

PORTS *and* HARBORS

February, 1979 Vol. 24, No. 2



Port of Marseilles

IAPH Conference Le Havre May 1979

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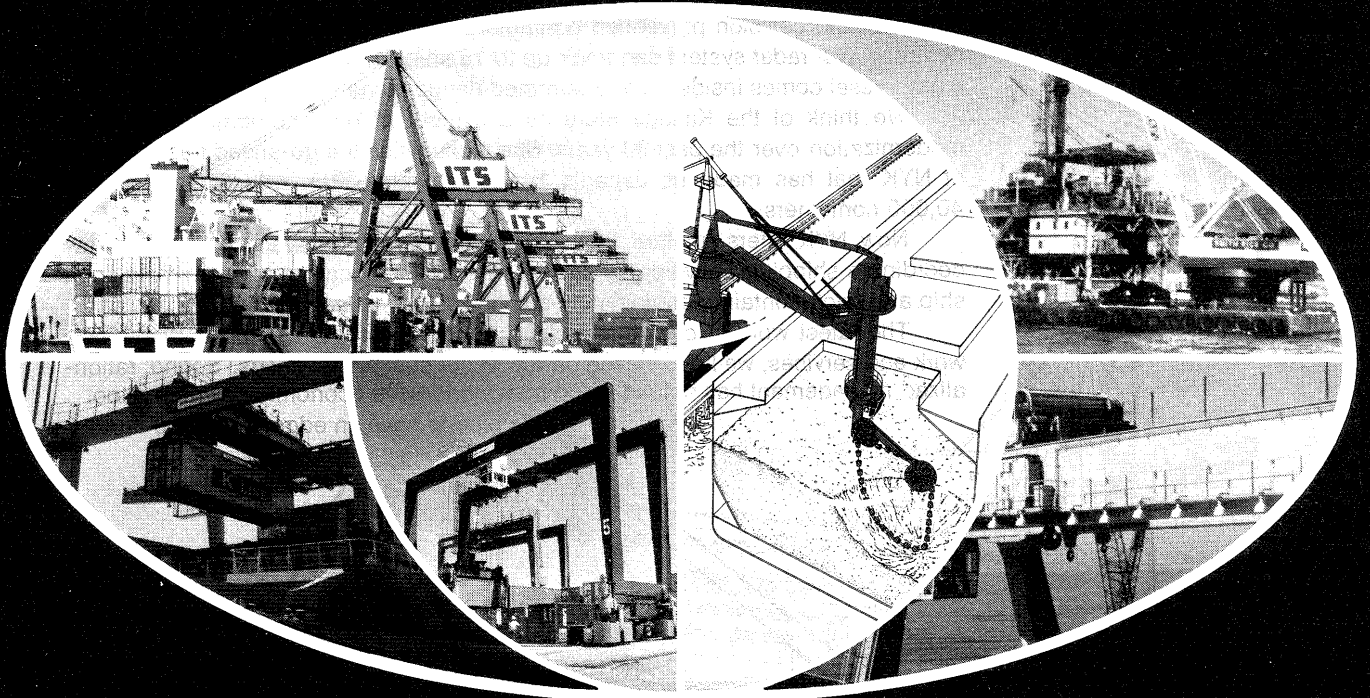
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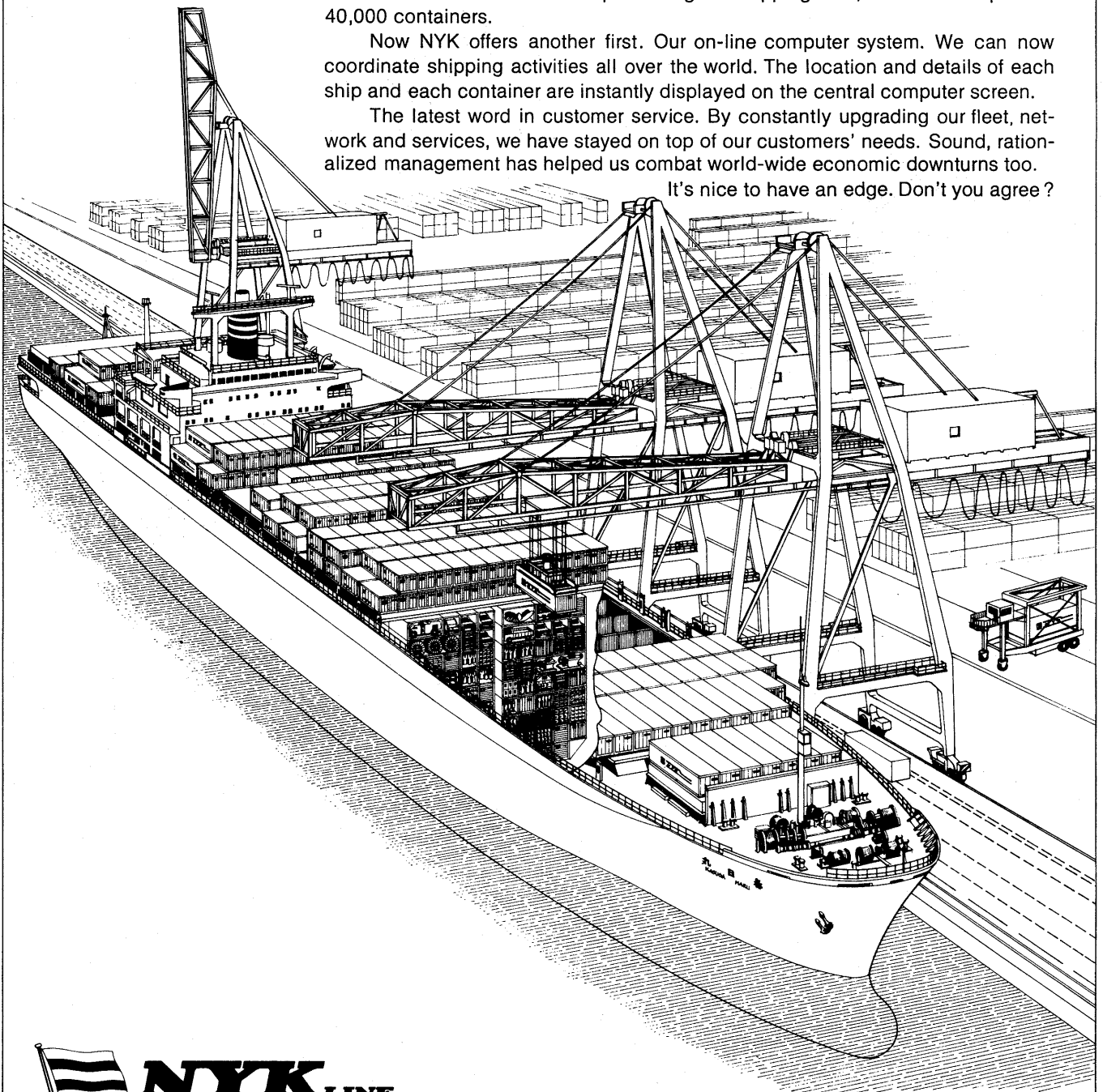
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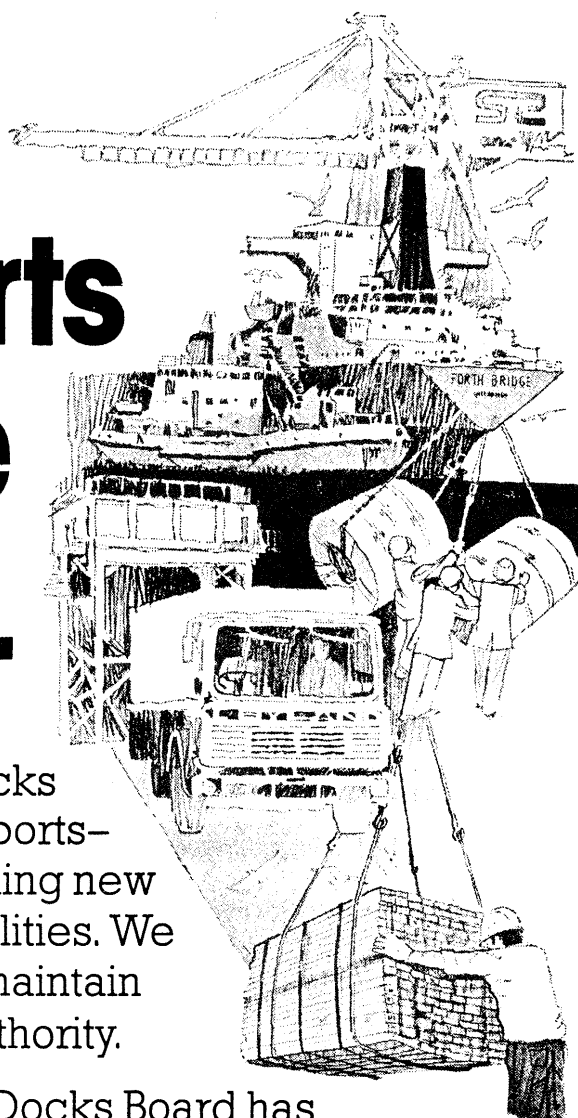
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PORTS *and* HARBORS

IAPH Head Office Announcements : Pages 7 ~ 19

Secretary General sets up New Guidelines for Improvements on "Ports and Harbors"

The Association's monthly organ "Ports and Harbors" celebrated its 23rd birthday only a short while ago serving the members all along since its establishment in 1955, when the Association formally came into being. The journal started as a quarterly was raised its status to a monthly 13 years later in 1968, following the 5th Tokyo Conference, and its delivery measure from surface-mail to air-mail in the latter part of the same year under the supervision of former Secretary General Toru Akiyama.

The "Ports and Harbors" has functioned for the Association as the main artery to unite the members of IAPH scattering all over the world, providing the most efficient and most economical vehicle to circulate announcements from the Association's Head Office among the members.

The interim meeting of the Executive Committee held in Mombasa, in April, 1978, took a considerable time to discuss on the possibility of further improvements of the journal and economization of its production cost. To deliberate the problems, an Ad-hoc Committee was formed up with Dr. J. Bax, Head, External Affairs Department, Port of Rotterdam as Chairman and after their thorough study recommendations were made to Secretary General Hajime Sato.

Pursuant to the advice and suggestions made for the journal, the Head Office mapped out a renovation plan and referred it to the members of the Executive Committee for further comments last June, proposing that, should everything go smoothly, the whole plan could be put into action beginning with the first or second issue of 1979. Of course, the Head Office put into practice at once some of the new guidelines applicable for the sake of saving expenses, such as the use of light-weight printing paper from the June 1978 issue, and the reduction of annual issuance from 12 to 10 by combining July-August and December-January issues into one respectively, thus winning considerable cutdown in postage and production cost.

By the end of August, the majority of the Executive Committee members replied to the Secretary General promising their full support to the renovation plan and encouraging the Head Office staff with further advice and suggestions at the same time.

What is worthy of mentioning here may be that we would also obtain their full support to a new column "My Views" in "Ports and Harbors" which would carry "leading articles" by leading port or transport men on current and future problems in each issue. It is agreed that each member of the Executive Committee would send in such an article either by writing it himself or by having someone under his influence write one for him at least once in his 2-year tenure of office.

As seen from the following plan, active participation and collaboration of members at large, members of the Executive Committee, Director and Alternate Directors as well as Special Committees is an indispensable "must" to bring this plan to a success.

"While the resources of personnel and financial capacity are limited", says Secretary General, "the editorial staff under the newly appointed Managing Editor Hiroshi Kusaka will endeavor to do their utmost responding to the expectations of the members, although, I am afraid, a little extra time may be required before the outcome of such endeavors reveals itself apparently".

Your continual guidance and cooperation are ardently desired by the Editorial Staff to attain this goal with success. (TKD)

Renovation Plan for the "Ports and Harbors"

(I) Improvements of the Contents

(A) Editorial Guideline

- (1) It must cater to a wide variety of readers in different parts of the world and often of completely different cultural back grounds. It is not easy task, but the editorial staff should make every effort to make it interesting to each one of them.
- (2) Efforts must be made to collect **more facts, more news, more opinions**, to be properly compiled in the journal to arouse interest of such readers. The journal should incessantly be on the look-out for new trends in the world rather than reports on local or regional interest. This, of course, does not mean complete omission of "personalities". Human interest is essential in ports. Some of the pictures, such as of presentations, faces, container cranes, however, should considerably be reduced. The photos to appear should in itself tell a story, be news, informative.
- (3) It is always remembered that editing is subjective. From all materials collected, the editor should do selecting stories, trimming them to give more meat, discarding, condensing and rewriting them on his judgement. He should not be afraid of being vulnerable to attacks by any contributor.
- (4) Members and readers are always keen to know new technological, mechanical or philosophical developments, new devices and principles, etc. by which to improve the efficiency of port construction, maintenance, administration and operation of their own. Efforts should be made to obtain news, new

proposals, new scientific papers and treatises on such issues of world concern and introduce them in the journal.

- (5) News in the relevant fields such as shipping and transportation, their new ideas in shipbuilding, new extension of railroads, new hinterland connections, newly applied transportation techniques, etc. should be of great interest to us, as well.
- (6) Reports on large developments in port-and-industry-areas, new port policies, renovation of port management systems, better idea of training in the ports, better handling of community relations by ports are the items of supreme interest to the members and readers. Effort should be made to collect such materials.
- (7) New trends of trade development and the part played by ports in the development may be another interest to explore.
- (8) Opinions on current port problems held by the world's leading characters in the port circle are always the subject of common interest among our members and readers. Effort should be made to get them.
- (9) Information on the activities of international organizations such as the UN, IMCO, UNCTAD, ECOSOC, PIANC, ICHCA, IALA and so on, should be reported in proper form.
- (10) News and facts of member ports are the subjects of interest and good friendship promotional material to be shared among members. In handling these subjects, however, attention should be paid not to make the articles too long nor repetitive in short period of time.
- (11) Chances should be open to a greater number of the members and readers. This certainly will stimulate the interest of the readers in wider areas and give a spur to the editorial staff.

(B) Collection of Materials (Cooperation of Members)

The success in the editorial guideline depends to a large degree upon the richness of materials collected before each edition. But the sphere of activities of the Head Office staff is limited, the collaboration of our members is indispensable in this regard. In other words, the success of the journal could be a reflection of the enthusiasm on the part of the members.

Therefore, we particularly urge the cooperation of members as follows:

(1) Members of the Executive Committee

They are specially requested:

- (a) To contribute one article each, possibly about 2,500 words, at least once during the 2-year tenure of office. This article will be put at the head of each issue under the heading of "My Views".
- (b) To introduce at least one significant paper during the 2 year tenure of office, corresponding to the guideline (A) (4) or (5) within his reach, such as professors of universities, research organizations, his own technical staff, consultants, etc.
- (c) To solicit at least one page of advertisement per year from among relative industries within his sphere of interest. (related to the economization measure).
- (d) To write frank comments and criticism on the

journal from time to time. This will certainly give the editorial staff the best stimulus.

(2) Members at large

All members both Regular and Associate are requested:

- (a) To send as promptly as possible the newest information on his port which is appropriate to be made public on the journal. We especially request the cooperation of port administrators in the developing countries in this respect.
- (b) To send in a copy of the annual report regularly.
- (c) To say anything he wants on the journal. Active participation of the members is the main-stay for the journal.
- (d) To send photographs of the port, which is proper for the Front Cover Page. Aerial views are preferable.

(C) Formation of the Journal

The journal shall be in the following formation, but subject to change due to the availability of the material for each issue. (Names of the headings of sections are tentative, any suggestion is welcome.)

- (1) "My Views" Contribution by the Executive Committee members. Always to be put at the head. (corresponding to the above (B) (1) (a).)
- (2) "Open Forum" Corresponding to the above (A) (4) (5) (6) (7).
- (3) "Port Release" Contribution by the member ports with rather substantial importance, including annual reports. The latter will be reported only its highlights.
- (4) "IAPH Announcements and News" Announcements, reports and messages from the Officers, Executive Committee, Board of Directors, Special Committees or Liaison Officers on the biennial conference, committee meetings and concerning all other activities of the Association.
- (5) "International Maritime Information" Information on the activities of UN, IMCO, UNCTAD, ECOSOC, PIANC, ICHCA, IALA, and other international organizations with which IAPH keeps friendly relationship, in abridged form.
- (6) "World Port News" Press release of all kinds by member ports.
- (7) "Voice" Letters from members and readers at large which are worth to be printed.

II. Economization of the Production Cost

Due to the financial difficulty caused by the rising value of Japanese Yen in the world money-market, the following measures will be taken;

(1) Frequency of Publication

Frequency will be reduced from 12 to 10 yearly. July and August, December and January issues will be combined to be one number.

(Continued on next page bottom)

Comm. on Trade Facilitation met in Antwerp

Mr. Robert L.M. Vleugels, Chairman of Committee on Trade Facilitation, in his recent communication to this office, informed that the meeting of the Committee was held at Antwerp on 25 and 26, October, being attended by Mr. Claude Mandray, General Manager of Port of Rouen Authority, Mr. John Raven Vice-President of SITPRO UK Board and Special Advisor of the Committee and Mr. B. Hille, Chairman of the Facilitation Committee, Dutch Ship Owners Association. (Special Guest). As the result of this advisory meeting, it was decided to circulate a simplified questionnaire which had originally been notified to members in the July/August issue of the journal, for the purpose of collecting sufficient information on the present situation on the trade facilitation adopted by the member organizations.

In the light of the significance involved in this difficult but important tasks carried by the Committee, members are earnestly requested to render their cooperation with the matter.

I. Report on IAPH Facilitation Committee's Advisory Meeting, Antwerp

Informal discussions during 25th and 26th October made it clear that port facilitation initiatives, even when limited to strictly port linked problems, should also include the handling of information associated with goods and cannot be limited to problems concerning ships' movement and handling of dangerous goods.

A: Several arguments were put forward which can be summarized as follows:—

- The port is a link in the whole transport chain. Even if the port authority itself is not involved in the operational handling of goods, it should favour facilitation initiatives. Good port procedures are an essential element in port efficiency and can be of great help in avoiding congestion.

- Port authorities usually have an accepted status from which they can effectively influence other parties involved in the port function and are themselves bound to be affected by facilitation developments in these other sectors. (e.g. A change to standard procedures will often be a preliminary condition for automatic data processing systems.)

- Port authorities as a neutral party are well situated to promote the facilitation ideas that can lead to a better overall service and they are also well placed to advise on

(Continued from page 8)

(2) Paper Quality

The Head Office has started a trial use of new quality paper from June 1978 issue. After several trials of different quality, and having members' comments, final decision of switching to a new paper now being used was made.

(3) More Advertisements

Due to slackening Japanese economy resulted from high Yen exchange value, we have to seek more and more advertisements from outside Japan. Cooperation and collaboration in this regard by the members is earnestly requested. If we can get more income from the advertisement, we can buy good papers from outside, this will surely enhance the reputation of our journal.

developments in other areas (e.g. Customs or container operations), which can call for changes in port procedures.

— In practice, this means that together with the Customs Cooperation Council (CCC), the International Chamber of Shipping (ICS) and others, IAPH should actively participate in trade facilitation policy as a spokesman for the ports and at the same time as a promoting agent for initiatives worked out by national trade facilitation bodies, the aim of which is not only to standardize documents but also to simplify procedures and prepared for computerizing developments.

B: There was a general concern to avoid duplication and to approach to subject in a practical way. It was felt that in the first instance, IAPH should inform its members of current relevant work in the field of facilitation and the development of standardised codes and procedures.

An important question is how to raise the interest of IAPH members. Possible methods of doing this include:—

- An information session during the 1979 IAPH Conference (Le Havre),

- The consideration of a standard modular set of port procedures as an optional alternative to the present extreme variety of individual port practices,

- The identification of urgent facilitation problems in ports and the provision of practical examples of benefits of improvements,

- The stimulation of ports to participate in national SITPRO-type committees and develop local facilitation teams to study the ports' own problems,

- The development of an effective communication and information system through the help of IAPH national directors and a regular collation and circulation of relevant facilitation news, and

- The concentration of work on priorities established by IAPH members themselves in response to a short questionnaire for immediate circulation. (This questionnaire replaces the much longer inquiry published in the July/August issue of "Ports and Harbors").

II. The QUESTIONNAIRE on Trade Facilitation

A: Chairman's Letter to IAPH Members (November 18, 1978)

As a member of IAPH, you know that a Special Committee on Trade Facilitation has been established on occasion of the 10th Conference at Houston (April 24/30, 1977).

In our endeavour to optimize the results of the not so easy task, we undertook the members of this Committee and I myself as chairman would highly appreciate your personal cooperation.

At present, it consists of your **early reply** to the questionnaire.

B: Questionnaire

Please reply to the questions by marking 'YES' or 'NO' in the given column.

If further remarks would be necessary, be so kind to provide them in a separate notice.

I. SHIPS' MOVEMENT

	YES	NO			
1) Which of the following activities are you as a port authority responsible for?			— Inland waterways	----	---
— Pilotage	----	---	— Banks	----	---
— Tugs	----	---	— Insurance	----	---
— Berthal location	----	---	— Customs	----	---
— Stevedoring	----	---	— Other government or official departments	----	---
— Customs clearance	----	---			
— Health control	----	---			
— Bunkering	----	---			
— Food	----	---			
— Immigration control	----	---			
— Customs declaration	----	---			
— Radio facilities	----	---			
2) Who gives you information for ships arrival ETA (expected time of arrival)					
— ETD (expected time of departure) ?					
— ship's agent	----	---			
— coast guard	----	---			
— other organisations	----	---			
How is the system for handling this information organised under your responsibility:					
— Manual ?	----	---			
— Automated ?	----	---			
3) How does the port authority communicate with ships for arrival planning ?					
— telephone	----	---			
— radio	----	---			
— telex	----	---			
4) Are you interested in a study aimed at providing standard procedure for planning the ships' arrival ?	----	---			

II. GOODS FACILITATION

1) Is your port or your port association working with a national trade facilitation organization ?	----	---			
2) Would you welcome information on developments and trade facilitation as it may affect movement of goods through ports ?	----	---			
3) Are you sufficiently informed of the nature and advantages of the United Nations Documentation Standard for the movements of goods in international trade ?	----	---			
4) Do you apply this standard to documents issued by you for completion by shippers, forwarders and other participants in international trade through your port ?	----	---			
5) Would you be interested to receive details and examples of the application of this standard to port documents ?	----	---			
6) Are port documents and procedures problems handled in your port by a local consultative committee ?	----	---			
7) If so, which of the following sectors are represented ?					
— Exporters	----	---			
— Importers	----	---			
— Forwarders and agents	----	---			
— Shipowners	----	---			
— Road carriers	----	---			
— Rail	----	---			

C: Returning Address

Please return the answers to the following address (as practicably soon as possible):

Mr. Robert L.M. Vleugels
Director General, Port of Antwerp
City Hall, B-2000, Antwerp, Belgium
Tel: 31/31.16.90 Telex: 31 807

(rin)

IAPH Proposal to IMCO: On Draft Convention on the Liability Of Seacarrier for Damage by Dangerous and Noxious Products

At a meeting of the working group of the IAPH Standing Committee on Legal Protection of Navigable Waterways, met in Paris during the third week of December, it was unanimously noted that the IAPH should express its view to the IMCO secretariat, on the issue presently under consideration by IMCO Legal Committee, namely, a draft "Convention on the Liability of the Seacarrier for Damage by Dangerous and Noxious Products".

In conformity with the above, Mr. Andre Pages, Chairman of the Committee proposed that the following comments should be expressed to IMCO via Mr. A.J. Smith, Vice-Chairman of the Committee & IAPH Liaison Officer with IMCO:—

- that IAPH stresses that the ports are keenly interested by the issue, in as much as ports and their environments are all too often the victims of damage by dangerous and noxious products,
- that they must insist that the principle of strict liability of the person responsible be adopted,
- that the victims should be left the choice of action against the carrier, or the shipper, or both of them, jointly and severally for compensation,
- that they stress that the limitations of liability need to be substantially increased compared to the 1976 Convention on Limitations for Property Claims, especially for the smaller tonnages, as small ships carrying dangerous and noxious products can cause extensive damage,
- that it is the intention of the IAPH to reserve its right to express its views throughout the debates of the IMCO Legal Committee, on this issue.

The proposal, being authorized by Mr. G.W. Altvater, President, will duly be commissioned to the IMCO Secretariat by Mr. A.J. Smith. (rin)

IAPH Proposal for Convention on Customs Transit

As reported in our October issue, IAPH has been asked to comment on the proposed new Convention with the basic aim of facilitating the transfer of goods from on Customs transit system to another by providing a link between such systems.

Mr. Robert L.M. Vleugles, Chairman of IAPH Special Committee on Trade Facilitation (Director General, Port of

Antwerp), in his November 20 letter to this office, informed that the following comments were submitted to Mr. E. Dorsch, Director Customs Technique Directorate of CCC, after consulting with members of the Committee.

IAPH Comments on CCC Proposal for Convention on Customs Transit

1. The International Association of Ports and Harbors has been invited to comment on CCC proposals for a convention on the carriage of goods in Customs transit which is designed to provide a link between transit systems to facilitate the transfer of goods between transit systems.
2. Clearly it is in the interests of port and harbor authorities that goods should move speedily through the ports and harbors and that they should not be delayed more than necessary by the need to comply with Customs requirements. The IAPH should therefore support any proposal which is likely to enable goods to clear the ports more quickly by reducing the Customs procedures to be completed there.
3. The extent to which this particular proposal will affect port traffic is not evident. Almost certainly the interfaces between transit systems occur most frequently at land frontiers but there are bound to be occasions even at present on which goods move from one system to another through a port. More importantly, if it is made easier for goods to transfer between systems, it is probable that traffic will move under transit procedures in future where at present it makes no sense to do so.

There is no doubt that as the CCC recognises containerised and other forms of unit load through movement the intervention of Customs at ports results in an unnatural break in the journey. For such traffic in particular it is more sensible that Customs export clearance should be completed at the point which the goods are loaded into the container, etc., that they should move without interruption, sealed and under cover of a simple document, through to their destination where import Customs formalities are performed. The CCC proposal should, therefore, assist the movement of goods from departure to destination and at the same time speed the flow of traffic through ports and on these grounds is to be welcomed. (rin)

Containerization Committee In Action

Special Committee on Containerization, Barge Carriers and Ro-Ro Vessels, chaired by Mr. R.T. Lorimer, General Manager, Auckland Harbour Board, New Zealand, completed two committee reports recently.

One is the third report on container handling statistical survey which has been conducted by the Committee since November, 1975 both in regard to numbers of containers and crane movement rates at container terminals. The first report was compiled by former member Mr. A.S. Mayne in September, 1976 and then in May, 1978 by the present Chairman Lorimer. The third report covers period January 1st-June 30, 1978 in which nine ports (London, Auckland, Singapore, Adelaide, Cochin, Fremantle, Melbourne, Sydney and Nagoya) participated in sending their returns. The survey result was sent to those participated ports from the Tokyo Head Office.

The second report completed by Mr. Lorimer's Committee is the survey result of container and special terminal facilities. To the questionnaire sent to all IAPH member

ports in January, 1978, one hundred and three (103) ports returned in their replies. The report will be printed by the Head Office and distributed to members attending the 11th Conference in Deauville in the first instance, then for general distribution after the Conference. (TKD)

Studies on Constitution and By-Laws

As reported previously, Standing Committee on Constitution and By-Laws (Chairman: Mr. J.H.W. Cavey) has been working on the reformation or modernization of the Association's Constitution and By-Laws, since the Houston Conference and Mombasa Meeting.

Though subject to the further deliberations, the following points will be highlights of the changes to be proposed in due course:—

- a. Stipulation of the Association's objects (six items)
- b. Stipulation of roles of the Conference, Plenary Meetings, Board of Directors, Executive Committee and the Secretary-General

All these are intended to clarify, simplify and streamline the procedures and actions to be necessary for the smooth development of the Association. Members are requested to acquainted with the matter through communications via journal or other media to be made available in due course of time. (rin)

Mr. Tsuboi awarded

Mr. Gengo Tsuboi, a member of IAPH Executive Committee, Board of Directors, COLS and Vice-President of the Japanese Shipowners' Association, a regular member of IAPH, was awarded with the Second Class Order of Sacred Treasure on November 7, 1978 by the Japanese Government, for his long and meritorious services toward the promotion of the maritime industries throughout his career in the governmental office as well as in the public or commercial entities.

He, upon his retirement from the governmental office as Deputy Vice-Minister of Transport Ministry of Japan in 1954, has been involved with various public services including the Shipowners' Association. He, while presently is the Chairman of the Board, was the president of Tokyo Tanker Co., Ltd., until March 1978. He has been serving on the IAPH Executive Committee since 1967. (rin)

Visitors

— Mr. Ken Snaggs, Chief Executive Officer, Point Lisas Industrial Port Development Corporation Ltd., Trinidad, West Indies, visited the Head Office on November 28 and was received by the Secretary-General and his staff. He was on a port development inspection tour to Japan and Singapore. During his one week stay in Japan he visited Ministry of Transport, Ports of Tokyo and Kashima.

PLIPDECO (Point Lisas Industrial Port Development Corporation Ltd.) is a responsible body for the development of the industrial port complex at Point Lisas, near Port-of-Spain, and presently is conducting the preparation of the fundamental facilities including the dredging of channels, reclamation of sites for steel mills and aluminum smelters.

— Dr. Rolf Fastenau, Deputy Chairman, Dr. Walter Hubenthal, Managing Director Sales Department Import and Dr. Rolf W. Stuchtey, Managing Director Marketing of

(Continued on next page bottom)

4th JOINT IALA/IAPH/PIANC Committee on Port Signals met in Paris, November 8 and 9

The Fourth Joint IALA/IAPH/PIANC Committee on Port Signals was convened at IALA Headquarters, Paris, on 8 and 9 November 1978, under the chairmanship of Capt. J.E. Bury of Trinity House. The meeting was held under an IAPH hostship represented by Mr. Robert Boeuf.

The following is the reproduction of the records of the meeting which was contributed to this office by Mr. J. Prunieras, Secretary-General of IALA. In his letter, it was indicated that the next meeting would be held from 13 to 15 June, 1979, while the venue was not decided yet.

The following is the reproduction of the notes of the meeting. (rin)

NOTES OF THE FOURTH MEETING OF THE JOINT IALA/IAPH/ PIANC COMMITTEE ON PORT SIGNALS HELD AT IALA HEADQUARTERS PARIS, 8-9th NOVEMBER 1978

PRESENT:

Chairman

- Captain J.E. Bury, Trinity House

Secretary

- Mr. N.F. Matthews, IALA Secretariat

Country	Name	Representing
Belgium		
	— Captain H. Van Loocke	IALA/PIANC
	Belgium Marine Department	
France		
	— Mr. J.F. Levy	IALA
	Direction des Ports Maritimes & des	

(Continued from page 11)

Bremer Lagerhaus-Gesellschaft accompanied by Mr. Shigemi Tsuyama, Japan Representative of Bremen ports met Secretary General Sato and other staff of the Secretariat on November 27, 1978. The subject focused on the next biennial conference of IAPH in Deauville, France and future of the Association in general to which the Bremen party expressed their sincere concern and assured further cooperation. They were on the way from Taipei on business trip.

Membership Notes

New Members

Regular Members

Busan District Maritime and Port Authority
46-63, 3-Ka, Daechang-Dong, Dong-Ku, Busan, Korea
Office Phone: 42-3209
Telex: BDMPA-3377
(Mr. Kim, Sang Jin, Director General)

Incheon District Maritime and Port Authority
1-17, 17-Ka, Hang-Dong, Chung-Ku, Incheon, Korea
Office Phone: 2-0285
Telex: IDMAPA-23380
(Mr. Bae, Kwang Ho, Director General)

Voies Navigables

(Affaires Internationales)

- Mr. M. Laffin IALA

Direction des Phares et Balises

- Mr. Pichard IALA

Direction des Phares et Balises

- Mr. R. Boeuf IAPH/PIANC

Ministere de l'Equipment

Finland

- Captain J. Manninen IALA/PIANC/
Finnish Lighthouse Administration IAPH

Fed. Rep. of Germany

- Mr. H.D. Vogt IALA/PIANC
Bundesverkehrsministerium
(Wasser-und Schifffahrtsdirektion Nord,
Kiel)

Netherlands

- Captain C. Van Aken IALA/IAPH/
Directoraat Generaal van het
loodswezen PIANC

United Kingdom

- Mr. M.J. Faulkner IALA
Trinity House, London
- Captain E.J. Kirton IAPH/PIANC
Harbour Master, Southampton
British Docks Board

International

- Mr. Rajan WMO

Interpreter

- Mr. Jagers

Apologies for absence were received from Captain Ording, Norway, Mr. Mannola, Finland, and the representative of the Port of Hamburg.

Agenda Item 1

The provisional Agenda was adopted.

Agenda Item 2

The notes of the last meeting were agreed.

Agenda Item 3

There were no matters arising from the notes of the previous meeting other than those covered by the present Agenda.

Agenda Item 4

The definitions of Port and Harbor proposed by IAPH were agreed. It was further agreed that in any documents to be produced the term "Port" would include the term "Harbour".

Agenda Item 5

The following documents were circulated, Port Signals used in Federal Republic of Germany (Annexe 1), signals used in Finland (Annexe 2), comparison between Joint Committee Signals and SIGNI, prepared by the Netherlands (Annexe 3).

A thorough discussion took place with regard to the proposals of the Working Group. It was agreed that every ship should have a clear message. It was not safe to allow a ship to proceed in the absence of any message to

the contrary.

It was decided that basically the colour green should be used to mean "proceed" and the colour red to mean "do not proceed". In this connection the German delegate was quite emphatic that in Germany the colours green and red could not be exhibited together in combination, in case of failure of one colour leading to a wrong message being given.

It was decided that a ship having a message to proceed needed to know whether other ships would be proceeding in the opposite direction to him (i.e. two way traffic) or whether he had sole use of the manoeuvring space available (i.e. one way traffic).

The first six basic messages proposed by the working group were therefore agreed as follows:—

1. Serious emergency: All vessels to stop or divert according to instructions.
2. No vessels may proceed for a prolonged period (e.g. due to maintenance works).
3. Vessels must not proceed.
4. Vessels must not proceed but may prepare to move shortly.
5. Vessels may proceed (one way traffic).
6. Vessels may proceed (two way traffic)

The 7th basic message "Vessels may proceed but the passage will be closed soon" was considered to be too dangerous for general use as vessels would be tempted to use excessive speed. In certain locations a local signal may be devised by the relevant authority on their own responsibility.

No difficulties have been pointed out to members with regard to the international system. The Commission had, however, earlier indicated that no major changes in, or additions to the existing international system would be generally acceptable.

It is therefore requested that as far as possible the new system being considered port movements does not conflict with the WMO international system of signals. Any proposal of the joint IALA/IAPH/PIANC Committee will however be considered by the CMM in consultation with the member countries concerned, and any change to the existing system will have to be approved by the WMO Executive Committee.

The Joint Committee decided to defer the question of tidal signals as there was some feeling that they were no longer required in the light of modern technology.

Agenda Item 6

In the light of Mr. Rajan's statement, no further action with regard to meteorological signals was required at the present time.

Agenda Item 7

This question was referred back to the working group in the light of the discussions which had taken place. All members of the Joint Committee were requested to submit any written comments to Mr. Matthews on the question of port signals by 1st January 1979 so that the working group can take these points of view into account. In particular, the working group were instructed to consider the following specific questions:—

1. The advantages and disadvantages of a directional system as opposed to an "all round system".
2. To what extent should port signals be compatible with SIGNI?
3. Should there be alternative signals for long and short range use?

4. Should vertical or lateral signals be used to carry basic messages?
5. Definition of one way traffic and two way traffic, e.g. does this include priority vessels?
6. The difficulties associated with day time directional signals (screening problems).

Agenda Item 8

The date of the next meeting of the Joint Committee was agreed as 13-14th June with 15th June in reserve, the venue was not decided, but Captain Van Looke would approach the Secretary General of PIANC with a view to holding it in Brussels.

Agenda Item 9

The Chairman closed the meeting and thanked IAPH for their hospitality which had been much appreciated, and thanked the interpreter for his excellent services.

ANNEX 1



Federal Republic of Germany

Signals for movement under bridges, into and out of port and lock entrances (Seeschiffahrtsstraßenordnung App. I Part I A19):

○ red	○ red	no passage/entrance (bridge, lock, entrance closed)
	○ red	passage/entrance is prepared
○ white	○ red	passage/entrance for ships, but priority for other direction and under condition of sufficient height
○ white	○ white	lifting bridge is lifted in first step
○ red	○ red	passage/entrance for ships under condition of sufficient height
○ green	○ green	passage/entrance allowed no traffic from other direction
○ white	○ green	passage/entrance allowed, but priority rules have to be watched
○ green	○ green	
	○ red	no leaving of locks
	○ green	leaving of locks (compulsory)
	○ red	bridge, port entrance, lock entrance is not possible (closed for a longer period)
	○ red	

ANNEX 2

PASSING THROUGH PROHIBITED

-  The bridge is not in open position, the channel is reserved or closed.
-  The vessel has been observed, the channel is reserved. WAIT!

	The vessel has been observed, the channel will be free soon. GET READY!
	The bridge is in open position.
	The bridge is in open position, but the signal lights have not yet been switched to the «Passing through Permitted» phase. WAIT!
	The bridge is in open position, but the signal lights have not yet been switched to a phase permitting passing through: the signal of permission will be given soon. GET READY!

PASSING THROUGH PERMITTED	
	OVERHEAD CLEARANCE RESTRICTED. The vessel is responsible for sufficient overhead clearance. The bridge will be opened when requested by one prolonged blast on the whistle or by VHF radio telephone.
	The bridge is open, passing through possible.

Legend:
 ○ = continuous light
 ⊗ = flashing light
 V = violet

	The bridge is unattended and overhead clearance restricted. Passing through on own risk. The vessel is responsible for sufficient overhead clearance.
--	---

			Vessels must not pass except for specified vessels (e.g. ferries) in accordance with local rules
			Vessels must not pass except for specified small craft in accordance with local rules

⊗ Red ⊗ Green ⊕ Flashing

ANNEX 4

Simple System of Basic Messages Proposed by the Chairman

- R Prolonged closure
- R R Vessels must not proceed
- R R Vessels must not proceed but may prepare to move shortly.
- G G Proceed—two way traffic
- G G Proceed—one way traffic
- G G Proceed—one way traffic inwards
- G R Proceed—one way traffic outwards
- R R Ships must not proceed except for priority craft/pleasure craft using right hand channel
- R R Ships must not proceed except for priority craft/pleasure craft using left hand channel.
- G G Proceed two-way traffic using right hand channel
- G R Proceed two-way traffic using left hand channel.

ANNEX 3

IALA/IAPH PIANC	SIGNI	NETHERL. PROPOSAL	MEANING
			Serious emergency: all vessels to stop or divert according to instructions
			No vessels may pass for a prolonged period (e.g. due to maintenance works)
			Vessels must not pass
			Vessels must not pass but may prepare to move shortly
			Vessels may pass but the passage will be closed soon
			Vessels may pass (one way traffic)
			Vessels may pass (two way traffic)

Industrial Ports and Economic Transformations

Series No.9

By Paul Hanappe and
Michel Savy

CHAPTER III

RECENT TRENDS IN PORT ECONOMICS (Part 3 & 4)

3.3. THE ORGANISATION OF TRANSPORT

- 3.3.1. Transport auxiliaries
- 3.3.2. Containerisation and barge-carrying vessels
- 3.3.3. The increasing role of telecommunications and tele-data-processing

3.4. SPATIAL ASPECTS

- 3.4.1. The least modal captivity
- 3.4.2. Questioning the concept of hinterland

CHAPTER IV

UNDERLYING PROCESSES IN THE EVOLUTION OF PORT INDUSTRIAL AREAS, AND CONCLUSIONS

4.1. THE DIMINUTION OF THE ROLE OF THE DOMINANT BRANCHES

4.2. THE SEARCH FOR GREATER FLUIDITY IN PORT FUNCTIONS

3.3.3. The increasing role of telecommunications and tele-data-processing

The traditional branch of telecommunications, and the more recent applications of data-processing under the name of tele-data-processing, are at the present time undergoing convergent processes, both at the level of technology and the applications which are involved and also at that of the organisation of companies and markets. Many factors lead one to believe that this convergence constitutes the beginning of the emergence of a new branch of activity, undoubtedly with the promise of a brilliant future in the coming years². There have already been major movements of various fractions of the most active capital towards establishing their positions of force.

¹ MINGRET, Paul, *op. cit.*, page 503

² See on this subject:

- D. KIMBEL, *Computers and telecommunications*, Paris, OECD, Data-processing studies, 1973, 250 pp (in French)
- P. HANAPPE and M. SAVY, *Industries in Europe*, *op. cit.* (in French)
- P. HANAPPE, Some problems presented by the new telecommunication networks, paper read to the *AFCET Symposium* at Montpellier, 23-25 October 1974 (in French).

We saw when examining the transport auxiliaries, and also when looking at containerisation, that data-processing had already found important fields of application in maritime transport and port activities.

For this purpose we can see the development of world-wide networks for data transmission, which are essential for operation under the competitive conditions of the activities concerned. In this we can see the importance for the ports of finding themselves well placed and established early on in such networks.

Maritime transport, and the terminal activities which are linked with it, are the occasion for many other applications

of the new activity in telecommunications-tele-data-processing. The projects for control of navigation by satellite are well known; it is probable that before establishing control of the use of maritime routes on a world scale systems similar to I.F.R. will be used in the most frequented straits. Data-processing for the management of a fleet of tramp steamers based on instantaneous transmission of freight available in various ports has been a preoccupation of ship-owners for several years now. The international commercial transactions, which are the origin of maritime transport, necessitate more numerous exchanges of information, carried out more frequently and more rapidly, as the internationalisation of the economy penetrates into all its aspects. The development of "exploded production", and the way (as we saw in section 3.1.) that it affects industrial-port activities, poses major problems of technical management; in particular it involves adjusting stocks and transport programmes for intermediate products to the requirements of production on the market as they occur at any time within a major industrial grouping.

It is not surprising that transport should be a most suitable area for the application of the new techniques of data transmission; this results from their ubiquity in the economy, and their role of placing various economic activities into relation with each other. If it is true, as some persons indicate¹, that the new branch of telecommunications-tele-data-processing will assume the characteristics which will make it a dominant branch in the next ascendant Kondratieff phase, we will see there the conventional behaviour of the dominant fractions of capital: in the sense that they will use the descendant phase to disengage from those activities which offer only marginal efficiency for capital, and will look cautiously into new combinations which are capable of bringing individual and collective prosperity; in the sense also that the transport activities, when they do not themselves constitute a dominant branch as was the case for more than a century with railways, play the role of a privileged vector in the dominance of certain branches on the whole of the economy.

¹ in particular D. KIMBEL, *op. cit.*

This was in any case one of the conclusions of the previous phase of this research work¹ on the subject of the dominance of the petroleum branch in the last ascendant Kondratieff phase. The observations which can be made at the present time on the subject of the emergence of telecommunications-tele-data-processing, and their special applicability to transport, are at least coherent with this interpretation.

¹ P. HANAPPE and M. SAVY, *op. cit.*

3.4. SPATIAL ASPECTS

3.4.1. The least modal captivity

Combination and substitution of different modes involves questioning the traditional schemes of specialisation and captivity.

The dominant trend over the last two decades in the maritime transport of goods, as far as the tonnage transported was concerned, was the development of massive

bulk transport and, more recently, specialised bulk transport for a large number of products (cf. chapter 3.2): for all these products the use of specific port handling resources and vessels created a number of special channels, the efficiency and productivity of which are inaccessible to the traditional maritime transport channels (conventional cargo vessels for general goods, cranes) and also to terrestrial transport channels (road, railway) or air transport, even when such a substitution is geographically possible. Specialised channels for massive bulk generally restrain inter-modal competition for this reason.

By contrast development in packaging, handling and transport techniques for general goods linked with the container, by restricting delays and the cost of breaking down the loads, poses the problems of captivity or modal competition in different terms. Whilst the technique of the container was initially limited to the maritime field it was rapidly extended to road and rail and, in some cases, to air transport. In this way parallel routes, effected by different modes, were established on several routes, including the most important of the world flows of general goods.

Between Japan and Europe the maritime route is paralleled by mixed transport: sea from Japan to the western coast of the Soviet Union; rail to Moscow, road from Moscow onwards. The sea route from Europe to the Western Coast of the United States by the Panama Canal is also partly paralleled by rail transport (or, in the case of certain goods, air transport) from one coast of the United States to the other. In Japan car-ferry routes are now competitive with road links. In the case of black Africa (and in particular Nigeria, where congestion in the ports has now reached spectacular proportions) permanent road transport systems from Algeria and across the Sahara have been established, whilst Peugeot serves its Kaduna factory in Nigeria by an air bridge from Satolas. In the case of the Near East and the countries of the Persian Gulf the blocking of ports and railways (the Iranian system is not able to absorb the wagons which arrive from the Soviet Union) have made the simultaneous use of practically all the existing methods of transport necessary: air freight for products of the highest value, sea + road with load breakdown in a Mediterranean port, road across Turkey and transport on the Caspian sea.

This establishment of parallel routes is intended simultaneously to shorten delivery times, in particular for goods of high specific value or for which the "time value" is high (spares, etc.), to avoid certain bottlenecks, to introduce competition into the tariffs of various types of carriers, and to place the loader in a position where he is protected from exclusive dependency on one mode of transport and one category of carrier. This movement is likely to be further supported by the development of sub-multiples of standard containers, which therefore become compatible with air transport, so enlarging the competence of grouping and transit agents capable of directing freight on to one or other combination of several modes of transport.

Several ship-owners, air transport companies and even road transport companies are not remaining inactive in the face of this evolution and are developing, in the various forms of subsidiaries and often international joint ventures, companies capable of integrating into one centralised organisation the simultaneous management of different and complementary modes of transport.

This breaking down and sometimes replacement of maritime transport should not necessarily be regarded as

contrary to the development of port activity. On the contrary the breaking down of loads becomes, in the new multi-modal organisations in the transport channels which are being established, more extensive; the delays and costs involved are decisive when establishing the competitiveness of one system as compared with alternative solutions. Under these conditions the activities linked to transport now constitute one of the main axes of port development, both in respect of participating in the various multi-modal channels which have one end or a point of passage through a port, and also to preserve the competitiveness of maritime transport as compared with its various competitors.

3.4.2. Questioning the concept of a hinterland

Over the last three decades maritime transport, port activities and the road transport associated with them have undergone more profound changes than in the whole of the previous century.

Does the traditional concept of a port hinterland retain any sense under present circumstances, at least in those regions concerned with modernisation and competition of ports and served by modern means of maritime transport?

Without claiming to provide an exhaustive summary here of the historical content and the theoretical foundations of the concept of a hinterland it should be pointed out that these were put forward at a time of relative uniformity in the unit costs of maritime transport: the types of vessels were less numerous, their performance and their rates were comparable from one line to another at the same period, since gains in productivity linked with the increases in the size of vessels and change in means of propulsion profited all lines progressively and equally.

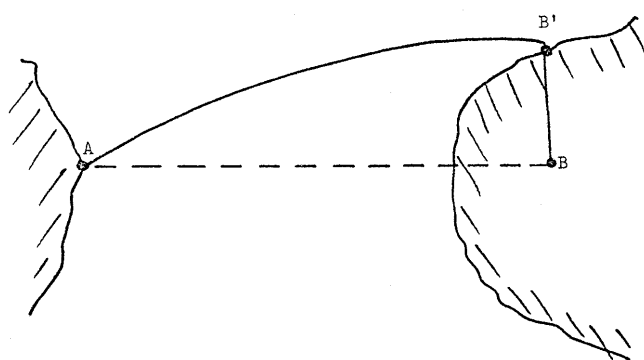
A relatively large number of ports, spread over a large number of sites, installed comparable handling techniques with productivity and tariffs which were certainly different, but which remained within the same order of magnitude.

The land transport systems serving the ports were also relatively more extensive than today: in France the railways and the networks of XIXth century narrow-gauge canals were more extended than the networks which today meet modern standards.

Finally there was a considerable disproportionality between the costs of maritime and land transport: transport by sea was very considerably cheaper, and was therefore used for the largest possible share of transport. It is on this consideration that the Palander's law of refraction¹ depends; when goods are to be carried from port A to a town B inland in another continent, that route which provides the longest sea route is to be preferred to a straight line which involves a longer distance of the more expensive land transport.

¹ Palander, Contributions to location theory, Uppsala-Almqvist and Wicksells Boktrycken 1935, 258 p. (in German).

In its more sophisticated form the concept of a hinterland certainly takes into account port disparities, a more efficient port or one served by more effective land transport resources enjoying a radial zone which is more extended than that of a less developed port. The underlying geographical concept remained that of the "traffic basin", a relatively homogenous zone of influence for which the port provided a natural "funnel", draining all the traffic from it to maritime outlets supplying all its needs. This zone of influence was relatively undifferentiated in respect of goods, since there were scarcely any specialised modes of transport, either by land or by sea.



--- direct line, shortest geometrical route
— most effective route, by sea from port A to port B',
by land from B' to B

This relative "atomicity" of the transport and port service market, with small tariff disparities lending themselves to a marginalist and modeling approach to the hinterland, relatively comparable to that of Christaller's urban networks or the industrial establishment networks. The present epoch is characterised by several trends which question those conditions formerly used to establish the concept of a hinterland.

In the case of bulk goods we have seen the dominant trend of the appearance of specialised bulk traffic, covering petroleum, ores and coal, cereals and fertilizers and an increasing number of other products. Operating specialised vessels involves restricting the number of ports of call to the minimum, whilst the installation and operation of port handling and storage equipment calls for new investments: in this way port concentration is accelerated, the ports themselves needing to specialise in handling one or other types of goods for which they have equipped themselves, before their competitors, in order to attract the traffic and to maintain their position. For this reason the hinterland of a port, as far as these particular goods are concerned, progressively extends until it covers, in the case of a monopoly, the whole of the contiguous economic territory. This port concentration, as shown by the "concentration of hinterlands", is particularly noticeable when land transport of bulk goods is involved, particularly when this also is specialised.

The wide-gauge waterways, reinforced by the appearance of barge-carriers, and particularly competitive when compared with rail and road transport for heavy goods, effectively establishes the hinterland of those ports it serves by the extent of its network. In this way New Orleans is the sole maritime outlet for the whole of the Mississippi and its tributaries for several thousands of kilometres from the sea. However as the waterways extend their network to a continental scale, even linking the maritime ports to each other, then disparities in the equipment and services offered by the ports may result in certain ports becoming the hinterland of others. Might the possible construction of the Rhine-Rhône canal locate Fos, in respect of certain products such as paper-making pulp imported from Scandinavia by barge-carriers, in the hinterland of Rotterdam? The traditional geographical image of a hinterland, a protected traffic basin in the country behind a port, therefore no longer has any meaning.

The most obvious case is that of transport by pipeline which determines, as the pipeline is established, the

hinterland served by a port until it covers the whole of a national or international territory. Whilst this phenomenon initially concerned only crude oil and natural gas it has already been extended to cover an increasing number of chemical products, suspended ore sludges, etc.

This questioning of the concept of hinterland is particularly evident in the case of Great Britain where, for specific economico-historical and geographical reasons, international and coastal traffic used a large number of ports distributed round the whole British coastline. Pollock has pointed out¹ that, for example, certain refineries on the east coast of Scotland are now supplied by pipeline from ports on the west coast, whilst Southampton is tending to take an increasing share of container traffic on inter-continental lines at the expense of those ports which may be nearer to the actual port of origin or destination of the goods involved.

¹ cf. Eric E. Pollock, *Ports, Port Hinterlands and Regional Development*, paper at the International Symposium on Regional Transport Planning in Theory and Practice, Zagreb, April 1971, 13 duplicated pages.

In the case of bulk goods there is therefore, with the simultaneous concentration of ports and land services, an extension of the hinterlands, up to the point of total loss of geographical significance of this concept, and at the same time a differentiation of hinterlands according to products: the hinterland of Marseilles extending up to Germany in the case of oil and up to Fos in the case of iron ore.

These disturbances are even greater where general goods are concerned. Port concentration becomes even greater here as the growth of traffic increases the productivity of the installations and attracts ship-owners who, as a result of competition, reduce their tariffs, and as the large number of lines offers the loader shorter immobilisation delays. This results in "super-hinterlands" like those described for bulk goods.

However the least modal captivity, certain examples of which have already been given (cf. section 3.4.1), introduces more radical disturbances incompatible with the geographical approach through contiguity of the concept of a hinterland. Using rail transport from the west coast to the east coast of the United States before transport by sea to Europe, does Los Angeles form part of the hinterland of New York? With the land transport of goods which are disembarked from Japan in Siberia does Paris belong more to the hinterland of Nadochka than that of Le Havre? The modification of the terms of comparison between land and maritime and even air transport brings into question the premises of Palander's law of refraction, or rather leads to reformulating it in a much more complex manner. The ports are no longer the funnel of a zone of preserved influence, but privileged points, more or less powerful according to their own competitiveness and the possibilities of international linking which they offer, within groups of links between origin and destination which are simultaneously served by different international combinations and routes.

CHAPTER IV

UNDERLYING PROCESSES IN THE EVOLUTION OF PORT INDUSTRIAL AREAS, AND CONCLUSIONS

Examination of the period after the Second World War

and the changes which have occurred in the economy during the last decade, when compared with the development of the port industrial zones and the appearance of new trends in the life of ports, makes it possible to draw conclusions as to the direct and specific influence of long-term Kondratieff movements on port evolution. In this way it opens up interesting perspectives for a deeper understanding of the transformations taking place in port life, and without doubt will throw light on the orientations and strategic choices of those organisations which are responsible.

Within the framework of this chapter such factors are identified in two fields which appear to be fundamental from this point of view:

- the diminution of the role of dominant branches
- the search for greater fluidity in port functions.

4.1. THE DIMINUTION OF THE ROLE OF THE DOMINANT BRANCHES

The dominant branches play a fundamental role in driving and transforming the economy in the ascendant Kondratieff phases. The profound effects of the growth of the petroleum branch on transport and industrial activity after the Second World War includes, in particular, the transformation of maritime transport and port activity as described and explained in chapter II.

In a descendant Kondratieff phase, by contrast, the most active fractions of capital behave so that even the concept of a dominant branch loses its relevance. This, in our opinion, represents one of the fundamental characteristics of the Kondratieff alternation: the economic situations, which opened up to these dominant fractions of capital occasions for valorisation and expansion, have exhausted their virtues and have reached their limits; these dominant fractions, without withdrawing completely from such activities, are now no longer investing in them with the same enthusiasm, and are no longer utilising them to drive the economy forward. They are seeking new sources of valorisation, and this necessitates long periods of cautious approach and reorganisation¹ before technical, institutional and even political solutions are developed which can then permit a new departure.

¹ hence the major movements of disengagement and re-engagement of capital observed over the last ten years.

It would therefore be a serious error, in particular for the maritime ports, to rely at this time, for their future, on these economic activities which caused their transformation and ensured their prosperity during the two decades which followed the Second World War. Clearly we are not to expect the disappearance of these industrial activities which are established in the ports and which have so profoundly modified them; there will almost certainly not be any absolute regression in refining, petrochemicals and metallurgical activities, but rather periods of moderate expansion alternating with periods of stagnation; an increasing part of the new productive capacity will appear overseas. However these industrial activities will no longer play the motor role, the effects of which were so spectacular in the ascendant Kondratieff phase.

The most active fractions of capital will undoubtedly not pull out massively from these industrial activities. Their dominant role in the previous period had the effect of making them better able to withstand the crisis and its

difficulties; in this way they remained attractive within a framework of moderate expansion. But since the brilliant future is now in another field the main concern of the most active fractions of capital is to identify this other field, and even to assist its emergence and to ensure positions of force within it. This is the way in which the interest of the major oil companies in the nuclear industry and American coal should be interpreted¹.

It would be presumptuous at the present time to attempt to predict which will be the new dominant branch or branches. Economic reflection is primarily the observation of the behaviour of the most active fractions of capital which can provide some indices, which need however to be interpreted with great caution.

The activities of telecommunications-tele-processing² are frequently cited as an emerging branch, capable of playing a major role in the near of further future, and as a possible motor influence in a new phase of expansion. Undoubtedly much is to be expected in the field of new forms of energy and in particular, at least initially, from nuclear energy. This does not however cover the field of possibilities, but these are undoubtedly the two new branches of activity which have the best chances of acting as dominant branches in the future in a new ascendant Kondratieff phase. For quite different reasons both of these are of definite interest for port organisations.

¹ see J.M. Chevalier, *op. cit.*

² For a more detailed identification of this group see P. Hanappe and M. Savy, *Industries in Europe*, *op. cit.* (in French).

In the case of telecommunications-tele-data-processing the field of possible applications is very wide. Engineers have already made available a wide range of new techniques (ranging from computers to artificial satellites) and combination techniques, the applications of which could change economic and daily life in the same way that electricity and the automobile changed it in their time.

Undoubtedly the maritime ports will not combine all the factors for localisation of the equipment involved; whatever the situation one should not expect from this side the recovery of the port industrial zones. They are, however, directly involved as possible points of application, on a large scale, of several of these new techniques. We saw, in section 3.3.3, how maritime transport, the port function and ancillary activities already offer advanced fields of application for this type of technique. From the point of view of port development in general there is one trend which should undoubtedly be encouraged; if it is desired that ports should retain and increase their role as nodal points in the economic space it is necessary for them not only to adapt to these new trends, but to attempt to play a motive role in them. From the point of view of an individual port it is vital that it takes care, by very means, to become a central point in the interconnection of automated information networks of all types, and to be well located in the various types of networks which are being established so as to ensure the transfer of information in a rapid, powerful and reliable manner. In practice the location of the physical flows of transport of goods and products which gives ports their primary reason for existence already depends, and will continue to depend in an increasing manner, on the flow of information which is now the almost indispensable complement of the physical movement of products; it is of the very nature of these

modern methods for transmitting information that they should be spatially disconnected from the corresponding movements of products; in the long term, however, the two types of flow will have a tendency towards mutual adaptation of their spatial structures.

As far as nuclear energy is concerned this concerns the port industrial zones more directly and more physically. The size of the various items of equipment in a nuclear power station pose major transport problems, to which waterway and sea transport is often the only satisfactory answer¹. Furthermore the technical similarities with certain aspects of shipbuilding mean that this industry, which at the present time is experiencing difficulties, could find in nuclear plant those substitution activities which would utilise part of its plant and workforce potential; examples of this type can already be seen. It is not unreasonable therefore to see nuclear plant take a strong position in the list of port industries.

¹ It is known that certain items of plant, manufactured by Creusot for the nuclear power stations at Fessenheim, some three hundred kilometres away, reached their destination by going to Marseilles by water, then by sea past Gibraltar to Rotterdam, and finally by the Rhine to Alsace; a total route of more than five thousand kilometres!

Furthermore nuclear power stations need very large quantities of cooling water; fear of accidents means that sites which are situated downstream of the major urban centres are generally preferred to those upstream. To these ecological considerations should be added the fact that the port industrial zones, as they exist today, are major consumers of electricity, so making maritime ports sites which are often selected for the establishment of nuclear power stations.

Telecommunications-tele-data-processing and new forms of energy certainly do not form the only two paths to be taken into account when defining a long-term strategy for maritime ports. Furthermore, and for as long as one is in the depressive Kondratieff phase, one should not look to massive investments and to large induced effects on the rest of the economy in either of these two paths, nor in others. At the present time it is more a matter of each port organisation making those provisions which will assure it a favourable situation in fields which, in the near or further future, are seen to be the place of emergence of a new dominant branch. The considerations which are now being developed in this respect therefore fall more into a framework of medium-term preoccupations.

Meanwhile short-term problems are presented in regard to industrial development. From this point of view it is necessary to be guided by a analysis of the constituent traits of the new international division of labour. In this one finds those factors which shed light on the interpretation and extrapolation of the slowing down trends which have been observed over the last ten years in major port industrial investments. They show that the most interesting potentialities are found downstream of the industrial process, generally the larger generators of employment, and of more skilled jobs. Their requirements, which will serve to distinguish one port site from another, are not expressed solely in terms of depth of water, or the area of the industrial zone which is available, but in terms of the resources and diversity of the inter-industrial fabric, of the abundance and quality of services, and good communications (in all senses of this term) with the nearby urban zones and markets. This certainly modifies the hierarchy of

the ports from the angle of industrial desirability. This is why port organisations need, at the present time, to define their development policy in the closest possible collaboration with public and private organisations which influence the orientation of urban and regional development. If it was, in fact, ever possible the period of splendid isolation of the major industrial ports is now over.

4.2. THE SEARCH FOR GREATER FLUIDITY IN PORT FUNCTIONS

In periods of economic difficulty industrial companies have to struggle even more against the threat of reductions in the level of profit and against the slowing down in demand for their products. One of the most effective ways of reacting consists of improving the efficiency of their relationships with the market. This is made necessary by efforts to extend their market areas geographically and to reduce the time and cost of transport, together with the other obstacles which separate them from their clients.

This contrasts with the requirements of the previous ascendant period during which industry (mainly heavy industry) required the transport apparatus to increase rapidly its capacities for handling vastly increasing tonnages of raw materials and finished products; cost reductions are obtained mainly by scale economies arising from the increasing gigantism of the operation. At the present time the distribution of production between several countries or continents is moving more in the direction of a search for greater flexibility, rapidity and reliability in the transport apparatus. The conjugation of these factors had the effect of developing afresh the transit function of ports as compared with their industrial function. What industry now expects from them is greater fluidity with greater transparency.

The trends observed recently in ports, as described in chapter III, are clearly illuminated and become unified in their interpretation when seen from this point of view. In practice we have seen that, in the face of a relative decline of the heavy industries in ports, it is possible to observe a whole group of factors which are increasing or being improved, despite the generally depressed climate of the economy.

In this way the trend towards specialisation observed in the design of vessels and in port installations results directly from the enlargement of the range of products which now have to undergo international transport under conditions of increased efficiency and rapidity; from this point of view technical considerations (frequently linked with the nature of the product) and economic considerations operate in the same direction.

Containerisation constitutes another type of answer, complementary to the first, to the necessity for transporting an enlarged range of products and goods in a rapid and fluid manner.

Modernisation, data-processing and the internationalisation of transit agents and other transport auxiliaries corresponds to the requirements of loaders to reduce administrative delays and to have available a tool which allows them recourse to the most efficient mode of transport over a given route.

The least modal captivity observed on routes where the choice of mode seemed previously to have been imposed by geography is also explained by a widespread effort to reduce transport delays on the most loaded routes and on

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Navigation Aids and Communication System in Port Planning and Operation

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I. Introduction

Navigational aids at the port entrance and on approach channels are essential port facilities to provide safe access to ports for vessels from the open sea. The planning and maintenance of the approach channel and adequate navigation aids and port communication facilities are important problems in port planning and operation.

A favorable port is provided with a sheltered water area with anchorage grounds and quays, facilities on land, and an approach channel with the necessary navigation aids and port communication facilities for the safe maneuvering and berthing of vessels.

The location of the approach channel is determined to provide safe maneuvering of vessels with regard to the topographical, meteorological, and hydrographical conditions of the port area. A coordination of navigation aids and port communication facilities as one functional system will serve to increase the safety of navigation, and facilitate various activities connected with port traffic.

The following is a brief outline of the planning of the approach channel and the installation and operation of the navigation aids and port communication facilities for the proposed Port Qasim Project in the Islamic Republic of Pakistan. It will present a method of approach to the planning of a favorable channel and a functional system of

(Continued from page 19)

those where bottlenecks occur.

The increasing role of telecommunications and the quantity of information associated with the physical transfer of a product which now needs to be transferred are manifestations of the need to make transport operations more fluid, to eliminate delays and accidents, and to make the optimum possible usage of the various modes of transport, stocks and market fluctuations.

These recent trends all lead towards greater fluidity in port operations and to a higher transparency in the functions of the ports; they correspond to the preoccupations of an epoch when it is no longer rapid expansion which maintains profit margins, but where the latter are threatened by a general climate of recession making competition more acute.

This is a fundamental factor in the contemporary situation which must always be borne in mind when considering port policies and the various levels of decision which this involves, from capital investment programmes to publicity, and including price and tariff policies and relations with industrial and commercial companies, transport auxiliaries, town and regional planning organisations, and many others . . .



Dr. Y. Fujino

navigation aids and port communication facilities for the safe guidance of vessels in the approach channel and port. The actual implementation of the Project will not be in exact accordance with the following proposed plan.

II. Port Planning

A. Demand for New Port

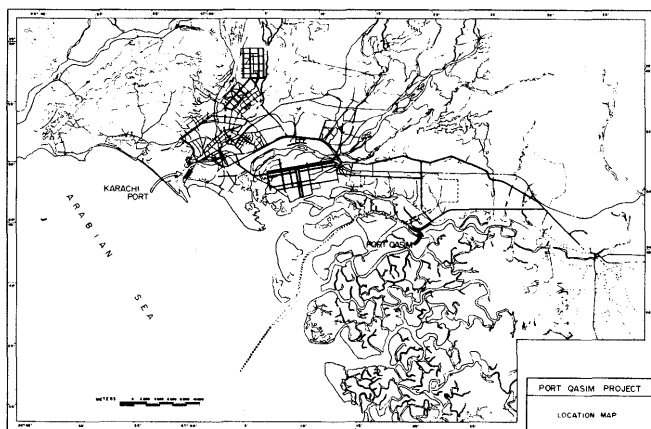
Since the independence of the Islamic Republic of Pakistan in 1947, Karachi Port, as the only port in West Pakistan, has been called upon to handle all the seaborne trade of West Pakistan. Port facilities have been expanded to meet the increasing traffic, but the lack of space in the port and the congestion in Karachi City restrict further expansion to increase the handling capacity.

Increasing seaborne trade called for the construction of a second port on the coast of West Pakistan, and Phitti Creek, a location approximately 25 km east of Karachi was selected as the proposed site for the port. The port will be called Port Qasim. General cargo will be handled in Karachi Port, while raw materials in bulk cargo will be handled in Port Qasim.

The Port Qasim Project proposes to construct facilities for 25,000 DWT vessels to enter port in the first stage, 50,000 DWT vessels in the second stage, and 75,000 DWT vessels in the future. Upon final implementation of the development program, Port Qasim will be provided with facilities to handle the seaborne trade required to support the industrial development of Pakistan, and the livelihood of the 3% per year increasing population.

B. Site Conditions

Phitti Creek extends over a distance of 30 km with a width of approximately 300 m. There is a wide sand bar extending for 8 km at the mouth of the creek. The water depth is roughly 6 m, a sufficient depth for the navigation of 3,000 DWT vessels. Hydraulic studies were carried out to determine the technical feasibility of dredging the sand bar



and creek for the establishment of a channel and port for large ocean-going vessels. The topographic, meteorological and hydrographical conditions of the Arabian Sea were studied for the establishment of the channel. The findings of the studies recommended the establishment of a deep water bulk cargo port at the site.

The port area was formerly the delta zone of the Indus River, with a number of creeks in the coastal landforms of beaches, sand bars, tidal flats, and mangrove swamps. Phitti Creek which will serve as the main navigation channel for Port Qasim cuts into the land from the open sea in a north easterly direction, curves to the north east past Kadiro Creek, and reaches Pipri Creek, the main port area.

The sand bar area is characterized by the south-west monsoon in summer, and the north-east monsoon in winter. Occasionally, cyclonic storms from the Arabian Sea attack the area. Offshore currents in the Arabian Sea occur generally in two directions, westerly during the north-east monsoon, and easterly during the south-west monsoon, with current velocities of 1–2 knots per hour. The wave height is

high during the south-east monsoon, but the frequency of wave heights exceeding 3 m is less than 10%. The prevailing wave direction is the south-east.

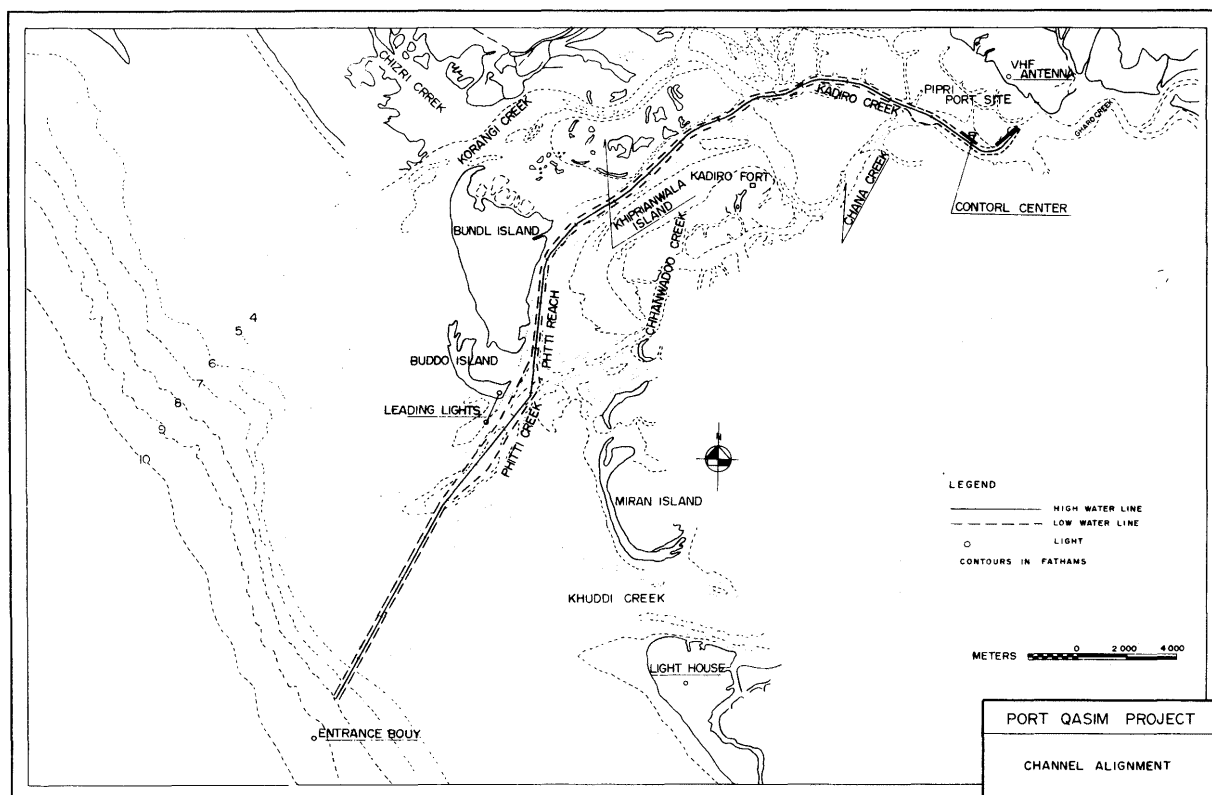
C. Channel Alignment

The proposed alignment of the navigation channel for Port Qasim will commence from the Arabian Sea across the wide sand bar extending for 8 km, enter Phitti Creek, and cut further inland along the bending creeks.

The objective of a favorable channel alignment is to assure that vessels will not be subject to difficult maneuvering or strong cross currents so that delays and accidents may be prevented. The channel should be located to take advantage of natural deep water as far as possible, and the number and deflection angles of curves should be kept to a minimum, avoiding the use of reverse bends where possible. The alignment should be parallel to external forces such as wind, swell, or currents.

A channel alignment of approximately 5 miles from the open sea across the sand bar into the deep water area of Phitti Creek was established as the approach channel. In the approach channel, there are two current forces. Tidal currents of ebb flows are mostly parallel to the channel alignment, while the direction of flood flows is approximately 30° removed from the channel alignment. The current velocity in the order of 0.5 knot will not be a problem for the navigation of large vessels. However, during the monsoon, the velocities of these currents are in the order of 1 knot, and vessels will be required to be cautious in navigating the channel. The predominant wind direction during the monsoon season is west-south-west, and the wind speed is 6–7 m per second. Full-loaded vessels will not experience much drift.

From the inner end of the approach channel, a natural deep water section of twice the width of the navigation channel extends for 3 nautical miles allowing a passing zone



for large vessels. The southern end of Phitti Reach is straight, and the upper reach has natural deep water, providing a second passing zone. Kadiro Reach is the most difficult section of the channel alignment with large deflection angle bends. The proposed alignment increases the width of the channel at the bends to alleviate maneuvering problems. Beyond the Kadiro Creek, the channel reaches Pipri, the center of the port without further difficulty.

The channel width will be approximately the length of vessels to enter port and the transit of vessels will be controlled under one-way traffic.

III. Navigation Aids

A complete system of navigation aids and port communication facilities will be provided for the safe navigation of vessels along the channel extending over a long distance with a narrow width allowance.

A. Entrance Lighthouse

A lighthouse will be constructed on land south of the entrance to Khuddi Creek on the west side of the approach channel. Vessels approaching Port Qasim will recognize the lighthouse as the first visual aid at a point 10–17 nautical miles from the approach channel.

The height of the lighthouse will be 35 m above sea level. Solar batteries will be used as the source of power, and the light intensity will be 50,000 Cd. The solar battery depending on solar energy will be a very practical source of power in the tropical area with a long duration of sunshine. The maintenance will be easy at low cost. Acetylene gas will be provided as the power source for emergency.

B. Leading Lights

From the mouth of the approach channel to the entrance of Phitti Creek, the channel extends over a distance of 5 nautical miles. The sand bar will be dredged to form a narrow straight channel. Leading lights consisting of the front light and the rear light will be installed to indicate the center line of the channel. The rear light will be located on Buddo Island. The front light will be located at a site about 1.8 km towards the channel entrance from the rear light which will be a distance of about 12 km from the channel entrance. The line within the visibility range of the two lights will indicate the center line of the channel.

The height of the front light will be 7 m above high water level, and that of the rear light will be 28 m. The towers will be of concrete structure, easily visible by the eye during the day. Both lights will be equipped with solar batteries and acetylene gas for emergency. The light character of both lights will be of illumination intervals set to 4 times of simultaneous illumination per minute, and the lights will be visible at the channel entrance at night. The rear light will be equipped with a radar transponder, so that the leading light may be recognized by the radar on vessels.

C. Channel Buoys

An entrance buoy will be installed at a site 1 nautical mile offshore the channel entrance. The buoy will be of the ocean type with a high focal plane and good stability. The light source will be acetylene gas, and the luminous range will be 5 nautical miles. A radar reflector will be provided so that the buoy will be recognized by the radar on board.

From the entrance of the approach channel, lighted buoys will be installed on both sides of the channel at

intervals of approximately 1 nautical mile. At least two buoys on one side will be visible by vessels at the same time.

In the inner channel from Phitti Creek buoys of smaller dimensions will be installed at the bends of the creeks to indicate the navigation channel. Approximately 50 buoys will be installed including the entrance buoy. The power source will be acetylene gas, and the luminous range of the approach channel buoys will be 5 nautical miles, and the range of the inner channel buoys will be 3 nautical miles.

D. Lighted Beacons

Lighted beacons are small fixed light towers to be installed in three locations on the port and starboard sides of the channel for vessels in anchorage in the passing zone to identify their positions. One or two lighted beacons will be installed on land along the channel to serve vessels in navigation.

13 lighted beacons will be provided on either coast of the entire channel of Port Qasim.

The beacons are of simple pole structure with a light apparatus at the top, and the power source will be acetylene gas.

E. Radio Telephone Communication (VHF)

An internationally recognized radio communication system VHF (Very High Frequency) will be installed at the Control Center of the port to provide port communication services for the smooth navigation of vessels and the operation of the port. The communication system will serve the following purposes.

- (1) Communication between the Control Center and vessels entering or leaving port.
- (2) Communication between Port Qasim and Port Karachi.
- (3) Communication from the Control Center to the pilots, tugs, and port operation stations.
- (4) Communication between the port operation stations.

IV. Guidance for Navigation

A Control Center will be established at Pipri, the center of the port, to supervise the maneuvering of vessels in the one-way traffic approach channel and port.

A. Approach of Vessels

Ocean-going vessels entering port will notify the Port Authority through the Control Center the name, nationality, and tonnage of the vessel, the type and volume of cargo, and the scheduled time of arrival through the public communication system in advance.

Ocean-going vessels are equipped with the internationally recognized telecommunication system (VHF). The range of the VHF station to be established in the Control Center is about 100 km. Vessels will be able to inform the Control Center of the accurate time of arrival at the channel entrance several hours in advance. The Control Center will notify the quarantine office, the pilot station, and the tugs to serve the arriving vessel. The vessel will stop at the quarantine anchorage for quarantine, and await instructions to enter port. The pilot will meet the vessel around the entrance buoy, board the ship, and assist the maneuvering of the vessel throughout the channel. Tugs will await the vessel around the entrance of Phitti Creek, and attend the vessel for safe berthing at Pipri.

The channel has been designed to allow regular ocean-going vessels to navigate the approach channel at all tidal levels, but large ore-coal carriers with deep drafts will enter port taking advantage of above average tidal levels. The ore-coal carriers will wait outside the channel to enter port upon instructions from the Control Center.

Vessels will navigate the approach channel at a speed of 6–8 nautical miles per hour, and the inner channel from Phitti Creek to the berths at Pipri at a speed of 5–6 nautical miles per hour, requiring approximately 3 hours to pass the entire channel.

B. Vessels Entering Port

Vessels approaching Port Qasim across the Arabian Sea from the south or east direction will first sight the lighthouse to be constructed at the port entrance, while the entrance buoy and buoys to be installed on both sides of the channel will gradually come into visibility. From around the entrance buoy, the vessel will proceed with the bow in line with the channel. As the vessel arrives at the entrance channel, the leading lights will be visible in the approach channel.

Navigators, well aware that leading lights indicate the center line of the approach channel under an international agreement, will proceed in the channel by keeping observance of the leading lights. Lighted buoys on both sides of the channel serve to indicate the width of the channel. The leading lights are located at a distance of 7 nautical miles from the channel entrance. The two white light towers will be visible in the daytime, and the two lights will be visible at night. When the leading lights are not visible under unfavorable conditions, vessels will enter port only upon the approval of the captain, the pilot, and the Control Center.

The Control Center will give instructions to vessels entering port on judgement based on weather conditions reported from the pilot station. The pilot station will be established on Bundal Island located approximately midway of the entire channel. Pilots and quarantine officers will be stationed, and tugs will be in waiting. Communication between the Control Center and the pilot station will depend on the VHF system.

In case vessels must urgently enter port when the visibility is restricted in the approach channel, it will be possible to enter port under the guidance of pilots and the assistance of tug boats.

C. Navigation in Channel

The channel beyond Phitti Creek extends for 25 km with many bends. Approximately 30 lighted buoys and a number of lighted beacons will be installed on the port and starboard sides to indicate the channel alignment. The location of buoys will hardly be deflected as the creeks are free of waves and currents except for slow tidal currents. Vessels will proceed from Phitti Creek through Kadiro Creek into Pipri, the center of the port, for berthing. Though the berth width is twice the channel width, the assistance of tug boats will be recommended for the safe berthing of vessels.

D. Vessels Leaving Port

Similarly as in the case of vessels entering port, vessels will leave port under the supervision of the Control Center.

In the middle and northern sections of Phitti Creek, there are large natural deep water areas available for passing

zones.

Generally, in the channel of a port, a vessel leaving port has the priority of navigating the channel. As the channel in Port Qasim is planned for one-way traffic, as a rule, in case there are vessels arriving and leaving at the same time, the vessel leaving port will first pass through the entire channel, after which the vessel entering port will proceed through the channel into the port. In case, vessels arriving and leaving are to pass through the channel at the same time, the navigating time will be adjusted to allow the two vessels to pass each other at the passing zone.

In case of small vessels, the water area in the passing zone excluding the channel area will be available for anchorage. In the passing zone, three beacons in a set will be installed on the port and starboard sides of the channel. Vessels in anchorage will be able to locate their positions by the lights.

V. Conclusion

The proposed Port Qasim Project has been presented as an example of a channel and navigation aids and port communication facilities planned to provide safe access to the port on the basis of geographic and technical considerations.

An effective system of navigation aids and port communication facilities is a basic requirement for the safety of navigation in the approach channel and berthing in the port.

Many ports of the world are provided with up-to-date berthing facilities, cargo handling facilities, storage and access roads and railways, but are not well equipped with necessary navigation aids and port communication facilities. The navigation aids and port communication system must be improved with the development of the port to assure the safe navigation of vessels and the smooth operation of the port.

The Japan Marine Signals offered engineering services for the planning and design of the proposed Port Qasim Project. We provide engineering services for a complete line of investigation, planning and design of the approach channel and the navigation aids and port communication system for ports, and offer advice on the maintenance and operation of the installations.

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Port Delays in India—A Major Constraint

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(Reprinted from "Indian Shipping")

Congestion and consequent delays and detentions to ships at various major ports in India constitute a major constraint for Indian ships that goes to aggravate the severe impact of the depression in freight markets and of increasing operating costs by wastage of available transport space resulting in further reduction in the earning capacity of ships and adding to the operating cost by way of infructuous expenditure on standing charges and port dues. The delays presently being experienced in waiting for berths at Bombay are stated to be well over a month. Similar berthing delays are also understood to be suffered at Calcutta in respect of bulk cargo vessels, some bulk cargo ships being reported to have been waiting for 3 to 3½ months. At Madras the delays are understood to be 21 days while the position at other major ports are as depressing. In addition to berthing delays, ships have to suffer longer stay in ports due to extremely poor discharge loading rates. The bulk discharge rate at Calcutta is understood to be around 400 to 450 tonnes per day on an average although it could be easily increased to 800/1000 tonnes, while at Madras it is 150/200 tonnes. As the Monsoons set in, the situation is sure to assume impossible proportions soon. Various deficiencies in the facilities and working of the ports cause these delays that appear to defy all efforts to bring about improvement. These include, apart from lack of adequate infrastructural facilities of port equipments like cranes and fork-lifts and rail and road transport inadequacies to cope with the requirements of quick clearance from port areas to delivery destinations, extremely low labour productivity and growing labour indiscipline. The congestion in Bombay is a result of a sudden spurt of large number of bulk cargo vessels calling for discharge at the port arriving with large quantities of fertilisers, sulphur, rock phosphates, edible oils, cement, clinker, cotton, fibre etc. It is expected that during the next 3 or 4 months fertilisers of the order of some 4 lakh tonnes per month would be arriving in the country to meet the urgent requirements of the farmers in various States, while the edible oil imports during the current year may be of the order of 12 lakh tonnes as against 8 lakh tonnes last year and the imports may increase further to 18 lakh tonnes by 1987. Bombay which is geared mainly for general cargo handling and has to contend additionally with low labour productivity, can hardly be expected to cater for the needs of these heavy imports of bulk cargoes. At present some of the berths in the port are reserved for discharge of these bulk cargoes most of which are imported by Public Sector Undertakings like the Fertiliser Corporation of India and the State Trading Corporation to meet the urgent essential needs of consumers. As a consequence, both bulk ships and general cargo ships suffer long delays of over a month just waiting for berthing apart from longer port stays.

At a high level meeting of the representatives of the Ministries of Commerce, Agriculture, Railways, Food Corporation of India, State Trading Corporation, Fertiliser Corporation, Major Port Trusts etc. convened in New Delhi,

in the first week of June, it is decided to divert as many fertiliser and edible oil and other bulk ships as possible to other ports like Kandla, Calcutta, Haldia, Madras, Vizag, Marmugao, Cochin, Managalore, Tuticorin, only the residual cargo being proposed to be left for discharge at Bombay with a view to relieving the alarming congestion conditions at the port, particularly since a large part of the cargo is meant for distribution in other States like Punjab, Haryana, Madhya Pradesh, Andhra Pradesh etc. The inland movement over long distances from the ports of diversion to consuming destinations being a major limiting factor in this, the Railways have agreed to provide the maximum possible wagon facilities required. Road transport is also planned to be utilised to the extent possible for transport upto 500 kilometre distance from the ports. As building up the requisite port handling facilities to handle the bulk ships and cargo would require long-term measures—the most obvious facility at Bombay being the Nhava Sheva project—as follow up exercise to the Delhi proposal, a meeting of the various representatives concerned including representatives of shipowners, was held in Bombay under the chairmanship of the Bombay Port Trust Chairman Shri B.C. Cariappa, on 9th June, when Shri V.R. Mehta, Jt. Secretary to the Ministry of Shipping and Transport in charge of ports attended, to assess how best such diversion could be organised to meet the short-term reception requirements over the next few months. As an outcome of discussions at the meeting, it has been estimated that with the co-operation of Railways to obtain the requisite number of wagons on the various routes from discharge ports, under given existing other constraints like labour output etc., Kandla could take a maximum quantity of about 70,000 tonnes fertilisers per month, Calcutta 50,000 tonnes, Haldia 15,000 tonnes, Madras 50,000 tonnes, Vizag another 50,000 tonnes and all other ports another 15,000 tonnes, leaving the balance of 1.5 lakh tonnes to be handled at Bombay. In these circumstances, shipowners have strongly urged that no priority berthing or berth reservations should be given to any ships including bulk cargo vessels, at Bombay and all vessels should wait for their turn for berth. The proposal appears to be however unacceptable and preferential berthing would continue to be given to some fertiliser and edible oil ships on the plea of urgent needs of consumers. Shipowners have conveyed in unmistakable terms the absolute impracticability of diverting general cargo ships as it would involve, besides technical considerations of handling at destination ports, serious legal and insurance implications and also expose the shipowners to incalculable risks and liabilities on account of claims for damage, loss and short landing due to multiple handling involved of small parcels consigned for delivery to several parties which would in itself pose an impossible situation. The only possible practicable procedure that could be adopted to achieve the objective of diverting general cargo ships, it was noted, was by declaring Bombay closed to all general cargo vessels, so that the voyage would become frustrated and shipowners would be absolved from legal liabilities under the Bill of Lading clauses and become free to divert their ships to other ports and discharge the cargo at ports other than the discharge port.

(Continued on next page bottom)

The technical evolution of warehouse construction in the port zone

(Hinterland):—The port of Antwerp has a considerable number of warehouses where goods may be stored under the best possible conditions. The total surface area occupied by warehousing is constantly growing and increased from 742,341 m² in 1960 to 2,174,147 m² on 1 January 1978.

A difference should be made between municipal warehouses and those which are owned by private firms.

MUNICIPAL WAREHOUSES

These are publicly owned by the City and are given in concession to port users. The total surface area which amounted to 388,049 m² on 1 January 1978 is, as will become clear later, considerably smaller than that occupied by privately owned warehouses (1,786,098 m² on 1.1.1978).

Quayside municipal warehouses

Because of their direct connection with the water, warehouses on the quay enjoy a distinct advantage over

off-quay warehouses because the extra transport costs involved in bringing and taking away goods during loading and unloading are eliminated. However, quayside warehouses belonging to the City are mainly in the older parts of the port. The surface area of these warehouses grew from 82,354 m² in 1960 to 176,936 m² on 1 January 1978.

The growth of municipal warehouses since 1960 has taken the form of walling up older metal sheds, mostly done by the warehouses concessionaire. It is thus not really possible to talk of new warehouses.

Off-quay municipal warehouses

On 1 January 1978 these occupied a total surface area of 211,113 m². A difference must be made between warehouses under customs supervision and the so-called free warehouses.

(Continued on next page)

(Continued from page 24)

It was noted that the problems of congestion at Bombay were not new and such situations had been handled efficiently in the past to clear off the congestion conditions quickly. The present critical position had been developing for some time since the strike of port and dock workers and go slow of pilots and had assumed alarming proportions. Conveying the considered views of shipowners, Shri T.M. Goculdas, Chief Executive of the Scindia Steam Navigation Company and Vice-President of Indian National Shipowners' Association, emphasised their very firm opinion that palliatives like diversion of ships as contemplated were no solution at all to the issue and the idea clearly indicated a defeatist attitude that tried to shy away from the real problem. The port had never before experienced such prolonged delays and it was a matter of regret that it was in consequence losing its international standing as an efficient general cargo port. Bombay, it cannot be ignored, is purely a general cargo port and when similar pressures were brought on the port to service bulk cargoes like foodgrains on priority basis, without much hesitation they had been firmly turned down. The position such as the one obtaining at present would hardly conduce to the long-term interest of the port as a premier general cargo port of India or to the interest of shipping, trade and industries that it serves. For bulk cargo handling, it would be advisable that special facilities should be provided at Nhava Sheva or at other ports, or else it is preferable to let the bulk ships go to ports where better facilities are available.

Apart from deficiencies in equipment and other facilities, Shri Goculdas emphasised that the real major cause of congestion today is the very low level of labour productivity. It is indeed most distressing that though labour employed by the port is no longer casual, there is presently as much as 40 to 45% absenteeism and the Port Authorities find it difficult to enforce regularity. The total number of effective working hours put in by labour in the

port is as low as 3½ to 4 hours per 8 hour shift. It is a clear warning that unless some effective method was evolved to improve labour productivity even by giving appropriate incentives and lowering datum lines and co-operation of Union leaders is secured to ensure the same, chronic congestion being experience now will be a perpetual feature of the port, and the port authorities will be forced to depend upon temporary measures for ever without hope of finding an early permanent solution.

The extent of the losses being suffered by Indian shipping companies on account of delays at Bombay may be gauged from the fact that they are estimated to have incurred loss of Rs. 12 crores on account of berthing delays alone during the year 1977-78. These figures do not include further losses of infructuous expenditure of standing and other charges on account of longer stays of ships in the port due to slow discharge/loading or loss of earnings due to wastage of space during the delays and detentions. The losses suffered by the companies due to congestion at different major ports during the year have been estimated to be roughly over Rs. 25 crores.

The issue is too grave to ignore and instead of fruitless discussions or recriminations, effective methodology requires to be evolved to identify the deficient areas and inadequacies and evolve correct measures that could be adopted on long and short-term basis and implement them speedily. There is no doubt full awareness of the prevailing serious situation and the implications involved, in the Ministries concerned and port administrations. The Minister of Shipping and the BPT Chairman have been mobilising all efforts to beat the congestion. To meet the immediate grave situation, it has been agreed that the position should be continuously reviewed and further corrective remedial measures explored wherever found necessary at meetings of all the parties concerned and interests and authorities involved to be convened at least once a month. Shipowners would no doubt be only too happy to co-operate fully with any such effort.

Surface area of municipal warehouses (in m²)

Period	Quayside			Off-quay			Overall Total
	General goods	Particular goods	Total	Warehouses with customs superv.	Free warehouses	Total	
1/1/60	20,974	61,380	82,354	108,004	43,463	151,467	233,821
1/1/78	100,596	76,340	176,936	103,162	107,951	211,113	388,049

Surface area of privately owned warehouses (in m²)

Period	Quayside			Off-quay			Overall Total
	General goods	Particular goods	Total	General goods	Particular goods	Total	
1/1/60	103,871	47,087	150,958	6,132	351,410	357,542	508,500
1/1/78	483,471	176,622	660,093	504,257	621,748	1,126,005	1,786,098

The *warehouses under customs supervision* are intended for storing goods which importers wish to leave temporarily under customs supervision.

The *free warehouses*, with a few exceptions, are exclusively reserved for storing goods the insurance premium for which does not exceed 5% according to the current tariff of the Belgian Committee of Fire Insurers.

The warehouses in this category which were built after 1960 are reinforced concrete constructions on concrete pile foundations and enclosed by brick walls. The roof consists of a self supporting reinforced concrete vault with a span of c. 24 m. The distance between the columns is c. 15 m.

PRIVATELY OWNED WAREHOUSES

Over the last few decades the construction of privately owned storage facilities at the quayside and on off-quay sites has taken on enormous proportions.

Privately owned quayside warehouses

The total surface area they now occupy amounts at the present time to 660,093 m².

About 70% of the warehouses in this category are steel constructions. The roofing consists of corrugated sheeting for which asbestos cement, aluminium and galvanized steel have been used.

These materials have also been used for the walls although a large number of warehouses have brick walls.

About 20% are reinforced concrete shell roof constructions with brick walls. All shell roof warehouses date from before 1970. Finally about 10% are prefabricated constructions made up of columns of reinforced or prestressed concrete and roof girders of prefabricated prestressed concrete. The walls are made of cellular concrete or brickwork.

The type of construction used for this category of warehouses is chosen in accordance with the purpose of the particular warehouse: a grain silo for non-long-term storage, for instance, is naturally a reinforced concrete structure into cells. It is worth noting the general use of laminated wooden trusses as the carrying structure in warehouses intended for storing corrosive solids such as phosphates, fertilizers, salts, sulphur. Wood is in fact the only construction material which is corrosion-proof.

Privately owned off-quay warehouses

The surface area occupied by privately owned warehouses on off-quay sites has increased by leaps and bounds over the past few years.

Almost one half of the off-quay warehouses for goods of a general nature consist of a steel structure with corrugated sheeting for the roof and walls of corrugated sheeting of brick. About 40% are built with prefabricated, prestressed concrete elements. The roof is then mostly made of cellular concrete elements and the walls of cellular concrete or brick or sometimes of metal sheeting. The remainder have a reinforced concrete structure (7.5%) or a structure made up of laminated wooden trusses (3.5%).

Over the period in question, 1960-1970, there has been a clear evolution in the choice of construction materials for the new warehouses.

The reinforced concrete shell roof type which was fairly common before 1970 has since then virtually disappeared and has been replaced by the prefabricated, prestressed concrete type which was not in use before 1965 and which has enjoyed great popularity since early 1970.

Municipal warehouses are more or less exclusively made of concrete, principally because of the low maintenance costs. In the case of privately owned warehouses, on the other hand, there is a preference for steel, although this seems to be giving way to prefabricated, prestressed concrete.

Wood is of relatively little importance as a construction material for warehouses except in the case of warehouses for corrosive goods and for wooden sheds.

Orbiter Probe

Documentary Aspects of the International Transport of Dangerous Goods : ECE

The Working Party on Facilitation of International Trade Procedures, a subsidiary body of the Committee on the Development of Trade of the United Nations Economic Commission for Europe, at its seventh session in February 1978, agreed to recommend to Governments and to international organizations entrusted with the establishment and/or administration of conventions and regulations affecting the transport of dangerous goods that action should be taken to harmonize information requirements and to simplify documentary procedures in accordance with the recommendations concerning documentary aspects of the international transport of dangerous goods.

The recommendations for action are divided into two parts: on information requirements and on documentation.

Their conceptions are set out as follows:

INFORMATION REQUIREMENTS

1. The overall information requirements of dangerous goods documents should be harmonized, both for different modes of transport, and for different parties engaged in the transport of goods;
2. In particular, the amount of information required to classify the goods should be standardized as: the correct technical name, hazard class/division, United Nations number and (when required) flashpoint. Other information about the goods should be derived by reference to this central core of information;
3. A single form of words should be developed for the text of the legal declaration to meet fully the requirements of regulations and conventions governing different modes of transport;
4. Transport emergency information should be provided in the form of standard, pre-printed tables for each substance, each table bearing as a key reference the United Nations number for that substance. The manual entry of additional related information or codes on documents should not be required.

DOCUMENTATION

5. Whenever possible, the dangerous goods declaration should be incorporated in, or combined with, an existing transport or cargo handling document;
6. Where special separate forms are used for dangerous goods declarations (including standard forms contained in Recommendations, regulations, international Conventions and annexes thereto), they should be designed in accordance with the aligned recommended layout contained in this Recommendation;
7. Regulations and Conventions should not preclude transmission of dangerous goods information by

electronic and other automatic means and should be amended where necessary to acknowledge this possibility;

8. A dangerous goods declaration supplied for one mode of transport should be valid for subsequent modes of transport in multimodal and combined transport movements;
9. Where special additional documentary requirements exist, such as radioactive substances and in other circumstances, regulations and conventions should permit incorporation of the necessary data in the dangerous goods declaration itself, as an optional alternative to a separate document.

The study is divided into eight sections:

Introduction	Section I
Standardization of information requirements	Section II
The classification of dangerous goods	Section III
The text of the dangerous goods declaration	Section IV
Transport emergency information	Section V
Methods of documentation	Section VI
Multimodal and combined transport	Section VII
Special requirements	Section VIII

New Secretary-General for CCC

Sir Ronald Radfor, former Chairman of the Board of H.M. Customs and Excise of U.K., according to a recent notice from CCC (Customs Co-Operation Council), took the office as Secretary-General on September 1, 1978, succeeding Mr. Chevalier Annez de Taboada who retired from the office on August 31, 1978, after serving CCC for twenty five years.

IMPA's meeting adopts a resolution on Tankers Safety and Pollution Prevention

London:—Pilots of the world representing 26 countries at their International Maritime Pilots' Association General Meeting in Kyoto Japan on October 1978 urged immediate action by all Governments to minimise the world wide problem of pollution by major spillages at sea.

The General Meeting of IMPA passed the following Resolution

This IMPA Conference having considered the papers on pollution stress the need for respective Governments to give greater emphasis to the part that their trained licensed pilots can play in alleviating the associated problems.

Plea for better communications: Mr. Whitelaw at IAASP conference

("Terminal", the Journal of the International Association of Airport and Seaport Police):—Well known British politician, Mr. William Whitelaw was the guest speaker at the opening of the London conference. Mr. Whitelaw was formerly Secretary of State for Northern Ireland under the last Conservative government and as Shadow Home Secretary is expected to head the Ministry responsible for the UK police if a Conservative government was elected.

In covering terrorism, he said: 'Some question need to be asked: 'Are the means of communication intelligence information between countries working satisfactorily?' and, in particular, 'Is the information communicated quickly enough and does it reach all the people on the ground who can benefit from it?'

"All too often after the even one hears these fatal words: 'If only we had known.'

These are challenging words indeed for our Association and before long we may have to consider to what extent, and in what way, can existing channels of communication be improved.

William Whitelaw went on to mention to the important subject of handling hazardous goods, a subject which will only escalate in the face of technical advance.

He also put things very much in perspective by pointing out that highly publicised, emotive crime causes everything else to be regarded as 'just ordinary everyday crime.'

He went on, "It could be said that airports and seaports are literally the frontiers of crime. Through them the virus of terrorism infects a nation unless precaution is taken. In them the victims of crime are the travelling members of public of all nations whose movements spread cooperation and understanding between countries.

"To allow them to remain the regular victims of crime is to allow an evil impression to be given of the nations they visit, an impression which spreads hostility and bitterness in place of friendly curiosity.

"From the serious international terrorist to the petty pilferer, infringers of the law at our airports and seaports are ambassadors of distrust. At a most impressionable moment a new visitor to any country can receive a very bad impression. That is why your police work at airports and seaports is of such enormous importance to your own countries."

"Organised crime and the transportation industry": IAASP

("Terminal"):—The Miami Conference (The '79 Conference of the International Association of Airport and Seaport Police) will be held between 4th-8th June 1979 and will be based at the Sonesta Beach Hotel which is on the ocean convenient to downtown Miami, Miami Beach and the International Airport. The theme of the Conference will be 'Organized Crime and the Transportation Industry—an International Overview'.

To quote George Havens of the Dade County Public Safety Department "Experts in the field will be featured and will present current methods being utilised by international criminal cartels including smuggling of weapons, narcotics, explosives and contraband. Organised white-collar crime, including fraud, embezzlement and infiltration into legitimate business will be presented'.

Publications

UNCTAD Handbooks for Port Planners

1. **Port Development—A Handbook for Planners in Developing Countries**, (TD/B/C.4/175—Sales Number E.77.IID.8, price U.S.\$12.00), is a reference book summarizing the basic principles of modern port planning. It offers guidance in the task of formulating a national port development policy and of preparing realistic programmes for the extension and improvement of individual ports.
2. **Appraisal of Port Investments**, (TD/B/C.4/174—Sales price U.S.\$8.00), commences with a general discussion of the concepts of economic costs and benefits in the ports field, and the methods of comparing them. Following this discussion, case studies are presented to illustrate the various methods of investment appraisal. These case studies, while relating to hypothetical countries, have been selected to show the types of investment evaluations that developing countries are likely to face when choosing from alternative plans.
- Both publications can be obtained from the United Nations Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland. They are available free of charge to official bodies in developing countries.
3. **"RoRo Worldwide Guide"**. Edited by Brendon Bernard. Published by Intec Press Ltd., 3 Station Parade, Whyteleafe, Surrey, England. 220 pages. Soft Cover, \$32.00.
4. **"Tanker Operations: A Handbook for the Ship's Officer"**. By Greg S. Marton, Published by Cornell Maritime Press, Inc., Box 109, Cambridge, Maryland, 21613. 207 pages. Illustrated. \$10.00.
5. **"Bulk in ISO Containers"** by John Agnew of MacGregor Centrex, London and Gerry Askham of Trinicon SA, Geneva. A4—47 pp—£4 to members, £8 to non-members, ISBN 0 906 297 01 X. ICHCA, Abford House, 15 Wilton Road, London SW1V 1LX.
6. **"Long-Range Forecasting: From Crystal Ball to Computer"** by J. Scott Armstrong. Published by Wiley-Interscience, 605 Third Ave., New York, N.Y. 10016. U.S.A. 630 pages.

According to the author, this is a complete guide and reference source covering forecasting methods in the social and management sciences. It is practical. It . . .

- tells how to structure a forecasting problem
- describes forecasting methods
- explains how to evaluate forecasting models
- gives advice on how to get new methods accepted
- tells how to get people to act on forecasts with "bad news".

For further information write to:

J. Scott Armstrong at the Wharton School, U. of Pennsylvania, Phila. Pa. 19174 or Pam Byers at Wiley-Interscience, 605 Third Ave., New York, N.Y. 10016.

Missing Cargo Bureau highly reputed beyond borders

(Montréal):—An operation which saves the users of a port and the consumers which it serves millions of dollars is a tremendous asset to that port and to the entire country.

The Missing Cargo Bureau at the Port of Montreal has produced results which entitle it to that classification.

The Bureau was organized by the Port Authority in 1971 as a free service to importers and also to assist in the restoration of the reputation of the port. Prior to its formation, very few attempts were made by shipping companies, consignees or insurers to trace missing cargo. It was assumed that it was stolen after arrival at Montreal and claims were submitted to the insurers and paid. The net result was large claim payments by insurance companies, frustration and loss of business by consignees, time wasted by truckers unable to locate the cargo and a reputation for the Port of Montreal as a poor security risk.

Since its formation, the Missing Cargo Bureau has located and arranged for delivery to consignees almost 80 percent of all cargo reported missing. In the first half of 1978 it found 6,598 missing cartons, cases, drums, casks, steel bundles and other items with a total value of \$1,005,633. During this period, more than 95% of all items reported missing were recovered.

The reputation of the Bureau has spread beyond the borders of Canada. Requests have been received from ports around the world for guidance in organizing similar operations.

Finally, the reaction of insurance underwriters is highly favorable. Their written and verbal comments indicate that the number of claims has been greatly reduced since the formation of the Missing Cargo Bureau and that the average value of such claims as they now receive is much lower than in former years. This has enabled the underwriters to lower their insurance rates, with benefits accruing to the consignees and to the millions of consumers who are served by the Port of Montreal.

Nanaimo Harbour News

1) Mr. H. Allard elected CPHA president

Mr. Henri Allard, manager of the Port of Quebec, is the new president of the Canadian Port and Harbour Association.

Mr. Allard was elected at the association's annual meeting held recently in Ottawa, Ontario. He succeeds Mowbray Alway of the Hamilton Harbour Commissioners.

2) All together, say ports

Ports and environmental groups and agencies must work closer together in the future. This viewpoint was expressed at a meeting of directors and committee members of the Canadian Port and Harbour Association held in Quebec City recently.

Canadian Port and Harbour Association is an association served by representatives of all Canadian ports. In addition to presenting recommendations to government, Association members serve on a number of committees which consider various aspects of port problems.

The meeting agreed that both environmental and economic needs should be considered in all port developments including industrial expansion or dredging to maintain or improve present facilities.

The meeting also discussed guidelines for the administration of Canadian ports which will be submitted to Transport Canada. The importance of all ports being represented at all meetings of CPHA was stressed by those present.

Locust Point terminal heads for all-time record

Baltimore:—Locust Point Marine Terminal, one of the oldest in the port of Baltimore, is headed for a record in cargo tonnage in 1978.

At the rate tonnage has moved across the terminal's numerous piers during the first 10 months in 1978, the Maryland Port Administration feels the previous cargo record set in 1974 is sure to be broken by the end of 1978.

In comparing year-to-date figures, the tonnage figure as of October 1978 increased 19 per cent over the same period in 1977. The increase from 605,544 tons in 1977 to 721,137 so far in 1978 reflects a gain of 115,593 tons. The tonnage increase was mainly in import cargo which jumped from 357,858 tons in 1977 to 462,900 tons in 1978; a 29 per cent increase. Export cargo remained stable.

Looking at individual commodities for the year so far, steel and container cargo have shown the largest tonnage increases. Container cargo tonnage, up 83 per cent, went from 82,304 tons in 1977 to 150,737 tons in 1978. Steel rose from 80,230 tons in 1977 to 161,836 tons in 1978, an increase of 102 per cent.

Extended Great Lakes navigation season studied

(Buffalo):—Pros and cons of extending the winter navigation season on the Great Lakes continue to be discussed by officials of the St. Lawrence Seaway and members of a number of governmental bodies on both sides of the border. The Seaway heads have commissioned a Canadian study of the effects extension of the Great Lakes-St. Lawrence Seaway navigation season would have on shippers and on transportation operators. The study involved a demonstration program to be conducted during the 1978-1979 winter calling for a series of sailings by a Great Lakes boat carrier on a 13-mile stretch of river in the Ogdensburg area. Seaway authorities assert that the effect of the study on the environment would be minimal and that the demonstration program would be under "constant observation and control." The Great Lakes Navigation Board, composed of representatives from eight federal agencies and two regional Great Lakes commissions, has voted in favor of allowing the demonstration program for testing the feasibility of winter navigation on the Seaway, to proceed.

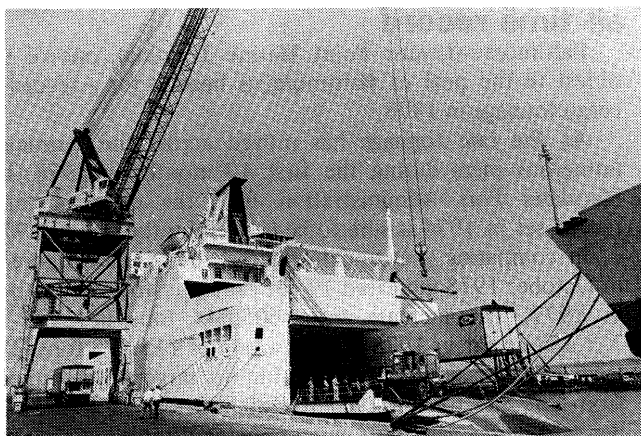
Offshore spoil site reports are encouraging for harbor

(South Carolina Port News):—Disposing of dredged materials at a sea location near Charleston Harbor likely would have "minimal effect" on marine life. The tentative conclusion was reached by Dr. Dale Calder, a biologist with the South Carolina Wildlife and Marine Resources Department.

Dr. Calder has headed an intensive study of dumping spoil in an area about 10 miles southeast of the harbor mouth. Disposal offshore could be the answer to the problem of shrinking on-land sites.

The Army Corps of Engineers has deposited channel entrance spoil in the area for about 13 years with little adverse environmental impact. Some types of bottom life in the immediate vicinity which live in or are attached to the sand might be affected, however.

Barn raising at Charleston



BARN RAISING, Port of Charleston style, is accomplished with the help of a 125-ton gantry crane. At Union Pier, the South Carolina State Ports Authority's gantry lifts Powell tobacco barns aboard Imparca Line's new Ro-Ro vessel, "Imparca Express". The crane moved a large number of the barns from dockside to waiting dollies. A yard tractor pulled a dolly to the stern ramp to accommodate each unit placed aboard the huge Venezuelan-flag vessel.

Such organisms are unable to escape silting or pollution in the way that fish and other free-swimming life can do. Yet those which are not smothered repopulate the dumping site after the dredged sand has settled, the study showed.

Dr. Calder reported that the ocean floor in the disposal site is mostly sandy, with scattered areas of shell. "We did not see any live bottom areas. There were not a lot of sponges or octocorals or dense fish population," he explained.

The Corps of Engineers commissioned the study in connection with the planned deepening of Charleston ship channels from 35 to 40 feet.

Port tonnage appears at plateau

(Port Corpus Christi):—After five years of growth that has doubled cargo tonnage, the Port of Corpus Christi appears to have reached a plateau. Total cargo moving through the Port during the first 10 months of 1978 shows tonnage running near the level of a year ago. The January through October total of 50.8 million tons compares to 50.3 million tons for the same period in 1977. That is in sharp contrast to the 29 per cent increase over the previous year reported after 10 months in 1977, Port Director Harry Plomarity said.

The plateau in skyrocketing tonnage totals is due largely to a leveling in petroleum movements, he said. The setting of new port tonnage records each year from 1974 to 1977 reflected local refinery capacity expansion and dramatic increases in imports to replace declining domestic crude oil production. In 1973 total port tonnage was 30 million tons.

Port Everglades about to come of age

(Fort Lauderdale News):—Above, below, around and on the waters of Port Everglades, more than \$50 million worth of changes are taking place, perhaps the most in the nearly half-century of the Broward County facility.

Not everyone agrees on the merit of individual developments now under way at the port, but one thing is certain and on which there is no disagreement: Port Everglades is about to come of age.

Here is a list of developments either begun or soon to be started at the port:

- Deepening and widening of the harbor, a multiyear \$23-million-plus project funded by the federal government and scheduled to start next year.

- The \$7-million gantry crane for containerized shipping, which is scheduled to be in place next July and should triple this type of business in the port within three years.

- The foreign trade zone, the nation's largest and the state's first. It's been open only a few months but already has spurred about a half-dozen building projects.

- A \$7-million refrigerator-freezer warehouse, the first in South Florida that can handle waterborne freight directly from dockside.

- A Trade Mart International development, a \$7-million, four-phase plan related to the foreign trade zone and which is expected to help develop the port into a major transshipment point for the Caribbean, Central America and South America.

- The Port Everglades Executive Center, a \$4-million, six-story office-exhibition center adjacent to the trade zone for zone users and service facilities.

- Development of the trade zone's first subzone on nine acres of port land near Fort Lauderdale-Hollywood International Airport. Users of this \$3.5 million development are expected to ship goods through both the air and sea ports.

- An additional \$1.2 million dry storage warehouse within the foreign trade zone, one of several that are expected to be constructed as demand grows. It joins a \$1.5-million warehouse already in the zone.

Port of Houston sets all-time tonnage record in 1977

(Port of Houston Magazine):—A record-breaking 104.3 million tons of cargo moved through the Port of Houston in 1977, according to statistics released by the U.S. Army Corps of Engineers, official record-keepers for U.S. ports.

This figure shows a 16 per cent increase over the 1976 total when 89.9 million tons of cargo were handled at the Port.

Of the 104,291,267 tons handled in 1977, liquid cargoes equaled 78,250,133 tons, while dry cargoes accounted for 26,041,134 tons.

Preliminary statistics for the first nine months of 1978 indicated that this year's total tonnage may equal or better the 1977 figure.

Congress passes waterway fuel tax

(Port of Houston Magazine):—The House of Representatives passed a compromise bill HR 8533, which authorizes imposing an inland waterway fuel tax, and replacement of Locks and Dam 26 at Alton, Illinois. This bill represents a compromise between the waterways industry, which opposed any sort of fuel tax, but wanted the new lock and dam facility at Alton, and the administration, which wanted a much stronger bill, including a recovery of some of the federal costs of maintaining and operating waterways. This version of the bill will impose a fuel tax of 4 cents per gallon, starting in October, 1980,

and building up to a 10 cents per gallon tax by 1985. Proceeds from this tax would be placed in a trust fund and total nearly \$30 million by fiscal year 1981, \$58 million by fiscal year 1982, and nearly \$101 million by fiscal year 1985. This fuel tax would apply to commercial barge industry craft only, and not to deep draft ocean going vessels, passenger vessels or tugs used in moving LASH or SEABEE barges.

Free Long Beach harbor cruises offered for three more months

(Port of Long Beach):—Free 1-1/2 hour cruises of Long Beach Harbor have proven so popular with groups and the general public that the original 90-day test program has been extended for another three months through February 18, 1979.

The Long Beach Board of Harbor Commissioners, noting that over 20,000 persons had already taken the narrated tour aboard the sight-seeing boat "Star," has approved the program offering free cruises with three trips daily, five days per week, for an additional 90 days.

Los Angeles monitoring of the marine environment

The Los Angeles Board of Harbor Commissioners recently approved a \$90,950 agreement with the University of Southern California to perform harbor-wide monitoring of environmental conditions in the Main Channel and inner harbors of the Port of Los Angeles as part of USC monitoring of the entire Los Angeles-Long Beach harbor complex.

Under the contract, USC will identify marine animals and test water samples from 12 environmental monitoring stations in the Los Angeles Main Channel and will include the findings in a joint report on the marine environment of the Los Angeles-Long Beach harbor complex, which is expected to be complete by spring, 1979.

It has been five years since USC scientists started to conduct a similar harbor monitoring of the marine environment. The results of the last investigation of both ports was published in 1976 as a lengthy report to the U.S. Army Corps of Engineers.

The City of Los Angeles Bureau of Engineering is in the process of monitoring the environment of the outer Los Angeles Harbor. The City and Port of Long Beach are also funding environmental studies for the Port of Long Beach.

Container cargo up 18%: New Orleans' Annual Report

(New Orleans Port Record):—Advances in tonnage and cargo value during fiscal year 1978 are documented in the Port's Annual Report to Governor Edwin Edwards.

In his letter to the Governor, Michael J. Molony, Jr., President of the Board of Commissioners of the Port of New Orleans, noted "The Board's business was conducted with a net gain of \$4,156,477 from revenues (totaling more than \$25 million) over expenses." Molony also emphasized progress of the Port's Capital Facilities New Construction Modernization Program which when completed will represent a \$91 million investment—\$75 million of which was appropriated by the 1976 Louisiana Legislature in the form of general obligation bonds.

"With the funds provided by the Legislature and those

Los Angeles harbor gets deeper



Dredging equipment has become commonplace in Los Angeles Harbor as it deepens a portion of the Main Channel adjacent to the Port's new Seaside Container Terminal complex. A 3,500-ft. portion of the channel is being dredged from minus 35 feet to minus 45 feet, with the spoil used to fill Slip 232, thereby creating 10 acres of new terminal area. This dredging operation is not part of the dredging of the entire Main Channel by the Army Corps of Engineers which is expected to commence in late 1979. When completed in 1981 the Seaside complex will include 129 acres and will be the single largest contiguous container terminal on the Pacific Coast.

generated from our operating revenues," Molony continued, "we expect to proceed with our building and renovation program, which will enable us to continue our competitive position as a leading port in international trade."

The report states that volume of general cargo passing over public facilities during fiscal year 1977-1978 was up six percent over 1976-1977. Bulk cargoes passing over public facilities were down for a number of reasons, the principal ones being the western coal strike and the suspension of activities at one of the export elevators disabled by an explosion in December 1977.

Gains were also made in the number of containers handled and the volume of cargo moving across the Port's public facilities in containers. The volume of container cargo was up eighteen percent in fiscal year 1977-78 over 1976-77 and the number of containers (20' equivalent units) was up six percent.

A new grain elevator to bring more jobs

(Port of New Orleans):—The Board of Commissioners of the Port of New Orleans today approved the issuance of \$200 million worth of Industrial Development Revenue Bonds to finance construction of a major grain elevator and other facilities by Continental Grain Company in an industrial complex planned for the company's Westwego site.

The new structure, which is projected to be ready for the 1980 grain crop, would not have a headhouse like the one that was destroyed in December 1977, it was pointed out. The Board has been assured that the new open design

Groundbreaking at L.A. Port



Los Angeles:—Among those participating in the Los Angeles Harbor Department Headquarters groundbreaking, Nov. 1, 1978 are David Villarreal, of the office of Los Angeles Mayor Tom Bradley; Nate DiBiasi, Harbor Commission President, Ed Connors of the architectural firm of John Carl Warnecke and Assoc.; Miss Port of Los Angeles, Patricia Palacios; Roy Ferkich, Harbor Commissioner; Councilman Robert Wilkinson; Congressman Glenn Anderson; Harbor Commissioner Gene Kaplan; and contractor's representative Russell Necaie of Tutor-Saliba, Inc. The five-story HQ building in San Pedro is expected to be completed by mid-1980 and will consolidate offices now located in four separate buildings.

for the grain elevator will meet or exceed regulations of the Environmental Protection Agency as well as those of the Occupational Safety and Health Administration (OSHA).

Michael J. Molony, Jr., president of the Board, said he was "delighted with this development, the first of many we hope to materialize in bringing more jobs, processing and manufacturing to this area.

"This is an example of business working with a government agency for the best interest of the people. The port and our State's citizens will benefit from this development without any public taxation or any financial liability. Under the financing arrangement Continental Grain will be totally responsible for repayment of the bonds," he added.

The grain elevator and other facilities that are contemplated should add more than 300 permanent jobs when construction is completed, according to Continental officials.

Molony said, "Our Board has decided to actively seek industries to process and manufacture in the area. We are establishing a department to be headed by a specialist to induce industry to come to Greater New Orleans and to give the Port an industrial base. Too much commerce simply moves through here, and we want to change that to create additional port-related jobs and payrolls."

He said that the U.S. Maritime Administration in 1977 estimated that one job is required for each 600 tons of foreign trade, with the exclusion of oil. The agency reported that, again excluding oil, the direct impact of each ton of foreign cargo handled comes to \$44, and that the total economic impact, both direct and indirect, comes to

\$70 a ton.

"These figures," said Molony, "indicate how exceedingly important it is for us to induce industry to come to our port and to utilize it."

Trustees of Longshoremen Contract Funds report new gains in NY-NJ Port Benefits

(NYSA-ILA Contract Board):—The top trustees of pension, welfare and medical funds of New York-New Jersey area waterfront workers announced that an unprecedented high level of benefits and services are currently being provided to the 11,000 local long shoremen under their existing three-year labor agreement.

The report by Thomas W. Gleason and James J. Dickman, co-chairmen of the NYSA-ILA Contract Board, followed a two-day review of the funds by the labor and management trustees who supervise the local longshore contract programs.

A major reason for the improvements, they stressed, were actions by fund administrators, medical directors and other personnel in providing welfare and clinical benefits at a cost of some \$5 million below actuarial estimates of the program.

Mr. Gleason is president of the International Longshoremen's Association, AFL-CIO and head of union dockworkers in the bi-state region. Mr. Dickman is president of New York Shipping Association, Inc., whose 135 member companies finance the dockworker fringe benefit programs under the labor contract on the basis of assessments on tonnage of ocean cargo moving through the harbor.

"Significantly, the present pension, welfare and medical benefits are at the highest level in waterfront history and they probably exceed such provisions in any other United States industry," Mr. Gleason and Mr. Dickman said in a joint statement.

The ILA represents all harbor workers in the metropolitan region around the bi-state harbor involved with the movement of high value general cargo or passengers transiting the port by ocean vessel. The union membership includes longshoremen, who physically handle freight in loading and discharging ships or barges, cargo checkers and tally clerks, maintenance employees, carpenters and coopers.

The New York Shipping Association (NYSA) represents all employers utilizing longshore labor in the port and its membership includes ocean carriers, contracting stevedores and marine terminal companies.

Port of Oakland sells the largest revenue bonds

Faced with a boom in oceanborne foreign trade and an upsurge in scheduled carrier interest in Oakland International Airport, the Port of Oakland in November 1978 sold the largest single block of revenue bonds in its history—a \$20 million issue purchased at a net annual interest cost to the Port of slightly under 6.2 percent.

The revenue from this sale will be used to initiate a three-year marine terminal construction program that will ultimately increase Oakland's present 400-acre wharf and yard capacity by nearly half again, and will finance expansion of passenger terminal facilities to cope with new and anticipated services between Oakland International

Waterborne commerce on San Francisco Bay to grow as much as five-fold : NORCAL

Bay Area members of the Northern California Ports & Terminals Bureau (NORCAL) (President, Captain Thomas R. Eddy, Port Director, Port of Richmond)—the joint planning agency including the Ports of Oakland, Redwood City, Richmond, San Francisco, the Benicia Port Terminal Company and Encinal Terminals of Alameda—recently revealed for the first time detailed maps depicting the parameters of growth they envision that will enable each port to meet projected cargo demand through the first two decades of the 21st century.

Third in a series of studies issued by NORCAL and the fruit of over three years of analysis of the long-term need for facilities to accommodate international and domestic shipping on San Francisco Bay, the report is both good news and bad news to shapers of the Bay Region's future.

On the one hand it is reassuring. Projections of water-

borne dry cargo tonnage transiting Bay Area ports in the year 2000 range from 25 million to 66 million short tons. Capacity of the region's five ports at full development will reach a probably adequate 53.2 million tons, the study reveals.

On the other hand, this is disturbing, because it makes clear that even with maximum development of all feasible existing ports areas on San Francisco Bay, the region will be hard-pressed to maintain its viability as a shipping center almost immediately after the turn of the century.

Even the low cargo projection for the Bay Area of 60 million tons in the year 2020 exceeds maximum capacity of existing ports, the study asserts, and the median cargo forecast of 122 million tons would completely swamp the area's 53.2-ton port capability limit.

"It is," the NORCAL study concludes, "apparent that the total annual potential throughput capacity of existing ports will not meet the long-term needs of the Bay Area. Therefore, a general analysis of the criteria for future port development planning is needed."

The NORCAL report makes no estimates of liquid bulk capacities in the Bay Area, but confines itself only to dry cargoes. The yearly capacity of a single berth is assumed to average 530,000 tons for containers, 85,000 tons for breakbulk cargoes, 280,000 tons for dry bulk and 160,000 tons for neobulk cargoes (e.g., automobiles).

In determining maximum potential, the NORCAL analysis embraced the outer limits of development as projected by the ports, including significant amounts of Bay fill in certain areas.

Although there was no effort to determine the economics of such fill construction, the report asserts, the port development outlines used in the analysis are not inconsistent with port priority areas in the Bay Plan of the San Francisco Bay Conservation & Development Commission.

"The outlines you see here are not etched in stone," declared Port of Oakland Executive Director Walter A. Abernathy, acting as NORCAL spokesman at a press conference today accompanying release of the report.

"Variations will probably occur in the dimensions of the facilities and the cargo mixes forecast in this document in response to technological advances, altered economic climate and other forces we can only account for as time makes them clearer," he added.

"What we have here, though, is an essential planning tool," Abernathy explained, "by which we in the Bay Area's port industry take our best crack at projecting how we can develop responsibly and cooperatively in the face of the tremendous cargo increases we are looking at now and down the road."

"This is our input to other regional planning bodies like the Bay Conservation & Development Commission and the Metropolitan Transportation Commission who must take seaport requirements into account as they consider inter-related issues like transportation access, industrial develop-

(Continued from page 32)

Airport and other major U.S. destinations, according to H. Boyd Gainor, president of the Oakland Board of Port Commissioners.

"During the first half of this year alone, liner vessel export cargoes handled at the Port of Oakland have been running 43 percent ahead of the same period in 1977," Gainor pointed out, "while import cargoes are up 22½ percent."

"That tonnage growth rate far outstrips any other port on this coast—and forecasts by a variety of agencies indicate that we can expect as much as a five-fold increase in maritime general cargo in the San Francisco Bay Area over the next 20-odd years," he continued.

"While Oakland already has more cranes and hardware and twice the container yard acreage of its Pacific rivals, the Port is nowhere near the saturation point when it comes to meeting the demand by existing and new steamship services," he asserted.

"Almost half of this bond issue—some \$9.5 million—will be used to complete the expansion and modernization of Berths 4, 5 and 6 in the Oakland Outer Harbor," Gainor explained, "including purchase of a new crane—the Port's 17th—for Berth 5, along with a container freight station, and modification of two other cranes for use at Berth 6. Another \$1 million will be expended for demolition to prepare for development of a new Market Street Container Terminal on the Oakland Estuary."

By early 1980, reported Walter A. Abernathy, Executive Director of the Port of Oakland, Outer Harbor developments financed by this bond issue are expected to return net revenues of \$4.1 million to the Port annually. Airport rentals and fees, lease returns and other projects created by the bonds will contribute \$700,000 yearly, he added.

"All this in turn means substantial economic benefit to the City of Oakland," Abernathy declared. "More shipping, more cargo movement, greater airport activity all open up more jobs for the community and tremendous spin-off in wages, local purchases and tax income."

Learning the Oakland way



KMPA's executives learn the Oakland way—Three executives of the Korean Maritime & Port Administration (KMPA) are participating in a newly formulated one-month Port Management Training Program conducted by the Port of Oakland and soon to be available to middle-level port management personnel of other nations.

The participants, who will be in Oakland through December 6, are K.H. Chang, Woon Kyu Choi and Jeong Jun Seo (shown left to right above), all based with the KMPA in its Seoul headquarters.

The Port of Oakland Port Management Training Program offers an in-depth survey of policies and procedures in the areas of planning, administration, operations and economics, as practiced by the West Coast's most specialized containerport.

Day-to-day classroom coordination is provided by independent maritime consultants James Enzensparger and Captain Warren Atkins, both former executives with Pacific Far East Lines.

Above, Chang, Choi and Seo receive an introduction to concerns of the Pacific Maritime Association with, from left, Larry Gallagher, Area Supervisor, Northern California, for the PMA Training & Accident Prevention Department; John Verheul, Terminals Superintendent, Port of Oakland; Jim Smith, head trainer, Crane Operators Program, International Longshoremen's & Warehousemen's Union; and Russ Martin, Coast Representative, Training, PMA.

ment and environmental preservation," he said.

"One thing I do want to emphasize," Abernathy concluded, "is that if these cargo projections are on target—and at Oakland, export tonnage is running 43 percent ahead of last year during the first six months of 1978 alone—then encouraging maximum development of all existing Port areas in the Bay must be a priority if we want to maintain the region's historic economic participation in maritime commerce through the next 40 years. And we'd better start thinking now about what criteria we'll use in creating additional port facilities inside the Golden Gate for the period beyond."

Mr. Walter A. Abernathy elected president of the California Association of Port Authorities

Mr. Walter A. Abernathy, Executive Director of the Port of Oakland, has been elected president of the California Association of Port Authorities.

The agency coordinates rates and activities of the ports of Hueneme, Long Beach, Los Angeles, Oakland, Redwood City, Richmond, Sacramento, San Diego, San Francisco and Stockton.

Port looks at industrial expansion

("Portside", Portland):—Possible land acquisition for industrial development outside existing Port property will be explored by the Economic Development Department following a recommendation to the Port Commission at its September 1978 meeting.

Commissioners approved a 90-day period of public review for the program, which is expected to go before the Port Commission for action next December.

Attention would focus on parcels of at least 100 acres within the Port District, developed in cooperation with and upon invitation of the local government having jurisdiction over the land. Goals of the program would include creation of new jobs, paving the way for diversified economic growth in the tri-county area; and consideration of projects that will offer the Port a reasonable rate of return, yet adapt to local and regional planning objectives.

Don Barney, community development director, said the Port's role would be to supplement and complement—rather than compete—with private developers.

As a public agency with resources unavailable to private industry, the Port could use its authority to create large industrial parks, imposing high development standards, and to deal with marginally profitable projects of private developers, complicated by such factors as zoning, industrial rehabilitation and land reclamation. Over the next three months staff will conduct marketing and finance feasibility studies and solicit comments from local government, business, labor and special interest groups.

A permanent link between port and port users

(Antwerp):—The first copy of the new, completely revised edition of the quadrilingual Vade-mecum of the port of Antwerp was recently handed over Mr. J. Huyghebaert, Alderman of the port. This was done by the General Manager of the port, Mr. R. Vleugels, in his capacity of president of the Orientation Committee of this Vade-mecum. Also present was Mr. W.H. Osterrieth, President of the Port of Antwerp Promotion Association, organization which together with the city of Antwerp patronizes this publication. During this presentation it was recalled that the first edition of the Vade-mecum was realized in 1973 in order to provide the port customers at home and abroad with a general introduction into the various customs, rules and regulations governing port activities in Antwerp and to make them acquainted with the various branches of activity, their professional associations and enterprises active in the port.

Consequently this work consists of two main groups of information, viz. a "Who's who" and a part devoted to "regulations and tariffs".

PLA taking steps to improve the financial position

("Portfolio" Bristol):—Despite an overall loss of £4.7 million in the first 28 weeks of the year, the Port of London Authority under the Chairmanship of Sir John

Cuckney is taking positive steps to improve the Authority's financial position.

In a statement following the latest meeting of the 24-Man Joint P.L.A./Union Sub-Committee discussing reduction of the Port's work force by 1400 over the next year, Sir John said that even if current plans to seek government assistance ran into difficulty there would be no question of the P.L.A. going into liquidation or receivership.

Sir John said he was hopeful the Government would accept the Joint Sub-Committee's plan to cut the number of jobs and release the promised £35 million grant aimed at securing the future of the Port.

Nine unions are involved in these talks, at which Sir John said he was encouraged by the importance they attached to the urgency of thrashing out a joint agreement on a corporate plan.

BTDB favour Government guidelines

(“Portfolio” Bristol):—The British Transport Docks Board has come out firmly in favour of the Government's 5% pay guidelines in the current wage round.

Managing Director Keith Stuart pledged that pay offers to the Board's 11,000 employees would be the maximum 5% allowed. There will be no topping up through self-financing productivity deals and other fringe payments.

Mr. Stuart maintained that in reality productivity schemes had to be based either on increased throughput in ports, something that with everyone fighting for trade was difficult to keep up, or on cutting jobs, a policy which generally speaking was unacceptable to the Trade Unions.

Container compound for Avonmouth

(“Portfolio” Bristol):—Plans for the provision of a £130,000 freight container compound on West Wharf at Avonmouth Royal Edward Dock were formally approved at a Bristol City Council meeting last month.

The majority of the expenditure involved is in the purchasing of a Hyster 620, 62,000 lb. capacity fork-lift truck, for use at the terminal, together with a number of 40 ft. Mafi trailers.

The trailers will be used to ferry the containers two at a time to the compound at West Wharf I. There they will be stacked and delivered as required by the Hyster 620.

The Port Authority increasingly is being presented with the need to handle containers from conventional vessels being discharged at Avonmouth docks.

Whilst in the past it has been possible to arrange for containers to be taken away direct from ships, it is now necessary to provide a key service. The new compound will be capable of holding up to 200 containers at any one time.

Sir Humphrey re-appointed

(London, BTDB “Docks”):—The Secretary of State for Transport, William Rodgers, has announced that Sir Humphrey Browne, CBE, has been re-appointed chairman of the British Transport Docks Board for a further period of office up to April, 1980.

Sir Humphrey was first appointed chairman of the Board in May, 1971.

State ports remain profitable against the trend

(London, BTDB):—The State-owned British Transport Docks Board recorded a surplus of £14½ million in the first half of 1978, chairman Sir Humphrey Browne revealed in London recently.

Sir Humphrey said that this result was in contrast with the generally gloomy financial picture in the industry, though it was £1 million down on the corresponding period for last year.

Industrial action at Southampton had cost BTDB about £3 million in direct losses alone, Sir Humphrey said, and the Board's trade elsewhere had been hit by the recession in the steel industry and other important trades, and the restrictions on imports of steel, which BTDB had been handling in substantial quantities.

There had been some significant gains in other traffics, with increases in foodstuffs, new vehicles and manufactured exports. The number of containers and other unit loads dealt with had risen further, to a total of 524,000 units in the first nine months.

The chairman was confident that the Board would continue to make headway, a fact that was manifest in its capital investment policy. The BTDB would authorise a total of £13 million this year on developments at its ports, compared with expenditure of about £10 million in 1977 and 1978, and there continued to be an encouraging demand from customers for new facilities at the ports, Sir Humphrey said.

Another roll-on/roll-off terminal for Immingham

(London, BTDB):—The British Transport Docks Board is to go ahead with the construction of a new roll-on/roll-off terminal at its port of Immingham on South Humberside. The new terminal—Immingham's second—will be operated as a common-user facility for freight traffic and is due to be completed by the end of 1979.

Announcing the scheme, Mr. Ken Bantock, port director, Humber ports, said that there was a known demand for additional ro/ro capacity at Immingham, which had been an established ro/ro port for more than 12 years.

“We have been talking with potential users of the new terminal for some time, and an announcement of the first customer is imminent,” he added.

Liverpool prepares to reap UK's bumper harvest

(Port of Liverpool):—Modifications at Liverpool's Royal Seaforth Grain Terminal will enable the Port to take advantage of possible export trade following Britain's bumper wheat crop.

The modifications involve the provision of a road intake facility between Silos 1 and 2 where bins originally built for a possible rail link will be connected to the main silo by an elevator.

The grain can then be loaded into bulk carriers at the transhipment berth through two modified spouts.

Grain Terminal Manager Mr. Ken Wharton said: “The bumper UK crop means that some soft wheats will be exported. We are looking to export about 50,000 tonnes in the first year”.

It is hoped that the modifications will be completed by the end of December 1978.

Douala: Port of Today and Tomorrow

Cameroon National Ports Authority

Cameroon has all together four ports in its infrastructure, namely: GAROUA, VICTORIA/TIKO, KRIBI and then DOUALA which is the most important because it handles more than 90% of the maritime traffic of Cameroon and that of the neighbouring countries without an outlet into the sea.

Douala port is an estuary port linked to the sea by a channel of 25 Km long. For its particular favourable geographical situation, it presents numerous advantages which makes it one of the most important ports on the west African coast.

Its location in the gulf of Guinea makes it benefit from calm waters which shelter ships from the strong sea waves. Moreover, the Cameroonian coast, characterized by the uniformity of the relief, insures possibilities of extensive expansion.

One of the principal reasons for Douala being the most extensive port is its opening unto a vast hinterland economically rich. Also, it goes without saying that almost 80% of Cameroon industries are concentrated in the littoral, which upholds the title of Douala town as the "ECONOMIC CAPITAL".

In fact, as regards the numerous advantages offered by the presance of industrial production centers near places of transfer, especially reduction of transport costs of raw materials and finished goods for importation as well as exportation, time economy etc, some appreciable efforts are brought to Douala in order to assure her of a viable framework of industrial development.

To this effect, the right bank (Bonaberi) has been set aside to shelter new production units. At moment, there are two units, one for cement production and the other for chemical industry, foreshowing an indisputable industrial vocation for Douala Port.

INSTALLATIONS

One the left bank, there are 11 general cargo berths on a linear wharf of 1,837 m of which two are reserved for coasting and for aluminium and alumina traffic.

The berths are kept at -8.50 m depth and adjoined with 12 sheds thus,

- 8 first zone sheds
- 3 second zone sheds
- 1 third zone shed.

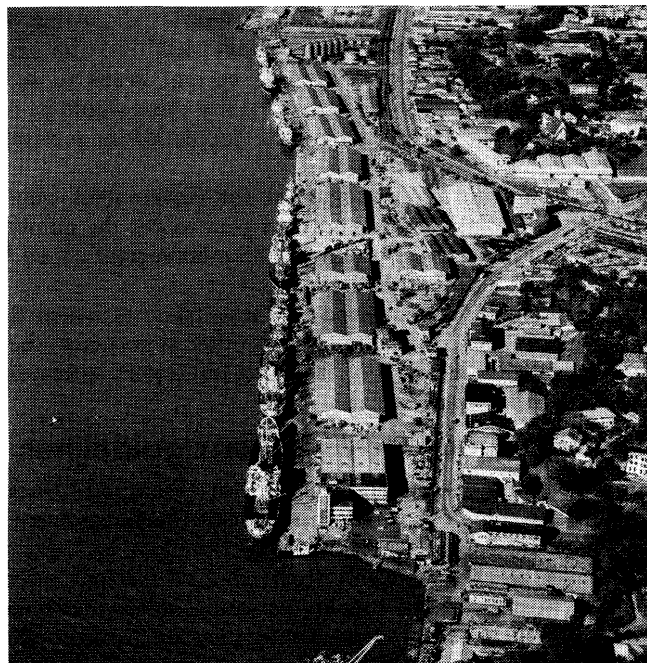
Below berth 11, a floating dock of 1,000 tons in capacity is destined to the careening of small units. Along the wharfs, a strip of traffic comprising of two railways fitted in permits lifting engines to accede fully in the sheds.

On the right bank, two (2) specialized platforms have been laid, one for banana traffic and the other for industrial needs. They are kept at -7 m and -8.50 m depth respectively. A provisional Roll-on/Roll-off ramp completes this infrastructure—

The capacity of Douala Port is therefore estimated at 2,700,000 tons a year.

TRAFFIC EVOLUTION:

Without still knowing a flashing push, the Douala Port



Aerial view of Douala Port

traffic has risen in a steady manner at an annual average rise of 10%.

Despite some accidents in the world economy, notably the oil crisis of the years 1973/1974 and the fall noticed in timber market (one of our main export products) in 1975, we ascertain that goods tonnage treated in Douala Port has more than doubled between 1965 and 1976.

The 1977 total traffic represents a figure of 2,515,874 tons, as against 2,228,426 tons in 1976, showing a rise of 12.8%. This rise is due to the importations which went from 1,380,234 tons to 1,713,910 tons whereas exports fell by -4.7%. Main exports commodities are:

Wood	: (timbers and sawn wood) :
	402,406 tons
Banana	: 88,073 tons
Coffee	: 73,192 tons
Cotton	: 53,316 tons
Cocoa	: 36,957 tons
Aluminium	: 29,378 tons
The main imported goods are	:
Hydrocarbons	: 486,998 tons
Drinks and alimentary products	: 275,672 tons
Chemical and metallurgic products	: 202,394 tons
Building materials	: 336,078 tons

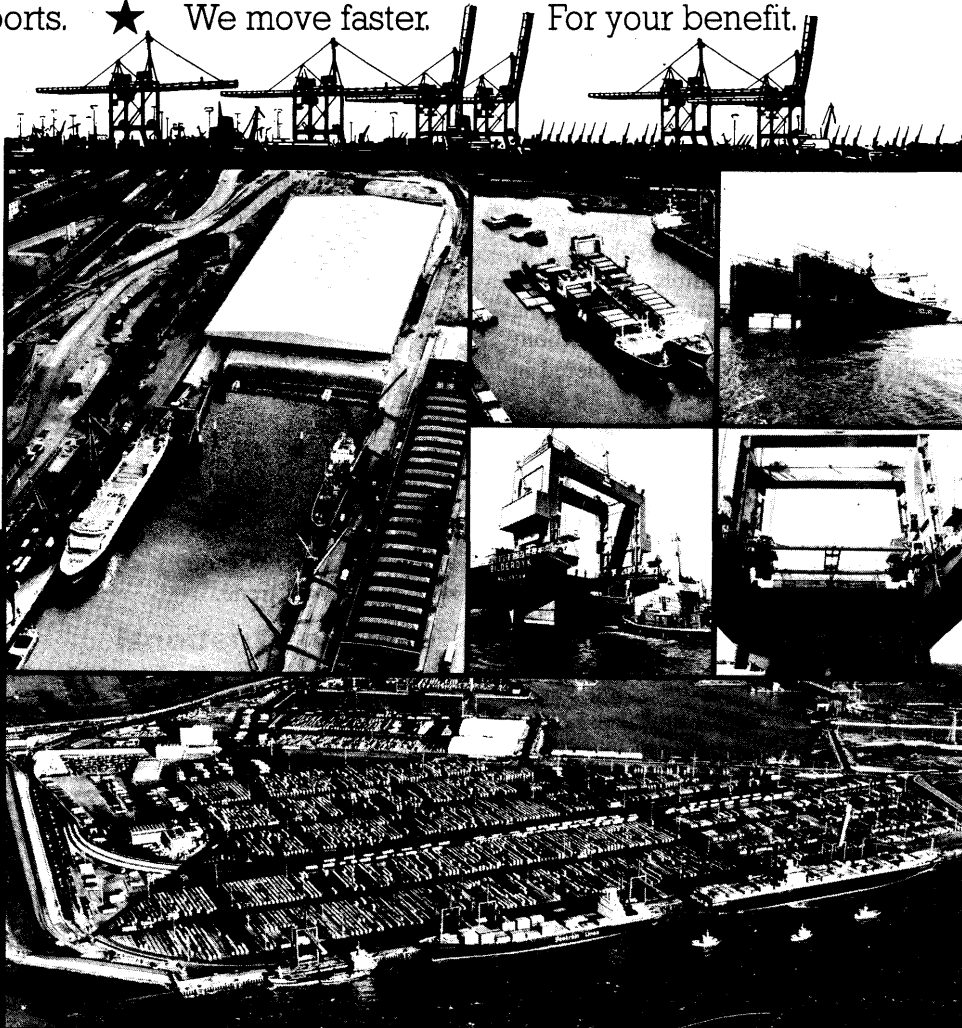
FUTURE PERSPECTIVES:

Under the pressure of traffic evolution due to an indisputable economic push of Cameroun, and because of the changes that marked the maritime transport during the last decade, notably the use of heavy tonnage vessels and the introduction of specialized vessels (container-carriers—barge-carriers, roll-on/roll-off vessels etc.), the installations of Douala Port, at the beginning of 1970, showed signs of congestion. The berth occupational rate

(Continued on page 38)

Container Ro/ro-Lash

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(Continued from page 36)

which permits appreciating the degree of saturation of a port and which went over 90%, confirms it. It was necessary therefore to look for appropriate solutions to meet the needs of the traffic evolution on short, average and long term.

A series of studies made in this effect has conducted to the elaboration of a master plan of extension and modernization of Douala Port, thus the operations to realize for the first phase comprises of:

- the deepening of the channel from -5.50 to -7.50 m, a marling of 2 m permitting the access of ships of 9 m to 9.5 m draft.

- The construction of a timber port allowing the flow of 2 millions tons per year.

- The construction of a container-terminal with an associated Roll-on/Roll-off terminal, at -11.5 m of draft.

- The construction of a fishing port with appropriate superstructures: cool stores, ice factory, fish market etc . . .

- The construction of a repairs unit equipped with the actual floating dock and another of 500 tons capacity.

- The realization of road and railway connections and the extensions of storage areas.

One can note that the programme is ambitious since it represents an investment of about 30 milliards francs CFA. The total working period is estimated at 30 months and the laying of the foundation stone was solemnly done on the 18th of December 1976. On this date about 50% of the project has been realized, and we could ascertain without being too optimistic that the works will be completed in the anticipated time.

THE COMPLEMENTARY CHOICE:

The projected creation of a deep sea port at Cape limboh near victoria responds to two fundamental necessities.

On the one hand, the evolution towards bigger and bigger tankers calls for the provision of specialized berths for vessels of 15 to 25 m of draught. Such depths are not envisaged in Douala and on the Wouri estuary.

On the other hand, the high concentration of the industries in Douala would raise, on more or less long term, serious environmental and social problems. It was therefore necessary to look for other sites and the options were Cape limboh in the west of victoria and Rocher du Loup, in the south of Kribi.

The first site seems to be more interesting on a purely port consideration and is destined to the implantation of an oil terminal and eventually that of minerals. The studies realized until now were made taking into account the factors which will allow a viable exploitation of the refinery to be built in the site in days to come.

From this sketch, a less specialized commercial port is likely to develop thanks to the economic sway effects resulting from the creation of other industries linked to the exploitation of the refinery. It will firstly serve the needs of its hinterland which will develop simultaneously before competing Douala and taking up certain traffics from him.

Equally, a study is being carried out at Rocher du Loup, this will not lose sight of the needs and economic potentials of the south and the east of the country (iron-wood) and the exploitation of the MINIM-MARTAP bauxites.

Royal Seaforth Dock to get Freightliner railhead

(Port of Liverpool):—The Government has given the go-ahead for a Freightliner Terminal to link the Port of Liverpool's busy Royal Seaforth Container Terminal with the national Freightliner rail network.

The decision was announced by the Secretary of State for Transport Mr. William Rodgers during a visit to Liverpool.

It means that the Mersey Docks and Harbour Company will receive a 50 per cent grant towards the project which will cost more than £800,000.

The Mersey Docks and Harbour Company has argued that a Freightliner Terminal is vital to their strenuous efforts to attract more trade to the Port.

But the application made under Section 8 of the Railways Act. of 1974 stressed the environmental advantages of being able to transfer containers direct from ship to rail without trundling them heavy lorry along Merseyside's crowded roads.

The Managing Director of the Dock Company Mr. James Fitzpatrick welcomed the Government's support for the project as the key that would open doors for the £50 million Royal Seaforth Dock with its container, grain, timber and roll-on roll-off terminals.

Bordeaux-Le Verdon's container throughput up 21%

(Port of Bordeaux):—It is nearly two years since Le Verdon handled its first container with its first gantry crane.

Over the first six months of 1978, container traffic increased by 21% compared to the first six months of the previous year.

This brought the half year tonnage figure to 160 000 t. of which 58 000 t. (+60%) was imports and 102 000 t. (+6%) was export trade.

Bremen International

• Bremen/Bremerhaven breaking 1974 general cargo handling record

The official results for the first nine months of 1978 (18 million tons cargo handled, of which 11.4 million are alone generals) show the Bremen/Bremerhaven port-group to be well on the way to beating the boom-year, 1974, standing record of 14.6 mil. tons of general-cargo. Bremen's general-cargo, after the first three quarters of 1978, is 3%—and even 7.4% for bulk-commodities—(4.6% on average) over the previous year. Computative estimates anticipate a total for the Bremen ports for 1978 of 24.2 million tons of cargo, 15.2 millions being generals.

• World ro-ro fleet to treble within five years

The highest rate-increase in world merchant shipping is enjoyed by the ro-ro ships. According to the German Institute of Shipping Economics, Bremen, there were 284 ro-ro ships, with 1,139,329 GRT, resp. 1,325,873 tdw in 1972. At the beginning of 1978 the world ro-ro fleet already comprised 635 units of 3,034,939 GRT resp. 3,756,196 tdw. Increase within 5 years: some 170%. Order bookings at the start of 1978 totalled 227 units (1,865,970 GRT/2,194,790 tdw) = 60% of the tonnage afloat. Ac-

Port of Thessaloniki, Greece - Past and Prospects

by **Nicholas M. Samaras**
IAPH Director, Greece

The city was built in 315 B.C. by Cassandrus, who named it Thessaloniki to honour his wife, sister of Alexander the Great, and could certainly be expected to have a bright future primarily due to its geographical position.

Since then, the development of the port has been closely related to the growth of the city which has followed a steady upward trend.

In the years of Byzantium, it was a great cultural and trade center, second only to Constantinople. Ships from all over the world and caravans from the European hinterland arrived in its port. This port was a very important transit center even then. Especially in October, during the celebration of Demetria, a great commercial fair morning the city's patron saint, Saint Demetrios, traffic was heavy with visitors and cargoes from Europe, Asia and Africa.

During the Turkish occupation, Thessaloniki decline. The growth of the city and the port resumed after liberation, in 1912.

There are very favourable prospects for the port. Its outstanding geographical position in the Balkan peninsula plus the fact that it is the main point of access to the Balkan hinterland and its only natural outlet creates vast possibilities of transit trade development. Furthermore, the connection, now under study, via the Axios river to Central Europe and to the North Sea through a system of canals, as well as the continuous expansion of the transportation network, will greatly increase its importance as a transit center from Europe to Asia and Africa and vice versa. Also, the rich Macedonian soil and subsoil, the development of the industrial Zone of Thessaloniki, favored by the availability of specialized labour, and the sufficiency developed railway and road network, have all contributed to the significant growth of the port.

The port is in a continuous process of expansion, modernization and functional improvement with the prospect of becoming one of the most important ports in the Mediterranean basin. Between 1963 and 1977 the volume of

cordingly there should be, at the end of 1980, 860 ro-ro freighters, totalling 4,900,909 GRT/5,950,986 tdw. The countries having the biggest ro-ro fleets are Japan (78 ships), Britain (73) and America (20).

● Philadelphia erects world's biggest container crane

The biggest container crane in the world—a multi-purpose bridge of 375-ton lifting-capacity—manufactured by Friedrich Kocks GmbH in Bremen, is at present being erected on the Parker Avenue Marine Terminal in Philadelphia/USA and is to come into operation in April 1979. The crane-giant, which moves on rails and 48 wheels: 1,400 tons. The interest in this super container-crane, which can also load larger containers with heavy machines, power-station sections etc, is world-wide.



Thessaloniki Port Authority—Pier No. 4

dry goods loaded and discharged, more than tripled.

In order to meet the needs of steadily increasing traffic, Thessaloniki Port Authority's management has planned and started constructing a whole series of projects creating a 6th Pier, covering an area of additional 600,000 sq.m.

(See Table 1 and 2 on next page bottom)

Hamburg in Tokyo

Tokyo:—Port of Hamburg held a press meeting at Haginoma Room of Hotel Okura in Tokyo on Friday November, 1978, 3.00-4.30 p.m. where Mr. Helmut F.H. Hansen (General Representative of Port of Hamburg) personally gave detailed description of current situation at his port and answered questions from the press.

Port of Hamburg held a reception at the Ariake Room of Hotel Okura in Tokyo on Monday, November 27, 1978, 6.00-8.00 p.m. where Mr. Helmut F.H. Hansen, General Representative of Port of Hamburg presided over the hundred-odd guests of shipping executives and press members.

New fields for 50-year old Hydraulics Laboratory

Delft institute works on projects all over the world

(Rotterdam Europoort Delta 78/2):—The Hydraulics Laboratory with its establishments at Delft, the Northeast Polder, Wageningen and Haren is a symbol to its many clients at home and abroad. To many other people, however, who have no professional dealings with it, this research institute is virtually a closed book. This is hardly surprising since the Hydraulics Laboratory takes no sides in politics on national issues and does not beat the big drum. It 'just' works with water. Now that this national institution is celebrating its fiftieth anniversary, it may be a good thing to devote a concise article to what it is and what it does.

The Hydraulics Laboratory has three objectives: it makes recommendations, it carries out research and it supports education.

The research, that is to say basic research on hydrodynamics in the widest sense, supports the institute's advisory activities so that it is not a goal in itself. Recommendations are made by assignment, against payment of expenses. So the Hydraulics Laboratory is in fact functioning as a specialised body of engineering consultants.

The Hydraulics Laboratory and the Soil Mechanics Laboratory together form the Hydraulic Engineering Laboratory Foundation, a government institution set up in 1933 to give the six-year-old Hydraulics Laboratory an independent juridical status.

The supreme body is the Board of Governors, in which the Ministries of Transport and Waterways, of Education and Sciences and of Finance have representatives. The Director, Dr. J.E. Prins, is assisted by a small Board of Managers.

The over five hundred staff, largely university graduates and top-flight technicians, are divided into advisory and

ancillary departments.

The head office is at 'Thijssse Erf' in Delft. The other major establishment is at De Voorst in the Northeast Polder. There are smaller establishments in Wageningen and Haren. The plant at the Hydraulics Laboratory is worth far over one hundred million guilders. Operating capital is borrowed from the State at interest, expenses are calculated on the basis of cost prices according to sound business principles and charged up commercially to the clients. A general State subsidy amounts to only a few percentage points of turnover which now stands at over fifty million guilders a year.

Clients

The main client is the central Government and most of the Government orders by far come from the Ministry of Transport and Waterways—notably the Delta Project department. Long and close cooperation has resulted in friendly contacts which have a stimulating effect both ways, without obscuring the businesslike character of relations.

Assignments are also received from local government bodies, such as provinces, municipalities, drainage districts, waterworks, power companies, contractors, industry and engineering consultants.

Foreign assignments (from governments, industry, engineering consultants and international institutions like the World Bank) account for about one fifth of the Laboratory's turnover.

Field of operations

The Hydraulics Laboratory engages in applied scientific research in the field of hydraulics in the widest sense.

This includes:

- density currents,
- maritime constructions,

(Continued on page 42)

Table 1. CARGO TRAFFIC IN FIVE-YEAR PERIOD 1973-1977

(in thousands of tons)

	1973	1974	1975	1976	1977
1. Dry Cargo	4,141	4,513	4,732	4,824	4,591
1. Liquid Fuel	4,702	4,731	4,735	4,548	5,298
Total Traffic	8,843	9,244	9,467	9,372	9,889

Table 2. DRY CARGO TRAFFIC IN FIVE-YEAR PERIOD 1973-1977

(in tons)

Year	Discharged		Loaded		Total Dry Cargo
	From Abroad	From Greece	From Abroad	From Greece	
1973	1,886,497	519,397	1,004,157	731,248	4,141,299
1974	2,044,215	492,446	1,240,267	735,636	4,512,564
1975	2,010,358	519,257	1,495,485	707,285	4,732,385
1976	2,135,157	497,270	1,578,772	612,835	4,824,034
1977	2,130,763	654,289	1,153,844	651,966	4,590,862

Ships don't linger for long

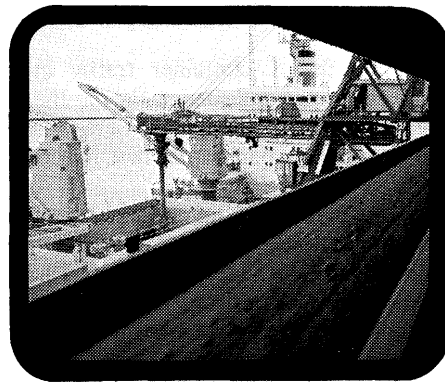
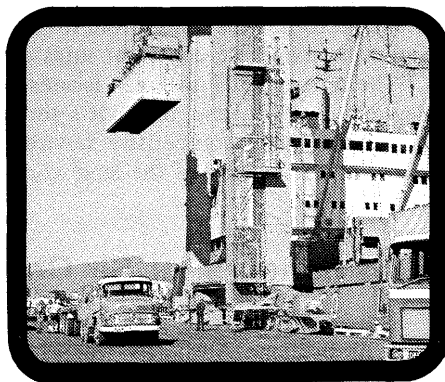
at

TOWNSVILLE

***– The average stay is only 1.75
days per vessel, and more ships
than ever are using the Port.***



Containers and Bulk Loading



Gateway to Australia

**Townsville
Harbour Board**

No. 1 The Strand, Townsville
North Queensland 4810 AUSTRALIA
P.O. Box 1031 Telephone 721011
Cable: 'Nausport'

(Continued from page 40)

- pumps and industrial circulations,
- sediment transportation,
- dams, dykes, locks, sluices and weirs,
- dredging technology,
- damming operations,
- ports and coasts,
- hydrodynamics and morphology,
- rivers and navigation.

Designers, builders, administrators and policy-making bodies may apply for advice based on scientific research.

Recommendations are based on thorough preparation. Parallel to the work on assignments, the same people in the same departments engage in basic research and development, literature research and small-scale model research, mathematical work (often with the aid of computers), measurements on the high seas, etc.

Branch establishment

In 1951 the Hydraulics Laboratory set up a branch establishment in the newly reclaimed Northeast Polder. There one had suitable soil, plenty of water and room—which was lacking in Delft—to build big river and port models. At first these were mainly open-air constructions, but now most of the models are in halls with up-to-date equipment, the biggest having a floorspace of two and a half hectares.

The future

Care for the future is visible in the expansion of scientific work and research, the renewal of equipment cooperation with others and the constant adjustment of medium and long-term planning.

New fields of operation will no doubt be added, and old ones abandoned perhaps. Mathematics will acquire an ever bigger place in the solution of problems which are physical by nature. The foreign market will probably gain in relative importance, but domestic jobs, in close cooperation with the State Waterways Board, will remain the basis.

Container handling rises sharply in Port of Rotterdam

Rotterdam:—The growth of container traffic in the Rotterdam port has been rapid and spectacular. In the first six months of 1978, 550,000 containers were handled which was 27.5 per cent more than in the first half of last year.

Liner traffic as a whole (comprising containers, roll-on/roll-off traffic and conventional general cargo) developed favorably: in the first half of 1978 it increased by 10.3 per cent compared to the same period last year. Conventional general cargo maintained its position and rose by 10 per cent. Roll-on/roll-off traffic increased by 27.8 per cent.

In the bulk cargo sector coal and ore handling scored big increases. Trumper traffic grew by 6.6 per cent. Tanker traffic, however, comprising mainly crude oil, is still decreasing; during the first six months of 1978 it fell by 14.6 per cent.

Total traffic in the Port of Rotterdam, during the first half of 1978 amounted to 129.9 million tons which is 6.6 per cent less than in the comparable period of 1977.

Berthing statistics in the Gulf ports

(from The Gray, Mackenzie Monthly Bulletin, September 1978)

Port	Berthing delay
Bahrain	no delay
Damman	no delay
Abu Dhabi	1 to 6 days
Khorramshahr	4 to 7 days
Abadan	nil to 5 days
Bandar Shahpour	nil to 7 days for general cargo 5 to 30 days for bulk cargo
Bandar Abbas	8 to 12 days for general cargo 15 to 30 days for bulk cargo
Bushire	nil to 5 days

Container terminal at Brisbane

The Port of Brisbane Authority has commenced negotiations with Associated Container Transportation (Australia) Ltd. regarding the operation of the new \$40 million container terminal under construction at the Fisherman Islands.

This follows on from a Government approval that the Port Authority is to be responsible for the development, operation and commercial functions of the terminal and may engage contractors where necessary and feasible for particular operations.

The contract will be for an initial period of three years after which the Port Authority will submit back to Government guidelines for future operations.

The growing trade in containerised cargo through Brisbane and the introduction of larger (second generation) ships up to 60,000 deadweight tons demands a modern large terminal with deep water access.

The existing terminals at Hamilton and Newstead will continue to operate viably well into the foreseeable future, and will service the container ships of the first generation.

The terminal at Fisherman Islands should be operative in September 1979, and Brisbane's three terminals will then provide a highly competitive service in Australia's export trade, to the benefit of the large community served by the port.

New honours for Sir Charles

(“Brisbane Portrait”):—Chairman of the Board of the Port of Brisbane Authority (Sir Charles Barton) has been elected a Fellow of the Australian Academy of Technological Sciences (F.T.S.).

He has also been notified by the Institution of Engineers, Australia, that it has chosen him to receive the Peter Nicol Russell Memorial Medal for 1978. The medal is the highest honour which can be bestowed by the I.E.A.

Containerisation at the Port of Townsville

Townsville Harbour Board

The Port of Townsville has been characterised over the last 10 years by some dynamic development which has been geared to keep one jump ahead of the rapidly expanding needs for shipping and transportation in North Queensland, Australia.

Townsville's container crane was installed in 1974 primarily to handle the increasing tonnage of refined metal products, principally copper and lead. The design specifications however, called for a crane of unusually versatile capabilities to embrace not only heavy-lift of unitised lead and copper, but also multi-size conventional containers as well as an 8 cubic metre grab facility for the discharging of loose cargoes.

The wisdom of this initial design specification is being increasingly displayed as the varieties of cargoes originating from the North are attracted to the Port of Townsville.

The expressed policy of the Townsville Harbour Board, apart from servicing the needs of the bulk cargo producers of minerals and sugar, has been to equip the Port with a facility to enable the primary producer of North, Western and Central Queensland to ship his products to overseas markets with less delay and cheaper cost than is otherwise possible. The alternative of course, has been for products such as meat and wool to be transported by long rail or road haul to Brisbane for shipment at that port.

The evolution of the versatile containerisation methods at the Port of Townsville has meant a significant reduction in the turn-around time for ships with the added advantage of enabling the utilisation of larger ships taking larger cargoes loaded in shorter time.

Month by month an increasing number of containers are passing through Townsville and this trend is being now more strongly recognised by ship-owners. Regular services taking in Townsville now offer a versatile container and Ro/Ro schedule every three weeks to United Kingdom and European ports and container adapted ships fortnightly to Manila, Japan and the West Coast ports of the U.S.A.

In support of this trend in demand, made possible by the efficient container crane handling system, the back-up services at the Port have been extended and developed. Provision is made for cold storage for 2,500 tonnes of paletised meat with 120 outlets for refrigerated containers additional. Wool handling is adjacent to the Port and has been set up to provide "on the spot" dumping, sampling and storage. Wool is packed 72 bales to the container and the record shows that, with wool sales held to co-ordinate with the now regular scheduled shipping services, wool can be cleared and loaded often within hours of sale and shipping advice.

Refined metals too are now frequently shipped in containers and pelletised nickel is regularly handled in this way with considerable time saving as a direct result.

Townsville has claims to be the deepest water container port in Queensland with a draught at the Nos. 2 and 3 berths of 11.1 metres L.W.O.S.T. Provision is made for ships of 65,000 tonnes at the container berths and the statistics of the container crane with an outreach from the

Quay line of 32 metres and a maximum height of lift of 25 metres ensure that ships of this size can be fully serviced.

The crane, originally restricted to the No. 3 berth of 100 metres can now traverse the adjacent No. 2 berth, has now been reconstructed at a cost of \$3,000,000. This gives a total traverse of 288 metres, which can of course provide for the future installation of a second crane.

A stern ramp Ro/Ro pad at the container berth provides accelerated cargo handling for ships of the Scan Carrier class where loading can be made by both ramp and container crane simultaneously.

Reclamation of an additional 39 hectares immediately behind the container berths is in progress as part of a works programme over the next five years of \$18,550,000.

The optimism of the Townsville Harbour Board, which to date has been fully justified, sees further rapid growth of containerisation at the Port. The Port's efficiency has not gone unnoticed by overseas ship-owners and 1978-79 will see further reefer and container ship services schedules in to Townsville to reach new export markets for North Queensland's primary products.

Townsville Harbour Board Chairman Bert Field is proud of his Port's record which shows that the average turn-around time for all ships using the Port is less than 1.8 days with the current trend moving as low as 1.48 days. Moreover, shippers using Townsville are not confronted with long periods of waiting for entry and berths which are common with every other major Australian port.

Mr. Field said: "Containerisation and mechanisation of cargo handling is the pattern of the future. For too long so many of the major ports have been on the receiving end of technological changes which have necessitated short-term and sometimes irrational forward planning."

"We at the Port of Townsville have taken a great deal of initiative to ensure that we are not going to be found lacking in the service of industry's needs. I believe that things do not just happen by chance and I can assure you that what is going on in Townsville is very positive demonstration on our part to prove to ship-owners and shippers alike that we are determined to maintain the lead in providing the facilities well in advance to cater for growth of transportation needs, which are so vital to our Nation."

7th Sister Ports Seminar (Seattle-Rotterdam-Kobe) held in Kobe

Kobe:—"Desirable Relations between Cities and Ports" was the main theme of the Tri-Sister Ports Seminar which was held in Kobe from October 15 to 18, 1978 being attended by some eighty delegates of the three sister ports, including Mr. Andre van der Lauw, Burgomaster of Rotterdam, Mr. Paul Friedlander, President of Port of Seattle Commission and Mr. Tatsuo Miyazaki, Mayor of Kobe.

Utilization of Citrus Cargo in Israel

(Reprinted from Journal of the Israel Shipping Research Institute—SAPANUT):—The Citrus Marketing Board of Israel (CMBI) markets all citrus fruit produced in Israel both for internal consumption and for export. Citrus is a seasonal product (most of the export is concentrated from January to April), exported in large quantities (about one million tons in a season), and is relatively cheap and perishable. CMBI markets abroad some 50 million boxes (each weighing 20 kg. and measuring 2 cubic feet) to many different markets, part of the sales coming from stock and part from firm sales. Most of the produce is sold in Europe, especially Germany and England. Average gross revenue per box is about \$6, of which close to \$4 is the expense of getting the box from packing house to the overseas market.

The seaborne shipping of 75% of the citrus is undertaken by CMBI and the rest by buyers in Scandinavia and Yugoslavia. The majority of ships in this trade have ventilated holds. Reefer ships are used for export to Iran and the Far East from Eilat, and to western Europe at the beginning and end of the season when the weather is still warm.

CMBI has investigated different methods of unitizing the cargo, like palletizing, containerizing, etc., setting up a special staff to try to bring some rationalization to the handling chain, starting from the packing house in Israel and ending in the market abroad. The group has undertaken various experiments, surveys, and studies on unitization.

Trials and Results

The emphasis was first placed on examining the feasibility of existing means of unitized cargo transport, through exploiting the unused, existing transport capability (in Israel's containerized commerce, there has been a surplus of imports so that containers leave Israel empty). The purpose was to ease the burden on Israeli ports during the height of the season and to enable a gradual changeover to the transport of citrus as unitized cargo.

The pallet constitutes the basic unit for handling the boxes from the packing houses. The principal unitization unit could be the container, the flat (an open container), or the trailer.

Since CMBI has for a number of years used ro/ro's for citrus consignments on trailers and on flats for consignments in vessels with ventilated holds, the trials in 1976/7 concentrated on consignments in closed containers. In the course of the season, more than 300 containers (mostly of 20-ft size) were shipped to Europe by different routes in order to apprehend the logistic and economic problems that arise. Some of the containers were fitted with instrumentation to examine the effect of the different variables on the behavior of the fruit and the packing in a closed container.

Many factors are liable to affect the quality of the fruit and the packing, owing to its transport in a closed container. The main factors are the route, season of the year, duration of stay in the container, placement of the container on the vessel (i.e., above or below deck), precooling of the fruit, and type of insulation between container walls and boxes. The destination of the consignments were both ports and inland destinations in England, Germany, France, Belgium and Italy. The agrotechnical

subjects for study were the temperature of the fruit along the voyage, the composition of the gases in the container (the fruit breathes, absorbing oxygen and expelling carbon dioxide, and in so doing raises its temperature), and the extent of condensation created on the inside container walls. As was expected, many logistic problems arose during the course of the voyages, starting with container stuffing and loading onto vessels in Israel, through unloading from the ship in the foreign port, and ending with taking the fruit out of the container at the final destination.

It was found that in Israel container stuffing had to be done at centers at the port but away from the dock area, and not at the packing houses (of which there are about 60 in the country). Generally it was not possible to reach the final destination with the container because of the problem of thereby by-passing CMBI warehouses abroad in which are stored older fruit—in other words, circumventing the "first-in, first-out" (FIFO) method at the fruit warehouses abroad—and because of the serious logistic problems in receiving the containers abroad, since the system is not geared for them.

With the test consignments, a picture was obtained also of the economic side of shipping citrus in containers. With the price structure extant at the time of the trials, a consignment of a box of citrus fruit in a container was from 10 cents to 30 cents more expensive, depending on route, than a box shipped in the conventional manner. But because conventional handling is manual work-intensive, the relative price of the latter is expected to rise in the future and the costs of the two handling-means will even out in a few years.

In light of the trial consignments in closed containers, it was found that it was possible to so ship the fruit when the weather outside was cold enough, but even here under certain limitations (such as protection against condensation and limiting the stay of the fruit in the container). When the outside temperature was higher, precooling of the fruit was necessary before its introduction into the container, and even then shipping was possible in closed containers only within these same limitations.

Ventilation

In order to overcome the limitations in sending citrus fruit in closed containers, a test was conducted in ventilating the fruit. The main idea was to adapt an existing system for central refrigeration of products in containers to the needs of ventilating citrus only. For this test, an experimental apparatus was brought over from Germany that would force air into the container at a controlled temperature and humidity. The apparatus, together with seven containers (5 of 20 feet and 2 of 40 feet), were put into a refrigerated room, filled with citrus, and made to undergo a static simulation of a sea voyage to western Europe at various times of the year. The first results showed that 5-6 air changes an hour prevent condensation in a 20-ft container and keep the fruit in a reasonable condition. CMBI plans to set up an experimental apparatus like this on one or two ships in order to continue the tests and to gather operational data.

A New Citrus Box

Because the present boxes that serve citrus are not suitable for palletization on standard pallets, and because the pallets for which the boxes are suitable are not fit for containerization, it was decided to develop a new box that would be suitable for palletization on a standard ISO pallet (1 meter x 1.2 meter), so that it could be containerized easily and answer the requirements of packing and marketing the fruit. This work is now in progress and test consignments are being planned for shipment.

Future Plans

CMBI plans call for continuing the shipping of closed containers on an experimental (but commercial) basis on a wide scale for drawing commercially applicable conclusions, integration of containerized citrus into the CMBI marketing system, and easing the burden on ports in critical routes. Similarly a continuation is planned of agrotechnical test consignments on routes for which no decisions have yet been made regarding the shipping of fruit in closed containers.

Table A: Advantages and Disadvantages of Various Unitization Methods for Citrus Fruit

METHOD	MAY BE DECK CARRIED	VENTI- LATION NO PROBLEM	RETURN VOYAGE CARGO	RAIN PRO- TECTED	COLD PRO- TECTED
Closed Container	+	—	++	+	+++
Flat (Open Cont.)	—	+	—	—	—
Trailer	—	+	++	—	—

+ = advantage; — = disadvantage.

* = in limited quantities;

** = with special attachments.

Table B: Seaborne Shipment Possibilities

TYPE OF CARRIAGE	CLOSED CON- TAINER	FLAT	TRAILER
Containership, Below Deck	+	+	—
Containership, On Deck	+	—	—
Ro/Ro Vessel	+	+	+
Conventional Ship, On Deck	+	—	—

Note: Containers and flats on ro/ro's may be transported with or without trailers.

+ = advantage; — = disadvantage.

An attempt to predict the future development of unitization citrus shipments in Israel meets with several serious problems:

1) Surplus transport capability in unitized form (containers and ro/ro) in the export trade is most limited even today, and it will shrink further in the next two years—so much so that it does not seem possible to rely to any large extent on existing liner services.

2) Today it is difficult to find vessels, whether container

or ro/ro, for seasonal charter; in the future, some improvement is in fact expected in the situation, but this is not at all sure. This is true, too, for the containers themselves.

3) Containerizing fruit is a seasonal activity, on a large scale, and requires appropriate containerization centers.

4) Serious logistic problems exist in receiving unitized fruit shipments abroad, both at the ports and at final destinations.

5) The most appropriate form of unitization for CMBI is the pallet, but there are practically no suitable vessels for transporting pallets, and certainly not in the quantities required by CMBI.

Every form of unitization has both advantages and disadvantages (enumerated in Tables A and B); and today it seems that in the future there will not be exclusive use of one method, but use will be made of all the methods together, exploiting their separate advantages. For instance: containerships with flats; containerships with closed containers with forced ventilation below deck and closed containers on deck; ro/ro's with flats or trailers or pallets below deck and closed containers on deck. One must expect that unitization will be introduced into citrus fruit shipping gradually, especially on lines for which it will have economic advantages over accepted cargo-handling methods, with the rate of unitization being dependent on its economic desirability.

Ports of New South Wales, record trade figures

("Ports of New South Wales", Sydney):—Despite the continuing world-wide economic malaise, ports controlled by The Maritime Services Board of New South Wales posted record trade figures for the 1977/78 financial year.

Figures released in Sydney by the President of the Board, Mr. John Wallace, show that total trade through the ports of the State amounted to 71,964,519 tonnes—3,614,170 tonnes up on the previous year.

Mr. Wallace said the four major ports—Port Jackson, Botany Bay, Newcastle and Port Kembla—accounted for 70,098,922 tonnes of the State's total throughput.

"Added to this highly gratifying result, is the fact that all four major ports set individual records at the same time," Mr. Wallace said.

The two major energy related commodities—coal and oil—dominated import/export figures, highlighting Australia's increasing dependence on imported crude and the move back to coal-fired power stations by many of our major trading partners.

Overall trade through Port Jackson was 23,009,291 tonnes last year—an increase of 13,859 tonnes over the 1976/77 figures.

Oil imports both through Port Jackson and Botany Bay rose from 11,009,862 tonnes to 12,091,874 tonnes—an increase of 9.8 percent.

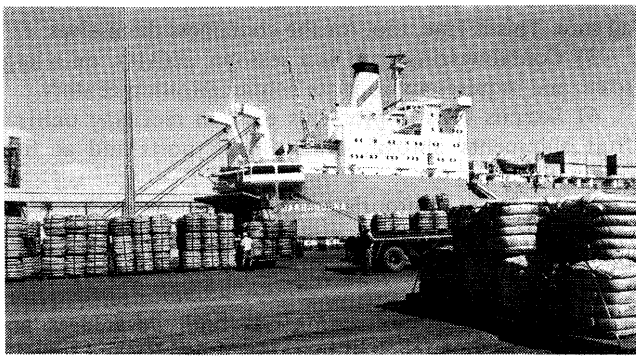
Botany Bay, alone, increased its overall trade (imports and exports) by 6.6 percent from 9,861,788 tonnes to 10,515,519 tonnes.

Newcastle registered a trade figure of 18,958,316 tonnes—an increase of 1,896,241 tonnes, or 11.1 percent on the 1976/77 figures.

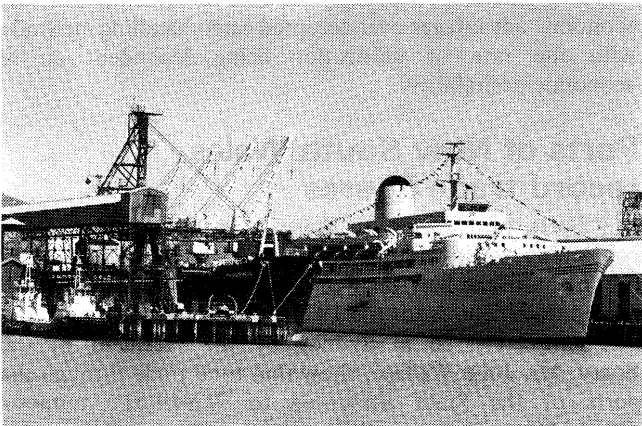
Coal exports from Newcastle broke the nine million

(Continued from page 45)

Townsville photographic news



Increasing volume of wool is passing through Townsville. Here, the Scan Carrier 'BARRANDUNA' loads wool by stern ramp for direct shipment to Europe. Wool handling facilities now operative at Townsville saves Queensland's primary producers heavy land transportation costs when previously centralising was done at Australia's Southern ports.



The gaily-decked tourist ship 'FAIRSTAR' ties up at Townsville's No. 8 berth whilst the bulk mineral carrier 'PANORMUS' loads zinc concentrates at No. 7. Townsville Transport & Services Pty. Ltd., who operate the bulk loader at the Port with supporting services, has introduced a specially developed dust hood for dust control when loading bulk minerals. The tourists on 'FAIRSTAR' suffered no inconvenience with dust because of this efficient system.

tonne barrier for the first time, and early indications point to a total export tonnage in excess of 10 million tonnes for this financial year.

Another record was created at Port Kembla, with a trade figure of 17,615,796 tonnes—an increase of 944,309 tonnes, or 5.7 percent on the previous year.

The Outports of the State—Twofold Bay, Trial Bay, Clarence River and Richmond River—accounted for a total trade of 1,865,597 tonnes. All but Richmond River, down by 6,173 tonnes, registered increases in throughput.

Sharjah leads the way for Gulf ro-ro traffic

(Sharjahport News):—Since its opening in 1975 Sharjah has progressed to become the leading ro-ro entrepot and transshipment port in the Middle East.

Its development is primarily due to Sharjah's recognition of the specialised and individual service needs required by ro-ro shippers and importers.

From a detailed analysis of these needs and the experience of three years ro-ro operations, Sharjah has developed a ro-ro policy which gives the highest priority to such aspects as rapid vessel turnabout, safety, nil damage, on-port care and above all the flexibility required to cater for the individuality of each consignment.

Sharjah offers the importer, the shipper and the manufacturer facilities tailor-made to their specific requirements at individually negotiated contract cost levels which make sense in today's increasingly competitive Gulf market.

The port is fully equipped to handle all types of ro-ro traffic from cars and trucks to plant, heavy equipment and unisited loads on trailers.

Today, Sharjah is recognised as being the most advanced ro-ro port in the Middle East.

New cold store for Sharjah

(Sharjahport News):—A new common user cold store for Gulfbound refrigerated and chilled cargoes—featuring 24 hour operation and direct automated discharge of reefer tonnage at its own deep-water berth—is being commissioned at Sharjah's Port Khalid early in 1979.

Thought to be unique among specialised port facilities in the Gulf the cold store will be owned and operated by Intergulf Cold Storage Services Limited (ICSS). ICSS is a Sharjah-based company, founded by a European consortium, together with the Government of Sharjah.

The company is working closely with Sharjah Port Authority, which operates the berth and represented the Government of Sharjah in the land leasing arrangement for the cold store itself, concluded with ICSS earlier in 1978.

Construction by Arabco has already commenced.

With initial capacity for an annual throughput of up to 50,000 tons of reefer/chilled cargo the new facility has an area of over 30,000 sq. ft. built alongside Port Khalid's newly-completed Berth 8, the store will be served by four conveyors working up to four holds simultaneously.

With a length of 600ft. and a depth of water alongside of 30ft. Berth 8 is accessible for the largest reefer ships in service.

Submersible barge "Hercules" delivered

(KAWASAKI TOPICS):—KHI delivered a submersible barge to Architug Corp. of Panama for use in Persian Gulf and Red Sea port construction work.

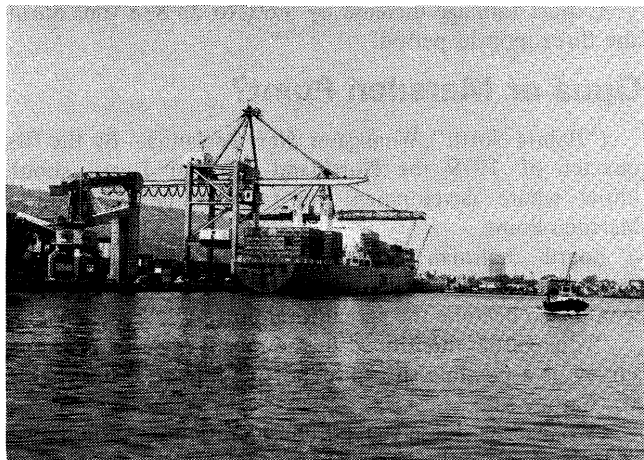
The "Hercules II" can transport not only cargo in the same manner as conventional barge, but also small vessels and floating constructions such as dredgers, marine structures, etc. after having loaded them in the submerged condition.

The barge's main particulars are: Length o.a.: 90.00 m Breadth mld.: 30.00 m Depth mld.: 6.00 m Classification: Lloyd's Deadweight: about 8,500T.

News on Ports of Israel



Port of Ashdod



Port of Haifa

Operational data for 1977/78

Cargo traffic	unit	Port of Haifa	Port of Ashdod	Port of Eilat
Total cargo	'000 ton	5,188	3,550	1,102
Cargo in containers (nett)	'000 ton	1,215	241	228
Cargo in containers (number equivalent to 20 ft.)	unit	142,000	30,000	27,000
Cargo in bulk	'000 ton	2,265	1,905	507
Ships traffic	number of voyages	2,519	1,052	139
Passenger traffic	passengers	230,216	6,464	50

Pusan's new container pier puts into operation

(The Korea Times):—

By Park Chang-seok

Pusan Port has reached the international level with the completion of the first-phase project for the expansion of port facilities, which doubled the dock capacity of the nation's largest harbor.

The first-stage work, which has lasted for four years since 1974, includes the construction of four modernized piers including a container pier and drastic expansion of the five existing piers.

The expansion project cost a total of 91,193 million won, including \$106,509,000 in foreign loans from the International Bank for Reconstruction and Development (IBRD) and the Saudi Fund Development (SFD). A second phase will soon start to be completed in 1981.

With the completion of the project, Pusan Port is now capable of simultaneously accommodating 52 vessels including 50,000-ton class ones at one time, compared with the previous capacity of 33 vessels.

The annual cargo-handling capacity has been doubled 7,000,000 tons to 14,000,000 tons and it is expected to go up to 16,500,000 tons by 1981 when the second-phase project will be completed.

The main feature of the first-stage expansion is a

659-meter container pier, the first of its kind in Korea, which was formally put into operation on Oct. 1, 1978.

The pier, the fifth quay at Pusan Port, will be able to accommodate two 50,000-ton class container ships simultaneously and 240,000 containers annually.

In view of the importance of this pier, the Terminal Operation Company (TOC), a non-profit corporate body, has been formed to exclusively take charge of its operation.

The pier is equipped with four container cranes, 10 straddle carriers, 16 tractors, 120 chassis, and other necessary modern equipment to work an area of 326,550 square meters.

Three other piers constructed in the first-stage port expansion project are a grain pier, a bulk pier, and a coastal passenger pier.

Besides the construction of the four piers, the five existing piers—Nos. 1, 2, 3, 4, and the Central piers—also saw conspicuous improvement in their facilities in the first-phase project.

In the second-phase project, another container pier similar to the first will be built and the facilities of Piers Nos. 3, 4, and the Central Pier will be expanded.

Kuching Port reviews cargo tonnage

Kuching Port Authority handled 155,313 tons of cargoes in the period April to June, 1978 compared to 149,646 tons during the corresponding period in 1977, an increase of only 3.8%.

During the period under review, the import tonnage handled increased by only 2.8% to 131,479 tons compared to 127,900 tons during the same period in 1977.

Export tonnage increase by 9.6% to 23,834 tons during the three months period.

Opua or Marsden Point?

("Points North", Whangarei, New Zealand):—By the first quarter of 1979 the Northland Harbour Board should know where development must go—to either Opua or Marsden Point.

Board chairman, Mr. Jim Carney, told the October meeting that whichever was selected as a timber port would also become the agricultural port.

"Whangaroa, mentioned in the recent regional resources survey as a possible site for exporting timber, is unsuitable," Mr. Carney said.

"Whangaroa doesn't stand consideration on capital costs and environmental aspects," he said.

Mr. Carney recommended environmental studies of Opua and Marsden Point should start within three or four weeks.

On the recommendation of the resources survey, the board will set up a technical working committee to establish guidelines for development.

\$8.8 million equipment to cope with increase load

(PSA Press Release):—The Port of Singapore Authority has recently ordered some \$8.8 million worth of port equipment to increase its cargo handling capability in both container and conventional operations.

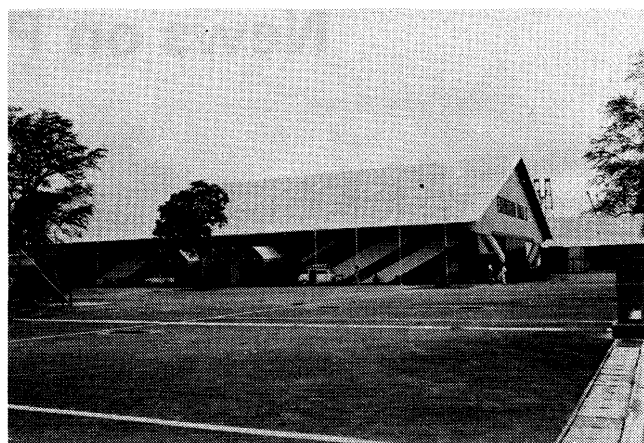
A major portion of this sum is an order for six more transtainers (gantry cranes) for marshalling operations at the Container Terminal. Costing over \$6.5 million these cranes will supplement the present yard equipment to cope with the tremendous increase in container traffic.

Monthly container movement at the Container Terminal has grown from some 28,300 TEUs (Twenty-foot Equivalent Units) in Jan 1978 to over 40,700 TEUs in Jun. This tremendous increase can be attributed to the increase in the number of container shipping lines calling here and also the expansion of feeder services from Singapore.

The PSA's Container Terminal is expected to handle some 468,200 TEUs of containers and 6.8 million tonnes of cargo for the whole of 1978—an increase of over 36 per cent and 38 per cent respectively over last year.

Besides the order for transtainers, the PSA is also adding 100 units of 3.5 tonne capacity forklift trucks costing some \$2.3 million to its large fleet of mechanical equipment. They are expected to be delivered within four to six months.

The provision of more transtainers and forklifts is part of the PSA's \$29 million investment plan on mechanical equipment for the next five years announced in 1978.



World Trade Centre Singapore, New Exhibition Hall No. 3

"Transpo-Asia '78" held at World Trade Centre, Singapore

The third and largest exhibition hall of the World Trade Centre Singapore, developed by the Port of Singapore Authority (PSA) at an estimated cost of \$2 million, provided the house for its first exhibition "Transpo-Asia '78" held on 25–29 November 1978.

"Transpo-Asia '78" was organised by INTERFAMA, with modernisation in transportation and communication for ASEAN regional economic growth as its theme. The main features of the exhibition are road, rail, air and sea transport equipment, and also maintenance and ancillary products.

The new exhibition hall has a total area of 8,700 sq. metres (93,600 sq.ft.), and it is the largest covered in-door exhibition hall in the region.

The World Trade Centre Singapore is a project promoted and developed by the PSA at a cost of \$83 million. It is part of the PSA's concept of providing an integrated exhibition and convention service, together with a cohesive world trade nucleus within a single building.

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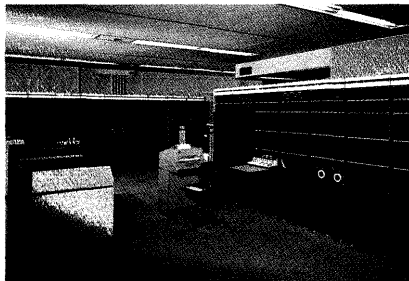
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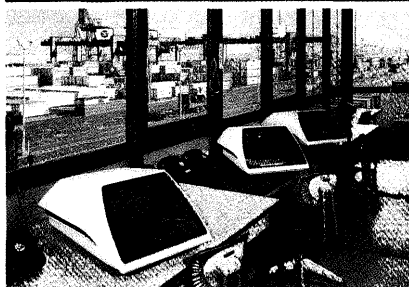
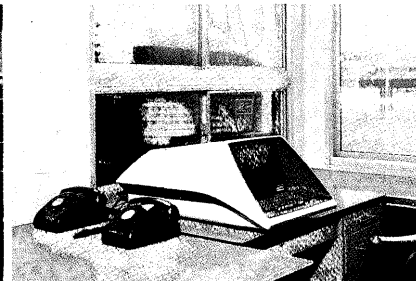
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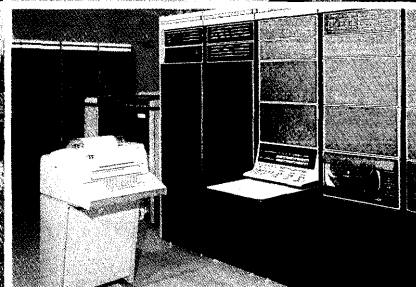
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