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#### The Cover:

Port of Lourenço Marques :- First in importance in Mozambique, the port of Lourenço Marques is building (see foreground) a container terminal with provision of 6 hectares stacking area to be completed in 1973. See also article pages 17 $\sim$ 20.

Price US\$2.00 per copy US\$20.00 per year Secretary General: Toru Akiyama

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#### Forum on Port Problems:

## The Port of New York-New Jersey— The Intermodal Port

by Clifford B. O'Hara

Director of Port Commerce The Port Authority of New York and New Jersey

> before the National Railroad Piggyback Association Dallas, Texas January 24, 1973

It is a great privilege for me to have the opportunity to discuss the bi-state New York-New Jersey Port before the National Railroad Piggyback Association, to tell you about our facilities and services and to make a few observations regarding the present status and the future of international intermodal transportation.

The New York-New Jersey Port has two rail TOFC/COFC yards which were built specifically for the handling of intermodal container traffic. These are the Penn Central International Terminal yard at Port Newark and the Portside Yard of the Jersey Central adjacent to the Elizabeth-Port Authority Marine Terminal. The 10 acre Penn Central yard has been in operation about  $1\frac{1}{2}$  years and is equipped with two 2,500 foot long tracks each of which accommodates twenty-six 89 foot TTX cars. Penn Central operates a PC 90 piggybacker at the yard. There is a 150 foot wide area between the two tracks. The yard can be doubled in size when required. Penn Central International Terminal was built on our property for Penn Central by The Authority of New York and New Jersey and is operated under a lease.

The CNJ's yard is directly south

of the PCIT but was built by the Jersey Central itself on their own property. This is a 3 track 14 acre facility and it handles both domestic and international intermodal traffic for the Jersey Central and its connections. The tracks at the yard are 1,600 feet long each. Jersey Central also has a PC 90 piggybacker at this yard.

The containership terminals at the Port Authority's Port Newark and Elizabeth facilities are served directly by the Penn Central and Jersey Central Railroads. Lehigh Valley comes into our terminals under reciprocal switching. However, since the opening of the Jersey Central's Portside Piggyback-Container Yard direct through joint service Norfolk & Western-Lehigh Valley trains are moving via Bound Brook, N.J.-CNJ into Portside. Also, Erie-Lackawanna and Jersey Central are operating joint through service trains via Lake Junction, N.J. into Portside, greatly improving their service which formerly came into Port Newark via a time-consuming switch movement from Jersey City. B&O and Reading also have joint service operations with CNJ into Portside. Penn Central is operating direct trains between Enola Yard, Harrisburg, Pa. and their Penn Central International

Terminal at Port Newark.

It is understood that Penn central and Lehigh Valley plan to move container cars directly into Global Terminal in Jersey City.

Port Seatrain, in Weehawken, N.J. has direct service through the Hoboken Shore Railroad, with direct interchange with the Erie-Lackawanna and Penn Central. However, it is understood that mini-bridge containers are being trucked between Port Seatrain and Penn Central's North Bergen TOFC Terminal and Erie - Lackawanna's CROXTON yard.

Howland Hook Terminal is adjacent to Arlington Yard of the staten Island Railway (B&O) and plans are under study to bring tracks directly into the terminal.

The Northeast Marine Terminal at 39th Street, Brooklyn, has direct rail service through the New York Dock Railway which interchanges with the trunk line railroads.

I would like to make a few observations as to where containerization is headed insofar as the Port of New York is concerned. The New York-New Jersey Port handled last year approximately 18,000,000 tons of general cargo both in foreign and in domestic coastwise and offshore commerce. We estimate that well over half of this tonnage is moving in containers, and this is really a somewhat more impressive figure than it appears because the total general cargo tonnage figure includes certain commodities such as scrap iron and steel and bulk sugar which are generally handled in shiploads and not susceptible to containerization.

Our trade with Puerto Rico is 100% containership or trailership. The trade between the Port of New York and Northern Europe is probably at least 85% containerized or moving in combination container/ roll-on/roll-off ships. In the Mediterranean containerization is well advanced, accounting for probably half the traffic for the advanced ports in



Aerial view of the north side of Port Newark, with downtown Newark in background.



Five cranes working SL-7 Galloway at Port Elizabeth.

Spain, France and Italy. Break bulk predominates in the balance of the Mediterranean at the present time although this situation is changing. The Port of New York's trade with Japan is approaching 65% container with the advent of the joint service of the five Japanese flag lines. Five of their seven large fast vessels are already in service. American-flag service between our Port and Japan has been containerized for some time. Our trade with Australia-New Zealand is also very heavily containerized.

If there is one trend which should be obvious it is that container trade is the greatest with other developed countries and that it has been slower in its growth with the underdeveloped countries. However, containerization is also reaching out to many underdeveloped areas. Southeast Asia, including Taiwan, Singapore and Manila, is now getting direct container service, often via relay ships through central transfer points like Hong Kong.

Some feel that the future growth of containership service is going to be slow. I tend to feel the opposite; I feel that there are reasons to believe that it will continue to spread to almost all our trade routes. The reasons for my belief are (1) as a surplus of containerships becomes available because of the new, large and fast vessels being put into the Atlantic and Pacific trades, older vessels will be used by aggressive containership operators to open services to new areas both direct and by relay of containers through central relay points. Some of this is already happening. Sea Land and Seatrain have expanded their services from Puerto Rico to Jamaica and Santo Domingo and many other areas of the Caribbean. The second reason why I believe that containerization will take over in more trade routes is the high cost of longshore labor in the U.S. It is getting so that the cost of stevedoring of break bulk ships in the U.S. consumes such a large part of the total ocean revenue that operators will be driven to the use of containers with concomitant savings in stevedoring costs in the U.S. even though there is really no demand for labor cost reduction at the other end of the line, generally in underdeveloped countries. One area which we expect container development to come to is Brazil which is experiencing an unprecedented economic boom. Containership service between Great Britain and South Africa has already begun, and service to and from the U.S. is not far away.

As railroad men, you are undoubtedly vitally interested in our thoughts about the potential of the land bridge and the mini-bridge. The true land bridge refers to traffic moving between Europe and Asia via ships in the Atlantic and Pacific and using a cross North America rail movement. Mini-bridge refers to traffic between the West Coast of North America and Europe via transcontinental rail and Atlantic ocean movement through the East Coast; and also traffic moving between the Far East and the East Coast of North America via Pacific ocean service, West Coast ports and transcontinental rail movement. Rates for mini-bridge, for example between the West Coast port cities and Europe, are the same as the direct ocean rates published by the steamship conferences covering all water service. The same is true of mini-bridge between the East Coast and Japan. We are handling quite a bit of this traffic through the Port of New York. The Penn Central has been handling weekly trains in both directions and there have been movements also via the Erie Lackawanna and Lehigh Valley in connection with the Norfolk & Western. The make-up of the trains includes all three types of traffic.

As port authorities, we must necessarily look on the mini-bridge developments with mixed feelings. We have been handling a good many such shipments through our port and hope to handle more. However, what we have to gain on West Coast-Europe traffic moving through our port is more than offset with what we can potentially lose on East Coast-Japan movements particularly the large inbound movement from Japan.

What is the future of the land bridge? I know most railroad men are spending a lot of time on this problem. True land bridge between Europe and the Far East appears to me to have a limited growth potential. Fast containerships between Japan and the European North Sea ports are scheduling as low as 25 days by the Panama Canal. The best the land bridge can do with perfect coordination of ship arrivals and train departures and vice versa at both ends is about 21 days and for the bulk of the movement it does not appear to offer too much. The traffic which has been moving appears to be traffic which has been solicited on a non-conference basis by the steamship lines in an effort to fill out their Europe-U.S. ships which have been operating well under capacity. The recent action of the steamship conferences operating between Japan and Europe in declaring U.S. land bridge traffic on a non-conference basis to be a breach of contract which would lose shippers the benefit of their con-



Aerial view of Elizabeth—Port Authority Marine Terminal — Port Newark in background.



Aerials of Port Newark, Port Elizabeth.

ference deferred rebates could have a very serious effect on the growth of this traffic.

Mini-bridge has great potential yet there appears to be some limiting

factors. The mini-bridge tariffs of the steamship companies, in which the railroads participate, have Fourth Section Relief so that they will not apply at intermediate points.



This rare aerial photograph encompasses a vast area, beginning with the Newark Airport in the foreground, adjacent to Port Newark and Port Elizabeth facing the Newark Bay. In the background farther east is seen the Hudson River flowing from left to right into the Upper New York Bay. On the Manhattan Island are seen New York's skyscrapers represented by the 110-story twin towers of the World Trade Center.

Therefore, rates from Japan to say Rochester, New York, are based on combinations via New York piggyback-container yards. The new fast Japanese containerships-the latest of which, the KUROBE MARU of NYK Line, has attained a speed of over 30 knots-even at their cruising speed of 25 knots will provide 16 day service between the Port of New York and Japan. The railroad land bridge in connection with services through the West Coast ports can beat this by a few days but I am by no means convinced regular service can be offered which will divert any substantial part of the Far East-New York traffic. However, this is only guess work-or wishful thinking—and one man's guess is as good as another's.

We are very much interested in the multiple trailer and container rates which the New York railroads have published between our port and Chicago. Penn Central started the band wagon with 30 car, 60 trailer or container rates which were not suspended by the ICC but were placed under investigation. This was followed by a series of publications by other railroads of other 10 and 50 trailer rates between the same two points. All N.Y. railroads now have 10, 50 and 60 trailer or container rates. These rates offer considerable reductions below the going Plan  $11\frac{1}{2}$  rates. They are being utilized to some extent by the steamship companies and more generally by consolidators who are putting together the minimum offerings with a mixture of domestic and export/import traffic. This is a first important step on the part of the Eastern railroads in meeting the competition of the Canadian National and Canadian Pacific which provide multiple container rates between the ports of Halifax, St. John, Quebec and Montreal on the one hand and Toronto and Windsor on the other. These rates have diverted substantial quantities of U.S. Midwest cargo via Canadian ports, particularly in the Michigan area. More multiple container rates are needed, to and from other Mid-western points, and the sooner the better. However, since these rates are under ICC investigation, I presume some delay will be experienced.

We are also handling at the Port of New York substantial amounts of container traffic moving to and from Canada via piggyback ramps of the Penn Central and Norfolk and Western in the Niagara Falls-Welland area of the Province of Ontario. This is non-ICC regulated foreign-to-foreign traffic. Because of a quirk in the steamship conference agreements affecting those steamship lines operating between the U.S. North Atlantic ports and Europe, conference rates need not be observed when the traffic originates in or is destined to Canada. This is referred to as "third country traffic" and as a result New York's excellent containership schedules are capturing some business which might otherwise move through Canadian ports.

Of course, you can't have it both ways—and the steamship lines serving Canadian Atlantic ports are selectively soliciting and getting traffic in the American Midwest on exactly the same "third country" basis. And I fear they are getting a lot more U.S. traffic than the U.S. ports are getting to and from Canada !

Most container traffic moving through the Port of New York is handled on wheels, piggyback, with the exception of land bridge and minibridge which is all C.O.F.C. C.O.F.C. can be handled at most of the piggyback yards in the New York area, including the two yards adjacent to our Port Newark-Elizabeth container terminals.

If I could make a sort of muted commercial, I would like to answer the unasked question "Why New York?" Why should the New York-New Jersey port be utilized rather than other East Coast ports on international container movements? Some of the reasons have been mentioned already—the facilities are here. But in addition the factor of steamship service makes New York the logical port for rail business. For example:

1. The new fast Sea-Land SL-7 vessels make New York their only U.S. port. All the outports are served by feeder vessels with transshipment at their Port Elizabeth terminal. This is called "relaying." Seatrain and some other companies serve New York

## Lighterage in Developing Countries-Outdated or Indispensable?

by

G. Wekesa, Chief Traffic and Commercial Manager, East African Harbours Corporation and R. Leach and N. W. Lewis, McKinsey & Company, Inc., International Management Consultants

The picture of port working throughout the world today is a mixed one. Whereas in most major ports in the developed countries virtually all cargo is now worked alongside, ports in developing countries often retain a significant proportion of lighterage working. The reasons for this are largely economic. Thus the majority of ports start their life using lighters working directly onto the shore, since

as first port in from Europe, and last port out, serving the other U.S. ports in between the New York calls.

2. New York has many more sailings, and more direct sailings without intervening ports of call on this side of the ocean. For example, we recently made a survey of service during May 1972. Outbound to Rotterdam, New York had 38 sailings that month, 25 were last port out. Inbound, for import traffic, 31 of 34 ships made New York first port of discharge. Baltimore had 23 sailings; only 2 were last port out. Hampton Roads had 17, 7 were last port out. To Gothenburg, Sweden, we had 13 ships, all were last port out; 12 were first port in as well. Baltimore had 8 ships, all stopped at another port before departing overseas. In the Mediterranean, we had 28 sailings to Genoa; 16 were direct. Baltimore had 11 sailings, none direct. You can go

this is the method of working that requires least investment at the outset. Then, as the development of a country proceeds, and the cost of labour rises, the provision of deepwater berths for alongside working becomes more attractive economically, and port managements take the decision to start the swing away from lighterage.

The general opinion about making this switch is that it should be

right through the list of world ports and most of the time New York has more ships, and faster overall service, both inbound and outbound. New York calls are never skipped because of schedule difficulties since there is such a large nucleus of traffic in the immediate hinterland of 15,000,000 people.

3. Headquarters of most Americanflag lines serving New York are right in the area, as well as chief agencies of foreign-flag lines. Closer supervision of the intermodal interchange is possible.

I would be remiss if I didn't say, in this company anyway, that we have some fine (if indeed hard up) railroads providing excellent TOFC-COFC service via our port. They can and do perform, and what's more they can sure use the business.

#### Thank you

#### (Photographs courtesy of The Port Authority of New York and New Jersey)

accomplished as quickly as possible. Managements of many ports in developing countries are therefore now asking themselves how rapidly they should-and could-complete the switch, especially in view of the continuing increases in labour costs. But this is only part of the question. They must also decide whether the switch should be complete or whether, in fact, some mix of lighterage and alongside working might provide the best answer, at least for some years to come. The problem is particularly complicated in situations where future traffic levels are difficult to predict, or where seasonal or other characteristics make traffic levels variable

To explore this question we considered the situation of a typical port in a developing country, namely Dar es Salaam in Tanzania. Dar es Salaam is one of a group of ports belonging to the East African Harbours Corporation (a Corporation of the East African community, which includes Uganda, Kenya, and Tanzania). It handled 2.8 million tons d.w. in 1971, and has eight alongside and up to eight stream berths in use. Traffic in and out of the port has grown rapidly since 1965. Imports have increased by 1.1 million tons (178 per cent) and exports by 0.7 million tons (228 per cent). Of these figures 0.2 and 0.4 million tons are Zambian traffic, which has flowed increasingly through Dar es Salaam since Rhodesia's UDI. Moreover, materials for the new Tanzania-Zambia railway rose from nothing in 1965 to about 0.4 million tons in 1971. Naturally, the number of ships visiting has also increased, and as a result the number being worked at any one time has risen, both alongside and in the stream.

The results of our analysis in this port indicate that, depending on precise local circumstances, lighterage should play an important role in the ports of developing countries for many years.

Before explaining this conclusion in detail, let us look at the main characteristics of alongside and lighterage working.

#### LIGHTERAGE VERSUS ALONG-SIDE WORKING IN GENERAL

The operational features of the two methods of working differ substantially, and these differences are reflected in their economic profiles. The following sections first compare the two methods under these two headings, and then consider the main factors influencing the choice between them.

#### **Operational Features**

Of the two ways of working cargo between ship and shore, alongside working is generally the simpler from an operating standpoint. The ship is brought alongside a quay provided with a depth of water sufficient to accommodate it. Cranes (or other gear) on ship or shore are then used to transfer the cargo over the ship's rail, usually with one 'ship gang' and one 'shore gang' for each crane.

In contrast, lighterage working is operationally more complicated. The ship is anchored in the stream, the cargo is handled by ship's gear between ship and lighter, the lighter carries the cargo between ship and shore, and then the cargo is handled again between lighter and quay by cranes on shore. This double handling of lightered cargo typically entails twice as many gangs as alongside working, and often gives rise to a higher incidence of cargo damage. In addition, further labour has to be provided to move lighters and cargo-handling workers between ship and shore at intervals throughout the day.

As a result of these different operational characteristics, the economic profiles of the two methods of working also differ substantially.

#### **Economic Profiles**

The basic economic difference between the two methods of operation is that alongside working is capital intensive and lighterage working labour intensive.

1. Alongside working. The capital cost of providing alongside berths with a depth of water sufficient to accommodate the draught of ocean-going vessels can be high. The exact amount involved depends on the characteristics of the

particular port; in some cases it is a relatively simple matter to build quays a small distance out on a steeply shelving solid bed, while in others dredging or even blasting may be needed to provide the required depth of water at the appropriate point and expensive 'locking' facilities may be needed because of tidal range problems. However, offsetting the high capital cost of alongside working is the relatively high labour productivity that should stem from single-as contrasted with double-handling of cargo.

Another important—but this time disadvantageous—feature of alongside working is that if the anticipated level of traffic fails to materialize only a small proportion of the costs can be avoided, since berths cannot be moved to a new location, and the labour costs are a relatively small proportion of total costs.

In summary, alongside working is an efficient method of handling regular, predictable flows of cargo, but because the greater proportion of cost is fixed, the cost per ton rises rapidly if total traffic falls, as illustrated in Exhibit 1.

2. Lighterage working. The economic profile of lighterage working differs in several important respects. First, it requires relatively low capital expenditure, since (a) the depth of water required at the quays need be only sufficient to accommodate lighters and (b) the first cost of lighters and associated tugs is relatively low. Second, its labour content is high, not only because cargo is double handled, but also because both the lighters themselves and the necessary ancillary launches must be operated and maintained. A relatively large proportion of total costs is escapable, however, if traffic falls below expected levels, since the most important element of cost (labour) can be reduced; moreover, lighters, tugs and launches can sometimes be transferred to other ports. Because of these high variable costs, cost per ton for high traffic levels is typically greater than for alongside working, although it does not increase so much if traffic levels fall. This is illustrated in Exhibit 2.

As far as indirect ship costs are

concerned, turnaround times, the most important determinant of these, are unlikely to differ substantially between the two methods. Although tons per gang shift may be somewhat higher for alongside working with some cargoes, more gangs per ship can often be used with lighterage since both sides of the ship can be worked simultaneously. Moreover, queuing time, if any, will be the same for both methods if total tons/ day capability is the same.

### Factors Influencing Choice of Alternatives

In certain circumstances there may be overriding reasons why one of the alternative methods of working is to be preferred. For example, if onward transportation by waterway is envisaged, use of suitable barges is obviously attractive since alongside working would call for twice as much cargo handling instead of half as much.

Excluding such special considerations, the best planning decision on whether to accelerate the switch to alongside handling or to continue to provide a proportion of port capacity by lighterage follows from the operational and economic characteristics outlined above. This decision depends on a number of factors that vary from port to port. Specifically, lighterage is more suitable where:

- Traffic forecasts are subject to high uncertainty. Since maximum port capacity is likely to be significantly higher than actual traffic, some of the port's facilities will be underutilized. For these facilities, lighterage, with its advantage of having costs that are largely escapable, is the more attractive.
- Labour cost is low. Since lighterage requires substantially more labour than alongside working, it is likely to be more attractive where labour costs are low than where they are high.
- Capital is scarce. Owing to its low capital investment, lighterage is relatively attractive where funds are difficult to find or are expensive. In particular, where such funds would have to be provided in a scarce foreign currency, the difficulty of repaying princi-

pal and interest in that currency further favours lighterage.

- Few gangs can work simultaneously on one ship. Where the number and dimensions of hatches to be worked restrict the number of gangs that can be deployed or greatly reduce the cargo-handling rate, alongside working becomes uneconomic because of the poor resulting utilization of the expensive resource, the berth. Thus lighterage is favoured by these conditions.
- Future technology is uncertain. Many ports that have historically provided cargo-handling services using lighters are developing their modernization plans at a time when the technology of cargo transportation is evolving rapidly. Where there is doubt, for example, regarding the likely time scale and method to be used in unitizing a major trade, it could be advantageous to continue with low capital cost lightterage until the likely shape of future shipping patterns becomes clear.

Many of these conditions typically apply in developing countries. Our analysis for Dar es Salaam aimed therefore to determine broadly whether there was still a role for lighterage in that port, and if so how great it should be, or whether port management should move as rapidly as possible with the conversion to alongside working.

This analysis examines the main economic considerations and reaches broad conclusions. Preparation of detailed development plans, however, obviously requires consideration of other factors such as availability of suitably experienced staff, anticipated ship and cargo characteristics, and opportunities to absorb or redeploy equipment at other ports. Thus the conclusions reached illustrate the general economic picture, but each individual port must make a detailed study of its own situation before finalizing its development plans.

#### LIGHTERAGE VS. ALONGSIDE WORKING AT DAR ES SALAAM

The starting point was to define the task for the port over a reasonable number of years ahead; it was therefore necessary to begin with traffic forecasts. Next, estimates were made of the likely capital and operating costs of providing the same cargo-handling capacity by the two methods; reasonable assumptions were made about resources required, equipment costs, and work rates. It was then possible to assess the costs involved in providing for the forecast levels of traffic by means of alternative mixes of lighterage and alongside working.

It was not necessary to consider whether shipowner preference for either cargo-handling method might dictate choice of port, since other considerations —e.g., political or hinterland communications — normally limit this choice.

#### Traffic Forecasts

Port management arranged for a study to be made of probable levels of traffic for each year from 1970 to 1980, including 'minimum,' 'likely,' and 'maximum' levels. The results of the survey indicated substantial uncertainty in future traffic volumes with present forecasts ranging for example from 1.9-2.8 million tons in 1975 with a most likely figure of 2.3 million tons. The reasons for the wide spread of these forecasts include:

- Export traffic from developing countries such as Zambia, Zaire, and Tanzania depends greatly on terms of trade, which can and do vary considerably.
- Imports to such countries are also variable, since they have to be paid for out of export earnings.
- Zambian goods  $\operatorname{can}$ flow through several other ports as well as through Dar es Salaam. Indeed, these other ports are the traditional outlets from Zambia to the sea, and have been superseded largely for political reasons. Thus, not only does this mean that political factors can heavily influence traffic through Dar es Salaam, but also that shortterm fluctuations in volume can be exaggerated where agreements have been made to route agreed minimum tonnages through other ports.

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• Timing of completion of the Tanzania—Zambia railway was uncertain, affecting both the flow of Zambia cargoes and the movement of materials for the construction of the railway.

#### Assumptions

Realistic assumptions were made regarding the requirements for equipment and labour that would be needed to work the existing lighter quay at Dar es Salaam smoothly, and to work a typical alongside berth. The associated rates of working were also assessed. In this way the cost and ton/day characteristics of a lighterage quay and a typical alongside berth could be found, as illustrated below.

From these, the figures could be scaled to a standard capacity (arbitrarily chosen) of 1,000 tons/day for each method, to establish what costs would arise in each case and thus provide a proper basis for deciding the appropriate scale for each method of operation.

1. Lighterage. The general view of management is that, for good working conditions, the existing Dar es Salaam lighterage quay would require

- —56 lighters
- -8 lighter tugs
- -4 stream berths
- -4/4/2 gangs per ship (first/second/third shifts), each gang being
  - 5 men on shore
  - 4 men in lighter when at quay
  - 6 men when at ship
  - 8 men in hatch
- ---50 tons per gang shift for imports
- —70 tons per gang shift for exports
- —Import and export measurement tonnages equal.

The associated capital costs were taken as:

- -New cost of one lighter
  - US \$30,000
- -New cost of one lighter tug US \$90,000
- -New cost of motor boats Negligible
- -New cost of lighter quay (half existing wharf shared with dhows

and coaster) US \$3.5 m.\* ---New cost of stream berth Negligible

2. Alongside. For broadly comparable working conditions, equivalent assumptions for a typical alongside berth at Dar es Salaam would be

- -5/5/3 gangs per ship (first/second/third shifts), each gang being
  5 men on berth
- J men on berth
- 8 men on ship
- -60 tons per gang shift for imports -75 tons per gang shift for exports
- -Import and export measurement tonnages equal.

Associated capital costs would be: --Cost of new alongside berth

US \$5.0 m

3. Operating costs. For both lighterage and alongside working, cost of cargo-handling labour is taken as US\$0.6 per man-hour or US\$4.85 per man-shift. This includes an element to cover supervision and fringe benefits.

For lighterage, marine costs—i.e., lightermen, lighter tug crews, motorboat crews, and fuel—are assumed to be US\$260,000 per annum.

4. Other assumptions. The following further simplifying assumptions have been made for the purposes of this illustrative analysis.

- -Cranage costs for lighterage and alongside working are equal. Since lighterage cranes are typically less costly than those provided for direct working of ships this assumption favours alongside working.
- -Costs of maintenance of quays, lighters and tugs are excluded since these costs are normally small compared with direct labour and other costs (e.g., maintenance costs in Dar es Salaam are less than 5 per cent of total ship working costs).
- ---No allowance has been made for possible higher levels of cargo damage or loss with lighterage than with alongside working, since this factor is unlikely to have a significant effect on the overall comparison.
- -No allowance has been made for possible withdrawals of labour; any events of this kind will favour lighterage owing to its larger proportion of escapable costs.
- -All types of ships and cargo are

assumed equally susceptible to both methods of working. In practice long-run cargoes tend to be well suited to lighterage and general mixed cargo to alongside working. These broad considerations influence the allocation of individual ships to berths, where both types are available, but are unlikely to affect greatly the best mix of lighterage and alongside facilities for the next 5 years in a port such as Dar es Salaam.

### Evaluation of Lighterage And Alongside Working

With these assumptions it was possible to calculate the capital and operating costs of providing a given capacity by either method. These calculations are outlined in the appendix, and lead to the following figures for a capacity of 1,000 tons/ day.

#### • Lighterage

- -Capital cost: US \$2.37 million, of which \$1.42 million consists of items such as the lighter quay that could not be transferred to other ports in the event of major changes in traffic levels.
- -Operating cost: US \$2,180 per day.

#### • Alongside

-Capital cost: US \$5.53 million. In this case none of the facilities could be moved to other ports in the event of loss of traffic.

—Operating cost: US \$935 per day. From these figures the total cost of meeting Dar es Salaam's 'minimum,' 'likely,' and 'maximum' traffic forecasts in 1975 with different mixes of lighterage and alongside working can be compared. The results of these comparisons based on 340 working days per year are set out in Exhibits 3, 4 and 5, which are explained below.

Exhibit 3 illustrates how the total cost of meeting the three traffic forecasts for 1975 is affected by the mix of lighterage and alongside working adopted. A 50-year capital recovery period is assumed, and interest on capital is taken as approximately 8 per cent per annum. Furthermore it is assumed that,

<sup>\*</sup> Based on estimated capital cost of the lighter quay at £0.75 million per 600 feet.

given the option, management will always choose to underutilize lighterage rather than alongside facilities. In this exhibit, it is also assumed that unused lighters and other equipment cannot be gainfully redeployed elsewhere. The exhibit illustrates that, at the 'likely' traffic level, 20 per cent lighterage/ 80 per cent alongside is the most economic mix, and that this is only slightly less economic than other mix options even at the 'minimum' and 'maximum' levels. Thus, on the basis of these assumptions, 20 per cent lighterage appears to be the right amount to provide.

Exhibit 4 shows the effect on making slightly different assumptions-i.e., a capital recovery factor of 10 per cent, and gainful redeployment of one quarter of available lighters, tugs and other equipment in the event of traffic levels falling below expectations. The 10 per cent capital recovery factor can be regarded as interest at 8 per cent with the recovery period reduced to 20 years, or simply as reflecting in part the scarcity of 'hard' currencies in developing countries. The exhibit shows that with these assumptions 20 per cent lighterage remains attractive, though closer scrutiny reveals that 40 per cent lighterage is only slightly worse-in fact, the best mix in this case lies in the region of 25 per cent lighterage.

Exhibit 5 makes the same assumptions as Exhibit 3, except that labour costs have been raised by 30 per cent. Even in these circumstances, approximately 15 per cent lighterage remains desirable.

In summary, our analysis confirms the generally held view that lighterage is a more costly way of handling cargo than alongside working when facilities are fully utilized. However, because lighterage is labour intensive and alongside working capital intensive, lighterage can become the cheaper solution when the level of utilization falls.

Consequently, where 'maximum' and 'minimum' forecasts differ significantly, it is generally most economic to provide for much of this difference by means of lighterage, while using alongside working to cover fully the 'minimum' forecast level. At Dar es Salaam, for example, lighterage should continue to play an important role.

Conclusions for other ports could differ, if port, traffic, and economic characteristics are very dissimilar, but in general the broad conclusions for Dar es Salaam should apply to other ports in developing countries.

September 26, 1972

#### APPENDIX

Comparison of Capital and Operating Costs of Lighterage and Alongside Working To Provide 1,000 Tons/Day Capacity The lighterage operation would have

Capital cost

- -56 lighters at US \$28,600 each =US \$1.60 million
- ----8 lighter tugs at US \$86,000 each =US\$0.68 million

-Lighter quay

=U\$\$3.42 million US \$5.70 million, of which US \$3.42 million is physically tied to one location

Operating cost

 $-4\times(4+4+2)$  gang shifts, each of 23 men

=920 man shifts per day

-920 man shifts per day at

- US \$4.85/man shift =US \$4,470/day
- -Marine costs US \$263,000/annum (assumed to be spread over 340 days)

=US\$780/day

US \$5,250/day

These resources can handle a tonnage of

$$4 \times (4+4+2) \times \{\frac{50+70}{2}\}$$

=2,400 tons/day

Thus, scaling the operation for 1,000 tons/day capacity gives

Capital cost:  $\frac{1,000}{2,400} \times 5.70$  million

=US \$2.37 million, of which US\$1.42 million is physically tied to one location

Operating cost: 
$$\frac{1,000}{2,400} \times 5,520$$

## The equivalent alongside operation would have

Capital cost

- -1 alongside berth
  - =US \$4.85 million, all physically tied to one location

Operating cost

- -(5+5+3) gang shifts, each of 13 men
  - =169 man shifts/day
- —169 man shifts/day at US \$4.85/ man shift

=US\$820/day

These resources can handle a tonnage of

$$(5+5+3) \times \left\{\frac{60+75}{2}\right\}$$
  
=877 tons/day

Thus, scaling the operation for 1,000 tons/day capacity gives

Capital cost: 
$$\frac{1,000}{877} \times 4.85$$
 million

=US \$5.53 million, all physically tied to one location

Operating cost:  $\frac{1,000}{877} \times 820$ =US \$935/day

> Exhibit 1 WITH ALONGSIDE WORKING, COST PER TON IS LOW AT HIGH UTILIZATION, BUT RISES RAPIDLY AT LOW UTILIZATION.



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WITH 10 PER CENT COST OF CAPITAL AND ONE QUARTER OF UNUSED LIGHTERS, ETC. REDEPLOYED, APPROXIMATELY 25 PER CENT LIGHTERAGE IS MOST ATTRACTIVE .....





Exhibit 3

WITH 'MOST LIKELY' TRAFFIC LEVELS, 20 PER CENT OF LIGHTERAGE GIVES LEAST TOTAL COSTS ....





WITH 8 PER CENT INTERISE ON CAPITAL, EVEN 30 PER CINT RISE IN LABOUR COSTS WILL NOT FAVOUR ELIMINATION OF LIGHTERAGE .....



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Exhibit 4

Exhibit 5

## Mozambique Harbours Development Plans for '72-'76

Publicity Department—Mozambique Harbours, Railways and Transport Administration

Lourenço Marques, Mozambique

#### I. General Policy

During the last days of April, at a meeting of the Legislative Council for Mozambique, the Governor-General, Engineering Pimentel dos Santos, dealt with the governmental programme for the next 4 years.

In regard to the "General Harbours Policy of Transports", the following actions were indicated:

1. Creation of the state Transport Council;

2. Structure of a rational tariff system which would contribute to the distribution of traffic to more convenient means of transport from the point of view of the interests of; Mozambique;

3. Progressive directing of traffic according to the actual object of each means of transport.

We now see Chapter VIII—"Policy of Fluvial and Maritime Transport":

1. Commence the construction of the ocean terminal at Ponta Dobela for ore carriers and tankers of over 150,000 tons;

Extend the Beira wharf by 330 metres and reconstruct berths 2 and 3 of that port;

3. Commence the construction of the ocean terminal for ore carriers at Nacala;

4. Construct fishing ports, especially at Lourenço Marques, Inhambane, Beira and Quelimane;

5. Re-equipment of boats for port services, such as tugs, dredgers and launches;

6. Carry out small port works at Palma, Lake Nyassa, Nacala, António Enes, Quelimane, Beira, Macuse and Inhambane;

7. Promote the installation of ship repair and ship building yards;

8. Promote the reframing of coastal traffic by the use of appropriate ships and the establishment of

tariffs which are both lucrative and competitive;

9. Make better use of river and lake transport for persons and goods,

especially at Lake Nyassa and on the Zambeze River.

#### II. Port of Lourenço Marques Projects

We have important improvements at present under way.

The main one is the extension to the main wharf of more than 600 metres with a minimum depth of 12 metres, consisting of 3 new berths, one of which is destined for container traffic; this job should be concluded at the end of this year but, in the meantime, the first 300 metres are in provisional use.

The port of Lourenço Marques



#### HARBOUR AND RAILWAY NETWORK



PORT AMELIA, one of the secondary ports of Mozambique handled in 1971 137 477 metric tons of cargo.



PORT OF NACALA—Third in importance in Mozambique, handled in 1971 654 603 metric tons of cargo from 371 vessels. This port is undergoing an expansion program of an extension of 165 metres wharf with depths up -7.50 m and 408 metres wharf for -15 m depths, to be completed in mid 1974.



PORT OF NACALA: Berths presently two-to-three deep-sea vessels, is equipped with 12 ship loading cranes with a lift capacity up to 20 tons.

could not remain blind to the evolution of the most modern systems of transport and handling of cargoes. Therefore, the last 300 metres of the new wharf and its ample stacking grounds have been earmarked for container traffic.

The area of the available grounds (about 11 hectares) will allow for the special installation for containers to be one of the largest in the world. This traffic is of main interest to South Africa, where forwarding firms already intend to establish their position with a view to the future and including Lourenço Marques in their circuits.

Next in importance is the construction of tanker jetty and the mineral wharf, 2 being for timber ships (minimum depth 10 metres) and 1 for tankers up to 40,000 tons deadweight (minimum depth 12 metres). This moorage will permit increased cargo tonnages from tankers which supply Lourenço Marques, but is still far from accompanying the increase in the size of this class of vessel.

Finally, one must refer to the construction of terminals for the future ferry boat services between the two banks of the Estuary, constituted of floating metallic pontoons joined to the land by passageways of access. This improvement is significant for its urban interest and for what it represents in increasing the value of the territory to the south of Lourenço Marques.

Besides these 3 improvements in the course of materialization, others have been planned or are being investigated.

In the first place is the tender for the increase of the sugar warehouses by an additional 60,000 tons.

As to cereals, talks are being held with interested parties in Rhodesia, which may lead to the construction of a large silo in Lourenço Marques.

Besides this, the Group which appears to be interested in ship repair yards at Nacala also have Lourenço Marques in their plans and preliminary geological investigations are being made.

Finally, an Oil Company intends increasing its tank capacity within Portuguese territory, near the Matola refinery.

This mere mention of the project, from those which are on the verge of conclusion up to those which are only in the preliminary phase, shows that Lourenço Marques is a port in true progress in all aspects and that the Port Administration keeps in close contact with all requirements with a view to giving them a solution which meets the necessities of the interested parties.

#### The Master Plan of the Port

The constant development of the port follows a master plan to enable the planning of its expansion on a long term policy, greatly so in respect to the entrances to the port which, at the National Laboratory of Civil Engineering in Lisbon, has under preparation its study by means of a miniature hydraulic model.

The master plan of the port allows on the left bank (Lourenço Marques side) for the expansion of the port by means of docks at the Infulene shallows; on the right bank, to take advantage of the extensive marginal shallows. The area involved for the expansion of the port (2,560 hectares) is so vast that only the land part reaches to some 26 square kilometers, which even allows for the inclusion of the space necessary for the instalment of a vast industrial complex connected with port activities, where doubtless a large ship repair vard could be installed.

#### **Final Considerations**

The part of Lourenco Marques is, in Mozambique, the most important and the one which has better and more sure prospects at short notice, due to its characteristics and its favourables position relative to the important ore-bearing regions in the interior served by it.

However, as an ore loading port, it has its capacity limited by its accesses in such a way that it is considered that the largest advisable tonnage is about 100,000 TDW, today already insufficient for the world market for ores.

It is, therefore, thought to complement this with an offshore installation especially for bulk loaders, which will allow Lourenco Marques to maintain her position which she has held in the group of ports in Southern Africa, which problem will be the object of the chapter which follows.



PORT OF QUELIMANE—River port of Mozambique serving a vast agricultural hinterland; in 1971 handled 249 722 metric tons of varied cargoes.



**PORT OF QUELIMANE**—Equipped with cranes and other wharf mobile equipment; main shipping exports are tea and agricultural products.



PORT OF BEIRA



The PORT OF BEIRA, second in importance in Mozambique, handled in 1971 3 469 014 metric tons of varied import and export cargo to and from 1112 merchant vessels.



PORT OF LOURENÇO MARQUES

Ocean Terminal for Vessels of Large Tonnage Annexed to the Port of Lourenço Marques

Towards the middle of 1969, it was decided that the investigations should be extended to cover an installation for large ore carriers, which would then substitute the mineral wharf at Matola for iron ores, and serve also for coal and phosphates, the immediate potentialities of which seemed enormous. It was still thought to find a locality within the Bay, thus sheltered from the storms of the open seas.

Of the localities in mind, the one which seemed to offer the best conditions was to the west of the Ilha dos Portugueses and of Inhaca. But this locality which, at first, with its 50 to 60 feet of water appeared satisfactory for the purpose, would only permit, at enormous expense, the entry of ships in the 100,000 to 150,000 tons deadweight range, a limit insufficient to maintain Lourenço Marques as the port for the large tonnages of ores which the possibilities of the neighbouring nearby areas in South Africa, Swaziland and Rhodesia offered. The difficulties are increased by the necessity to lay to the place a pipe-line and, even more, a railway line, an item which, even today, is in most cases indispensable to connect to solid ground when dealing with installations for handling ores.

The evolution of the investigation of the problem soon caused the suggested solution of the Ilha dos Portugueses to be abandoned and, in place thereof suggested a new and definite step on the road to the sea: a terminal to be situated on the open sea between Ponta do Ouro to the south and the mouth of the Limpopo river to the north of the Bay of Lourenço Marques. The first aerial survey made with a view to finding an appropriate place for the desired installation was in September, 1969, and was made over that section of the coast. Since then, it has appeared that the most favcurable site is a section to the south of Lourenco Margues, which will have the additional advantage through its proximity to the railway branch line of Umpala to Salamanga which is approaching completion.

The first surveys having been made and the decision taken to free Lourenço Marques of the obstacles imposed by the channels of access, negotiations were commenced in January, 1970, with a specialized firm for the planning of the new port and installation for multiple purposes, especially for the handling of coal, iron ore, and possibly phosphates, serving vessels up to 300,000 TDW.

#### Investigations Under Way

It was also calculated that 2,500,000 tons of oil would be discharged at the installation and that the one at Matola would handle more valuable ores and those exported in lesser tonnages such as chrome, manganese and fluorspar.

The investigations were divided into two distinct parts: "Practicability of the port (berth availability)" and "the technical-economical study (feasibility study)".

## **Progress of Port Development**<sup>\*</sup> in India

Reprinted from Indian Shipping, May, 1972

The year under review marks the completion of two decades of national planning in our democratic set up. The foreign trade of the country has increased from Rs. 2,682 crores (in terms of post-devaluation rupees) to Rs. 3,160 crores in the two decades. Our exports have increased by 33-1/3 per cent in terms of value from Rs. 1,154 crores to Rs. 1,535 crores. The traffic handled at the major ports has increased during the years from 22 million tonnes to 55 million tonnes annually-an increase of 150 per cent. The pattern of exports has also changed to the national advantage. New items of export based on the fast industrialization of the country, such as engineering goods and other manufactures, have registered a significant rise.

The ports play a dominant role in our export trade as 95 per cent of the exports are despatched by sea. At present, the port industry also provides direct employment for over 2 lakhs of persons. In keeping with the prominent role played by the ports in the country's foreign trade and their high employment potential, investments in ports during the two decades of planning have increased appreciably. The total outlay on major ports during the first three Plans and the three annual Plans between the Third Plan and Fourth Plan was Rs. 254 crores. The facilities completed during this period were the two new major ports at Kandla and Paradip, the marine oil terminal at Butcher Island, Bombay, iron ore handling facilities at Visakhapatnam and Paradip, commissioning of a six-berth wet dock at Madras, four general cargo berths in the Ernakulam Channel at Cochin, two additional general cargo

berths, two oil refinery berths and a fertilizer berth at Visakhapatnam and extensive dredging and river training works at Calcutta to maintain the navigability of the River Hooghly.

#### Fourth Plan Programme

The approved physical programme for the development of major ports during the Fourth Five-Year Plan was estimated to cost Rs. 280 crores. The programme for the development of major ports includes the completion of the Tuticorin and Mangalore Harbour projects, the completion of the Haldia Dock Project, the undertaking of the corrective works in the Bhagirathi-Hooghly river system with a view to reaping optimum benefits from the Farakka Barrage, the Dock Expansion and Ballard Pier Extension Schemes at Bombay, the construction of the satellite Port for Bombay at Nhava Sheva, the completion of the Outer Harbour consisting of the Oil Dock and the Ore berth at Madras, the construction of an Outer Harbour at Visakhapatnam to cater to iron ore exports, the establishment of an Oil Dock at Cochin to handle deepdrafted oil tankers bringing crude oil for the Cochin Refinery, the commissioning of the fifth berth at Kandla Port, the development of ore handling facilities at Mormugao and the improvements to the ore handling plant and the construction of a general cargo berth at Paradip. Provision has also been made in the Fourth Five-Year Plan programme for augmenting the Central Dredger Pool to cater to the dredging needs of the country. A total expenditure of Rs. 151.81 crores will have been incurred on the development of ports during the first three years of the Fourth Plan period representing about 59 per cent of the provision of Rs. 260 crores for the Fourth Plan. An investment of Rs. 86.10 crores is envisaged for 1972–73. Mid-term Appraisal of Fourth Plan

Towards the end of 1971, a midterm appraisal of the development of port programmes under the Fourth Plan programme was undertaken by a Working Group, set up by the Ministry of Shipping and Transport comprising the representatives of the major ports and the concerned Ministries and the Planning Commission. The following criteria were adopted in the appraisal:

- (a) First priority should be accorded to projects;
- (b) In the selection of individual schemes, greater emphasis should be placed on exportoriented schemes;
- (c) No new scheme should be taken up unless it is vitally connected with the operational requirement of the concerned port; and
- (d) A close review should be made of the requirements of building in view of the pronounced scarcity of steel and demands on internal resources except at certain ports where the housing problem is very acute.

As a result of this appraisal, the Ministry decided on a step up in the investment from Rs. 260 crores to Rs. 304 crores to increase the tempo of development schemes, more particularly the export-oriented projects. Table I compares the total outlay envisaged in the beginning of the Plan and the total outlay now required during the Fourth Plan period:

#### Trend of Traffic

A statement indicating the commodity-wise and port-wise traffic for the years 1968-69 to 1970-71 juxtaposed with the projection made for the year 1973-74 is at Table II. It will be seen that the total volume of traffic handled at major ports has been more or less steady around 55 million tonnes since the commencement of the Fourth Five-Year Plan. There have, however, been significant shifts in the traffic pattern. Exports have registered increases, the most significant increase being to iron ore exports (30 per cent). Analysing the situation port-wise, it is found that the traffic in Madras, Mormugao and Paradip has shown

<sup>\*</sup> Extract from the Report of the Ministry of Shipping and Transport, Government of India, for 1971-1972.

an upward trend (due mostly to bulk cargoes) while a decline was evident in the ports of Calcutta, Bombay, Cochin and Kandla, due to fall in foodgrains and general cargo traffic.

During the year 1971–72, the major ports have handled in the 10 months upto the end of January 1972 a total traffic of about 48.45 million tonnes as compared to 45.68 million tonnes for the corresponding period of 1970–71. There is thus an indication of upward trend in traffic during the year 1971–72.

The change in the traffic pattern necessitated a review of the investment decisions, particularly those relating to cranes and civil works at general cargo berths, existing or proposed. This factor was duly taken into account while making the mid-term appraisal in order that investments on general cargo berths took into account the falling trend.

#### Projects under Execution

A brief description of important projects under execution at the major ports is given below:

Haldia Project—Calcutta Port: The project, the revised estimated cost of which is Rs. 53.48 crores (Phase I), envisages the construction of six berths within an enclosed dock, consisting of a coal berth, ore berth, fertilizer berth and a general cargo-cum-container berth, a berth for handling heavy lifts and a system to cater to the requirements of the oil tankers. The oil jetty was commissioned in August 1968. The construction of the dock system is in progress, and is expected to be completed by about the end of 1973. The ore and coal loading plants for mechanical handling of these commodities are being fabricated by the Mining and Allied Machinery Corporation (MAMC) Durgapur. Seven 650 HP broad-gauge locomotives have already been procured from the Chittaranjan Locomotive Works. Orders for transporter cranes and container cranes have been placed. Four dock tugs and one tug-cum-fire float are being manufactured by Garden Reach Workshops, Calcutta. As regards erection of various electrical equipments and accessories, work is in progress. A contract for the construction of a second estuarian dredger has been awarded to Garden Reach for dredging in the channel between Haldia and the sea to enable deepdrafted vessels to come to Haldia. Road and temporary railway connections to work sites and important points have been mostly completed.

 Table I Financial Outlays for Major Ports Development—Mid-term

 Appraisal of Fourth Plan Requirements.

	1		(	Rupees in crores)
	Ports	Original Outlay	Mid-term Estimate	Present Requirements
1.	Calcutta	5.86	6. 30	4. 39
2.	Haldia Project	40.00	70.00	50.00
3.	Bhagirathi-Hooghly River Training Works	8.00	10.80	5.00
4.	Bombay	48.14	145.17	25.62
5.	Madras	20.84	57.17	36.00
6.	Cochin	17.89	45 23	18.00
7.	Visakhapatnam (Inner Harbour)	16.65	34.19	16.86
8.	Visakhapatnam (Outer Harbour)	35.00	49.81	40.00
9.	Kandla	9.45	18.69	9.00
10.	Mormugao	22.00	42.16	32.00
11.	Paradip	14.00	20.50	17.00
12.	Mangalore Harbour Project	16.00	24.29	18.00
13.	Tuticorin Harbour Project	17.00	32.49	22.00
14.	Central Dredging Organisation	9.00	10.01	10.01
	Total	279, 83* (280)	566.81 (567)	303. 88 (304)

\* As against the outlay for which the physical programme for the Fourth Five-Year Plan was approved, the actual outlay for the Plan period was imited to Rs. 260 crores.

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An estimate for provision of fully mechanized plant for handling fertilizers including raw materials at the exclusive fertilizer berth has been sanctioned. Construction of residential quarters, work of drainage, water supply, etc. are in progress.

Bhagirathi-Hooghly River Training Works: It has been found necessary to undertake certain corrective works in the Bhagirathi and the Hooghly suitably phased over a period of years so that the full benefits of the Farakka Barrage Project could be derived by the Calcutta Port Commissioners for the Hooghly river system. While the Commissioners would be the executive agency for carrying out all these works, it had been decided that the entire capital cost of the works should be borne by the Government of India. The project is estimated to cost Rs. 10.83 crores. An estimate amounting to Rs. 8 crores was sanctioned by Government in October 1971. The Calcutta Port Commissioners have already started the work and an expenditure of about Rs. 1.78 crores was incurred upto 31st March, 1971.

The financial position of the Calcutta Port Commissioners continued to be a source of concern in spite of the Government of India having agreed to bear 50 per cent of the expenditure on river dredging and river maintenance from 1968-69. This has been mainly due to decline in traffic, heavy debt liabilities and various concessions granted to employees from time to time. In order to afford further relief to the Port Commissioners in meeting their deficit, it has been decided to increase the rate of Government's contribution from 50 to 80 per cent of the expenditure on river dredging and river maintenance with effect from 1968-1969 and to continue this arrangement till 1973-74.

Dock Expansion, Ballard Pier Extension and Master Plan for Bombay Port: The Dock Expansion and Ballard Pier Extension Schemes which together will provide eight additional berths in Bombay port, have almost been completed except for installation of wharf, cranes, sheds and storage areas which are anticipated to be commissioned by middle of 1973. One drag suction dredger manufactured by Mazagon Dock Ltd., has been commissioned

Table II Trend of Traffic at Major Ports with Estimates for 1973-74

			<b>,</b>				(Milli	ion tonnes)
Ports	Years	Petroleum Products	Iron Ore	Coal	Fertilisers incl. Raw Materials	Food- grains	Other Dry Cargo	Total
Calcutta (incl. Haldia)	1968-69	1.19	0.46	0.92	0.52	1.09	3.77	7.95
	1969-70	1.55	0.38	0.98	0.24	0.79	2 95	6.89
	1970-71	1.45	0.43	0.66	0.11	0.85	2.50	6.01
	1793–74	4.23	3.00	1.50	1.45	0.36	4.10	14.64
Bombay	196869	9.00	0.05		1.17	1.36	4.71	16.29
	1969-70	8,09			1.06	1.15	4.72	15.02
	1970-71	7.77	-		0.60	0.85	4.96	14.24
	1973-74	8.32		-	3,04		5,75	17.11
Madras	1968-69	0.84	2.00	0.08	0.80	0.91	0.82	5.45
	1969-70	2.24	2.09	0.16	0.34	0.86	0.82	6.51
	1970-71	2.66	2.17	0.02	0.45	0.63	1.02	6.95
	1973-74	3.33	3.00	0.10	0.58	0.34	1.20	8.55
Cochin	1968-69	3, 59	—	0.01	0.20	0.51	0.86	5.17
	1969-70	3.59	_	_	0.17	0.21	0.82	4.79
	1970-71	3.57			0.26	0.18	0.82	4.83
	1973-74	4.02	—	0.10	0.27	0.06	1.20	5.65
Visakhapatnam	1968-69	2.59	3.41	_	0.52	0.44	1.33	8.29
	1969-70	2.09	4.40		0.54	0.24	1.23	8.50
	1970-71	1.75	4.94		0.60	0.24	1.28	8.81
	197374	1.85	6.00		0.46	0.24	1.80	10.35
Kandla	196869	0.73	<u> </u>		0.43	0.54	0.30	2.00
	1969-70	0.93		—	0.34	0.54	0.28	2.09
	1970-71	0, 89			0.19	0.35	0.20	1.63
	1973–74	1.42	_		0.83		0.40	2.65
Mormugao	1968-69	0.16	7.97		0.16	0.04	0.47	8, 80
	1969-70	0.15	8.10	—	0.05	0.03	0.70	9.03
	1970-71	0.24	9.90		0.09	0.02	0, 76	11.01
	1973-74	0.50	9, 50		0.08	—	0,50	10.58
Paradip	1968-69		1.21	_	_	0.01	0.02	1.24
	1969-70		1.68	—	—	0,01	0.06	1.75
	1970-71	_	2.13	—		_	0.03	2.16
	1973-74		4.00				0.20	4.20
Mangalore	1968-69	—				—		
	1969-70	<u> </u>					—	
	1970-71			_		_		
	1973–74				. —		1.35	1.35
Tuticorin	1968–69		_	_				
	1969-70			—	—			
	1970-71	<u> </u>	_		·	—		
	1973–74			0.10			1.50	1.60
Total Traffic	1968-69	18.10	15.10	1.01	3.80	4.90	12.28	55.19
	1969-70	18.64	16.65	1.14	2.74	3, 83	11.58	54.58
	1970-71	18. 33	19.57	0.68	2.36	3.12	11.57	55.64
	1973–74	23.65	25.50	1.80	6.71	1.00	18.00	76.68

in March 1971.

The Master Plan for the development of Bombay Port has been finalized by the Port Trust's Consulting Engineers. As part of the further development envisaged in the Master Plan, the Port Trust has forwarded a proposal to construct three berths in Nhava Sheva complex. The proposal is under consideration. Meanwhile, the Port Trust has taken steps to initiate action to acquire the requisite land. *Madras Outer Harbour:* The construction of an Outer Harbour consisting of an oil berth and an ore berth is in progress. The oil berth in the Outer Harbour is expected to be completed by April 1972. The entire portion of the break-water has been completed except for a small stretch of 460 ft. Even this stretch of breakwater is expected to be completed by October 1972. The oil berth is designed to provide facilities for oil tankers of 77,000 dw.t. in the initial stage and 110,000 dw.t. ultimately.

As regards the installation of fully mechanized iron ore handling system in the Outer Harbour at the ore berth, orders have been placed on MAMC for the supply of two stackers, two reclaimers and two shiploaders. The same firm is likely to be entrusted with the work of the conveyor system shortly. Tenders for the ore berth have been invited and are under finalization by the Port Trust. Contract for the construction of the dumper house has been awarded. The order for the manufacture and supply of the wagon-handling system is under scrutiny. The iron ore berth is designed to handle vessels of between 77,000 and 100,000 dw.t. The supply of a suction dredger which is under manufacture by Garden Reach Workshops Calcutta, is expected by April 1972.

Cochin Port: The extension of the Q-9 berth is in progress. The construction of the two dredgers one suction dredger and one grab dredger—ordered on Garden Reach workshops, is in progress. These dredgers are expected to be delivered in 1972.

An investment decision to construct an oil dock to cater to the requirements of the deep drafted oil tankers of 80,000 dw. tons with 40 ft. draft for serving the Cochin Refinery was taken in 1969. Tenders have been received for dredging the dock basin and approaches and are under Meanwhile, repreconsideration. sentations have been received from many quarters for locating the oil dock at an alternative site. Technical investigations are under way at the Central Water and Power Research Station, Poona, to assess the feasibility of changing the site of the oil dock.\*

Visakhapatnam Outer Harbour: An order was placed on Garden Reach Workshops, Calcutta, for the construction of a suction hopper dredger. The Visakhapatnam Outer Harbour Project envisages construction of an Outer Harbour capable of handling ore carriers upto 100,000 dw.t. initially and upto 200,000 dw.t. ultimately. The Outer Harbour will be provided with mechanical ore handling equipment with a rated capacity of 8,000 tonnes per hour which could be stepped up to 16,000 tonnes ultimately. This is a high priority project under the major ports sector and the target date for its completion is May 1974. Almost all the items of construction equipment which have been ordered during 1969 and 1970 viz., bottom dump self-propelled hopper barge, pontoons, gantry cranes, floating crane, crawler-mounted crane, survey launch sand-bypassing system etc. have arrived at the site. Contract has been awarded for the major civil engineering works, both marine and shore, in 1971. The foundation for the Visakhapatnam Outer Harbour Project was laid by the Prime Minister in February 1972.

Kandla Port: There are at present four berths in Kandla port. The fifth berth is yet to be commissioned. It is complete except for the construction of a diaphragm wall and for dredging. The dredging underneath the berth is now being carried out by a grab dredger and dredging in front of the berth will be carried out by the dredger S.D. "Kandla" soon after it is spared from the breach channel. The fifth berth is expected to be commissioned in 1972.

A contract was awarded for modifications to oil jetty in September 1971. As per the contract, the work is expected to be completed by the middle of 1973. The order for the construction and supply of one diesel driven twin screw sea-going suction hopper dredger with a hopper capacity of 2.500 cu.m. is expected to be placed shortly.

Mormugao Port: The Mormugao Port Development Project estimated to cost Rs. 28.64 crores including a foreign exchange component of Rs. 5.23 crores, is in progress. The project envisages the provision of an iron ore berth with modern iron ore loading facilities, a mineral oil berth and improvements of the existing facilities. The work relating to dredging to provide the requisite depth for 60,000 dw.t. vessels and reclamation of the area needed for the establishment of the ore handling facility was entrusted to a Yugoslav firm. A part of reclamation work has been completed. Dredging of approach channel is in progress. Orders have been placed on the MAMC, Durgapur, for the construction and supply of shiploaders, reclaimers, etc. required for the provision of mechanized iron ore handling facilities. The contracts for the construction of barge berths and oil and ore berths are expected to be awarded shortly. The project is expected to be completed by the end of 1973.

Paradip Port: The port has maintained an effective draft of 37 ft. with permissible length of 675 ft. To improve the handling capacity of the ore handling plant, an additional reclaimer for iron ore has been ordered. This reclaimer is due for delivery in December 1972. The existing port has been developed to handle two million tonnes of iron ore per annum. The work relating to the construction of the general cargo berth is in progress. Steps are being taken to complete the port railway system expeditiously.

Mangalore Harbour Project: Expenditure sanction for Rs. 21 crores for the construction of three general cargo berths, two moorings and ancillary facilities at Mangalore as the first stage development programme was issued in April 1969. The construction of breakwaters is practically completed except for some minor works such as for correcting the profile. The broad-gauge link from Mangalore to the new port at Panambur is in an advanced stage of completion and will be ready for the use of the port at short notice. The work of excavation of high grounds within the harbour estate is completed. Excavation of turning basin dock and inner approach areas upto ground water is also complete.

Tuticorin Harbour Project: The project for the construction of a deep sea harbour at Tuticorin envisages the formation of an enclosed basin by the construction of two

<sup>\*</sup> It has since been announced that the Government of India have decided to change the location of the site for the oil dock to the alternative site at Bolghaty Island Channel where it is found that the problem of siltation will not be present after the damming of the Periyar river.

breakwaters. Expenditure sanction was accorded for the construction of four berths and ancillary facilities for an amount of Rs. 21.76 crores. The construction of breakwaters is in progress but the pace has been considerably slowed down due to certain financial and other difficulties being faced by the contractor. Efforts are, however, being made to resolve these difficulties. Orders for two harbour tugs have been placed. Indents have also been placed for the procurement of wharf cranes and forklift trucks.

#### Central Dredging Organization

A sum of Rs. 9 crores was included in the approved Fourth Five-Year Plan for this project. The project envisages procurement of two high capacity dredgers, tugs and other ancillary equipment mainly for use in connection with capital dredging at major ports. One of the dredgers ordered abroad has already been delivered. The other dredger ordered on Garden Reach Workshops, Calcutta, is due to be delivered shortly. A sum of Rs. 7 crores was spent on the project during the first two years of the Plan period. The total expenditure on the project during the Fourth Five-Year Plan period, based on tender cost, is expected to be of the order of Rs. 10 crores.

The two MOT dredgers which were acquired a few years ago continued to be utilized throughout the year. After finishing its assignment at Kakinada, MOT Dredger I did some work at Paradip and then moved to Tuticorin where she is working on the Tuticorin Fisheries Harbour. MOT Dredger II continued to be deployed at Mangalore Harbour Project throughout the year and is still there. The new dredger (MOT Dredger III) delivered during the year has already done very good work at Madras and Paradip. She is at present working on the Visakhapatnam Outer Harbour Project. The two tugs belonging to the Central Dredging Pool continued to remain on hire to Paradip Port Trust throughout the year. The operation of these dredgers and tugs is being managed by the Shipping Corporation of India Ltd. on an agency basis. The question of transferring this equipment to the ownership of the Shipping Corporation is

under consideration.

#### Steps Taken to Accelerate Turnround of Ships

Various measures have been taken under the successive Five-Year Plans to quicken the turnround of ships at several ports. The following important measures have been taken to increase the capacity for the principal commodities at the various ports:

Iron Ore: As against the maximum draft of 38 ft. in Paradip to cater to 40,000 dw.t. vessels, the draft available after completion of the Fourth Plan development programmes would be 52 ft. at Visakhapatnam, 42 ft. at Madras and 40 ft. at Mormugao. This would enable all these ports to handle vessels of 60,000 dw. tons while Visakhapatnam would be able to handle 100.-000 tonners. The increase in the loading rate from the present maximum of 25,000 tonnes a day to as much as 100,000 tonnes a day would quicken the turnround of vessels.

*Fertilisers:* Fully mechanized fertiliser handling facilities are being provided at Haldia and Kandla to enable over one million tonnes of fertilisers being handled annually at each of these two ports. Extensive mechanical handling facilities for fertilisers are also contemplated at Cochin.

Oil: Besides the Marine Oil Terminal at Butcher Island at Bombay which accommodates vessels with drafts of 34 ft. 6 in., facilities are available for vessels with drafts of 35 ft. at Visakhapatnam and 30 ft. at Cochin. A draft of 42 ft. would be available at Madras on completion of the jetty. Similarly, at Cochin 40 ft. draft vessels would be catered to in the new Oil Dock proposed to be provided. At Haldia, the Oil Jetty was commissioned in August 1968. As against the available draft of 30 to 31 ft. now, the draft at Haldia is expected to increase progressively to 33 ft. in 1973 and go upto 39 ft. in 1975.

General Cargo: The handling rate is intended to be stepped up by various methods of utilization. A large number of fork-lifts, as many as 180, are being acquired during the Fourth Plan to permit increasing use of palletization. Apart from this, incentive wage payment schemes

have been introduced at various ports to increase the productivity of labour.

#### **Provision of Container Facilities**

With the country's resurgence in the maritime field in the post-Independence era and the need for developing national and international seaborne trade, it is essential that Indian major ports focus their attention on containerization. India's potential containerizable cargo in its overseas trade is extremely impressive with Calcutta offering the largest volume of containerizable cargo and this matter is under detailed consideration.

During the Fourth Five-Year Plan, the low handling rate in regard to general cargo is intended to be stepped up by the adoption of a series of measures indicated below:

- (a) Full fledged container berths at Haldia (and later at Nhava-Sheva) which will have a capacity of 1 million tonnes each per annum as against the maximum handling capacity of conventional general cargo berth. Loading rate is expected to be as high as 12 to 15 thousand tonnes a day in containers as against the best average of 700 tonnes a day now obtaining at Bombay Port.
- (b) Increasing use of palletization by acquiring a large number of forklifts, as many as 180, during the Fourth Plan which would be more than the existing fleet.
- (c) Extention of incentive wage payment schemes based on results to wider areas (e.g. Dock Workers at Calcutta) and to comprise more sections of cargo handling personnel.

Towards this end, a portainer crane, the first of its kind in India, has been ordered by Calcutta Port Commissioners on an indigenous firm. Experiments are also under way to instal container handling facilities in a limited way in the Indira Dock Berth No. 12B (at Bombay).

#### Advance Action for Fifth Plan

The detailed schemes for the development of major ports in the Fifth Five-Year Plan would necessarily depend upon fairly firm traffic pro-

#### (Continued on Page 28)

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#### (Continued from Page 25)

jections in the various commodities to determine the extent, size and the quality of facilities to be provided at the various ports. However, in view of the long lead time required for creation of port facilities, certain advance action has been initiated by way of preparation of "position papers", in regard to capacity and dimensions of traffic of certain selected commodities like iron ore, crude oil and POL products, fertilisers etc. A Perspective Plan for iron ore exports for the next decade and a half has been drawn up recently. It is expected that coordinated Government action and investment decision in the various sectors on the Perspective Plan such as mining, transport, port facilities, shipping etc., would be taken early. The major ports have been asked to draw up advance action in the light of the dimensions of the exports indicated in the Perspective Plan. As regards handling facilities for crude oil and petroleum products, it has been decided that the ports should provide facilities to enable ships to unload crude oil at 4.000 tonnes per hour and 2.000 tonnes per hour for the products. The handling facilities for crude oil for 4,000 tonnes per hour would arise only in respect of ports situated close to a refinery. However, the facilities for handling oil products at 2,000 tonnes per hour are required to be kept as the objective to be attained during the Fifth Plan period by all the ports handling oil products. The port authorities have been asked to initiate action to work out the detailed measures necessary in this connection from now on.

One of the objectives kept in mind in the development of major ports is in the direction of import substitution in respect of the large number of floating craft including dredgers and tugs required by ports. It has been assessed that nine out of twenty-nine dredgers at Indian Ports have outlived their service lives by 1969. Even on the basis that the port authorities go in for replacement only of those dredgers which have already completed the normal life of thirty years, it is seen that there are as many as eighteen dredgers in Indian ports' fleet to be considered for replacement in the Fifth Plan. Obviously, the number

and type of dredgers to be replaced would depend upon the present day technological considerations and developments. It is proposed to standardize the replacement of dredgers to facilitate uniformity in the placement of orders on the various yards in the country and to ensure a quicker delivery than has been possible hitherto. The port authorities have been asked to initiate advance action towards the placement of orders for the replacement of dredgers and tugs needed in the Fifth Plan period. This should provide adequate construction time for indigeneous shipyards and thus ensure maximum utilization of indigenous capacity.

#### Security Force

As the original proposal to organize a separate Port Protection Force on the lines of the Railway Protection Force was not found to be feasible, it was decided to deploy the Central Industrial Security Force to the Major ports in stages. In pursuance of this decision, some units of this Force were posted at Calcutta, Cochin and Mormugao ports during 1970-71. Some units of this Force have been deployed in the Visakhapatnam port and Tuticorin Harbour Project during the year under report. According to the initial reports, the Central Industrial Security Force personnel are doing good and effective work wherever they have been posted.

#### Port Labour and Its Welfare

There were a few strikes and threats of strikes at the major ports during the year under report, but the labour-management relations on the whole continued to be cordial. A number of industrial disputes were referred for adjudication. Awards were also received in the case of some of the disputes.

In order to ensure industrial peace at the ports, a "Local Demands Committee" headed by Deputy Secretary (Ports), was constituted for settlement at the Central level of the unresolved local and sectional demands. This Committee has been able to settle a large number of demands relating to Calcutta, Madras and Kandla ports. This process still continues.

More recently, a number of decisions of far-reaching importance have been announced. Government have decided that in the case of Class III and Class IV employees, a part of dearness allowance will be treated as pay for the purpose of pensionary benefits alone with effect from the 1st December, 1968. Another important concession announced relates to ex-gratia payment in lieu of bonus. Government have advised the Major Port Authorities to pay in cash an advance calculated on the basis of "Khadilkar Formula" as an interim measure pending further consideration of the bonus issue by the Government. The calculations are to be made for the accounting year 1970-71. Yet another important decision taken is that the cases of anomalies arising out of the recommendations made by the Wage Board which could not be resolved at the port level would now be considered by a Committee consisting of the representatives of this Ministry, the Department of Labour and Employment, the Federation of Port and Dock Workers and the Port Authorities concerned. Anomalies which are not resolved by this procedure would be referred for decision to two separate one-man committees.

Various amenities for employees viz. residential accommodation, rest shelters, medical aid, scholarships to children, consumer cooperative stores, fair price shops, canteens, recreation halls, libraries, reading rooms, clubs, etc. continued to receive special attention from the port authorities.

The National Harbour Board at its nineteenth meeting held in Cochin on 5th November, 1971, took note of the appreciable increase in the wages of port and dock workers which had taken place as a result of acceptance of the recommendations of the Central Wage Board for Port and Dock Workers. It however felt that frequent wage increases had contributed to inflation in the country and this general rise in the price level had nullified the increases in wages. The Board was therefore of the view that an alternative method should be devised so that this vicious circle was broken. This question is receiving the attention of the Major Port Authorities.

(Continued on Next Page Bottom)

## Master Plan Up to 1990 Being Developed

#### **Port of Los Angeles**

Los Angeles, Calif., January 11:— A schedule to develop a master plan for the Port of Los Angeles up to the year 1990 has been accepted by the Board of Harbor Commissioners.

Consisting of 17 parts to be completed, combined and presented to the Commissioners by August, 1975, the master plan will probe matters of marketing, land acquisition and its use, transportation, construction and potential revenue.

One of the segments of the master plan will be its own financing. At the request of the Harbor Commissioners a final element of it will be a final review and audit by a private consultant.

"With this proforma schedule," commented John B. Kilroy, president of the Board of Harbor Commissioners, "we can see where we are in our master planning, and we have an excellent guide as to what the master plan should include when completed in about 31 months."

The Port was divided into eight geographical areas and each is to be studied. Already nearing completion is the West Channel-Cabrillo Beach investigation by Harbor Department staff and a private consulting firm. Extensive recreational use of this area has been recom-

#### Coastal Traffic

The National Harbour Board reviewed during the year the situation arising out of decline in traffic passing through the Minor Ports and in the coastal traffic of the country. It was agreed that these questions required to be examined from the point of view of availability of indigenous capacity to build suitable mechanized vessels for coastal trade and the existence of sufficient traffic. mended.

Also near completion is the West Bank study by another consulting firm. This investigation will determine the best possible land uses of Port property along the west bank of the Main Channel from the Vincent Thomas bridge south to the Outer Harbor.

The third geographical area extends from the bridge to the County flood control channel in the West Basin of the Port. Todd Shipyards and the Standard Oil Company already occupy facilities in this area. The study is scheduled to begin in November.

The northwest segment of the West Basin is another area of investigation, now underway by the Harbor Department staff.

A major project here is the relocating of the Wilmington-San Pedro road parallel to the Harbor Freeway. Preliminary plans call for creation of one of the largest container cargo-handling complexes on the Pacific Coast.

The Mormon Island-Wilmington geographical area study is one of the largest to be included in the master planning. Harbor Department and Los Angeles City planning staffs will begin this study near the end of 1973.

At this time, Harbor Department planners will begin final master planning of that portion of Terminal Island now in use. A number of planning studies on individual projects, such as the Overseas Shipping Company container expansion and a new lighter-aboardship (LASH) facility have already been completed.

Possible extension of Terminal Island south into the Outer Harbor presently underway is the longest individual study to be included in the master planning. Most of the investigation will be done by Harbor Department staff.

Marketing studies and a hydraulic model being constructed by the U.S. Army Corps of Engineers also will be important considerations.

The classification yard, a narrow stretch of land belonging to the Port in Wilmington near the San Diego freeway, is the last geographical area. A consulting firm will decide the best land use for this area, such as for warehousing and other storage.

In addition to geographical studies, other specific and general investigations are included in the master plan schedule.

The best method of handling the expected Alaskan oil will be determined, as well as a location for a future headquarters for the Harbor Department. Fourteen sites currently are being reviewed.

All the commissioners noted that while private consulting firms were likely to help when additional expertise is needed the major part of the planning will be conducted by the Harbor Department staff.

"We should emphasize that by approving this proforma schedule we are not binding ourselves to any outside consulting at this time," stressed Commissioner Frank Sullivan. "We will continue to consider individually each planning project as scheduled."

Kilroy indicated that the commission was primarily concerned with the total planning effect by the Harbor Department, and added that the present concept should serve to meet this objective.

Six of the 17 master plan segments are currently underway at the Port. Six more are scheduled to begin during 1973. Four will be completed by this summer, and all but four of the total 17 segments are to be completed by the end of next year.

## The Eighth Conference, Amsterdam/Rotterdam

#### Managing Directors of Amsterdam and Rotterdam -Personal Profiles

The 8th Conference of International Ports and Harbors is to be held in the Netherlands from May 6th through 12th. It is sponsored jointly by the Ports of Amsterdam and Rotterdam and hundreds of port people from around the world are expected to attend. Working sessions are to be held in Amsterdam's RAI Congress Centre and the program includes a day-long trip to view the port installations in Rotterdam.

Frans Posthuma and Johannes den Toom serve as managing directors respectively of Rotterdam and Amsterdam and thereby are unofficial hosts of the conference. Both are well known in port circles around the world, and have a number of things in common: both Mr. den Toom and Mr. Posthuma hold degrees in Civil Engineering from the Technical University at Delft and both have spent their entire professional careers in port projects in the Netherlands. Below we present short informal profiles of these two remarkable men.

#### Johannes Den Toom. Managing Director, Port of Amsterdam

"Ports around the world have many different methods of management: the one thing they all have in common is that they deal with the same ships." Thus Johannes den Toom who serves as managing director of the Port of Amsterdam as well as chairman of the 8th IAPH Conference, sums up the need for such meetings.

"New methods of shipping have forced radical changes in ports everywhere. There can be common solutions to these problems however and the IAPH is the only organization in the world which is grouped around port managers and port au-

thorities. The IAPH executive committee membership is divided amongst members from the three districts: the Americas, Asia/Australia-New Zealand and Europe/Africa," Mr. den Toom said.

"Thus problems seemingly unique to one area can possibly be solved by people from another; the working sessions in this conference were divided amongst the regions and we have planned plenty of time for discussion."

Mr. den Toom, now 47, began his professional career in 1952 when he joined the Ministerie van Verkeer en

Waterstaat (Dutch Ministry of Transport, Public Works and Waterways) being posted first to the Rhine and Hssel district, based in Arnhem. This district has charge of two branches of the upper Rhine River in the Netherlands, and the major project at the time was the canalization of the Neder Rhine.

At the end of 1956, Mr. den Toom was transferred to the North Sea Canal district, becoming head of this in 1959. The major task then was the widening and deepening of the North Sea Canal in conjunction with the construct of the new harbor

mouth at Ijmuiden, entrance to the Port of Amsterdam.

In March, 1965, Mr. den Toom was named to his present position. Whereas he saw his job with Rijkswaterstaat as basically a civil engiresponsibility, his management capabilities came to the fore in the Port of Amsterdam. "The port is municipally-owned but is definitely a commercial enterprise. However other ports within IAPH have different structures, and this is where exchange of views is most valuable."



Ir. J. den Toom Managing Director **Amsterdam Port Management** 



Ir. F. Posthuma **Managing Director Rotterdam Municipal Port Management** 

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#### Frans Posthuma. Managing Director Port of Rotterdam

For Frans Posthuma, the 8th neering one with some management IAPH Conference will be "an opportunity to say goodbye to many old friends. Years ago, I promised myself that I would retire at the age of 60, so I will leave my present position in October." Retirement for Mr. Posthuma is going to be different from retirement for others for he intends to keep up his interest in port affairs largely by advising ports in the developing countries to make their own growth plans.

> "A port is a rather complicated affair and to run a port effectively one must know something about everything. One cannot be a specialist, but it is necessary to develop a certain intuition about things based upon knowledge and experience. It's vital to have good relationships, but running a port means ensuring a supply of fresh water as well," he said.

> "It is a great pity that the broad vision required in developing a port is often hampered these days by specialists who pick a certain detail for criticism and thereby threaten the whole project. This is why discussion of common port problems is essential.

> "Common problems such as the environment, the growing size of ships and safety must be solved on a joint basis and this has been the task of IAPH since its inception. Close cooperation between port managers is necessary."

> Mr. Posthuma is generally credited with the enormous growth of the Port of Rotterdam in the post-war vears. He joined the Port Management in 1945 and was immediately concerned with the rebuilding of the quay walls. In the early years, the Botlek Plan was approved.

> This started the trend which has led to such vast projects as Europoort and Maasvlakte. The present position of Rotterdam as largest port in the world is due to a large part to the foresight of Mr. Posthuma. In the past years, he has also served as advisor to the United Nations and the World Bank.



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-Assistant Secretary General, ICHCA

## **IAPH 8th Conference**

### -Amsterdam/Rotterdam 7-12th May, 1973

Conference Chairman: Ir. J. den Toom, Managing Director, Port of Amsterdam Conference site: International Congress Hall, RAI, Amsterdam

Working sessions will be held on the following five topics:

- Coordination in the planning of links between ports and the hinterland to facilitate movement of intermodal transportation.
- 2. Preventive measures against air and water pollution in port areas.
- 3. Problems of developing ports and means of assistance available.
- 4. Potential of cargo distribution by barge carriers.
- Scope of operational responsibility of the port authority.

## ICHCA 11th Conference

### -Hamburg 14-17th May, 1973

Conference will be opened by Senator Kern and the Keynote Paper will be presented by Herr Konsal Dietz.

Conference site: Conference theme: Congress Centrum, Hamburg

"The International Transport Chain—where are the weak links?"

Further Information From : Conference Secretariat ICHCA

Grosse Elbstrasse 14, 2000 Hamburg 50.

## port problems in developing countries

#### by Bohdan Nagorski Published by IAPH

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## **Orbiter Probe**

#### **IAPH News:**

#### **New Members**

#### **Regular** Member

- Port Autonome de Nantes-St-Nazaire
   B.P. 1053, 44037 Nantes Cedex,
  - France
  - (Mr. Roger Gouet, Directeur General)

#### Associate Members

#### Class A:

- Mr. Clifford J. Evans Wallace, Evans & Partners, Plymouth House, Penarth Glam, CF6 2YF, Wales, U.K.
- West Ham Dredging Company P.O. Box R224, Royal Exchange, Sydney 2000, Australia (Mr. H. M. Thompson, Managing Director), Merging of two companies: HAM-Dredging Pty. Ltd. and Westminster Dredging Co.

#### Class D:

- Prof. J. G. Baudelaire
   43, Avenue du Wilson, 75116, Paris, France
   (Direction des Phares et Balises, International Courses Hydraulic and Sanitary Engineering, Delft)
- Navigation, Ports et Industries
   quai des Alpes, F 67000 strasboug, France
- (Mr. Yvan Ferraton, Directeur)
  Industrial Marketing Information Service Barkaro Bygata 353, 72590 Vas-

teras, Sweden (Mrs. Taimi Sammul, Gen. Sec-

retary)

All were approved by the Secretary General.

#### IAPH Honorary Member Considered Dead

The passing of missing U.S. Congressman Hale Boggs, Honorary Member of the I.A.P.H., was marked by memorial services held in his honor in New Orleans, Louisiana, U.S.A. in January.

The Honorable Thomas Hale Boggs was bestowed the No. 3 Honorary Membership during the Third I.A.P.H. Conference held in New Orleans May 1-4, 1963. See also news item entitled "Port Mourns Death of Rep. Hale Boggs" on page 35.

#### Lt. Gen. Suntrangkoon Resigns

Admiral Abhai Sitakalin has been appointed Director of the Port Authority of Thailand since January 10, 1973 in succession to Lieutenant-General Prachuab Suntrangkoon who resigned from office. Lt. General Suntrangkoon was the IAPH Executive Committee member during the period May 1967–June 1971.

#### **I.A.L.A. Booklets**

Paris: — The International Association of Lighthouse Authorities (I.A.L.A.) announces that the first three Chapters of the International Dictionary of Aids to Marine Navigation are now available in English, French and Germany and they are on sale at the Secretariat of IALA at the following prices: (for one booklet in one language)

Chapter	1—General Terms	9	$\mathbf{SF}$
Chapter	2—Visual Aids	20	SF
Chapter	3—Audible Aids	8	SF

The address of the above-mentioned Association is as follows: 43, Avenue du President-Wilson, Paris-16e, France.

#### New 1972 Tonnage Record

Houston, Texas (Special):—The Port of Houston set a new 1972 tonnage record of 69,439,058 tons, based on unofficial figures compiled from local sources. This topped by more than one million tons the previous record of 68,423,829 tons set in Heavy foreign trade shipments in the last three months of the year, especially wheat to Russia under the new U.S. trade agreement and a surge in steel and automobile imports helped change what had earlier looked like an ordinary year into a record-breaker.

1971.

While local barge and internal barge traffic also showed a spectacular gain of some 2.5 million tons, from 25.2 in 1971 to 27.7 million tons in 1972, it was the late strong showing in foreign trade with a total of nearly 20 million tons that was particularly encouraging to Port of Houston Authority officials.

Both in general cargo and in bulk movements, the Port's foreign trade held just about even with 1971, which had shown a 3 million ton increase over the previous foreign trade tonnage record of some 17 million tons. Foreign trade general cargo was just over 4.9 million tons while foreign trade bulk was at 14.8 million, about 11.1 million of it in exports, principally wheat and milo. December's 2.2 million tons of bulk exports, alone, was double the 1.1 million tons of December 1971. (Port of Houston News Release)

#### Wheat for Russia

Houston, Texas (Special)—More than 2.5 million tons of wheat for Russia had been shipped out of the Port of Houston's four grain elevators by the middle of February and the heavy pace is keeping up with dozens of more vessels in the Gulf heading here to take on more.

With a combined capacity of nearly 30 million bushels the four major elevators along the Port of Houston Ship Channel are working at capacity to load the steady stream of vessels taking on the hard winter wheat sought by the Russians under the U.S.-Soviet trade agreement.

The Port of Houston is handling the vast majority of the Russian bound wheat—estimated by government officials to be as high as 75 per cent of the total—since this type wheat principally is grown in the Texas - Oklahoma - Kansas - Colorado area which is best served by the Port of Houston. The wheat for (Continued on Next Page Bottom)

## Port of Buffalo

Niagara Frontier Transportation Authority October 1972

The Port of Buffalo is administered by the Niagara Frontier Transportation Authority under the capable leadership of Chairman William E. Miller. The port is ideally situated at the eastern tip of Lake Erie,

the vast part comes in 3300 ton hopper and 2200 ton box cars, although a small percentage arrives by truck.

More than two million tons of the 2.5 million tons shipped thus far have moved in the months of December and January and early February. The first wheat for Russia was shipped from Houston in August when 43,000 tons left, and September, October and November saw an average of about 150,000 tons shipped monthly.

The big jump came in December when more than 621,000 tons moved and in January, despite some inclement weather, more than 900,000 tons moved and the pace even has accelerated in February. Actually, this has been Houston's worst winter in decades, including snow for the first time in more than a dozen years, but even so the wheat keeps moving.

Besides the Port Authority's 6 million bushel grain facility, on which a 10 year least contract was recently signed with the Dreyfus Co., shipside grain elevators handling wheat at Houston are Goodpasture, with a 12 million bushel capacity and Cargill, Inc. and Union Equity Export, with capacities of approximately 6 million bushels each. The 2 million bushel Elco Corporation elevator handles rice exclusively.

Through January 21st, Russian flag vessels had carried 416,000 tons of wheat while eight American flag ships carried 294,000 tons. Under the U.S.-Soviet agreement one third of the wheat will move in Russian vessels, one third in U.S. flag ships and the remainder in ships of other nations. (Port of Houston News Release) in the heart of a section rich in industry. It is the first and last major U.S. port on the Seaway route. Within 500 miles of the area are located some of the country's largest cities as well as 75% of the population of Canada. This advantageous position allows Buffalo and the Niagara Frontier, of which it is a part, to serve as an important center of commerce.

Combined piers at the Port of Buffalo can dock 7 ocean vessels simultaneously and provide 6000 feet for general and bulk cargo dockage.



Buffalo, N.Y.:—Terminal A at the Port of Buffalo. This is the principal general cargo storage area.



Buffalo, N.Y.:—This picture shows the Seaway Piers at the Port of Buffalo. In the foreground is the giant gantry crane for loading and unloading cargoes. Piers of bulk cargo such as salt, potash and coke are shown at the top and at the sides of the picture. The building shown is what is known as the "Clay Building" and the 2 ships are transferring coke from a laker to a sea-going vessel.



Buffalo, N.Y.:—CARGO-TRANSFER METHOD USED AT PORT. Late in the shipping season of "71, the Crispin Oglebay, a self-unloading lake vessel, transferred its cargo of screened coke directly into the holds of the Ocean freighter, Carona Australe, which was docked at the NFTA Bulk Storage Piers. Loading also was taking place from dock-side at the same time as the ship-to-ship transfer.

There are two terminal buildings. Terminal A provides 118,000 sq. ft. of storage space and contains two overhead cranes with 10 tons capacity each. Terminal B offers 84,000 sq. ft. of high bay area for transport goods that must be warehoused. Storage facilities also include  $\frac{1}{2}$ million sq. ft. of shed space and an additional steel frame, aluminumwalled 14,000 sq. ft. shed contracted to the long term housing of bulk cargo that must be protected from the weather.

A fleet of heavy equipment at the port is highlighted by the Niagara Frontier Transportation Authority's Le Tourneau Mobile Gantry Crane. The crane has a 50 ton certified capacity and works the entire length of the docks and piers efficiently. With the versatility of hook or bucket, it handles all materials ranging from steel beams and bars to clay, sand and rock salt. The speed and accuracy with which the Gantry Crane lifts and deposits port freight result in important savings to both shippers and receivers.

Although both bulk and general cargoes contribute to the activity at

the Port of Buffalo, greater emphasis is being placed on domestic and foreign bulk cargo. This is in part due to the 200-plus acre rectangle of open land that is located directly on deep water within the port's sheltered terminal area. The land is ideal as a distribution center for bulk and is currently being used by several companies. The open pier across the slip from the North Westerly end of this tract has been taken over completely for a coke storage and screening operation which generates many thousand tons a month of domestic and overseas volumes. A standard conveyor system facilitates the loading and unloading of the coke.

As record tonnage for storage and distribution moves into the Seaway Piers, the NFTA continues to develop this desirable waterfront property and is interested in negotiating for even more contract movement of bulk cargo over this unique port facility. This significant change and others are conducive to progress and to the continuous growth of Buffalo as one of America's leading inland ports.

## Port Representative Added in Far East

Long Beach:—In line with its current expansion of trade development activities both domestically and overseas, the Port of Long Beach has announced the addition of Masahiko Takada to assist Shigeo Tokoro in the Tokyo office of United Overseas Corporation, which represents Long Beach throughout the Far East.

Takada is a graduate of Hosei University with a Law Degree, and was with Kowa Sales Company before spending the last seven years with Dai-Ichi Shipping in Japan.

George D. Gray was recently named as trade representative for Long Beach Harbor, assisting Trade Development Director Dean Petersen at Port headquarters in Long Beach.

At the same time, Harbor Commission president James G. Craig, Jr. announced that the Port of Long Beach will send a trade mission to the Far East in mid-April to visit present customers and explore the possibility for expanded trade efforts in Japan and elsewhere.

Completion of the 225 acre \$50million container complex in the Southeast Basin this spring gives Long Beach the largest such single facility in the entire Pacific. (Port of Long Beach News)

#### Port Mourns Death of Rep. Hale Boggs

New Orleans:—Memorial services for missing Congressman Hale Boggs, held here in January, marked the passing of one of the Port of New Orleans' greatest benefactors.

Boggs and three others were lost Oct. 16 on a flight from Anchorage to Juneau, Alaska. Louisiana's Senior Congressman after nearly three decades, Boggs had risen to House Majority Leader — highest position in the United States House of Representatives.

Long remembered at the Port of New Orleans will be his many contributions to the port's wellbeing and future greatness. Among these were the following:

• He authored this nation's Foreign-Trade Zones Act, under

which the Port of New Orleans was authorized to open and operate its Foreign Trade Zone.

• He was one of the founders and lifelong supporters of many of New Orleans' port-related organizations (such as International House) that came into being during his adult lifetime.

• He served the Port of New Orleans actively in large and small matters from the time he was elected to Congress at the age of 26. Three years of distinguished Navy service during World War II followed.

• He was re-elected to Congress from the 2nd Congressional District of Louisiana after honorable military discharge and held that position until January 3rd when the 93rd Congress in its opening session declared the seat he held for 28 years to be vacant.

• More recently, he was a member of President Nixon's official party to Peking, and helped frame agreements and legislation opening trade between the two world powers.

• He gave his native state and its people the probably strongest voice in national and world affairs in Louisiana's history.

A large gathering of world leaders united in the Boggs memorial services here. National leaders and dignitaries, led by Mrs. Pat Nixon (who represented President Nixon); included President and Mrs. Lyndon B. Johnson; Vice-President and Mrs. Spiro Agnew; a Congressional delegation led by Speaker Carl Albert; Louisiana Congressmen, and state, parish and city officials.

Catholic Archbishop Philip M. Hannan of New Orleans, celebrant of the religious services in St. Louis Cathedral, later escorted Mrs. Boggs and Mrs. Nixon to Jackson Square, where Mrs. Boggs was presented an American flag and the Navy ensign by Secretary of the Navy John Warner.

A 17-gun salute and a Navy demonstration on the Mississippi's waters and by Navy jet aircraft were a part of the observance. Mrs. Boggs received friends at a reception in the nearby Cabildo.

The Port of New Orleans, the City

of New Orleans, State of Louisiana, the United States of America and the world have lost a truly great leader. (New Orleans Port Record, February, 1973)

## Expanded Bulk Terminal Activated

New Orleans, La., January 23:— The Port of New Orleans commenced use of a major addition to the cargo handling equipment at its Public Bulk Terminal today.

Louisiana Lieutenant Governor James E. Fitzmorris, Jr. gave the signal to activate the equipment, which is valued at \$1.5 million and has been under construction for the past year and a half. Green petroleum coke destined for export by Kaiser Aluminum Corp. was the first commodity handled by the equipment. A large delegation of local transportation and shipping executives were on hand for the ceremony at the terminal, located on the Mississippi River-Gulf Outlet near its junction with the Industrial Canal in New Orleans.

Fred E. Pate, the port's managerial consultant at the Public Bulk Terminal, explained that the new bulk materials handling system gives the port a vastly improved means of transferring ores between a giant open storage pad and either ships, barges, rail cars or trucks. The system was built by Mill Engineers Inc. of Shreveport, Louisiana. It features conveyor belts, dust suppression gear, a rail-mounted hopperstacker, and controls machinery. The conveyors and stacker can mechanically discharge ores in predetermined piles on the  $600' \times 175'$  open storage pad, which can support up to 55,000 tons of bulk materials such as petroleum coke, coal, barites, manganese ore, etc. A reclaim system can return the ores to the conveyor belts.

Consultants for the new system were Swan-Wooster, Inc. of Portland, Oregon, and Linfield and Hunter, Inc. of New Orleans.

"This new equipment makes our bulk commodities terminal one of the fastest and most competitive facilities of its kind in the Gulf," said Port Director E. S. Reed. "We can move a wide variety of commodities here at a speed of 2,000 tons an hour, and we can transfer goods between ships, barges, trains, trucks and open or closed storage."

The facility was opened to traffic in 1961 and is considered the port's fastest growing facility, greatly increasing its cargo handling capacities each year. (Port of New Orleans Press Release)

#### **Jimmy Martin Resigning**

New Orleans, La., February 13: —James W. Martin will resign his position as deputy port director for trade development of the Port of New Orleans in order to accept the port directorship of the Port of Beaumont, Texas, effective April 1. The formal announcement of Martin's appointment was made by R. A. Coale, president of the port commission of the Port of Beaumont Navigation District of Jefferson County, Texas, following a recent meeting of the commission.

Martin will have full responsibility over the management and operations of the port. He succeeds John H. Groh, who has served Beaumont as port director since 1964. Groh will be retained by the Beaumont port commission in the newly established position of port consultant. Groh will serve in an advisory and consulting capacity in connection with a major port expansion program involving the construction of enlarged facilities for handling general cargo, containers, and barge-aboard-ship tonnage. The program also calls for grain elevator modification designed to eliminate air pollution.

Martin has served the Port of New Orleans as deputy port director for trade development since 1969. He came to New Orleans in 1957 as director of trade development and has managed the port's worldwide promotion of cargo traffic, publicity, and advertising affairs. He has been responsible for the activities of port trade development offices in New York, Chicago, St. Louis, London, Brussels, Panama, Tokyo, Hong Kong and Melbourne.

From 1951 to 1957 Martin was executive assistant to the general manager of the Port of Houston. (Port of New Orleans News Release)

#### 1973 Edition of the Steamship Services Directory Published

New York, Feb. 15:—The 1973 edition of the Port of New York Steamship Services Directory has been issued by the Port Authority to meet the needs of importers, exporters, freight forwarders and other business organizations and government agencies.

The 24 page Directory, published annually since 1955, lists the names, addresses, telephone numbers and pier locations for 188 steamship lines and agents offering regularly scheduled services from the New Jersey-New York Port on international, intercoastal and coastwise routes. It also contains names, addresses and pier locations of the Port's terminal operators and a listing of world ports served by the bi-state harbor. In addition, the new edition lists active steamship piers, together with the lines, terminal operators and railroads serving them. For the first time, passenger and cruise services are included.

Copies of the new Directory may be obtained without charge from the Port Promotion Division, The Port Authority of New York and New Jersey, 111 Eighth Avenue, New York, New York 10011, or from the Port of New York Trade Development Office at 170 Broadway, New York, New York 10038. (News from The Port Authority of New York and New Jersey)

#### Container Cargo Increase Predicted for 1973

Philadelphia, Pa., February 19:— Philadelphia's modern marine terminals will handle more than 35,000 containers—an all-time high—during 1973, it was forecast today by the Philadelphia Port Corporation.

Irvin J. Good, Executive Director of the Port Corporation, made the prediction and said the container cargo increase to the Port has created a pressing need for more container cranes and additional land for container handling.

Mr. Good said that in 1971 Packer Avenue Marine Terminal processed 3,586 containers. In 1972, this number jumped to 19,781.

At Tioga Marine Terminal, an



San Francisco, Calif., February 5:—Credit where due was the conclusion of the California Marine Affairs and Navigation Conference recently when its president, Kenneth Sampson, (left) presented the statewide agency's commendation for "outstanding service" to Lt. Gen. Fred C. Clarke, chief of the Corps of Army Engineers (center). The world's busiest engineer was congratulated by Robert H. Langner (right), Conference executive director, for his successful leadership in navigating the Corps through the narrow passages separating the "land mass" of growing domestic environmental concern, and the shoals of over-reaction which might preclude needed maintenance and development of the nation's harbors and waterborne commerce. The San Francisco World Trade Club event was attended by regional port officials, and of the Environmental Protection Agency and the State Water Quality Control Board. (CMANC)

equally dramatic increase was evidenced with 9,516 containers processed in 1972 over the previous year's total of 3,098.

Mr. Good based his prediction on Philadelphia's being named port of call by two new container services. Twelve (12) shipping lines now providing regular container service to the Port Philadelphia. He identified the two new lines as Sealand, Inc. and Zim Lines which began its operation February 10.

To accommodate this increase in containerized cargo traffic, Mr. Good said new container cranes have been ordered for each marine terminal and—pending award of contract both will hopefully be operational by Spring of 1974.

At the same time, some 26 acres of land between Packer Avenue Terminal and Delaware Avenue have been requested by Lavino Shipping Company to provide additional storage space for containers.

Frederic A. Potts, President and Chairman of the Board of the Philadelphia Port Corporation, also released figures showing that Philadelphia continued to recapture general cargo previously lost to New York and Baltimore.

The comparison showed that for the first nine months of 1972, Philadelphia's general cargo tonnage essentially held steady with similar 1971 period while New York and Baltimore registered decreases in excess of 11%.

Of greater significance, Mr. Potts explained, was Philadelphia's 1.8% increase in share of market while New York lost 1.4% and Baltimore fell .4%.

Mr. Potts also cited a report from

#### Europe-Africa

the Philadelphia Maritime Exchange which noted an increase of some 13% in the number of general cargo vessels calling in the port during 1972. (News from Philadelphia Port Corporation)

## Veteran of Transportation Industry

Portland, Oregon: — Louis O. D'Amico, a 27-year veteran of the transportation industry on all three coasts, has joined The Port of Portland's Trade Development department.

Most recently, Mr. D'Amico was vice-president of Columbia Steamship Co., Inc., Portland. For two years there he was responsible for operations, chartering, marketing and traffic. Earlier, he had established the western regional headquarters in Portland for Alcoa Steamship, Inc., serving there between 1965 and 1968 before moving to Alcoa's New York office as operations chief, primarily in bulk carrier operations. (Port of Portland News Release)

#### **Giant Vacuum Cleaner**

San Diego, Calif., February 14:— Vacuum cleaning the air may be the answer to a long-time dust problem at the 10th Avenue Marine Terminal in San Diego.

An improved dust-control system has been devised for the Port of San Diego's bulkloader at the 10th Avenue Marine Terminal in San Diego by the Engineering Department of the Unified Port District.

Commissioners for the District yesterday authorized construction by Port maintenance forces of a giant vacuum cleaner-type device. It'll have a 32-foot-long steel tube installed alongside the loading boom. The tube travels with the bulkloader spout from hold to hold of visiting ships.

The new device replaces a frame and cover procedure that reduced but did not eliminate air pollution in the area of Tenth Avenue on San Diego Bay. The big vacuum cleaner will cost an estimated \$15,000 and apears at this time perhaps to be a final air-pollution solution for the bulkloader area.

Dust sucked from ships' holds is carried to a central disposal contain-



Aerial view of the Antwerp city and several docks. (Port of Antwerp)

er at dockside. (Port of San Diego News Release)

#### Stockton Names New Port Director

Tokyo:—Richard A. Andersen, with 26 years experience in the maritime distribution and transportation field, was appointed as port director by the Commissioners of the Stockton Port District. He will assume his new responsibilities on Feb. 15.

He comes to the Port of Stockton from the Port of Everett, Wash., where since June 16, 1969, he has served as general manager, during which time the Port of Everett has enjoyed a substantial increase in cargo tonnage and profits developed under his direction.

Prior to his service at Everett, he served as sales manager for the Port of San Diego and in this capacity he traveled extensively to all major port cities in the United States, Japan, Taiwan and Korea. (Shipping and Trade News, Feb. 7)

## Sea Transport of Liquefied Gases—Familiarisation Course.

In view of the increasing sea-borne carriage of liquefied gases and the growing interest being shown across a wide spectrum of commercial activities, it has been decided to present a course which will combine both practical and theoretical aspects of the subject and provide a comprehensive and global understanding of this interesting subject.

A series of courses is being organized by Swan Hunter Project Services Ltd. in conjunction with the Chemical Engineering Department of the University of Newcastle upon Tyne. During 1973, three identical one-week residential courses are to be offered, the first between 26th– 30th March inclusive, with successive repeats 9th–13th July and 3rd–7th September inclusive.

Should the response to the 1973 programme so dictate, the series will be extended into 1974 and onwards as appropriate.

For further particulars, refer to Swan Hunter Project Services, Ltd., P.O. Box No. 2, Hebburn, Co. Durham, England.

#### EUREXPORT—Rouen—12-18 June 1973

1st International Exhibition for Export Services, Port and Marine Equipments (Refer to Ports and Harbors, September, 1972, page 44)

IMPORT & EXPORT are vital elements in the economy of a country. All economists agree with the fact any economical question will become highly important in the next years. Hitherto there was in Europe no specialized exhibition grouping all professions engaged in import or export. Such an international exhibition will take place for the first time in ROUEN from June 12th to 18th 1973.

EUREXPORT will present all that concerns commercial operations with foreign countries, from marketing to final delivery:

- ---packing and handling
- ---sea, river, rail, air and road transportation means
- -maritime and port equipments, especially ship equipments
- -commercial activities in hall European ports
- ---service supply

In the general state of export, i.e. the days when important export and transportation problems will be studied, the notion of crossing associated with "EUREXPORT" will show its real significance.

Confrontation of ideas, products, techniques, and men is a necessary dynamical element for any kind of expansion, promotion, and publicity.

6 Ministres and 22 professional organisations are warrants of the fame and authority of the exhibition; french and curopean ports authorities are already participating.

The French Chambers of Commerce abroad, the foreign Chambers of commerce at Paris, and the commercial advisers to embassies have already received the necessary papers.

Inquiries:

EUREXPORT—PARC-EXPO LE MADRILLET—76120 GRAND QUEVILLY

#### **Progress at Avonmouth**

Bristol:—The most outstanding development in recent years at Avonmouth has been the securing of the Port's largest ever dry cargo contract. It covers the import of cargoes of newsprint, forest products and unitised general break-bulk materials by the giant International Paper Company of New York.

For this trade a new general purpose distribution terminal has been constructed at the Royal Edward Dock. This is being operated by Inland Distributors Ltd., a British



Bristol:—A new general purpose distribution terminal has been constructed at the Royal Edward Dock. (Port of Bristol Authority)

subsidiary of I.P.C. The agreed throughput is for a minimum of 250,000 tonnes annually.

At the former 'Q' and 'S' berths a new warehouse, with an area of 165,000 sq. ft., has been constructed. It is of portal construction with verandahs along each side, which will permit operations to be carried out irrespective of weather conditions. With the warehouse, go quayside and marshalling areas, rail tracks and other facilities and equipment, such as fork lift trucks with clamps for handling the wide range of newsprint reels.

The first of two new vessels to be built for this trade is the m.v. Laurentian Forest due to open the service in DECEMBER, the second ship will be named Avon Forest and expected next autumn. They are 20,000 ton deadweight RO/RO vessels designed to carry cargoes of up to 14,000 tonnes of newsprint and other products and provide an all year-round service from all St. Lawrence ports. Both ships are designed to gain the maximum benefit from the Roll-on/Roll-off system of loading and discharging, which greatly improves the handling of rolls of newsprint. (Port of Bristol Authority, England)

#### First Orient Container Service Opens Fresh Prospects

Felixstowe, 21 February: — An important new direct container service linking Felixstowe—Britain's fastest growing port—with major markets in the Far East, was announced by the port and Orient Overseas Line in London and Hong Kong today.

Starting on April 5, initially two sailings a month are planned using specially-converted cargo liners, each capable of carrying up to 352 20-ft containers plus 5000 tons of breakbulk cargo.

"Felixstowe has been chosen as the sole UK port of call for the new direct container service," said Captain J. J. Howard, Orient Overseas Line's representative in Europe, "and the normal transit time from Hong Kong to Britain will be under 30 days."

Traffic from all parts of the UK or for destinations inland will be moved via Felixstowe by road or rail services.

Early in 1974, Orient Overseas Container Line—one of the companies in the powerful C. Y. Tung shipping group—will introduce the first of a new fleet of fully cellular ships on the UK run, each operating at 23 knots and able to carry



NO. 41/43 BERTH—(P.L.A. multi-user container berth) The terminal has been provided by the P.L.A. as a multi-user facility for those shipping lines who do not have their own container terminal. Operations: The berth is worked by a P.L.A. labour force who are paid a guaranteed basic wage for a 40 hour week under a terminal berth agreement. As a crew the men perform all container operations on the berth and ships. Straddle carriers are used to move containers to and from the cranes and to stack them in the stowage area. Delivery to and receipt from road vehicles is by the same method. (Port of London Authority)

over 1000 20-ft equivalents, including 60 reefer boxes. Orient Line is the fortieth regular service to choose Felixstowe as their main UK port of call. Currently, the port is being expanded at a cost of £8 millions to handle five million tons or more of cargo a year by 1975.

Mundy Overseas Agencies Ltd. are the appointed UK agents in London and Felixstowe and this new route is expected to tap much of the rapidly increasing export trade between Britain and the Far East.

"Felixstowe are happy to accommodate this worldwide operator and member of the Far Eastern Freight Conference at this stage in our planned development as a major port," said Mr. Stanley Turner, group managing director of the Felixstowe Dock & Railway Company. He added, "This significant new link broadens our existing deepsea container and regular liner services, providing shippers with an even greater choice of fast, reliable, and direct through-transport to major markets and suppliers."

Orient Overseas Line's first ship, the "Yeh Yung" is due to inaugurate the new UK/Hong Kong/Taiwan service when she sails from Felixstowe on April 5, 1973.

Last year, the Port of Felixstowewhich already is used by over 50 per cent of the North Atlantic container operators — handled than more 106,000 containers amongst cargo totalling nearly three million tons valued at some £900 million. The promise of new Far Eastern markets could materially improve the port's already rapid growth and this latest step will increase the balance in the total range of routes and services (News from Port of available. Felixstowe)

#### Cargo Worth Nearly £900 Million in 1972

Felixstowe, 2 February:—Increase in 'domestic' container movements also sets new Felixstowe Freightliner record and profits grow by 50 per cent.

Figures just available from Felixstowe—marking the beginning of an important year for Britain's fastest growing port—show that a record total of 2,739,308 tonnes of cargo valued at some £892 million was handled through the Port of Felixstowe in 1972—a 25% increase in trade value and 10% growth in volume compared to the previous year.

Container through put at the port also set a new record with 106,336 movements, nearly 19% higher than the 1971 total of 89,518 boxes.

Pre-tax profit for the first 24 weeks of the current financial year was  $\pounds 527,331$ , compared to  $\pounds 339,586$  for the first half of 1971-a profit increase of 56 per cent.

Furthermore, over 1300 containers were handled at the new £200,000 Felixstowe Freightliner terminal in the first four weeks of operations after the official opening at the end of November by Mr. Dan Pettit, chairman of the National Freight Corporation.

This is a small increase in railborne container movements compared to the previous month but the biggest and most encouraging jump in Felixstowe Freightliner tarffic is in 'domestic' boxes, not maritime container traffic. Altogether 1311 domestic containers—chiefly carrying East Anglian seed potato consignments to customers all over the UK —were dispatched by December 24.

Commenting on this welcome growth of inland box traffic, the group managing director of the Felixstowe Dock & Railway Company, Mr. Stanley Turner, said "We are delighted to see such a rapid and an encouraging boost to inland rail movements from the Port of Felixstowe. The new purpose-built Freightliner terminal (which was financed and is operated by the Dock company) is proving an important regional asset." January throughput at the site confirms that the upward trend in domestic container traffic is likely to be maintained. (News from Port of Felixstowe)

#### Berthing Control Unified for Upper Docks

London, 21st February (News from PLA):—As a further improvement to service to shipowners or agents in berth allocations in the Upper Docks (India and Millwall and Royal Docks) the P.L.A. is centering this function in a new Shipping Control office in India & Millwall Docks from February 26th.

The Shipping Control office will be managed by Mr. John Ridley and will handle all berthing arrangements for India & Millwall Docks and the Royal Docks. Improved telephone access for customers is assured through the new direct lines being installed. The new numbers will be 01-987.3936 and 01-987.6697.

## P.L.A. Aquire Thames Stevedoring

London, 1st February (News from PLA):—The P.L.A. and the Principals of Thames Stevedoring Company (1965) Limited announce today that with effect from close of business on Friday, 2nd February, 1973, Thames Stevedoring Company (1965) Limited will be transferred to the P.L.A.

The objective of this transfer is to secure the retention of the South American trade in London; to safeguard the employment of the maximum number of people; and enhance the service to port users.

The Company is transferred together with all its assets within the docks, but excluding the head office organization and premises outside the docks. Additionally the financial arrangements include the payment to the P.L.A. of  $\pounds 125,000$  in settlement of outstanding claims in respect of B Berth at the Royal Docks.

It is intended that the name of the Company will be changed to P.L.A. (Thames) Stevedoring Limited as soon as possible. It will be retained for the time being as a wholly owned subsidiary of P.L.A. for business and administrative reasons, particularly to facilitate the integration of personnel into the P.L.A. operating structure. From the 3rd February, 1973, the Company will trade under the name P.L.A. (Thames) Stevedoring.

The Company will operate within the P.L.A. Upper Docks management structure, and its Board will comprise senior P.L.A. managers with Mr. R. H. Butler, Director of Docks, as Chairman, and Mr. J. McNab as Managing-Director.

The staff of the present Thames Stevedoring Company (1965) Limited will be retained with the exception of head office staff and some forty docks staff who will remain the responsibility of the present Principals. The remaining staff will



Aerial view of Manchester Canal Docks and the centre of Manchester.

be integrated into the P.L.A. staff structure in appropriate grades within about one month.

The registered dock personnel of the Thames Stevedoring Company (1965) Limited will be speedily integrated into the P.L.A. work force.

Commenting on the take-over, the Director-General of the P.L.A., Mr. John Lunch said:—"I am very glad agreement has been reached on this take-over and welcome to the P.L.A.'s organization all the employees who are being transferred. This gives us all the opportunity to enhance the services of the Port of London and to handle increased trade."

#### Port Trends Outlined by Mr. Noel Ordman in Birmingham Speech

London, 29th January (News from PLA):—The major trends in international sea-borne trade which are determining the nature of modern port development were outlined in Birmingham tonight by Mr. Noel Ordman, Assistant Director-General of the Port of London Authority.

Speaking to the West Midlands Branch of the Institute of Export on "The Effect of Ships on Ports", Mr. Ordman said that the extensive changes which are being wrought are not only physical in character; they deeply affect fundamental concepts of development and management thinking. He said that the capital intensiveness of modern port installations and the acceptance of accelerated obsolescence have as important an influence on port financing and the nature and level of port charges as the size of vessels and the growth of unit load systems on the configuration of port installations.

Thus the continuous service, twenty-four hours a day, 365 days a year, provided at P.L.A.'s Tilbury container terminals is essential to produce the high levels of throughput needed to justify the investment cost whilst maintaining charges at an acceptable level, he said, In the same way, the Tilbury bulk grain terminal represents a very large capital investment which requires and attains consistently high throughputs to enable it to achieve acceptable levels of unit cost. "P.L.A. are very well aware that port users, shipping companies, container operators and hauliers, have also invested heavily in unit load systems and must consistently achieve levels of performance which justify their investment and that the efficiency of the port is (Continued on Next Page Bottom)

Europe-Africa

## Guiding The Freight Vehicle Driver

by John N. Crisford Public Relations Officer British Transport Docks Board, England

18th January, 1973

When the public relations aspects of opening a new roll-on/roll-off terminal for a ferry service between the port of Roscoff in Brittany, France, and the port of Plymouth in Devon, England, were considered at the planning stage, one of the groups of people who were not forgotten were the drivers of the heavy vehicles which would be running through Plymouth in increasing numbers.

The City of Plymouth, although largely rebuilt after war damage with a fine new shopping centre, still has a number of ancient and narrow twisting streets, in which it is possible even for an English stranger to lose his way. But when the ferry opened, drivers from France would be negotiating the city traffic. They would be used to driving on the other side of the road, and many would only be able to speak French.

The city authorities were by no means unaware of the problem and had already been working out three routes into the city which could be

essential to their performance".

Turning to the P.L.A.'s planned development at Maplin, Mr. Ordman said: "Here, high throughputs are the basis of our planning, both for the oil terminal and the unit load and container facilities.

"Because of Maplin's splendid location in relation to the Continent, the first class landward links it will have with the industrial Midlands and the South East and the large areas of land that will be available, this planning approach is fully justified both in terms of the capacity of the installations we will provide and also the demand which they are designed to meet". used—one from the east; one from the north and one from the west. They were proposing to signpost these with the standard road transport signs, and we as the port authority felt we should co-operate to the full by advising drivers who were about to use our port of the existance of these routes and the necessity of keeping to them.

We decided to produce a freight vehicle drivers' guide, which, as far as we know, had never been done before. Our objective was twofold. Firstly, to assist the drivers to such an extent that they would be able to travel from the outskirts of Plymouth, through the city, and through the docks right up to the ferry terminal entrance without once having to stop to ask the way, thus



The first lorry with a load of vegetables to drive off the ferry vessel 'Kerisnel' when the service was inaugurated on 3 January 1973. The 'Kerisnel' will arrive at the Ferryport at Millbay Docks at 7.00 a.m. each day and sail for Roscoff at 11.00 a.m.

saving their times and eliminating a cause of traffic jams in the city and the dock area. Secondly, we wanted to make the drivers feel welcome to the port of Plymouth, and their passage through it as pleasant as possible.

We worked in close co-operation with the civic authorities and they provided us with town plans and details of the recommended routes. We then drove over the routes to see what problems might be encountered, for there is no substitute for a personal reconnaisance in such circumstances.

It became obvious that we should have to provide three maps on different scales—one to direct the drivers to the city of Plymouth and the beginning of the through routes; one to guide them through the city to the dock entrance; and one to guide them from the dock entrance to the terminal.

We carefully annotated existing maps and plans to emphasize the selected routes, and assist the driver by naming the important roads and giving the position of easily identifiable objects such as roundabouts and traffic lights. We then handed these to a cartographer and asked him to produce the necessary three maps all in a similar style.

The maps had to be accompanied by an explanatory text and it was surprisingly difficult to write this in a short lucid manner which would be comprehensive, and yet both acceptable and understandable by the driver. However, the task of theoretically getting our man from a point well outside the city limits to the terminal by way of three different routes was eventually completed.

We added information as to the opening and closing times of the ferryport, details about parking areas or lack of them, the whereabouts of public telephones and the main Post Office, where to find wash-rooms and lavatories, and useful telephone numbers. We also warned him that on one of the routes he would encounter a toll bridge, gave him the toll charges, and pointed out that having the right change ready would speed his journey.

The guide was then printed in two colours on both sides of a sheet



The first of three maps included in each guide. It clearly shows the three routes recommended for heavy vehicles and explains when the driver may begin to look out for roadside directional signs.



The map from the Guide which shows the way through the city centre. The recommended route is emphasised and the position of a heavy goods vehicle park is indicated. A third map indicates the route from the dock entrance to the Ferryport.

of paper size  $417 \text{ mm} \times 293 \text{ mm}$  and folded with three folds to the handy pocket size of  $210 \text{ mm} \times 97 \text{ mm}$ .

Having completed this exercise, we had to do the whole thing again in the reverse direction from the point of view of a driver arriving by sea and faced with the problem of navigating an unknown city and getting on the right route for his destination which might be anywhere in England. This version was then translated into French.

The distribution of these guides

#### Europe-Africa

was a matter of some importance. Clearly the French guide could be distributed on the ship, but the English drivers might be coming from anywhere in Great Britain and to be of use the guides had to be put into their hands before they reached the city. The docks manager at Plymouth arranged for distribution through shipping and forwarding agents, and the two freight organizations, the Road Haulage Association, which is the organization of professional hauliers, and the Freight Transport Association, which is the trade association of vehicle fleet owners, both willingly co-operated, distributing supplies of guides to their members and mentioning it in their association journals.

The guides were ready in both English and French versions for the opening of the new service by Brittany Ferries (BAI) on 2nd January this year, and first reports indicate that they have been very well received. Certainly, the interest shown by the Press in this attempt by a port authority to take the trouble to make life a little easier for freight vehicle drivers may be an indication that guides of this type may become more widely used in future.

Brittany Ferries will soon extend their service to cater for passengers and their cars, and the next stage will be to prepare a guide for passenger vehicle drivers which will of course be done in collaboration not only with the city authorities but with the United Kingdom motoring organizations.

#### TRANSPO 73 MANCHESTER— Communications Exhibition at the Port of Manchester, May 18th/June 2nd

Manchester: - The site of TRANSPO 73 will be the modern Building at No. 6 Dock in the Port of Manchester where, within the unrestricted covered area, there is over 25,000 square feet of display space. The exhibition building, together with extensive exterior hard standing areas, railway sidings and berths will be transformed for a 17-day period to present the most spectacular Transport Exhibition ever seen in the North of England. TRANSPO 73 will present the best in surface and air transport from yesterday, today and tomorrow to a potential five-million-plus audience.

Over 40 major exhibitors have already made stand reservations and among the many highlights of TRANSPO 73 will be:-

#### RAIL

A vast range of exhibits, ranging from the rolling stock of yesteryear to the British Rail experimental train, will provide a major attraction. Apart from British Rail's participation French Railways have booked space, and the preservation societies will include the Dinting and the Keighley & Worth Valley Preservation Societies.

#### ROAD

Many important manufacturers, including British Leyland, Seddon Diesels, Crane-Freuheuf and Mercedes Benz, have reserved large sites and will undoubtedly produce exhibits in keeping with their status. An impressive line-up of veteran and vintage vehicles has also been organized and these will be displayed in a separate hall within the exhibition complex. One of the exhibits will be a Ford Model T lorry which was built not very far from the site where the Ford Motor Co. opened their first British factory in Trafford Park.

#### AIR

In addition to taking part in the main exhibition, BEA have also organized a special package deal for visitors which will include transport from TRANSPO 73 to Manchester Airport, 60 minutes flight by BEA Super 1/11, and their return journey to the exhibition—all for £3.00 inclusive'.

Other major airlines, such as BOAC and Qantas, have also made stand reservations and will join other members of the aircraft industry, such as Hawker Siddeley, at TRANSPO 73.

#### FREIGHT

From fork lift truck manufacturers to freight forwarding agents—all facets of the freight industry will be represented at TRANSPO 73. Among those taking part will be Freightliners, Godfrey Davis, Truck Rental, SELNEC, Atlas Express, British Road Services, Conveyancer Ltd., The Port of Manchester, Pickfords, Manchester Airport and many others.

Apart from the major categories many other aspects of the industry will be represented, including Banking and Finance, Insurance, Telephones and Telecommunications and the Communications Media.

Dates and Hours of Opening Friday, May 18th, to Saturday,

#### Opening Day

11.00–19.00 hrs.—Guests and Press only.

#### Weekdays

June 2nd.

11.00–21.00 hrs.—General Public.

#### Saturday/Sunday

11.00–19.00 hrs.—General Public. The opening day has been exclusively reserved for the Press and Exhibitors' Guests; among the many first-day visitors and delegates expected are Mr. Richard Marsh, Chairman, British Railways Board.

#### Port of Le Havre Flashes— December

Frequent Consignments of Cattle: —Cattle in transit are a common sight in the port. On October 11th, for example, 208 head of Irish cattle passed through on their way to slaughterhouses in various French towns. They were imported as part of the French government's current drive against rising prices.

The Advantages of Size:—A tanker of 477,000 tons, the Globtik Tokyo, was launched a short while ago. In two years from now the Antifer oil terminal designed to handle such monsters will be in service. So it is by no means inappropriate to spell out at once the economies that these new ships will make possible. Taking a load of 220,000 tons as the reference figure, oil experts have calculated that the savings on a voyage from the Persian Gulf to Le Havre will be:

Type of vesselSaving obtained220,000 tons---240,000 tons....0.33 francs per ton

290,000 tons	1.90	,,
300,000 tons	2.21	"
350,000 tons	2.78	"
500,000 tons	4.70	,,

I.C.S. France (Integrated Container Service):—The new General Manager for France, Spain and Portugal of the ICS World-Wide 35,000 Container Leasing Company is Mr. Michel Sacleux, who worked in close collaboration with the Port Authority a few years ago on Ro/Ro freight and container developments. He took up his new post on October 30th.

An Historic Day:—October 27th saw the official opening not only of the François Premier Lock, to which we recently devoted a special issue, but also of our second container terminal, the Quai de l'Europe, which supplements the already existing facilities of the Quai de l'Atlantique and enables us to look forward with certainty to a record movement of 100,000 containers this year (against 68,000 last year).

Concurrently with the official programme, the Port held an open day for the press and was proud to show its many and varied facilities to over a hundred French journalists and foreign correspondents in Paris. A cordial welcome will be extended to any individual journalists who were unable to attend or whose names were inadvertently left off our invitation list.

Le Havre: Gateway to Paris:— A new stretch of the Normandy Motorway, 15 miles long  $(24\frac{1}{2} \text{ km})$ , was opened by Mr. Olivier Guichard, the Minister for Regional Development, on October 27th last. This all but completes the motorway link with the capital and makes Le Havre more than ever the ideal port for the overseas trade of the entire Paris area.

French Cars For The Antipodes: —The Dutch vehicle-carrier Nedlloyd-Carwell recently loaded in Le Havre for the first time for New Caledonia, Tahiti and Australia. 308 vehicles of various makes were hoisted aboard by the ship's own derricks.

Three Months Ahead:--The September figures brought the total

(Continued on Page 46)

## Technical Tie-up on Continuous Flow Unloader

Tokyo:—A technical tie-up has been concluded between Mitsubishi Heavy Industries, Ltd. of Japan and Orenstein & Koppel A. G. of West Germany on the production of a continuous flow unloader, primarily for the market area of Japan but also for South East Asian countries with certain reservations.

The subject products are classified into two types, one for installation ashore and the other for mounting on vessel.



Deck mounted "Conflow" unloader



Conflow quay type unloader

#### (Continued from Page 45)

number of containers moved outwards or inwards until then to 68,-011, compared with a total of 68,000 for the whole of last year.

Roll-on/Roll-off Service to Canada:—The new ro/ro ships of the Federal Commerce and Navigation Company, better known as "Fednav", have been calling regularly at Le Havre since September. Designed for the transport of cars and other wheeled traffic, they have two loading doors on the starboard side each 15 ft 4 in (4.69 m) long. Fednav has renewed its contract with Renault for shipments to Canada.

Hapag Lloyd in Le Havre:—Since October 17th, Hapag Lloyd have been providing a direct service between Le Havre and Halifax, with sailings every Tuesday. Arrival in Halifax is timed for the following Tuesday. Through bills of lading are delivered for Montreal, Toronto and all Canadian ports. Onward dispatch from Halifax to Montreal takes two days, and to Toronto three days.

Spectacular Increase in Moroccan Fruit Shipments: — The Moroccan Export Board is so pleased with the results of the 1971/72 season that it has decided to increase shipments still further.

Two German ships, the Duneck and the Anna Knüppel, have been chartered for the purpose and will call at Le Havre every five days with containers of fruit from Casablanca.

Total shipments of about 45,000 tons can be expected during the 1972/73 season, not to mention the miscellaneous cargoes that both ships will be able to carry in either direction.

An air-conditioned shed will be used for the handling operations at the Le Havre end.

#### Ghana Study Completed

Vancouver (Swan Wooster Engineering Co., Ltd.):—A major study of the forest products transport system in Ghana has been submitted to the Ghanaian Government by Swan Wooster Engineering Co. Ltd.

The study was financed by the Canadian International Development Agency as part of Canada's program to assist developing nations.

## Security Committee Is Formed in Port of Kelang

Port Kelang, West Malaysia: ---The Port Security Committee was formed to discuss problems relating to security of cargo. The members of this Committee consist of a representative each from the Customs. Malayan Railways, Malaysian International Chamber of Commerce, Associated Chinese Chamber of Commerce, Malaysian Insurance Association and senior staff of the Authority. The Authority's staff comprise the Director (Administration), the Secretary, the Traffic Manager (North Port), Traffic Manager (South Port) and the Chief Security Officer.

At the first Security Committee meeting held on 15th September, the mechanics of the new procedure on port working was explained to the members. They were also informed by the Secretary of the Port Authority Encik Mohamed bin

The comprehensive report sums up a year long study which included extensive field investigations. The analysis proceeded from an examination of the existing system. This required the compilation of information and data on forest resources, commodity flows, marketing volumes and practices, government policy, personnel skills and training, and the calculation of the prevailing operating costs of the total forest products transport system of the Republic.

From these data the consultants developed forecasts of future utilization of products and of demand for their transport. These were used for the evaluation of alternate transport systems and the formulation of recommendations for improvements in specific system components. The study was oriented towards the practical aspects of operations with emphasis on operating methods, productivities of men and machines, and specific alternatives which are expected to be readily adapted to the capabilities of the Ghanaian economy.

Hj. Abdul Hamid that the claims against the Authority could be classified either for alleged shortdelivery against the quantity stated in the agent's landing tally, shortage of contents to packages or damage to goods. In deciding whether these claims should be paid or not, the Authority is guided by its legal responsibility of a bailee. As a bailee the Authority will be responsible only for cargo received into its custody. Only if this is so, the question of reasonable care will be determined. The Claims Section has been and will always be searching for better methods of getting fast and reliable information in finalizing claims. At present claims are finalized within a very short period.

To enable members to have a clearer picture of port operations. The Traffic Manager (North Port), Encik M. Rajasingam, touched briefly on the history of joint tally in the port. Joint tallying of goods proved to be not very effective in ascertaining the quantity landed and a new system was introduced whereby selected category of goods would be verified on discharge. This was necessary because of the experience that goods manifested or tallied by the agent did not necessarily mean goods received by the Authority. Under the new procedure, verification will be done on all cargo discharged into the custody of the Authority and this could be done without affecting the speed of discharge. Since the introduction of this system, the port staff found it easier to keep track of the receipt storage, movement and delivery of goods.

The Authority will also not allow Forwarding Agents and those who want to take delivery of their goods from entering the sheds. This is to ensure greater safety of goods kept in the port area. Instead, the port staff will deliver the goods to the importer and forwarding agents.



Frementle Port Authority — Mr. W. E. Willis has been appointed Divisional Manager-Administration and Secretary as from 27th July, 1972. Mr. Willis joined the Authority as a Junior clerk in 1949 and has served in a variety of positions in the Administrative Division.



Frementle Port Authority — Capt. J. Adams was appointed Divisional Manager — Operations as from 6th July, 1972. Capt. Adams joined the Authority's staff in 1949 and has previously held the positions of Harbour Master, Deputy Harbour Master, Chief Pilot and Pilot in the Nautical Division.

The Traffic Manager (North Port) appealed to the Agents to give the Port Authority one day advance notice by submitting two copies of the Import Note to the Commercial



Paceco 40 Long Ton Transtainer at the Port of Norfolk, Virginia similar to the two Transtainers to be installed at the North Point Wharves, Hong Kong. (PACECO)

Section of the port, one copy of which would be sent too the particular shed for tracing and cargo will be prepared for delivery the next day.

On the question of security of cargo raised by a member of the Malaysian International Chamber of Commerce, the Chief Security Officer of the Port Encik Hairi Osman bin Hussin said that the security personnel in the port area is on duty 24 hours a day and there is close co-operation between the Royal Malaysia Police and the Port Security Unit. The Marine Section of the Security Unit will acquire two more boats to increase sea patrolling in the port area.

After a short break, members were brought to No. 7 Shed to have a first hand look at the godown and the Traffic Manager (North Port) explained the actual movements of documents from the shed records. (Kelang Port News, Vol. 1, No. 2)

#### LNG to Japan

Abu Dhabi:—It is reported that a liquefied natural gas plant will be constructed by a consortium of five companies on Das Island, the total investment cost on this project being in the region of US\$300-million. The gas feedstock to the liquefied natural gas plant will be provided from fields in the ADMA concession area. A large scale sale deal of this gas has been arranged, subject to the approval of the Government of Abu Dhabi and the Government of Japan. Negotiations have been concluded between the Tokyo Electric Power Company Inc. and the Consortium for the sale of gas to Tokyo Electric Power Company Inc. of approximately 3 million tons per annum of liquefied gas. The agreement to supply this gas at Tokyo Bay covers a period of 20 years, commencing from 1976. Specialized liquefied gas tankers required for the transport of the gas to Japan will be provided under long term charter arrangements. (Gray, MacKenzie & Co., Ltd. January Bulletin-1973)

#### New Container Cranes Will Be First for Hong Kong Island

Alameda, Calif., January 24 (PACECO):—The first specialized container handling cranes to be installed on Hong Kong Island will be going into operation in June of 1973 for the North Point Wharves Limited Container Terminal.

Designed for handling containers in the terminal, the cranes are mobile with huge rubber tires. They will have a 40 Long Ton capacity and telescoping lifting spreaders for handling both 20' and 40' containers.

#### Asia-Oceania

Designed and built by Paceco, a Division of Fruehauf Corporation, in Alameda, California, the cranes known by the registered name of "Transtainer" have a 74 ft. span, which enables them to straddle six rows of containers plus a truck roadway.

Other container terminals in the Port of Hong Kong are on the mainland. The recent growth of containerization in the Port is evidenced by the container handling equipment in these terminals. This year at the Kwai Chung site there will be five Paceco Portainers (ship unloading cranes) and four Transtainers. At the Kowloon Wharf & Godown Company Terminal there is one Paceco Portainer and three Transtainers. At the Hong Kong & Whampoa Dock Co. Ltd. there is one Portainer and two Transtainers. The total handling facilities for the Port of Hong Kong this year will include 7 Paceco Portainers and a total of 11 Paceco Transtainers. Noteworthy is the fact that 6 of the 7 Portainers and 10 of the Transtainers at the Port have been ordered or put into service within the past two years.

#### Shipyard in Bandar Abbas

Teheran:—The Plan Organization has approved \$300-million for a ship-building yard at Bandar Abbas with the help of the Japanese ship-building experts. Additionally, \$69 million have been allocated in order to develop the Port's exporting crude oil and mineral ore potential.

In its efforts to moderate and expand the Iranian Ports, the Ports and Shipping Organization has placed orders with England for cranes valued at Rls. 200-million. The cranes which will have a capacity of 3 to 25 tons will be installed at Bushire, Khorramshahr, Bandar Shahpour, Bandar Abbas and two northern ports of Nowshahr and Pahlavi.

The ship repair-yard of Bushire will be expanded to construct small and medium ships at an estimated cost of \$4 million. The port is also being dredged to accommodate 20,00 ton ships. (Gray, MacKenzie & Co., Ltd. January Bulletin—1973)

#### **Port Seminar**

Tokyo:—The 12th Seminar on Ports and Harbours, 1972 (fiscal year) was opened January 29, in Tokyo by the Overseas Technical Cooperation Agency (OTCA) of Japan to last until March 27, 1973.

A reception was held on February 5 from 6:00 p.m. at Seiyoken Restaurant in Ueno, Tokyo where Dr. Kiichi Ohkubo, Technical Counselor, Mr. Noboru Suzuki, Director, Administration Division, Bureau of Ports and Harbours, Ministry of Transport, Dr. Hajime Sato, Director General of Japan Port and Harbor Association (Deputy Secretary General of I.A.P.H.) and OTCA and Government officials were present.

Altogether 18 participants including one lady were registered, from the following countries: Argentian, Colombia, Egypt, Indonesia, Iran, Iraq, Korea, Malaysia, Mexico, Nigeria, Pakistan, Peru, Philippines, Singapore, Sudan, Thailand and Venezuela.

## IHI to Build 700,000 DWT Ship

Tokyo, Japan, Feb. 22:—IHI (Ishikawajima-Harima Heavy Industries Co., Ltd.) and Mr. Ravi Tikkoo, Chairman of Globtik Tankers Ltd., England, who visited Japan on Feb. 20 in order to take delivery of the world's largest oil tanker the Globtik Tokyo (483,664 tons) built by IHI's Kure Shipyard, have made a preliminary agreement for the construction of an even larger oil tanker of approximately 707,000 deadweight tons, with the indicated delivery date being the end of 1977.

Upon completion, the vessel will be chartered to a certain major oil group for 20 years.

Details of terms and conditions of contract will be agreed upon between the parties within three months. (IHI News)

#### Port Integrated Documentation, Reporting and Billing System

Penang:—The Penang Port Commission was heralded into the computer era in 1966 when it became the first port in South East Asia (and the second organization in Malaysia) to install a stored-programme electronic computer—an NCR 500 Computer. However, this Computer was used mainly for accounting purposes. In November 1970 an IBM System/ 360 Model 20 was installed in its place and was planned for utilization in wider fields. The most significant application designed around this third generation computer is the Port Integrated Documentation, Reporting and Billing System (PID-RABS) for inward cargo.

PIDRABS is designed to process the tedious clerical and documentation procedures involved in inward cargo and billing. It is also a reporting system. The cargo handling operations performed on inward cargo is recorded in the system. The data on every consignment of cargo is captured with the maximum of detail. Combined with data recorded in the outward cargo system (already computerised), the ships file and pilotage records, the computer will be able to compile useful statistical and management reports on the 3 million tons of cargo handled and the 3,200 ships passing through the port annually.

PIDRABS is also designed to provide better and prompt customer services. The adoption of the system will eventually result in

\* immediate separation of cargo at the time of discharge from ship and prompt discharge to Butterworth or Georgetown as port-marked.

\* presentation of all charges in one bill rather than in a number of bills.

\* prompt billing for all services. To effect such a system, the capture of data begins at source with the creation of the Traffic Operations Master (TOM) file which records the status and details of every consignment of cargo in the ship's manifest and all the operations performed on it. The cargo handling activities as they occur are captured into the system via the input of other 'traffic' documents, namely the consignee's letter of instruction, tally worksheets, delivery invoices and the checker's report.

PIDRABS is not yet completely implemented though major portions of it is already in operation.

The system is currently producing \* a control report on cargo move-

ments and landing points. This report is required for the efficient planning of port operations and is produced just prior to the ship's arrival.

\* a godown inventory report which informs the godown storekeepers of the inward cargo that has entered the respective godowns. (Berita Pelabohan, October 1972)

#### **New Dredger**

Penang:—The Penang Port Commission's new dredger "Kuala Prai" was put into operation in early November 1972. Built in Australia at a cost of \$1.6 million the dredger was delivered to the Commission on 13.10.72.

This dredger is a self propelled hopper grab dredger with a hydraulically operated hopper of 400 cubic yards capacity and equipped with two Priestman crane operated grabs of  $2\frac{1}{2}$  cubic yards capacity each. The dredger is powered by two Lister Blackstone main engines developing 990 h.p. and driving two screws with a speed of  $10\frac{1}{2}$  knots in fully loaded condition. The vessel is 147 feet long, 35 feet wide with a draft of eight feet.

The dredger is manned by a crew of 10 and 2 crane operators and initially is operating on one shift of eight hours. It is planned to introduce a second shift in January 1973.

Since this dredger was put into operation the Commission has been able to maintain better depth of water alongside all the berths at Butterworth Wharves and with the introduction of a second shift, there will be adequate dredging capacity to maintain the depths at 32 feet L.W.O.S.T. In addition to dredging the areas at the wharves it will also have spare capacity to undertake dredging in other areas of the port if necessary. (Berita Pelabohan January 1973)

#### Oakland's Remarkable Build-up of Container Traffic Prompts Congratulations from Auckland

Auckland, N.Z., 6 February:---The rate of growth in the Port of Oakland's container traffic as recorded in the January issue of "Ports and Harbors" prompted congratulations from the Port of Auckland, New Zealand, which has had a sisterport relationship with Oakland since November 1969.

Mr. R. W. Carr, Chairman of the Auckland Harbour Board which administers the Port of Auckland, wrote as follows to Mr. Ben E. Nutter, Executive Director, Port of Oakland Authority, California:

"Members and Officers of the Auckland Harbour Board extend warmest congratulations on the remarkable build-up of container traffic and other cargo through the Port of Oakland.

"The rate of growth in container cargo from 365,000 tons in 1965 to 3.8 million tons in 1971 and approximately 4.3 million tons in 1972 is an achievement only professionals in the port industry can really appreciate.

"It reflects successful forward planning, effective development of port facilities to cope with changing trades and constant attention to daily work problems of a busy and expanding port.

"The Port of Oakland programme of 35 full container-ship sailings per month from ports in the Far East to Oakland, averaging the arrival of one vessel every 18 hours, puts the growth of Oakland into proper perspective for Members and Staff of port authorities like Auckland which are now at earlier stages of developing steadily expanding container traffic.

"Again, our congratulations on becoming the busiest container port on the United States West Coast and one of the world's largest. The enterprising direction and management already so apparent at the Port of Oakland ensure the continuing advancement we wish you in the years ahead."

The Oakland-Auckland relationship arose through interests shared by the two ports which handle a similar variety of goods and have common interests in the further development of container traffic.

In a centennial message to the Auckland Harbour Board in 1971 the Oakland Board of Port Commissioners stated:

"Mutual co-operation between the two ports has brought about better understanding and an immeasurable contribution to world trade between the United States and New Zealand." (Auckland Harbour Board)

#### Throughput af Karachi Port Shows Remarkable Increase

The Chairman, K.P.T., issued the following Statement to the Press on 30-11-1972:—

The working of the Port continues to show considerable improvements as very high tonnage in cargo handling have been achieved. The throughput on the 29th Nov., 1972 was 21,000 tons. The whole Port Organization, particularly dock labour, are geared up to clear the back-log at the earliest. At this rate of throughput, the K.P.T. is confident that within a short time the bunching of ships in the outer harbour would have been very considerably reduced and the waiting time of ships brought down to normal levels. Special measures have also been adopted to ensure that the regular users of the Port are not kept waiting outside the harbour and are accommodated without undue relay. Such shipping companies have been asked to send their forward shipping forecasts with tonnages so that adequate arrangements can be made to handle them expeditiously.

A number of vessels off port consist mainly of bulk loaders and dischargers. In certain cases, some bulk loaders have arrived even before the commencement of laydays. Furthermore, at least about 14 vessels are holding small quantities of cargo and once they are accommodated in the Port their turn-round would be very rapid which would in turn have an all-round beneficial effect.

The Port has taken special measures for export vessels to be accommodated in abreast condition so that the lighterage fleet in the Port area can be utilized to its maximum to move cargoes to and from vessels. Additional loading / discharging points have also been made available for this purpose, including berths No. 1 and 2 which, though not fully completed, have been put into commission for vessels working to and from barges.

The Port is now fully operational to work on Sundays and holidays and the Customs and trade organi-

#### Asia-Oceania

zations have also been requested to do likewise. Chamber of Commerce & Industry have already appealed to the members to move cargoes on Sundays and holidays. Special efforts are also being made to berth/ sail vessels at night so as to reduce the time lag between completion of cargo work and sailing time.

All these measures are having most positive effect and the throughput in the Port has shown remarkable increase and because of these measures, pressures on the Port have substantially reduced and we are confident that with the maintenance of the present tempo and level of throughput and expected further improvements, the problem will be resolved very shortly. (K.P.T. News Bulletin, December 1, 1972)

### World Bank Officials Visit Karachi

Karachi: — Mr. Tillman H Neuner of I.B.R.D. Economic Mission visited Karachi Port on 21-10-1972 and discussed the Port Development Schemes with the Chairman, Mr. Rustom F. Cowasjee, the Vice Chairman and the Principal Officers of K.P.T. The Engineer-in-Chief, K.P.T. Mr. Aftab Alam outlined the strategy for economic planning and development of Karachi Port. (K.P.T. News Bulletin, December 1, 1972)

#### Container Handling Quadruples

Singapore, 12th February:—The monthly throughput of containers handled by the Port of Singapore Authority jumped four-fold to 4,591 containers in November last year.

A total of 3,142 containers were handled during the month by the Container Port, 878 from conventional cargo ships alongside Keppel wharves, and another 571 at Sembawang Port.

Before the opening of the Authority's modern East Lagoon Container



A sectional view of the Authority's modern East Lagoon Container Terminal showing the third giant container quay crane conducting loading/unloading operations on the T.S. Bremen Express. The Bremen Express was also the first container vessel to work with all three cranes at one time. The Authority expects to take delivery of its fourth crane in July. (Port of Singapore Authority)

Port in June 1972 the monthly figure of containers handled hovered around 1,000.

The month also saw the highest number of seven third-generation container ships calling at the Container Port.

This worked out to one container ship alongside the Container Port every four days and indications are that this will be stepped up to one every three days with ten container ships scheduled to call at Singapore in January.

The number of 20-foot containers accounted for over 71 per cent while 40-foot containers made up 15 per cent. The remaining were 35-foot containers handled at Sembawang Port.

The Authority expects 1972 to be a record year for containers and containerized cargo. Since its inception in June, until November, the \$140 million East Lagoon Container Port alone has chalked up a total of 138,199 tonnes of containerized cargo. This represents an increase of 65 per cent over the figure of 83,466 tonnes for the whole of 1971.

Meanwhile, work on the further extension of 1,000 ft. (300 m.) to the main container berths is in progress. The first 2,000 ft. (614 m.) has already been completed and the Container Port is now capable of berthing two third-generation vessels at the same time.

The third giant container quay crane, costing \$2.5 million, has been commissioned for operation while the fourth crane is expected to be delivered in July.

The second Container Freight Station has been completed providing another 7,525 sq. metres of covered space for container stuffing/ unstuffing operations. (The Port of Singapore Authority Press Release)

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