted may seem long; in fact it corresponds to the time needed for developing a study, advancing a stage, or carrying out committee work on a given subject. The preparation of the Conference work sessions requires an actual time period of two years in order to draw up reports, study them and be able to discuss them.

The Tokyo conference, which was organized locally by the Japanese Maritime Safety Agency—who were the hosts—lasted 2 weeks in November 1980 and about 300 participants took part from about fifty nations. The General Assembly dealt with administrative matters and gave directives and guidance to its Executive Committee and to the Technical Committees for the 5 years to come.

The reports of the Services and constructors were also discussed and not only provided information for members but were also subject to general estimation. More than 200 reports were received in 1980 and were arranged in 12 themes to cover the whole range of maritime signalling activities from lighthouse building to maritime traffic Services, while taking into account theoretical studies and those which concern various assistances and the logistic support, etc. A general rapporteur and a technical expert were appointed for each theme they presented a synthesis and directed the debates as concerns the reports kept for discussion (about 2/5). At the end of the session the main points are retained.

### The IALA Technical Commissions

Only a part of the work of the 7 Commissions is mentioned here:

**The Buoyage Harmonization Commissions**, who were the cause of the recent adoption of the "A" system by the IMCO Maritime Safety Committee, proposed a single text which included the "A" and "B" systems. Taking into account the fact that there is a consensus of all the maritime signalling services, seafarers should at last easily be able to understand buoyage marks and lights throughout the world. The cardinal system is generalized, whereas 2 zones will subsist for the lateral system (red on the port side, green on the starboard side in one zone, and the reverse in the other one — however this is the one and only difference). This document was amended and adopted during a special meeting. The draft agreement to replace that of COPENHAGEN (1977) will be prepared by the IALA executive committee and subsequently submitted to

the maritime signalling services for ratification. The text of this agreement will be sent to IMCO for the information of all nations.

**The Microwave Commission** among other things is concerned with racons. Seafarers appreciate the service rendered by this type of marks and they are admitted to be of great interest. However various inconvenience subsist—notably interferences in the case of proliferation, or nuisances close by, and the rate of signal renewal is at times judged insufficient. IMCO recommendation A425 on the utilization of these buoys is to be attributed to IALA. This recommendation includes fixed frequency response beacon which could be very useful. However this type requires ship radar adaptation and utilization experience is not yet complete enough. For this reason IMCO tends to put off their insertion in ship radar specifications (A 222 standard under reconsideration). Moreover the extensions to the so-called 3 cm band—utilized by ship radars—during the World Administrative Conference of Radiocommunications in 1979 are not without effect on the racons.

The Association will subsequently adopt a definite position, taking into account technical progress already accomplished and also that which is expected in the future.

**The Availability and Reliability Commission** has a mandate to recommend reliability standards for the various maritime signalling establishments. This task proved complex as data available are incomplete and hard to compare, owing to differences in exposure to natural agents. Moreover the seafarer utilizes a set of signals which are more or less redundant, even within each category (light signals, radio signals, etc). The higher this redundancy, the greater the availability rate of the system, even if the reliability of the elements, taken separately, is not excellent. Thus numerous cases and situations must be considered and a difficult classification is required.

**The Light Intensity Commission** has already carried out important work. It may seem astonishing that at present there are no international standards for estimating and measuring lights, nor infallible knowledge of their range. However this is indeed the case, notably for flashing and flickering lights. IALA has already made considerable progress and published information in its alignment charts report which are admitted as standards by all Services, but important work is still required.

**The Commission of Surface Colours** is faced with similar problems, whereas **The Radio Navigation Systems Commission** is concerned with various questions dealt with at IMCO and is in the process of editing a radio assistance manual.

## **The Conference Reports**

### **Theme 1: Data, parameters and calculations for navigation assistance.**

It is the first time that such questions are grouped in a particular theme. As was noted by the general rapporteur, the number of reports presented provides a good idea of the increased importance—over a period of some years—of scientific methods in navigation assistance evaluation and decision procedures. The methods utilized may be classed as analytical (estimation of an assistance system with regard to the probability of obtaining the required accuracy) or statistical (study of the routes and trajectories of the ships with respect to navigation assistance) and

simulation techniques are applied (ship manoeuvres compared to various assistance installations). The movements of the floating bodies (buoys) under the effect of swell are the subject of considerable new studies. Operational research techniques are applied in order to obtain better efficiency or greater availability.

Finally numerous computer calculation programs are now used to determine light installation (alignments) and also to calculate buoy anchorage lines and logistic organization.

An interesting discussion concerned the use of navigation simulators to estimate buoyage quality or to try to define optimal buoyage. It was concluded that solutions to certain problems could be obtained, but that the number of possible experiments—limited by very high cost—is too small to give very significant results.

### **Theme 2: Lighthouses and fixed constructions.**

Besides classical construction in masonry or concrete often designed with a view to prefabrication and modularity, new structures and processes have already proved resistant or are being experimented. In particular the following may be mentioned: stainless steel towers (in successive rings), new designs for posts and piles, and generalized use of plastic materials—notably with fiber glass reinforcement.

The use of articulated towers comparable with those used by oilmen was an innovation to be noted and observed in future. These devices replace turrets, or buoys in very exposed places where they cannot be supplied with sufficiently strong lights at a suitable height. However they are still too small to be used as major assistance.

### **Theme 3: Floating assistance.**

Multiple trials have been undertaken with buoys in plastic materials but the results vary according to the nature of the material and local conditions. In certain cases these new types are advantageous, whereas in other cases steel remains irreplaceable. A definite decision cannot yet be expressed concerning the selection criteria. Plastic is also utilized for anchorage lines but again studies and progress are indispensable. The shape required for buoys exposed to violent currents are also being studied, as are their coatings (paints).

### **Theme 4: Buoy tenders and buoyage centers.**

Various services have described the new buoy tenders and tender ships put into service during recent years, particularly for operation in the open sea, in shallow waters, or under strong current conditions—and also their positioning and work equipments.

A relatively new concern has come to light, namely the need for rapid ships able to intervene without delay.

### **Theme 5: Energy sources.**

This question has always been considered very important, as concerns both safety and cost, and this is particularly the case with the energy crisis.

First and foremost comes the development of renewable energy systems using solar radiation, wind or swell. Progress still has to be made in these three fields, in spite of successes obtained. Solar energy is reliable but costly and is often unable to supply the power required for efficient

signalling. Wind energy demands that implantations be carefully chosen to obtain good reliability—trials with small wind generators on large buoys have given good results. Swell energy can be utilized in certain places but improvements in efficiency are indispensable. However numerous studies concern classical sources and improved utilization, efficiency and reliability, particularly with diesel generating sets and electric batteries.

#### **Theme 6: Light and vision.**

The practical questions faced at present have been dealt with in the reports and discussed.

Automatic lighting and extinction of the lights—desirable for economical reasons—is generally linked with the luminance acting on the control cells and not with legal times established by national regulations. For the seafarer, the lighting time must be related to his need and therefore depend on luminance and visibility and not on a legal hour. Some information—until now inexistant—was provided by some French studies concerning the value of the zenithal luminance and its variations at nightfall, according to weather conditions. Conclusions were drawn concerning the reduction of lighting hour dispersion as regards the lights of a same system. The rhythms adopted for the new buoyage system are designed so that signal recognition be as rapid as possible. A certain degree of standardization seems to be desirable but nevertheless some diversity is also necessary to avoid dangerous confusion. The short flashes allow power savings, but the seafarer must be able to recognize them easily and take bearings, thus they must last a long time or possess a rapid rhythm. The desire for economy must not lead to inefficiency.

In some cases the yellow colour used for special mark lights can be mistaken for red and above all white. A suitable colour zone has been recommended by I.A.L.A., but confusion with white can only be completely ruled out if the latter colour is consistent with the "recognizable white" of the International Lighting Commission, that is to say verging a little on blue—this is not the case with certain sources at present.

In the same manner countries apply I.A.L.A. recommendations for colour standardization. This demands that the corresponding national standards be fixed and that the necessary samples be distributed.

Finally, various aspects of the retroreflectors have been taken into consideration. In particular, a photometry and colorimetry method has been proposed in replacement of present solely qualitative estimations.

#### **Theme 7: Sound and audition.**

Fairly numerous contributions at previous conferences were devoted to this theme and concerned sound sources, diffraction, and controlling or attenuator screens. Only one report here deals with estimation of sound signal efficiency using a probabilist method. Some doubts as to the use of sound signals were raised in the discussion but it was agreed that they were still very useful for some seafarer categories.

#### **Theme 8: Radio-navigation.**

This theme is of course vast and is concerned by 15% of reports presented.

The subjects approached are development of radio assistance, its advantages, choice of means adapted to local

needs, and efficient use.

A first set of reports takes stock of existing general navigation systems (Omega, Loran-C, DECCA, differential Omega), gives an account of improvements (stability, standardization), of possible uses, and also of experimental estimations regarding expected accuracy. It was noticed that differential Omega transmitting stations were of low relative cost and are thus advantageous for developing countries.

A second set deals with relatively new systems in extension (RANA P. 17) or with increasing applications. This is also the case for high-precision systems, utilized for hydrography or navigation in narrow waters (SYLEDIS, SYLEPORT, etc.). The situation of the NAVSTAR/GPS system by satellite—which has great possibilities—is as yet not very clear, due to financial problems and a future decision concerning its uses for civil needs.

Radio beacons have not been forgotten, although in well equipped zones they are now practically only employed by pleasure boats or small fishing boats, notably for assembly. But modernizations giving greater point precision are possible and new method for calculating interference is proposed, as a basis for revising the 1951 frequency distribution plan which has now become obsolete. An English company has reported trials effected with a very high frequency (V.H.F.) radio beacon. Rather accurate angular bearings with the normal ship receiver—like CONSOL previously—can be obtained with this device, but at short range. This system could be very useful for pleasure boats and coastal fishing vessels.

Another set of reports concerns racons. Two of the reports provide information on fixed frequency beacons—mentioned above—and trial results. Matching of a modern radar costing 8,000 pounds may amount to only 400 pounds.

Moreover notable progress has been obtained with new types of passive radar reflectors which can be used on small boats and buoys. These reflectors are compact and really efficient.

Finally, the efficiency of the radio-navigation equipment on board and its utilization is dealt with in one report. This is an important problem for navigation safety—how do seafarers use the means at their disposal and to what extent does new assistance lead to greater safety? The answer to these questions primarily concerns the Services responsible for installing maritime signalling—in consideration of cost.

#### **Theme 9: Automation and remote control.**

There is a tendency—above all in industrialized countries—to suppress personnel in charge of stations. Moreover, increased safety means that the installations have to be controlled permanently—for faster intervention and also to warn seafarers of failures.

The reports therefore describe firstly automatic installations including suitable emergency and warning systems and secondly remote surveillance and control processes which even include total centralization for the main establishments. Control of the buoys, their position, and the working of their equipment is an important point, but at present there does not seem to be a practical and economical solution for this problem.

Electronics and radio are utilized but all difficulties have not yet been solved and notably problems of energy,

transmission and reliability due to maritime environment conditions. Whenever possible the commutated telecommunications network is employed—an economical and very reliable solution—and failing this radio channels are exploited.

#### **Theme 10: Coastal and harbour navigational assistance.**

This theme covers a set of special studies in which the diversity of maritime signalling tasks is well portrayed. Besides examples of systems employed for signalling in channels, mooring and current measurement, there are more “philosophical” contributions—simulation of traffic in the Channel and a comparison of various organization schemes, an analysis which concerns the utilization of assistance by harbour pilots, and a study of seafarers’ reactions and behaviour when system “A” was put into service in the northeast part of the Channel. On the one hand this study showed that the new system was appreciated by seafarers and on the other hand that there was a need for previous information by all possible means.

#### **Theme 11: Problems of organization, implementation and maintenance.**

Two important points are dealt with in this theme—firstly the naval maintenance means (buoy tenders and launches) for which a country reports the analytical and operational research studies carried out to define the most economical and efficient system, and secondly some remarks on availability and reliability to assist the appropriate technical commission. Good availability and management of maintenance means can modify the desired reliability level. It was reported that quality test procedures for components could improve equipment reliability and that quality standards for maritime signalling establishments could be established.

Finally attention is drawn to the fact that lightning protection is very important for establishments, as they are in a particularly exposed position.

#### **Theme 12: Maritime traffic services.**

For the first time 12 reports deal with this theme—which is of current interest—in an IALA conference. The maritime signalling services are concerned as they help to define traffic services, are often in charge of ground equipment realization—and even operation—and because, in any case, they must set up the signalling connected with this.

It is observed in the general report that maritime traffic services are becoming general throughout the world.

Under the influence of public opinion the initial aims—navigational safety and easy traffic flow—are giving way to protection of populations and the environment against accidents and their consequences, so that some systems are installed were relatively low traffic and easy navigation (notably with available assistance) did not originally warrant this. It may be that a system of pollution protection does not provide adequate navigational safety, and the reverse is also true.

The means used are everywhere the same, mainly radar—perfected to a greater or lesser degree—synthetic visualization and data-processing so that ships can be followed and their speed estimated. Dangerous passages can also be watched using television with retransmitted image, in good visibility regions.

One of the present problems is ship identification, to which there are various solutions. The most efficient solution would be to place radar responders on the ships to be followed, responding in a band other than that of ship radars, to avoid interferences. However problems of standardization, ship equipment and reliability are encountered (what proportion of equipment would be in service and in a good state after a crossing?). To be really useful in crowded zones, all ships would have to be equipped with such responders, but could this be obtained for small fishing vessels and pleasure boats?

The present solution is that of reports sent by the ships coming into the zone of surveillance or passing conspicuous lines—eventually with the help of very high frequency direction finding. However results are far from giving entire satisfaction.

One aspect discussed is the profitability (cost-return) of the maritime traffic services. Economists and technicians agree that at present there is no common denominator between costs (investment-operation), which can be calculated, and safety which does not seem to be quantifiable. The cost of accidents can be estimated, although it is difficult to assess damage to the environment, but to what extent can they be avoided through the presence of a maritime traffic service. This remains very subjective, all the more so as—fortunately—accidents are relatively rare and an estimation based on statistical or probabilist data does not seem possible.

However public opinion demands, no doubt rightly, that numerous means of protection be installed, and maritime traffic services are an efficient element of this.

As indicated by the general rapporteur, it was recognized that the following points should be studied by I.A.L.A.:

- Aims and missions of the maritime traffic services.
- Legal responsibilities.
- Harmonization and compatibility of navigational assistance and traffic services.
- Education and training of operators.
- Estimation of profitability.

These points, as well as the technical aspects, will be studied by a technical Committee—shortly to be set up. This Committee will act in conjunction with numerous agencies who already deal with these questions (navigation institutes, the International Association of Ports and Harbors, the Permanent International Association of Navigational Congresses, IMCO, etc.) and the professional associations concerned (Pilots, Captains, shipowners, etc.).

#### **Conclusion**

The foregoing general view—as brief as possible—shows the extent of the matters discussed in Tokyo and the importance of the resulting decisions or lessons for the maritime signalling services and navigational safety.

Each I.A.L.A. conference is a step forward for better maritime signalling and consequently better navigational safety. One of the most important steps was the adoption—in 1980—of a single set of rules for buoyage (although in two regions, A and B).

As was noted by the general rapporteur of theme 1, Tokyo 1980 reveals how important methods of calculation and scientific estimation have become, from both the technical and operational point of view. Whereas up to now



rather subjective empiricism was the rule. It can therefore be hoped that there will be decisive progress in maritime signalling over the next few years.

However, as was pointed out in theme 8 (radio-navigation) maritime signalling can only be efficient to the extent that seafarers know how to use it and indeed do so. The general conclusion is therefore that ship equipment and crew training must comply with safety demands. Proposals along these lines have been made to IMCO and are supported by I.A.L.A.. Navigational safety depends on this as does the protection of populations and environment against the consequences of eventual accidents.

\* \* \* \* \*

## Lakehead Harbour management changes

Mr. Walter J. Clemens, Chairman of the Lakehead Harbor Commission announced today (*on December 3, '81*) the following management changes. Mr. Ken McCuaig, Port Manager, will officially retire at the end of this year. Mr. McCuaig joined the Commission upon its formation in 1961 and has been largely responsible for its development and growth since that time. The Lakehead Harbor Commission has the distinction of being one of the leading port administrations in Canada. Mr. Clemens noted that the Commission was extremely grateful that Mr. McCuaig has agreed to continue his association with the Commission on a consulting basis.

Mr. Clemens also announced today the appointment of the new Port Manager for the Lakehead Harbor Commission. Mr. P. R. (Jerry) Cook will succeed Mr. McCuaig in this position effective December 1, 1981. Mr. Cook, a native of Thunder Bay, is well known in both community and business circles. Mr. Clemens stated: "We are very pleased that Mr. Cook has accepted this position bringing with him extensive knowledge in the marine industry". Mr. Clemens emphasized that the continued growth and effectiveness of the Lakehead Harbor Commission is important to the transportation network of North America and the economy of Thunder Bay. Mr. Cook's reputation and leadership abilities will be a great asset to the Commission in its efforts to maintain the Port's operating efficiency and its growing recognition in world markets.



Mr. P.R. (Jerry) Cook

## The 2,000,000th container handled at Port of Montreal

In some pursuits, such as the computation of distances to the planets, 2,000,000 is an insignificant part of the total. In terms of containers handled at a port, 2,000,000 is a very impressive figure. It represents approximately twenty million metric tons of cargo and it means hundreds of thousands of man-hours of work. It stimulates the economy of the port community by injecting many millions of dollars into the economic stream. The handling of 2,000,000 TEU's is a notable achievement for a port. It is a goal which the Port of Montreal achieved and passed in 1981.

In 1968, the first year in which containers appeared in Port of Montreal statistics, the number handled was only 11,374. In 1969, the first full year of operation of the port's initial container terminal, the number of TEU's handled was 47,107 and a cumulative total of 2,000,000 was no more than a dream.

As additional container terminals were built and more container lines were added to those serving the port, the yearly totals of containers handled increased steadily. Eleven years were required to reach a cumulative total of 1,000,000 TEU's.

In the last few years, there have been large annual increases in container handling and in less than four years, the second million mark was reached. Attaining that goal was a gratifying accomplishment for port operators and at the current rate of growth, we anticipate that the three million mark will be reached in less than three years.

Montreal pioneered in container handling in Canada. Its first container terminal, which was also the first in Canada, began operating in November 1968. Since then, four more terminals have been added and one of these was extended this year. All terminals are equipped with gantry cranes. All have adequate sheds, storage areas and modern equipment for moving, stacking and loading containers. All of them have efficient rail connections and facilities for trucks.

In recent years, a number of major container lines have been attracted to the port. The additional traffic which they have brought to Montreal ensures the continued healthy growth of the container business in future years.

Montreal is Canada's number one container port. It handles more containers than all the other Canadian east coast ports combined. It ranks fourth on the North Atlantic Seaboard.

## Dredgers build new port area: Port of Vancouver

Visible evidence of the expansion of Roberts Bank outerport can be seen as reclaimed land rises above the sea in the first stage of the construction which will enlarge the port to four times its present size.

Dillingham-Sceptre Joint Venture's dredges, the Sceptre Fraser and the King Edward, have removed nearly 3,000,000 cubic metres of sand from the future ship basin. This material has been pumped through a combination of floating and submerged pipelines which have been pushed under the causeway road and railway tracks and deposited on the sea bottom west of the present terminal.

At the same time, approximately 160,000 tonnes of gravel and rock have been placed around part of the perimeter of the future terminal to retain the fill and protect its slopes from storms. Gravel for this bank protection is shipped by scow from the Port's underwater stockpiles at Lions Gate Bridge, and blasted rock is scowed from the contractor's quarry on the Fraser River above New Westminster.

On-site monitoring of the dredging operations by biologists employed by the Port provides information on the impacts of the dredging on marine life and its habitat for the Department of Fisheries and Oceans. Extensive studies aimed at evaluation of these impacts are also being undertaken by Fisheries and Oceans with the co-operation of the Port.

In preparation for expansion of its coal shipping facilities into part of the new reclaimed land, Westshore Terminals, the present terminal operator, has carried out engineering and is preparing plans for a new shipping dock and for expanded coal handling facilities.

Dredging will continue throughout the winter until the end of February and resume again in September 1982. During this interval, if dredging were to continue, damage could occur to marine life and the Port has co-operated with the Fisheries Department in minimizing this damage by postponing dredging during the season when marine biology in the area is most active. Meanwhile, work on the protection of banks of the reclaimed land and the building of roads and other facilities will continue.

## Corps Investigations Funding

The Corps of Engineers' FY 1982 civil works appropriation allocates some \$12 million to deepdraft general investigations, with virtually all of it for on-going studies. The only "new start" is \$120,000 for the Delaware River Comprehensive Navigation Study, slightly reduced from the \$125,000 originally sought. Included for continuing planning and engineering studies are Mobile Harbor Deepening (\$700,000); San Pedro Bay Ports (\$400,000); Buffalo Harbor (\$500,000); St. Lawrence Seaway, additional locks (\$400,000); Norfolk Harbor and Connecting Channels Deepening (\$2.6 million); Mississippi River-Gulf Outlet Expansion (\$1 million); Galveston Bay (\$720,000); Sacramento River Deepwater Ship Channel (\$400,000); and Great Lakes Connecting Channels (\$1.010 million) to name those with the most funding. We have the complete list of all affected projects. Let us know if you would like to know how yours fared.

Overall, the FY 1982 appropriation, which President Reagan signed into law December 4, breaks down like this:

General Investigations	\$ 137,225,000
Construction, General	1,416,992,000
Flood Control, Mississippi River and Tributaries	256,310,000
Operations and Maintenance, General	1,008,355,000
General Expenses	91,000,000
Special Recreation Use Fees	4,784,000
	<u>\$2,914,666,000</u>
	(AAPA ADVISORY)

## Great Lakes Seaway tolls

The Saint Lawrence Seaway Development Corporation and the Seaway Authority of Canada have agreed that the revisions of the Joint Seaway Tariff of Tolls proposed this past September should be made effective, without change, when the 1982 navigation season begins. These include increases in charges that will average 18 percent in 1982 and 10 percent in 1983 for commercial vessels and cargoes transitting the entire Seaway between Montreal and Lake Erie. An exchange of diplomatic notes between the U.S. and Canadian governments to formalize the new tariff is expected to occur early in 1982.

Under the new tariff, tolls per metric ton on the Seaway's Montreal-Lake Ontario section for each of the existing commodity classes will be raised as follows in 1982 and 1983: bulk cargoes — 11 and 6 cents; containers — 11 and 6 cents; government aid cargoes — 7 and 4 cents; grains — 7

and 4 cents; and general cargoes — 25 and 15 cents. The vessel charge per gross registered ton will be raised one-half cent in 1982 and one-half cent in 1983. On the Welland Canal section, commodity tolls and vessel charges remain unchanged, but a local charge will be reintroduced. For loaded vessels, the charge will amount to \$150 per lock in 1982 (with a 50 percent discount for ships in ballast). Seaway officials doubt the new charges will "significantly diminish Seaway traffic." Said U.S. Seaway Administrator David Oberlin: "The increases proposed earlier are imperative to meet the financial obligations of our two agencies. We could not afford to await the final outcome of user charge legislation... we believe our decision is one of prudent management." (AAPA ADVISORY)

## 1981 cargo volume estimated at 35,265,000 tons: Maryland Port Administration

Foreign waterborne commerce in the port of Baltimore during 1981 amounted to an estimated 35,265,000 tons. This represents a 4.4 percent portwide decline in the flow of cargo from last year, or 1.6 million tons less than 1980.

Statistics released by the Maryland Port Administration identified 29,650,000 tons of the 1981 total as import-export bulk cargo, a decline of 3.8 percent. Worldwide demand for coal, which totaled 12.9 million tons in the port of Baltimore during the past year, kept the port's export bulk figures almost apace with last year's 18 million tons.

The 1981 level of import-export general cargo is estimated to be 5,615,000 tons, a decline of 7.2 percent from the previous year's 6 million tons.

W. Gregory Halpin, Port Administrator, in reviewing the statistics indicated that declines were minimal in view of the world economic picture during 1981 and added "there is every indication that our tonnage volume will show improvement as the business climate moves toward recovery in the early part of 1982."

He said "port commerce in 1981 was at a level very close to the forecasts made by the MPA at the beginning of the year. Baltimore showed its strength as a competitive East Coast port in limiting cargo losses during a period of international recession and severe attacks on its markets by Canadian and West Coast diversions."

"Baltimore more than held its own in 1981 and only a 77-day coal strike prevented the port from advancing over the previous year," Halpin said. "The ability of the port to withstand labor disruptions, worldwide economic stagnation and assaults by ports competing for our business indicates that 1982 could show gains over the year just concluded," he added.

"We project a significant increase in coal exports during the coming year since there will be no strike to contend with," he said. Another factor leading to improved business for the port in the coming year, Halpin said, relates to general cargo being diverted to Canada. The situation, which allows cargo to move north of the border by companies not filing tariffs, is expected to be solved by the enactment of new laws governing this trade. "Congressional action on pending legislation will improve U.S. ports competitive stance and should impact favorably on the port of Baltimore in 1982," Halpin said.

## French solicit Baltimore coal: Port of Baltimore

French Maritime Leaders recently visited Baltimore to solicit increased trade between the port of Baltimore and the port of Marseilles-Fos.

Yann-Pierre Remond commercial director of the port of Marseilles-Fos, urged more exportation of coal through the port of Baltimore. He spoke before a Hilton Hotel audience of 200 representatives of Baltimore shippers, freight forwarders, Maryland Port Administration officials, and industrial leaders.

Remond and other representatives from the port of Marseilles-Fos came to Baltimore to stress the shipping progress made by Marseilles during the past ten years.

Marseilles-Fos, the number one port in France and the second in Europe, can handle ships up to 250,000 tons with a draft of 65 feet. The port is located at the mouth of the Rhone River and has as its heart an industrial complex covering 18,000 acres in its first phase.

The complex processes crude oil arriving through deep-water petroleum terminals. The four refineries on the zone were built by Shell, Exxon, British Petroleum and Compagnie Francaise de Raffinage and are capable of refining 350 million barrels per year.

France is concentrating heavily on producing electricity by nuclear power. However, according to Remond, a large number of French industry is reconvertng to coal energy.

"What we need most now is coal," Remond said. "We will be needing several million tons more of coal a year. We don't need much of the metalurgical coal; we have sufficient of that. What we need is steam coal."

The coal Marseilles seeks is expected to come from United States producers located in West Virginia, Pennsylvania and Kentucky. Marseilles-Fos anticipates that it will handle six million tons of coal this year. The port of Baltimore handled more than 12 million tons of coal in 1980 and is expected to move about 15 million tons this year.

Baltimore is Marseilles-Fos' largest trading partner on the East Coast after New York and is linked directly by regular steamship service. Shipping companies serving both ports include Farrell Lines, Inc.; Zim Container Service, C.M.A.; Nedlloyd and Italia.

Marseilles-Fos handled more than 100 million tons of all types of cargo in 1980. The Marseilles docks have over 100 general cargo berths, 28 RO/RO berths and specialized facilities for grain, alumina, dry and liquid bulk, livestock, wines, fruits, and vegetables.

Marseilles is the Mediterranean's ship repair center with 10 drydocks, the largest accommodating vessels of up to 700,000 deadweight tons.

The hinterlands of Marseilles-Fos extends to Germany, Switzerland and Italy by rail route and the Rhone-Saone River which offers a 520 kilometer stretch of navigable waterway for pushed barges of up to 5,000 tons to Lyons. When canalization is completed, it will provide direct inland waterway access from the Mediterranean to the North Sea through West Germany.

Container cargoes rank highest in types of cargo handled by Marseilles, followed by petrochemicals and oil for refining. The port has a 540 ton fixed crane loading capacity.

When Marseilles-Fos completes dredging of its 80 foot deep channel, the port will be able to handle ships with 68

foot drafts and weighing as much as 400,000 tons.

## Break-bulk tonnage record: South Carolina State Ports

A record volume of break-bulk cargoes was handled by the State Ports Authority during fiscal year 1981 which ended June 30. The total, including bananas, was 1,587,131 tons, breaking the 1979 mark of 1,468,735.

Overall SPA tonnage was a near-record 4,339,475, only 28,436 below the standard set a year earlier. The 1980 collapse of Seatrain Lines causes noticeable decline in container activity from 1,819,230 tons to 1,625,222. Seatrain was by far Charleston's biggest ocean carrier.

Leading the surge in break-bulk goods were big gains in textile products, machinery, paper products and waste materials (textile and paper). Substantial increases also were registered in chemicals, canned goods and wool.

The SPA continued to post a very favorable balance of trade, 68.4 percent of the traffic (2.97 million tons) being export. This, too, is possibly a record figure.

Information concerning specific commodities, except hazardous, transported in containers is not reported to terminal operators such as the SPA. Shipping lines and their customers are not required to do so, largely in the interests of competitive confidentiality.

## Lakes governors seek uniform cost recovery — Seaway Port Director Helberg represents Great Lakes ports interests

The Great Lakes caucus of the Midwest Governors' Conference has adopted a policy statement calling for a "single national system for uniformly applied, federally administered user fees . . . for deepwater navigation including the Great Lakes."

The governors also called for the forgiving of the remaining St. Lawrence Seaway construction debt and proposed that seaway operating expenses be included in expenditures paid for from a national user fee fund, before the imposition of any fee system.

The Great Lakes caucus of the Midwest Governors' conference includes Governors Albert H. Quie of Minnesota, Lee S. Dreyfus of Wisconsin, William G. Milliken of Michigan, James A. Rhodes of Ohio, Robert D. Orr of Indiana and James R. Thompson of Illinois. The caucus met as a regular part of the 20th Annual Midwestern Governors' Conference held the latter part of August in Milwaukee.

The governors' policy statement came after Duluth Port Director Davis Helberg told the governors, "We need your help." Helberg was referring to proposed federal cost recovery and user fee legislation which he said could have "the ultimate effect of laying a disproportionate and discriminatory cost on the doorstep of the producer of agricultural export commodities."

Said Helberg, "We respectfully solicit the governors' assistance in making sure that such a system [of user fees] be uniform in its application and federally administered, so as not to disrupt or distort present cargo flows. We urge you to exercise your influence with the Congress to insure as equitable formula that will not pit port against port, region against region, waterway against waterway, solely

because of geographic location and dredging requirements.”

The governors’ policy statement recognized the special problems of the Great Lakes, including that the lakes represent the only navigation system which has been subjected to user fees for over 20 years, and the only international system.

The governors said the federal role in navigation should be defined to include “full responsibility for provision and maintenance of navigation channels and major designated waterside port facilities within the United States including the Great Lakes.

## **One of the largest harbor deepening projects now in progress, its 50 percent completes: Port of Los Angeles**

The deepening of Los Angeles Harbor from -35 to -45 feet, begun in October 1980, may be one of the last such projects to receive substantial federal funding. The Reagan administration has proposed to end federal support for deep harbor dredging.

Congressman Glenn Anderson, 32nd District-Los Angeles, is credited with guiding an appropriations bill through Congress which provided nearly half of the funding for the \$61 million project. The Port is paying the remainder from its revenues.

The deepening project’s objective is to make the 7,000 acre man-made harbor accessible to an estimated one-third of the world’s fleet of larger container vessels which presently cannot enter the waterway.

The Port was last dredged to a -35 foot depth in 1928.

Along with deepening the harbor, the present project will also create a 190-acre landfill on Terminal Island using the material removed from the channel bottom. The landfill has been proposed as the site for a new coal terminal.

The 30-month project was only begun after Harbor officials spent 16 years navigating a labyrinth of governmental and environmental checkpoints before receiving congressional approval.

As the dredging project passes its halfway point, Executive Director Perry said, “this project means the Port of Los Angeles can look forward to being able to maintain its status in future years as the leading import/export shipping harbor on the Pacific Coast.”

## **Korean port officials study in Oakland**

A group of 12 Korean Port officials returned to their country recently after completing a three-week course on port finance at the Port of Oakland.

Norvel Smith, President of the Oakland Board of Port Commissioners, said that this was the first group of port officials to participate in the finance training program, although four other Korean groups have been trained in the field of port management at the Port since the program was initiated in 1978.

Apart from Korea, port officials from Mexico, Panama, the People’s Republic of China and the Philippines have in the past participated in port management training at the Port of Oakland.

During the training session at the Port, the Korean group

learned about the financial aspects of organizing and operating a Port with the subjects ranging from professional accounting to port economics.

Smith said that through past experience in training, worldwide reputation and the knowledge gained in the development of these programs, the Port of Oakland is well equipped to provide such training for port agencies from around the world.

The 12-member Korean group was led by Sung-Jik Yang, Assistant Director of Port Operations, Incheon District Maritime and Port Authority. The Korean Port of Incheon is a sister port of the Port of Oakland.

The Korean officials came to Oakland under the aegis of the Korean Maritime and Port Administration.

## **Portland completes container terminal expansion**

Expansion of the Port of Portland’s Berth 603 at the John M. Fulton Terminal 6 container complex has been completed two months early at a saving of \$2 million under the \$20 million budget authorization.

The project was financed through an innovative lease-purchase arrangement that adds 1,050 feet of berth space, 17 acres of paved container yard and two container cranes. The project is the first link in an overall chain of Portland maritime development — designed to meet forecasts that predict cargo volume will triple across Port docks by the year 2000.

The port’s Terminal 6 container facility, one of the most modern and efficient on the West Coast, now offers a total of 2,850 feet of berth space, 5 container cranes and 53 acres of paved container yard.

Completion of Berth 603 came just in time to accommodate a flurry of activity affecting the Port’s container operations. The expanded facility was a factor in attracting Portland’s newest steamship line, the EAC-KNUTSEN service. It also gave positive impetus to an important preferential berthing agreement with the Port’s largest customer, the Japanese Six Lines, assuring that Portland will remain a leading port of call for Japanese container vessels. And, by the end of the year, all Matson Navigation Company container operations will be moved from Terminal 4 to the expanded Terminal 6 facility.

## **Container Berth # 4: Georgia Ports Authority**

Georgia Ports Authority’s ability to handle Savannah’s burgeoning container traffic has taken a major step forward with the opening of the fourth berth at CONTAINERPORT. Its completion will enable GPA to render more complete, diversified service as well as providing growth space for the many new lines which have expressed interest in the port.

A brief rundown of its physical characteristics indicates that it represents the latest in port engineering. At 1200 feet it is able to accommodate the larger generations of containerships now coming out of the yards. CONTAINERPORT maintains its excellent berth/storage ratio with the 40 acre container yard backing up berth 4. All-cement construction to a thickness of 14 inches assures stability for equipment, chassis, and landing gear. COFC and TOFC shipments will be expedited across the rail siding located on the berth.

To provide full crane coverage for CONTAINERPORT, a fourth unit has been tested and accepted. Replacement of a crane which was damaged earlier this year was expedited to allow its completion to coincide with the opening of the new berth. Like its sister cranes, it boasts 45 ton capacity and an average cycle time of 90 seconds. Container crane 4 has been equipped with "curve capable" trucks to permit it to traverse into berths 1-3 as well.

By the spring of 1982, two additional cranes will be added to the complex. These will be equipped to transit the entire berthing area as well. Their flexible truck configuration will ultimately permit placement of six cranes along berths 1-3 and three cranes at berth 4. Per unit cost on the new cranes reaches nearly \$5 million but the return in terms of speed and reliability more than justifies the cost, particularly in our customers' eyes.

An important feature of the new berth is that it is located immediately adjacent to the existing CONTAINERPORT complex. GPA has found that consolidation of facilities by mode produces considerable advantages. Centralizing inventory and control under a single management umbrella improves accountability, reduces on-terminal handling expenses, and speeds vessel turnaround, all to the cost advantage of shippers and carriers.

GPA's cold storage facility, located dockside in the heart of berth 4, is the centerpiece of GPA's expanding capability for handling temperature controlled cargoes. Currently, the 84,000 square foot building can accommodate approximately 672,000 cubic feet of chilled and frozen goods. Expansion plans call for increasing the size of the facility by two and one-half times. The project will also include construction of a large, covered platform which will increase truck handling volume and efficiency. The addition to the plant will be built on pilings over an existing drainage canal, eliminating the need to divert valuable container storage space for the project. The \$4 million undertaking is scheduled to begin in early 1982, with completion expected within 18 months after start up.

By the end of the decade, berths 5 and 6 will join the CONTAINERPORT complex. Again, they will be located adjacent to existing container facilities continuing our important system of centralized inventory and control. Some 10-12 cranes will line the berthing area. A total of 260 acres of backup storage will adjoin the margins, the next 25 acres of which will be paved beginning in the near future.

Georgia Ports spent \$23 million to construct berth 4. This investment underscores GPA's commitment to meet the single greatest demand of its customers-service. Acreage, capacity, length... these are all impressive statistics, but carry significance only as they relate to the terminal operator's ability to serve.

Georgia Ports has experienced considerable success in the nine years it has been in the container business. This has been predicated in some degree on the ability to identify and anticipate cargo trends and demands, and to provide the finest in facilities. It has been founded primarily, however, in a proven commitment to meeting our customers' needs. Our new addition is the latest milestone in a history of timely, practical expansion and customer service orientation. To our established customers and customers-to-be, may we present, Container Berth 4.

## Deeper draft vessels for the Port of Antwerp

The Norwegian bulk carrier "Stove Trader" recently called at Antwerp with a record draught of 46' (14.02 m.). She unloaded 91,291 tons of coal at a specialized terminal in the port.

The Stove Trader measures 266 m. in length, 39 m. in width and has a carrying capacity of 110,444 tons. She was piloted into the port via the Zandvliet Lock. This record draught is the result of a decision, made early in September in cooperation between the Administration of Maritime Affairs and the Administration of Waterways. It tended to increase by 2' the maximum advised draughts for vessels sailing to Antwerp/Zandvliet Lock. This increase follows those of 1 December 1980 and 1 January 1981 respectively, when the advised maximum draughts were raised each time by 6". It is an illustration of how the possibilities of Antwerp with regard to its maritime access are constantly being improved.

The new increase means that vessels having an overall length of up to 852' (260 m.) will be able to call at Antwerp via the Zandvliet Lock with a draught which, according to the tide, will vary between  $\pm 42'$  (neap-tide) and 47'6" (spring-tide). If the ship measures over 852' then the advised maximum draught is reduced by 8" for every 10' in excess of that length.

The efforts to realize increases in draughts, however, are not stopped. Pursuant to the agreement negotiated with the Netherlands about a further deepening of the river Scheldt by 1', the Minister of Public Works signed a decree for the execution of dredging works in accordance with this further deepening.

This decision means a new step towards the realization of the 48' programme which has priority within the framework of the programme for the improvement of the port's maritime access.

## Structural design of heavy pavements for ports and other industries: British Ports Association

The Lack of suitable design formulae and the increasing use of specialist heavy handling plant has led to failure of many hardstandings at U.K. ports and other cargo or equipment handling facilities. The British Ports Association is publishing the above named manual in June 1982.

The manual provides guidance to engineers designing heavy duty paving. It is the result of several years research and development by engineers involved in heavy duty paving. It allows the engineer to proportion the courses in a heavy duty pavement, or to check the residual design life of any existing pavement, taking into account the following:—

- Life required for pavement
- C.B.R. of subgrade
- Damaging rating of plant
- Degree of plant channelisation
- Dynamics, including braking, accelerating, cornering and uneven surface.

Contents:—

- Design philosophy
- Estimation of damaging effect of plant
- Worked examples
- Design charts (400 A4 pages)
- Properties of materials

Those who order before March 31st can take advantage



of the pre-publication price of 55 (exclusive of postage) saving 20 on the price. Please place your order using the form:—

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Please reserve me \_\_\_\_\_ copies of "The Structural Design of Heavy Duty Pavements for Ports and Other Industries" at the pre-publication price of 55 plus postage.

You will be invoiced upon receipt of the manual.

## **New oil terminal opens at King's Lynn: BTDB**

Last December witnessed the official opening of a new £200,000 oil terminal at the British Transport Docks Board port of King's Lynn in East Anglia.

The new terminal, opened by the M.P. for Norfolk North West, Mr. Christopher Broklebank-Fowler, was inaugurated by the motor tankers "Allurity" and "Asperity" which between them brought in 2,310 tonnes of petroleum products.

The terminal was developed by Anglo Petroleum Limited, a company that ships oil from U.K. refineries specifically to supply the more rural areas of this country. The terminal is situated at the northern end of King's Lynn Dock and is connected by a pipeline to the oil jetties in the Bentick Dock which can accommodate tankers carrying up to 2,300 tonnes of oil. It is Anglo's first sea-fed terminal.

The terminal will bring yet another new and valuable business to King's Lynn. It follows close on the heels of many other newly gained cargoes which have been passing through the port in recent months.

1981 has been some record cargo figures at the port. A boom in grain exports has led to a quarter million tonnes being handled so far this year, while container traffic at King's Lynn has increased tenfold to 5,000 T.E.U.'s — much of this being transported direct to the quayside via freightliner trains.

## **PLA's Chairman announces the top management structure**

Because of the changing circumstances of the Port of London Authority the top management structure has been kept under close review. It is concluded that the present arrangement in which we have a Chief Executive and a Managing Director is no longer appropriate. Mr. J.D. Presland, the present Executive Vice-Chairman and Chief Executive, will be retiring early from the PLA. Mr. Presland has made a massive contribution to the affairs of the PLA and we are deeply grateful to him. We wish him every happiness and success in the future.

As from 1st January 1982 Mr. John N. Black, the present Managing Director, will become the Chief Executive. The post of Managing Director will then be abolished. This important and demanding appointment is critical to the success of the PLA and I am sure John Black will be given wholehearted support and co-operation.

**'High productivity, outstanding equipment, competitiveness are the port's main assets': Prime Minister in Dunkerque**

French Prime Minister Pierre Mauroy chose Dunkerque on his first visit to a French port on 11th September 1981. He summed up the assets of the natural outlet of the Nord/Pas-de-Calais region owing to its geographical location, outstanding nautical conditions, first rate equipment and a communication network linking the port with its hinterland.

M. Mauroy reaffirmed the government's commitment to finance the construction of the western harbor bulk terminal, presently in progress, by including a credit of 35,2 MFF in the 1982 budget destined to finance most of the dredging operations. The terminal is likely to strengthen Dunkerque's position as France's leading port for the reception of coal and ore cargoes. "The new energy policy should also enable Dunkerque to benefit from various possibilities of coal processing (gasification, methanol, synthetic fuel) for which extensive studies have been initiated by the Government".

Work on the western harbor — eastern harbor link up will start in 1982 as well as the western harbor — wide gauge canal link-up.

With the Prime Minister were MM. Louis Le Pensec, Minister of the sea and Michel Jobert, Minister of Foreign trade.

## **Encouraging first half: Port of Le Havre**

The first half of the year 1981 saw a rise of 1.1% in incoming general cargo (2,084,000t) and of 5.2% in outgoing general cargo (2,329,000t). In the case of containerised general cargo the increase was spectacular, with imports up 15.3% at 1,495,000t and exports up 17% at 1,407,000t.

Coal was up by 1.4% and grain by 42%.

In contrast, imports of crude oil were 13% down (23,918,000t for the first 6 months of 1981 as against 27,594,116t for the first 6 months of 1980), this being a direct result of government policy. The traffic in refined products, however, was up by 25%.

With oil accounting for such a large part of Le Havre's trade, the drop in crude imports was naturally reflected in the total traffic for the half-year, which at 38,779,000t was 6.8% down on the 41,594,000t recorded during the same period last year.

The port's overall trading position, however, has continued its upward trend, owing to the much greater value in monetary terms of certain traffics that are developing fast. This is clearly brought out in the National Institute of Statistics' "Monthly Weighted Index of Quantities Handled".

The index (base 100 in 1970) stood at 200.6 for the first 6 months of 1980 and at 204.76 for the corresponding period this year.

## **Car Imports & Exports via Bremerhaven for some DM 10 Billiards in 1981**

For the first half of 1981 West-German foreign trade through the Bremen ports was decidedly positive. In those six months goods were imported/exported through Bremen and Bremerhaven valued at a total of some DM 23.4 billiards. This represented, compared with the 1980 first-half, an increase in imports of 6.2% — to DM 8.1 billiards — and of 7.5% — to DM 15.3 billiards — for exports.

On the imports side commodities such as, above all,

motor vehicles (with DM 757 millions — +71%); partially processed plastics and chemicals (with DM 661 millions — +81%) and machinery (with DM 571 millions — +20%) consolidated their positions further as important industrial goods. The most important trading commodity imported through Bremen ports was, again, coffee, which — at DM 911 millions — repeated an increase, by around six percent.

As for exports through Bremen and Bremerhaven, the most important trading goods were vehicles, for some DM 4.1 milliards; machinery for DM 3.8 milliards; partially processed plastics and chemicals for DM 1.3 milliards; iron products for DM 1.1 milliards; and electro-technical goods for DM 9 milliards.

This favourable development in foreign trade over the Bremen ports has continued further into the second half of 1981. The August result, as compared with the same month last year (DM 2.92 milliards) was, with a total value of DM 3.65 milliards, even 25% up. Computer estimates give the annual vehicle handling in Bremerhaven and Bremen for 1981 as some DM 1.5 milliards for imports and DM 8.2 milliards for exports, making a total foreign-trade in vehicles passing through the Bremen ports of some DM 10 milliards.

### **East Asian container handling at HHLA may exceed a quarter of a million TEU: Port of Hamburg**

HHLA, Hamburg's Port and Warehouse Operating Co. is achieving a remarkable growth in its container handling for the Far East, it was announced by the Tokyo Office of the City of Hamburg. The entire East Asian container handling by HHLA in the first half of 1981 rose to 123,028 TEU, an increase of 40% over the corresponding period for 1980. If such a remarkable growth continues, HHLA, for the first time, will handle more than a quarter of million TEU in Far East traffic alone by the end of 1981.

A major contribution to this remarkable increase in handling volume in East Asian traffic was exclusively provided by the Trio Group which currently accounts for about 20% of all container cargo handling. The company now owns 21 third-generation container ships.

To illustrate how rapidly container dispatching has become the mainstream of all cargo handling, it took HHLA ten years to achieve 1.75 million TEU as compared to only two and half years to achieve the remaining 1.25 million TEU. The average containerization degree for 3.75 million tons of all transshipments cargo handled at HHLA in the first half of 1981 was 62%.

The tremendous increase in container handling at HHLA did not happen by chance. Rather, it is the result of HHLA's extensive future-oriented policy to meet the increasing demand for container dispatching.

Ever since the decision was reached in 1965 to build Hamburg's first container terminal at HHLA's Burchardkai terminal, the company and the City of Hamburg together invested 437 million Marks for the construction of the infrastructure. These funds gave birth to one of the most modern container handling terminals in the world with 10 container gantry cranes, covering a space of 2.4 square kilometres.

To cope with the growing container transshipment, HHLA is currently constructing its eleventh container



**Container terminal at HHLA**

gantry crane. Moreover, HHLA is now expanding its container repair facilities as well as augmenting its container handling facilities at the Fruit Center at the O'Swaldkai. These are just a few examples of a wide-ranging facility expansion and renovation plan now underway at HHLA.

### **Amsterdam Port Consultants offer aid to ports worldwide**

'We have been in the port business in the widest meaning of the term for many years. Therefore it was only logical for the parties concerned to join forces to advise on the design, construction and operation of ports around the world'. So says Mr. J. den Toom, managing director of the Amsterdam Port Management and president of the newly-formed group, Amsterdam Port Consultants — APC.

APC is a consultancy able to offer all the professional advice needed for designing, developing and operating marine terminals and cargo-handling facilities.

The services of APC incorporate all facets of port activity and thus can help a wide range of clients to receive optimal benefits from their own programmes, whether it be port renewal, rationalising the work-force or construction of an entire new port.

APC's role varies from helping to select the best site for a new port to offering specialised advice or specific staff training for existing ports. Assistance is provided in the following areas:

- Port engineering: site evaluation, master-planning, technical design, layout and maintenance of waterways, quays, stacking areas; setting up major handling facilities, providing utilities and longterm planning.
- Port operations: unitised, container, bulk goods and general cargo handling; marine terminal and in-shed operations, provision of maintenance and auxiliary services and scheduling inter-related administrative activities.
- Port economics, finance and administration: socio-economic transport studies, feasibility studies, investment studies, revenue and cost accounting management, information systems, registration and control and personnel management.
- Port management: internal and external coordination,

problem solving, port relations and marketing, organizational design and adaptation, labour relations, training and development and budgeting and control.

APC serves in purely an advisory capacity. Although, naturally, it prefers to be in on plans from the beginning, it is prepared to join the project at any stage. Often, however, port projects are already taking shape.

Plans are underway. All the necessary knowledge, labour and equipment are sometimes available locally.

Yet, one or two essentials seem to be missing. This is where APC could step in: with the advantage of joint long operation and the unbiased critical eye of an outsider. APC is ready to give all the assistance needed to pilot the project through to a successful conclusion.

### **New port operations centre under construction in Ymuiden**

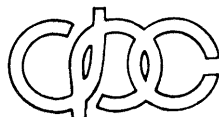
The North Sea Canal Ports — Amsterdam and Ymuiden — will have Europe's most modern radar installation in early 1983. This will make the Ports both safer and more convenient for shipping. The Ports are the first in Europe to have such an advanced system. Now under construction, the f 10 million unit was designed by Philips. It is being built adjoining the present radar tower, which dates from 1951 and which will be removed upon completion of the work, scheduled for March 1983. The present radar tower itself was the first such sophisticated unit in operation in continental Europe.

### **Biggest-ever harbour project completes: Port of Gothenburg**



After twenty years of nearly constant construction work, Gothenburg's Skandia unit-load harbour has now been completed. In mid-September, 1981, berth No. 702 in Skandia's Älvsborg Terminal was commissioned. No more berths are planned in the foreseeable future. With the final berth in the Skandia unit-load harbour, the biggest investment program in the port's history was finished.

The creation of the Skandia unit-load harbour cost some 400 million Swedish kronor and took 20 years from decision to completion, including reclamation work that required about 7.5 million cubic metres of sand, blast rock et cetera.



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## ADB approves \$71.4 million loan for the Songkhla and Phuket Ports Project in Thailand

The Asian Development Bank has approved a \$71.4 million loan for the Songkhla and Phuket Ports Project in Thailand which is designed to foster greater economic and social development in the southern region of the country.

The loan, from the Bank's ordinary capital resources, has a repayment period of 25 years, including a grace period of 5 years, at an interest rate of 10.10 percent per annum. It is the Bank's 36th credit to Thailand and the second for the ports sector.

The objective of the Project is to develop port facilities at Songkhla and Phuket to enable them to handle the growing volume of traffic. The Project's facilities comprise the first phase of development of a long-term master plan for each port.

These new facilities will enable direct loading/discharging of cargo, thereby eliminating the present lighterage operations. This will encourage imports and exports of the southern region to be handled directly at these ports rather than at Bangkok and Penang, and will result in a substantial savings in transshipment and inland transportation costs.

Moreover, in order to use the road network in the area more effectively and to link the new port site at Songkhla with the hinterland area, the Project entails the construction of two interconnected bridges across Songkhla Lake.

Thailand's southern region accounts for about 14 percent of its total land area and 12 percent of its population. It also accounts for 95 percent of its rubber exports and 85 percent of its tin exports. Yet, despite its importance in international trade, none of the ports in the region has deep water berthing facilities suitable for handling ocean-going ships. To ensure that the lack of such port facilities does not constrain the area's development, the construction of deep water port facilities at Songkhla and Phuket is essential.

Of the eight main ports in the region, Songkhla is the largest and is located only 30 kilometers from Haadyai, a rapidly growing commercial and administrative center. In addition, the government has selected Songkhla/Haadyai as a promising center for future growth and has planned significant industrial development for it. Phuket is another growth center, with its future development resting on its mineral resources and tourism potential. The port of Phuket also has two important advantages: greater proximity to Europe and the U.S. Atlantic coast than any other port in Thailand and a coastline suitable for deep water port development.

The total cost of the Project is estimated at \$118.5 million, of which the foreign exchange component is \$65 million. The Bank loan will be used to finance the entire foreign exchange cost of \$65 million and part of the local currency cost amounting to \$5 million. The balance of the local currency cost will be provided by the Thailand Government from its own resources. In addition, the Bank's loan will be used to refinance \$1.4 million out of the \$1.5 million originally provided for a previous Technical Assistance Loan.

The Executing Agencies of the Project will be the Harbor Department and the Department of Highways. The Project's estimated completion date is: Songkhla Port,

mid 1986; Phuket Port, early 1986; and Songkhla Bridges, end 1985.

## Shuwaikh port reaches maximum capacity

Shuwaikh commercial port Kuwait, is currently working at full capacity and any attempt to increase throughput will mean introducing a tangible qualitative change to it, according to Mr. Ibrahim Makki, director general of the Ports Public Authority.

Interviewed by the official Kuwait News Agency, Mr. Makki described the necessary changes as including more berths, more storage capacity, a larger labour force and more equipment.

Additionally, there must be an end to the congestion which blocks the flow of land transport to and from the port.

Makki compared the volume of handling in the first half of 1981 to the same period in 1977, when congestion at Shuwaikh and Gulf ports in general was at its utmost. The number of ships that anchored at Shuwaikh in the first half of 1981 was 1138 compared with 863 ships in the same period of 1977.

The volume of merchandise unloaded in the first six months of this year was more than three million tons compared to just over two million in 1977.

The number of containers unloaded at the port quadrupled between 1977 and 1981. In the first half of 1981 they reached 53,157 while during the same period of 1977 they numbered 12,564.

Meanwhile, at Shuaiba Port in Kuwait a floating pontoon link span is to be installed to enable Ro-Ro vessels to berth and discharge cargo regardless of tides.

The link span, designed by Navire Cargo Gear International of Sweden, is to be built and installed by Kuwait Ship Building and Repair Yard Co. and is expected to be in place by April 1982.

## More contracts for more Fisherman Isls. facilities: Port of Brisbane

The Port of Brisbane Authority has awarded five contracts worth about \$4,800,000 for major port expansion projects on the Fisherman Islands.

Two of the contracts applied to the construction of buildings and the provision of services for a partly developed area of 12 hectares which will be the islands' second container terminal.

Three more contracts related to the construction of an interim coal export facility.

Just recently, the Authority announced that Seatiners Pty. Ltd. (on behalf of Bulkships, Limited) would be the operator of the islands no. 2 container terminal.

The company will work under exactly the same lease conditions as the operator of no. 1 terminal, Brisbane Amalgamated Terminals Limited.

The first container ship to use the container port facilities was the "Columbus Queens-land," which arrived on August 9. Since then about 36 container and other vessels have utilised the islands' facilities.

The Authority is negotiating with Queensland Bulk Handling Pty. Ltd. for the development, management and operation of the islands coal loading facility.

The installation will be sited just upstream of Ampol's

crude oil discharge wharf.

Work on all of the above contracts is well advanced. The no. 2 container terminal is expected to be operational by May 1982 and the coal terminal is programmed to be ready by October 1982.

## Near record trade: Port of Melbourne

Despite industrial disputes experienced on the waterfront in June total trade through the Port of Melbourne for the financial year 1980-81 was 18,688,000 tonnes — a drop of 0.7 percent on the previous year.

Preliminary figures reveal that overseas exports totalled a record 5,750,000 tonnes — an increase of slightly more than three percent on the previous year. All other sectors of trade showed slight down turns.

Total general cargo throughput exceeded 15,241,000 tonnes, a small decrease. Bulk cargo was down approximately three percent to 3,447,000 tonnes.

Container traffic decreased by less than one percent with 508,405 TEU's being handled.

This was the second successive year in which more than 500,000 containers passed through the Port.

Details of preliminary trade figures by sector are:

	Tonnes
Total tonnage	18,688,000
Overseas Imports	6,822,000
Overseas Exports	5,758,000
Coastal Imports	3,143,000
Coastal Exports	2,965,000

Total General Cargo	15,241,000
Total Bulk Cargo	3,447,000
Total TEU's	508,405

## Safety in security: Port of Melbourne

Modern society has a propensity for reducing combinations of names and words to a series of initials which, in many cases, are totally incomprehensible to all but the initiated. However, the letters "T.L.C." are recognized by most people as meaning that someone is showing regard for others by extending some "Tender Loving Care."

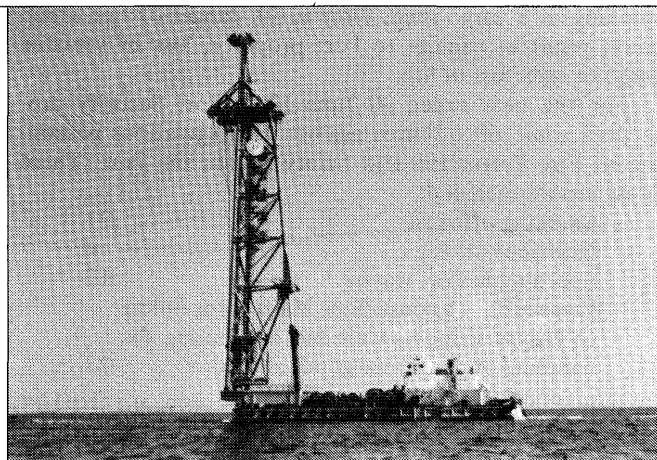
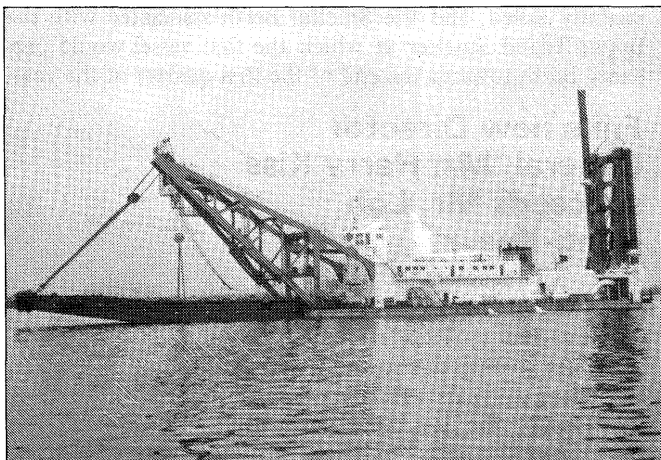
In the context of a port situation T.L.C. has another connotation — Total Loss Control, the coordination of Security, Accident and Fire Prevention.

Over the past few years the role of the 65 Port Security Officers and men employed as a unit of the Port Emergency Services has changed.

From a role concerned mainly with the safeguarding of Port of Melbourne Authority property from loss through theft and damage, the service now includes in its duties industrial safety from the security point of view.

Total Loss Control is prevention and detection: find the cause before it becomes a problem and where there is a problem solve it and prevent a recurrence.

In 1978, work related deaths, injuries and illness cost the Australian community \$914 million in insurance premiums and \$550 million in losses for hospital and medical expenses, workers' compensation and reimbursement of wages. In the same year, fire and other damage to insured buildings cost Australia \$275 million. It is estimated that



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the accidental fire comprised some 10 percent of all fire losses.

Fire Prevention is basic responsibility of the Port Security Service. The seven day week, 24-hour coverage given to the Port by patrolling Security personnel, makes them the most likely agents for the detection and prevention of major fires which could occur within the Port area.

During 1980, in addition to regular Fire Prevention inspections such as checking of fire and hot work detected in the Port and checking and reporting on hazardous cargo, a total of 33 small fires were detected in their early stages. But for their early detection any of these could have developed into major fires.

Accident Prevention, like Fire Prevention, covers a wide area with many potential causes awaiting the careless or unwary.

Port Security personnel are trained to look for the potential causes of accidents. Some of the more obvious potential causes which are detected include patches of oil or grease which constitute a danger on roads, walkways or wharves; interference with fire fighting and life saving equipment located in cargo sheds, on roads and wharves; and safety lighting on roadways or around construction sites.

Another important aspect of T.L.C. is the enforcement of the Port of Melbourne Authority Act and Regulations. The Regulations cover such acts as smoking in a shed or on a wharf; negligent driving; excessive speed or dangerous handling of small vessels in Port waters and movement of hazardous and dangerous cargo on ships or in sheds.

The enforcement of these Regulations provides a service for all Port users. For example, in the case of a person smoking in a cargo shed, there is the danger of fire which could result in damage to Port property, loss of valuable cargo or even loss of life.

For the year ended 30 June 1980, Port Security prosecuted some 60 offences against the Regulations pertaining to Fire Prevention and Safety within the Port. These prosecutions included:

Smoking offences	21
Negligent driving	4
Speeding in Port waters	10
Prosecutions against ships Masters for failing to ensure scuppers were blocked during the handling of dangerous goods and oil	25

Industrial Safety is one of the biggest problems faced by management. Its side effects, including the cost, lost man hours and the suffering and hardships caused to the injured worker and his family, are long lasting.

While people believe that an accident can't happen here, won't happen to them and that accidents or fires cannot be stopped, the community will continue to suffer.

The Port of Melbourne has a worldwide reputation of being a safe port — a reputation contributed to over the years by the excellence and efficiency of the PMA's Emergency Services. The watchfulness of the Port's workforce and the diligent practice of T.L.C. by its Security Service will in no small measure help maintain that safety record.

*(Port of Melbourne Quarterly)*

## Cargo tonnage during 1981 smashed all previous records: Gladstone Harbour

The Chairman of the Gladstone Harbor Board, Councillor A.W. O'Rourke, said that a total 18.8 million tonnes had been handled at the Port during 1981, as compared with approximately 17 million tonnes last year.

513 cargo carrying vessels visited the Port during the year.

Exports totalled 12.4 million tonnes, and imports were 6.4 million tonnes.

The largest single export cargo was 9.6 million tonnes of coal, of which 4.9 million tonnes were shipped from the Clinton coal facility during its first full year of operation.

Mr. O'Rourke said the coal tonnage shipped during 1981 was a 43 increase over the tonnage shipped in 1980.

Grain and seed cargoes also showed a spectacular increase over 1980. During 1981, just on 590,000 tonnes of grain and seed were exported, compared with 305,000 during the previous year.

Petroleum products brought in over the Auckland Point Wharf also increased by 28 to 345,000 tonnes.

Bauxite from Weipa totalled 5.1 million tonnes, whilst alumina exports were 2.2 million tonnes.

Mr. O'Rourke said that the handling of the massive tonnage at the Port was only made possible by the cooperation of all those associated with the operation and management of the various port facilities. He said that 1982 would see the inauguration of two further cargo handling centres at Gladstone, namely — the Clinker Berth at Q.C.L.'s Fisherman's Landing Works, from which the first vessel had recently sailed, and the Smelter Berth associated with the Boyne Island Smelter at which the first vessel would probably berth towards the end of the first quarter of the year.

## Fiji's new Director General, Mr. Harry Kiss succeeds Mr. Loh Heng-Kee

Mr. Kiss succeeds Mr. Loh Heng-Kee, the PAF's Director-General and took the chair on Tuesday, January 5.

Before joining the Authority Mr. Kiss spent 32 years with the Carpenters Group, the last nine years as Director of Shipping.

He is eager to get on with the job he was hired to do — and that is to run a complex organization like the PAF efficiently.

"A lot of hard work has been done in the past by others particularly Mr. Loh to get the PAF established and operational," he said.

"However, as PAF is only a relatively young organization and has been in existence for only six years, a lot more skills have to be introduced to increase the efficiency of operations."

Mr. Kiss said his most immediate task was to make sure that this was carried out.

He would also have to up-grade facilities at Fiji's ports and keep abreast of present and future needs.



He has already met his head office staff and had meetings with heads of departments.

One of his main concerns is the image of the port.

Mr. Kiss said that the authority does not have access to unlimited sources of finance.

"We are like a commercial organization and must operate within our means.

"My clear understanding from Government in that they expect us to continue to pay for all capital expenditure required for improvements and development.

"The Port of Suva is a relatively small port in the international context and it cannot be compared with some of the larger ports overseas as a money earner.

"This is the reason why we have to be careful how we spend our money," he added.

Productivity in Fiji's three ports is very high on Mr. Kiss' list of priorities.

He plans to tackle this immediately by building up a strong, efficient and dedicated team of workers.

"This in my opinion is the most important thing," Mr. Kiss continued.

"We have the nucleus of good men and women and all we have to do now, is to develop them to their full potential."

Mr. Kiss said a port could have the best systems and equipment in the world, but these would be useless if it did not have the trained work force.

"The most important thing is to have the right people and building them up into the right team to work the ports," he said.

Discussing port charges in Fiji Mr. Kiss said it was unlikely that they would go down.

"The type of tariff structure to be adopted in future would depend largely on the results of a study being carried out at present by Price Waterhouse & Associates.

The study began in November, 1981, and is expected to be completed in June this year.

Mr. Kiss has been associating himself closely with the study since he took up his new job.

The study is being financed by the Asian Development Bank.

Mr. Kiss does not expect to have any problems with Mr. Taniela Veitata's Fiji Registered Port Workers Union.

"I have dealt with the dockworkers' union in the past — in the days when the officials and members were very militant and sometimes irresponsible, but we were able to reach an understanding and respect for each other," he said.

"They know that I also have a genuine concern for their welfare and I am confident that we will be able to work together," he said.

## Mr. Loh praised for his work in Fiji

Mr. Loh Heng-Kee has left Fiji after more than six years as the Port Authority of Fiji's first Director-General and his work has been praised both in Parliament and at farewell functions.

Speaking in the House of Representatives, on December 4, the Minister for Tourism, Transport and Civil Aviation, Mr. Ted Beddoes, paid tribute to Mr. Loh's services.

He said Mr. Loh's hard work, loyalty and dedication "has produced results for Fiji ports that we can be proud of."

Mr. Loh left Fiji on November 28 on retirement leave

and Director-Administration. Mr. Joketani Cokanasiga, is acting DG.

The Minister said with Mr. Loh's departure, the Authority was now fully localised.

Mr. Beddoes told Parliament that he hoped to be able to announce Mr. Loh's successor shortly when "certain formalities" have been completed.

The tribute to Mr. Loh came while Mr. Beddoes was giving a resume of the PAF's achievements since its inception on November 1, 1975, during the 1982 Budget Debate.

At a farewell luncheon hosted by the board at kula House on November 26, Mr. Beddoes heaped praise on Mr. Loh's contribution to the development of Fiji through his services to the PAF.

The Minister said that what was seen of the PAF today would not have been possible without the dedication and indeed the tenacity of one person — Mr. Loh!

He said Mr. Loh was leaving after serving the Authority and Fiji with distinction and dedication.

"Mr. Loh has brought to bear on PAF the full benefit of his experience and expertise and at the same time guiding the Authority through a most difficult period.

"This is most appreciated by my Ministry and indeed by the Government of Fiji," Mr. Beddoes said.

Addressing Mr. Loh, the Minister said:

"Mr. Loh I am very mindful of the fact that PAF as an organization, is very close to your heart and I know you are equally concerned as I am of its future well-being and continued progress as it shoulders more responsibilities and expands its activities at the ports of Suva, Lautoka and Savusavu and we will continue to need your type of expertise.

"Mr. Loh, on behalf of my Ministry, the Government of Fiji and the Authority, I would like to take this opportunity to thank you most sincerely for your contribution to the development of this young nation."

Mr. Beddoes then presented Mr. Loh with a suitably engraved tanoa.

"I hope whenever you have occasion to use this tanoa, it will rekindle the happy memories of your stay here, and remind you of the many friends you have made in this part of the world," he added.

Earlier, the PAF board Chairman, Mr. David G. Peck, in another tribute to the retiring DG, said Mr. Loh had come to Fiji with a "lot of know-how" and had dedicated himself to the Authority.

"He has been a marvellous Director-General and has set a very high example for us all."

Mr. Peck said, Mr. Loh had worked very hard since the inception of the PAF and had built it up from scratch.

"He has been a very staunch officer, withstanding a lot of opposition from outside and despite the criticism he had 'stuck to his guns'."

Thanking Mr. Beddoes and Mr. Peck, Mr. Loh said he had enjoyed his years in Fiji and if he was required by the Fiji Government, he would be happy to return to serve again with the PAF.

Acting DG, Mr. Cokanasiga, paid Mr. Loh another glowing tribute at a staff farewell at the Peninsula Hotel on the night of November 26.

Staff and their wives hosted cocktails and dinner.

Mr. Cokanasiga traced Mr. Loh's record with the PAF from the days when he appointed chairman of a com-

mission of inquiry to look into the feasibility of establishing a port authority to which he was appointed later as its first director-general when it was decided that a ports authority was feasible.

Mr. Loh in reply said he was sad to be going away.

He thanked members of the staff for their co-operation particularly those that had joined when the PAF came into operation.

Mr. Cokanasiga, on behalf of the staff and their wives, presented Mr. Loh with a pair of the rare golden cowrie in a suitably built case, as a farewell gift.

The gathering concluded with the singing of the traditional Fijian farewell song "Isa Lei."

## Port forecast revised: Kelang Port Authority

For the first half of 1981, Port Kelang handled 4,701,000 freight tonnes. While this is an increased tonnage over 1980, it still would not be possible for the port to achieve the forecasted tonnage throughput for the year.

An increased throughput of 5.7% over 1980's performance had been forecasted for this year but falling commodity prices have since depressed the export sector causing decrease in rubber and timber shipments. The port's revised forecast of 9,905,000 freight tonnes is now only marginally higher than that of 1980's — a small improvement of 1.1%.

This, however, is expected to go on the upward turn when commodity prices improve towards the end of the year or early 1982.

In view of the fact that berth space, which already in Port Kelang has an occupancy rate of 90%, would not be sufficient in the short run to cater for the projected expanded trade during 1982-1986, the port is looking into a programme of providing an expanded lighterage service to work more ships at the Deep Water Point.

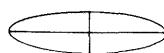
However, if more importers and exporters think in terms of shipping their goods in containers, this problem would be solved because the container terminal has sufficient capacity to handle this additional traffic.

In the long run, the 640 m. additional wharf space namely berths 19, 20 and 21 now under construction in the North Port will be completed in 1983 and the first stage of the Pulau Lumut project to construct 853 m. of wharf space would be ready by 1986 and these would provide additional berthing capacity and scale down the lighterage activity.

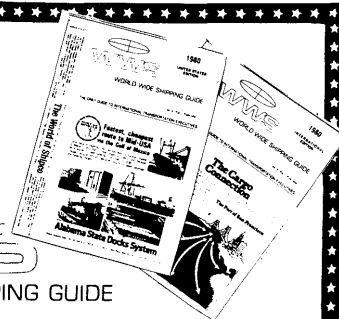
An allround improvement in berth productivity has been recorded at the port this year. On the conventional side, the average tonnage handled per foreign going ship each day in port was 690 freight tonnes whereas this year the tonnage has gone up to 778 freight tonnes — an improvement of nearly 13%. As such foreign ships calling Port Kelang have less turn around time from 2.4 days in 1980 to 2.16 days in 1981, a 10% saving in time.

By far the greatest improvement is at the container terminal which, plagued by congestion the previous years, had the position completely reversed this year. The pace of work at the terminal is so rapid that appeals are constantly made to importers to come forward fast enough to claim delivery of their boxes rather than let the port equipment idle.

## 1980 Edition



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The port took delivery of 10 new straddle carriers in November, 1980. Eleven more units were ordered for 1981, of which 9 units have been supplied by the manufacturers while the remaining 2 units would be received by the end of this month. With the final complement of 21 new straddle carriers in hand the old straddle carriers would be completely phased out.

Container ships calling Port Kelang this year have not only worked and sailed on schedule but a number of them have been turned around ahead of schedule. 321 container ships worked for the first half of 1981 as compared to 269 ships for same period last year. Although the container cranes' performance at the terminal was a poor 8.7 moves per hour in December 1980, this improved to 14 moves per hour in February this year and by June the performance was at a consistent 16 moves per hour. For the first 6 months of this year the terminal handled 70,612 TEUs compared to 59,024 TEUs for the corresponding period of last year. The Terminal expects to handle 148,000 — 150,000 TEUs for the year.

## Second container berth for Penang Port

In order to provide adequate facilities for the rapidly growing container traffic pending the completion of the proposed North Butterworth Container Terminal the Commission decided as an interim measure to convert Berth No. 5, Butterworth Wharves, into a container berth. The plan also includes the installation of the 2nd gantry crane, at the converted berth. The proposed container berth adjoins the existing container berth which has roll-on roll-off facilities.

The conversion of Berth No. 5 into a container berth involves minimal engineering work as the existing structures are already reinforced for container operations when constructed in 1969. It will, however, necessitate the removal of the transit shed at the berth, to provide a wider decked area for the installation of the gantry crane and the

movement of containers.

Work on the conversion is scheduled for completion in 1982 by which time the second gantry crane will also be delivered. The second gantry crane is being built by Mitsubishi Heavy Industries in Japan.

The cost of converting Berth No. 5 into a container berth is estimated to be \$320,000 being removal of the transit shed No. W5 and trenching required for the installation of electrical power supply to the container crane. The dismantled godown will be reconstructed at the Bulk Cargo Terminal for lease to port users as a storage godown for dry bulk cargo.

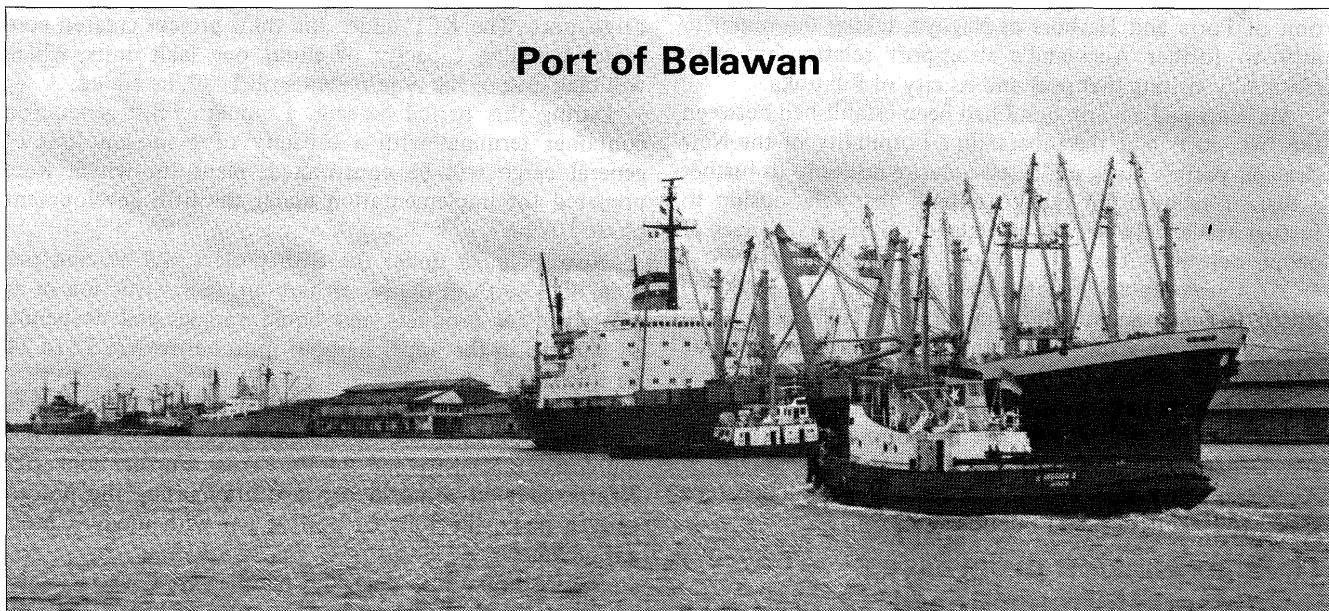
With the availability of this additional container berth, Penang Port will have capacity for handling 100,000 TEU's expected to be attained by 1985.

## Tonnage bonus scheme for Penang Port Commission

The Commission has introduced a tonnage bonus scheme for mechanical equipment operators servicing quayside operations both for conventional and container vessels. In the case of containers, the scheme is extended to include the back-up operations directly related to the loading and discharging of container vessels.

In implementing this scheme, the Commission hopes to accomplish three objectives. Firstly, it is to minimise total cost of moving cargo within the port area through increased throughput. Secondly, it is to provide an incentive for the participants to develop the spirit of group performance necessary for increased productivity, and thirdly, to provide a financial reward for greater efforts.

## Port of Belawan



**Third Largest Port in Indonesia  
and  
Entrance Gate to Sumatera**

1 Jalan Sumatera, Belawan  
Sumatera Utara, Indonesia  
Cable: ADMPEL BELAWAN  
Telex: 51695  
Phone: Belawan Nos. 14,338  
Port Administrator, S.F. Makalew

Formulation of the scheme included the setting up of job standards in terms of cargo units and determining the rate of financial remuneration. Job standards were set after a period of time and motion study to evaluate the standard performance under normal circumstances.

The rate of payment scheme provides for a progressively higher rate of payment to the participant surpassing the minimum level required but only to a point beyond which the rate is reduced. This was designed deliberately to prevent the participants from being over-zealous in a manner not conducive to safe operating practices.

Although the scheme is initially confined to mechanical operators on the quayside, the other operators would be rotated in turns so as everyone will have an opportunity to participate in the scheme.

When this phase of the scheme is successfully implemented, it will be extended to other operational areas where increased productivity can be induced through the offer of financial incentives.

### **Trade promotion, cultural exchange proposed: Auckland Harbour Board**

A committee of the Auckland Harbour Board will consider action to promote trade between the ports of Hakata and Auckland and examine means of furthering the cultural aims of New Zealand and Japan by an exchange of students between the cities of Auckland and Fukuoka.

The decision to set up a committee was made after a personal report to the Board's August meeting by Immediate Past Chairman, Mr. R.W. Carr who, with the Chairman, Mr. M.A. Shanahan and the General Manager, Mr. R.T. Lorimer, attended the 12th conference of the International Association of Ports and Harbors at Nagoya, taking the opportunity to further Auckland's sister-port relationship with Hakata by visiting that port and its city of Fukuoka.

Mr. Carr said a warm bond had been established between the two ports and the outstanding hospitality of the New Zealand party's hosts indicated a desire not only to further a distant relationship but to extend that relationship to further trade between the ports and cultural exchanges of people between cities.

Mr. Carr proposed a committee of three members of the Board to make an initial appraisal of his trade promotion and cultural exchange suggestions, the committee to be widened at a later stage to represent commercial, industrial and Government interests.

'As for the cultural side, the committee should include the Department of External Affairs and the Mayor of Auckland and it may well be that the city and port become sisters to Hakata Port and Fukuoka City.'

### **Tiwai expansion progresses: Southland Harbour Board**

The construction of the third potline for N.Z. Aluminium Smelters at Tiwai Point is well under way.

The final agreement on terms and conditions for the third potline, stage IV, was signed on 31 July 1980.

The cost of the construction is estimated at \$220 million, increasing the smelter's capacity by 78,000 tonnes per annum to 244,000 tonnes per annum. Staffing levels should increase to 1,450 personnel and an estimated indirect employment of 2,839 personnel.

When completed imports of the dry bulk tonnages of

alumina, pencil pitch and petroleum coke to the smelter should increase by 50 percent from the present total of 390,000 tonnes p.a. To this end N.Z. Aluminium Smelters are also building a second mobile pneumatic unloader to assist and speed up the discharge of this increased tonnage. The present unloader which is a twin unit has a total unloading capacity of 300 tonnes per hour and connects direct to a conveyor belt system for transport to the appropriate specialised storage facilities at the smelter, 1.6 km away from the wharf.

Discussions are also under way concerning the extension of the existing berthing facilities at the Tiwai Wharf. This wharf owned by the Southland Harbour Board if extended would provide berthage for two vessels simultaneously.

The smelter could one day add fourth and fifth potlines which would increase the total production to a staggering 439,000 tonnes per annum and add a further 1,000 employees to the work force.

### **Karachi Port's working improved**

Major all-round improvements have been accomplished in the working of Karachi port during the last 3 years resulting in eliminating the chronic congestion problem at the port and increasing the container handling capacity from 5,000 units in 1977 to 50,000 units in 1981 and oil handling capacity from 5 million tons in 1977-78 to 10 million tons in 1980.

This was disclosed by the Federal Communications Minister Mr. Mohyuddin Baluch while addressing a press conference in Karachi.

The Minister said that the economic committee of the cabinet has given KPT the mandate to develop as a general cargo port. The KPT under the third project created container handling capacity of about one lakh units, which will take care of the requirements till 1987, he added.

During this period he said, a modern third generation container terminal with a capacity of 2 million tons of general cargo will be constructed, plans for which were prepared for implementation under the fifth development phase 1982-87.

Also included under the fifth project will be construction of a berth in the lower harbour, reconstruction of an oil berth for products and liquid cargoes and deepening of channel in the upper harbour upto berths No. 22 to 24, he told newsmen.

The Minister pointed out that the port working showed vast improvements due to coordinated efforts of the Communications Ministry and the Port Trust. Further concerted efforts were in progress for institutionalising the process and to make the Karachi port at par with modern international ports.

Rear Admiral M.I. Arshad, Chairman KPT who was also present at the press conference told newsmen that the problems arising as a result of escalation taking place in every sector were under study of the port authorities and as soon as it completes a report will be submitted to the Government regarding ship handling and cargo handling charges. He said the most significant feature of the port was that it has become self-sufficient financially.



## PSA Training Courses for 1982—1983

### Introduction

The PORT OF SINGAPORE AUTHORITY (PSA) is responsible for the administration and operation of the six gateways in the Republic. The six gateways are Container Terminal, Keppel Wharves, Telok Ayer Wharves, Pasir Panjang Wharves, Sembawang Wharves and Jurong Port.

Singapore, with 160 years of port and shipping experience, has made her mark in international shipping and is the second busiest port in the world in terms of shipping tonnage.

Ships of more than 300 shipping lines flying the flags of nearly all the maritime nations of the world, converge at Singapore. There are no less than 400 ships in port daily, with a ship arriving or leaving, approximately, every 10 minutes.

The PSA recorded 54,060 vessel arrivals and departures totalling shipping tonnages of 474 million gross registered tonnes in 1980. The seaborne cargo handled in the Republic for the year also reached a new peak of 86.3 million tonnes.

For the first nine months of 1981, the Republic handled 68.6 million tonnes of seaborne cargo. It also recorded 42,100 vessel arrivals and departures totalling shipping tonnages of 381 million gross registered tonnes.

### Training in PSA

The history of systematic training in the PSA dates back to 1959. The emphasis then, was on operations training to upgrade the cargo handling skills of stevedores to meet the immediate operational requirements of the port. With the increasing sophistication in port administration and operations, the training function in the PSA has over the years, enlarged its scope to include management, supervisory, clerical and technical training.

Today the PSA's Training Department comprises the Operations, Technical and Management Training Sections. The Department is staffed by competent and able Training Officers and Instructors. It is also supported with excellent classroom and library facilities and sophisticated audio visual equipment.

Together, the three main Training Sections organise and conduct no less than 100 different courses annually to meet the short and long term training needs of PSA's 10,300 employees.

In 1975, the PSA decided to open some of its courses on port management and operations to participants from the ports of other developing countries in the region.

Organised on a non-profit making basis, the courses have attracted some 250 officers annually from the ports of the Asean and the Pacific regions, West Asia, India and Africa.

### Courses for Overseas Personnel

The PSA offers to share its experience in certain areas of port management and operations through the following 15 courses for 1982/1983:—

#### Management & Administration Courses

- Port Management & Operations
- Port Policing & Security
- Attachment Training at PSA Treasurer's & Accounts Departments

#### Port Operations Courses

- Training for Operations Instructors
- Cargo Operations at Conventional Wharves
- Containerised Cargo Operations
- Practical Pilotage Training

#### Port Engineering Courses

- Management & Maintenance of PSA Port Equipment
- Practical Training in Overhauling Forklifts & Components
- Port Engineering & Project Management

#### Safety Courses

- Ship Inspection
- Principles of Fire-Fighting
- Shipboard Fire-Fighting & Prevention
- Oil Spill Control
- Oil, Chemical & Liquefied Gas Tanker Safety

These courses have been structured to include lectures, discussions and programmed visits to operational departments. Related courses are scheduled to run consecutively so as to provide participants an opportunity to participate in more than one course while in Singapore. These courses serve as a forum for participants from developing countries to exchange ideas and experiences on port management and operations, to their mutual benefit.

### General Information

#### 1. APPLICATION PROCEDURE

All applications should be:

- made on the application form provided in this brochure. Application for each course should be on a separate form;
- supported and sponsored by the relevant Port, Government or International Agencies;
- accompanied by a bank cheque or draft for the total amount of course fees in Singapore Dollars; and
- submitted to reach the PSA not less than TWO MONTHS before the commencement date of each course.

#### 2. CONDITIONS FOR ACCEPTANCE OF APPLICATIONS

Organizations sponsoring their personnel for PSA training courses would be required to sign:

- (i) a Letter of Indemnity as the courses include programmed visits and/or practical work; and
- (ii) a Letter of Guarantee to reimburse the PSA for all hospitalization charges should any of their personnel require hospitalization while attending these courses.

Participants are advised to take up travel and accident insurance policies to cover them in the event of death, disability, loss of or damage to personal properties for the duration of the training period.

#### 3. COURSE FEES

Fees quoted are only for 1982 courses. Fees for 1983 courses may be subject to revision.

#### 4. REFUND OF FEES

If notice of withdrawal is given in writing within two weeks preceding commencement of the course, a 80% refund will be made or an administration charge of 20% of the course fees will be levied. If notice of withdrawal is given in writing after commencement of the course, no

refund will be made.

## 5. CANCELLATION

The Authority reserves the right to cancel any course if necessary.

## 6. SCHOLARSHIPS

Participants are normally sponsored by their ports/organizations for PSA courses. However, some participants have been sponsored to PSA courses under the Asean and Colombo Plan Training Awards Programme, Commonwealth Fund for Technical Co-operation, International Association of Ports and Harbors, International Labor Organization, United Nations Development Programme and International Maritime Consultative Organization. More information can be obtained from these organizations offering such awards.

## 7. MEDIUM OF INSTRUCTION

The medium of instruction is ENGLISH. As such, participants are expected to have a good working knowledge of English.

## 8. CERTIFICATE OF ATTENDANCE

Certificates of Attendance will be issued to all participants who maintain full attendance at all lectures/sessions.

## 9. MEALS AND REFRESHMENT

All courses include:—

- (i) Welcome and farewell lunches;
- (ii) Daily lunch for the first week; and
- (iii) Daily refreshment/snacks during tea/coffee breaks

## 10. VISA AND TRAVEL ARRANGEMENT

- (a) All participants will be responsible for making their own visas and travel arrangements to and from Singapore. Consult your High Commission, Embassy or Consul for more information.
- (b) On arrival at Singapore Changi Airport, participants:
  - (i) should present their passports or internationally recognized travel documents to the Immigration

officials and obtain from them the required approval to stay in Singapore for the duration of the training period; and

- (ii) will be met by PSA's representative who will provide the necessary assistance to facilitate clearance of Airport formalities.
- (c) Participants are advised to be in Singapore at least one day before the course begins.
- (d) Participants will be transported to the PSA Training Center on the first day of the course from designated hotels/hostels.

## 11. ACCOMMODATION

Singapore has numerous hotels to meet the accommodation requirements of participants. Your Embassy, High Commission, Consul or travel agent may be able to assist in making accommodation arrangements. It is suggested that you choose a hotel or hostel near the Port for your convenience.

## 12. LIVING ALLOWANCE

Sponsoring organizations should ensure that their personnel have adequate funds before leaving for Singapore to cover all expenses including accommodation, meals, transport, medical fees and other incidentals in Singapore.

## 13. CLIMATE & CLOTHING

Singapore is generally sunny with an average temperature of 28°C (82°F) during the day and 25°C (77°F) during the night. Lightweight casual clothing is recommended.

## 14. FURTHER ENQUIRIES

For further information, please write to:

Training Manager

Port of Singapore Authority

Tanjong Pagar Complex, 280, Tanjong Pagar Road,  
Singapore 0208, Republic of Singapore.

Telex: RS 21507; Cable: "TANJONG" Singapore

Telephone: 2217711 Extension 823; ISSN: 0129-9808

Course Title	Fees sing \$	Duration in weeks	1982									1983										
			MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV		
Management & Administration Courses																						
Port Management & Operation	1,800	3				31	18											12	30			
Port Policing & Security	1,000	2								11	22								3	14		
Attachment Training at PSA Treasurer's & Accounts Department	1,000	2				17	28								2	13						
Port Operations Courses																						
Training for Operations Instructors*	2,000	3										7	25									
Cargo Operations at Conventional Wharves	1,500	3				3	21								2	20						
Containerised Cargo Operations	1,500	3						28	16							23	10					
Practical Pilotage Training	2,500	2						28	9			18	29			2	13			24	4	
Port Engineering Courses																						
Management & Maintenance of PSA Port Equipment	1,000	2				3	14									6	17					
Practical Training in Overhauling Forklifts & Components	2,000	3						17	4								20	8				
Port Engineering & Project Management	2,000	3						17	4								20	8				
Safety Courses																						
Ship Inspection	500	1				1	5				4	8			7	11				3	7	
Principles of Fire-Fighting	500	1				8	12				11	15								10	14	
Shipboard Fire-Fighting & Prevention	800	1				15	19				18	22								17	21	
Oil Spill Control	800	1				22	26				25	29								24	28	
Oil, Chemical & Liquefied Gas Tanker Safety	1,500	3										1	19								7	25

NOTE: (a) \*This course is offered once in every two years.  
(b) No courses are offered during the months of December to February.  
(c) Dates and fees for 1983 training courses may be subject to revision.

# Marketing in Germany.

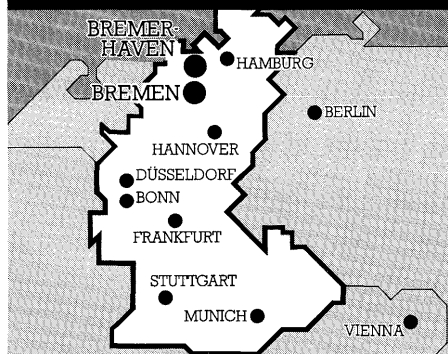
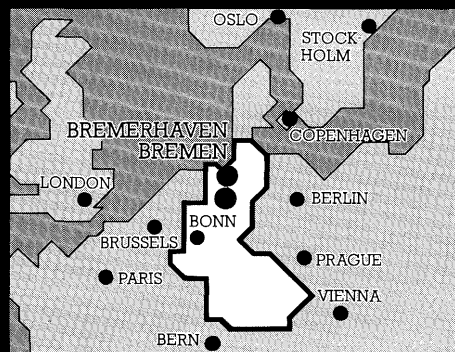
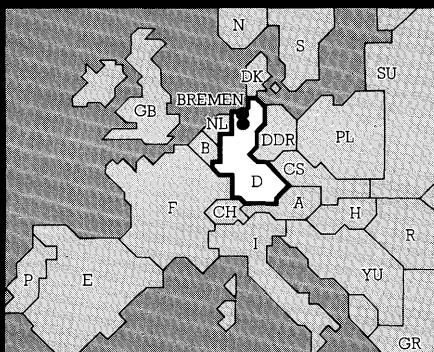
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- |                  |                             |
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