



Amsterdam-Rotterdam Conference IAPH May 1973

The Publisher: The International Association of Ports and Harbors Kotohira-Kaikan Bldg. 1, Kotohira-cho, Minato-ku, Tokyo 105, Japan

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HARBORS

Editor: Yoshio Hayashi

Published monthly by

The International Association of Ports and Harbors

PORTS and

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The Cover:

The outer oil port of Bordeaux at le Verdon, at the entrance, can accommodate tankers up to 200/250 000 tdw. On this picture, the "TEXACO NORWAY" (253,000 tdw) was unloading for the ELF refinery of Ambès (in the Gironde estuary). See also story on page 21.

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PORTS and HARBORS

Minor Papers Reproduced: The acro

The across-the-page-line articles printed here (numbered consecutively) are reproductions of Minor Papers from literature distributed at the 7th Conference in Montreal.

(18)

AUTOMATED CONTAINER HANDLING -A STEP INTO THE FUTURE

BY

C. D. RAMSDEN

PRESIDENT AND GENERAL MANAGER OF PACECO A DIVISION OF FRUEHAUF CORPORATION

Regardless of the activity, be it manufacturing, transportation or even entertainment, there is a growing interest throughout the world to automate wherever possible. Thus, it is not unexpected to find a rapidly growing interest in automation of port facilities involving the processes of loading, unloading, storing, stacking, sorting and distribution of containerized freight.

Such an interest would have been out of the question only ten years ago when this association met last in Montreal, and early papers were presented seriously suggesting the possibility of major containerized freight movements some time in the future.

The "containerization explosion", a trite phrase but certainly true, has occurred since mid-1960 and has brought us to a position where we now have in service and under construction "Super-Container Ships" capable of speeds in excess of 30 knots with carrying capacities of 2,000 20-ft.-equivalent containers. The capital investment in these tremendous ships requires their full utilization and fast turnaround at the ports. Because of the large number of containers to be discharged and loaded during the very short turnaround time, port facilities must be designed and built for an extraordinarily high hourly throughput capacity to cope with the surge of activity required during the period of time the ship is in port.

NOTE: Shipstainer, Transtainer, Portainer, Sway-Stop and MACH Portainer are marks or registered Trademarks of Paceco Container Handling Equipment. Speedtainer is the registered mark of Kaiser Engineers. Sway-Stop is the subject matter in pending U.S. and Foreign Patent applications.

The pressure of competition has, during the past several years, substantially lowered the revenue recovery for container shipments from port to port and, in addition, demands of customers for late acceptance of export and fast delivery of import containers all are pressuring port facilities to be designed and built to operate at the lowest possible cost per container handled while providing the highest container availability practical.

The technology of design and construction in container handling equipment has advanced almost as rapidly as the containerization program itself. Individual equipment items such as ship loaders, dock handlers, transporters and other port equipment have had significant improvements made in their individual capabilities. The machines now provide for multiple container handling, higher tonnage capacity, more rapid positioning, higher speed movements and greater accuracy of control.

Over the past years there has been an increasing awareness by port managements, terminal operators, ship operators, for the need of an over-all system approach. Considerable attention is being given to designing the terminal for its future potential and requirements, and in so doing plan the growth and expansion of preserve each item of equipment and ground facility initially installed. Much attention has been given and acceptance has been shown to the concept of modular growth toward a final plan where each piece of equipment added to meet expanding port growth complements the original equipment. The objective of this planned growth concept is to increase terminal throughput to its maximum for each containership berth and terminal acre, by growth in modules which involve minimum capital investment consistent with updating and uprating of equipment and systems rather than creating a situation of obsolescence of equipment and/or systems.

The trend in the terminal system planning is moving away from the original chassis storage systems through the straddle carrier phase to rubber-tired Transtainers complemented by rail-mounted Transtainers, toward automated transport from dock to storage area in combination with automated stacking and retrieving from ground storage or from vertical storage buildings.

With the development of an over-all systems approach to attain maximum container freight throughput, the port or terminal operator must get maximum performance from each piece of equipment. To do this, the first step in automation is to eliminate the human delay factor in the operation of handling, transport and storage equipment by taking control away from the operator at every possible occasion so as to automatically operate each equipment item at its maximum designed speed and duty cycle. This, we believe, will be the initial step taken in port automation.

Considering the need for speed and efficiency required to handle up to 200 containers per hour, which will move by the use of multiple ship unloading facilities, and even higher handling rates attained when ship unloaders are automated, ground handling terminal facilities must be automated to cope with the demand.

There have been many broad and sometimes grandiose schemes for automated terminals put forward in the past, but up to this time far too little hardware has been produced and installed. The problems of cost versus reliability have to be weighed against labor and time savings. The ability to send men to the moon and bring them back clearly indicates that, if money is no object, great reliability can be built into computerized systems which can perform automated ship loading and unloading and automated transport, storage and retrieval of containers. At the present time, however, investigations indicate that in order to get the necessary reliability in a completely automated terminal system, extensive backup systems are required and initial costs and maintenance costs appear to be prohibitive. The failure of a single part of a totally automated system would bring the whole loading/unloading operation to a halt and delay the ship at the dock until repairs can be made — a costly matter, in fact.

Automation of rail or rubber-mounted Transtainers for ground storage of containers in multiple stacks is feasible with presently developed hardware. The rubber-tired Transtainer automation offers more problems and may be limited in total scope more than the rail-mounted Transtainer.

Automation of a vertical storage and retrieval facility for containers, such as the Paceco Speedtainer, is well within the state of the art. Only the size and mass of the containers make the system unique because automatic warehousing systems and automatic parking garages are presently in reliable operation throughout the world; however, even such systems cannot tolerate a major fault, failure and shutdown without high cost losses.

One of the serious deterrents to full automation of a container terminal is the inability of handling equipment to control the exact position of the container in relation to a selected position within the tolerances required by the dimensions, structure and container lifting fittings. Most of the handling equipment for ship loading/unloading and much of the equipment for handling containers in and around a terminal uses a wire rope suspension system of some type attached to a lifting device for the purpose of raising and lowering a container. Because containers must go deep into ship cells, and in many instances are stacked 3 and 4 high on the ground in close proximity, one to the other, the ropes suspending a container lifting device must be essentially vertical with respect to the lifted container. The container can swing as a pendulum from the force of wind and the force of acceleration and deceleration of travel of the container handler. Automation of container terminal loading and handling systems cannot proceed until the handling equipment has the ability to control and maintain the location of a container in fixed relation to the crane. Several schemes have been used in the past with some modicum of success. British Rail has used a rigid vertical mast suspension on rail-mounted yard cranes to eliminate sway; however, this design becomes impractical for unloading a ship where a total lift of 130 ft. may be required. Shipstainers have been provided with "upper limit" locking devices to hold the container fixed during travel, but do not hold the container during its vertical travel period against sway induced by wind or by a listing ship. Minimum cycle time is also unattainable with such a method of movement.

A cross-rope system for controlling sway was developed 4 or 5 years ago and is used on the Paceco Transtainers throughout the world, but this system has limited capability in controlling sway when the container is suspended over 30 ft. below the hoist drums on the trolley of the Transtainer. Other devices have been developed which have attempted to provide some degree of rope angle to prevent a pendulum action, and schemes have been developed to provide brakes to prevent the sheaves in the hoist system from turning, which in turn tends to dampen the sway in the rope suspension. Electrical systems which measure and regulate rope angle, a function of sway, and regulate deceleration rates have been developed but they have the basic fault of not being able to stop a container at a predetermined position with respect to ship or ground at the same time they stop the sway of the container by controlling speed and deceleration. None of these systems has proven really effective in controlling sway in a ship unloading crane where very high speed movements are essential, and the total lift from the bottom cell of a ship to the top position is 130 ft.

Until container sway is extremely accurately controlled or eliminated, it is impractical to attempt full container terminal automation. The position of a ship or a ground storage area can be accurately measured with relation to accurately measured positions of moving trolleys or structures of Portainers, Transtainers and other handling devices, but the system will fail if the container location with respect to ship cell or ground position cannot be controlled. Careless operators using the built-in high acceleration and deceleration rates of modern cranes can cause a container to sway 8 ft. or more off the vertical.

For the past 4 months a new system* for container sway control has been under test in the Port of Oakland 7th Street Terminal. The system is installed on a Paceco Portainer, which has a total lift of 126 ft. and an outreach over a ship of 115 ft. Tests have been conducted for effectiveness of sway control and at dock or ship deck level and show that the system is capable of essentially eliminating the sway to a matter of inches in a few seconds after a full stop at high deceleration rates. The system provides a wide rope angle in the suspension system while above the ground and above the deck of the ship, and by means of a split trolley or movable sheaves on the trolley bring the upper rope suspension points automatically close together when a container enters a stack or enters into the cell of a ship. This narrowing of the upper suspension sheaves prevents interference between the ropes and the cell structures or other containers in ground stack.

With the sheaves and/or twin trolleys widely spread to provide rope angles to stop sway there is a danger of excessive rope tension in the full hoisted position. Automatically devices bring the suspension points together as the container lifting spreader approaches the upper hoisting limit.

At present, delays occur in ship loading and unloading cycles at entry to the cell guides when the operator must slow down to position and enter the guides at slow speed because of the swaying container; also when approaching a vertical cell position where the container or lifting spreader must be stopped.

With the container controlled to the degree now possible with the new multiple, adjustable rope suspension "Sway Stop" system, it is believed that automation of ship unloading can be attained. Sensors are available which will monitor the position of the ship with respect to the dock, measure draft or tide changes and list angle. This information can be transmitted to simple computers which will in turn tell the Portainer the exact position of the cell guide entrance and the vertical position for any cell on the ship at any time. The container will be traveled automatically through a minimum travel arc from shore into any given cell without slow down and further be lowered at full speed until it reaches a point just above the next container in the cell. At this point the hoist is decelerated and stopped automatically to deposit the container in the cell. All this is accomplished with a pre-programmed loading system monitored by ship position sensors. Using these types of control studies show that container loading/unloading rates can be increased by 50% using the high speeds and sway stop system, by an additional 20% using below-deck measurement (draft, tide) and with full automation 100% improvement in cargo movement rates.

To prove the feasibility of the entire system, a one twenty-fourth scale model of a movable ship and a dock crane has been built and has been fitted with sensors and other devices necessary to control the load/unload cycle automatically. It is successfully operating in the fully automated model, which has proven the full ability to perform the job intended. Within the next year it is intended to automate, in steps, the full scale Portainer in Oakland.

*U.S. & Foreign Patents Applied for.





PORTS and HARBORS

Now that we believe that ship loading and unloading can be automated, our plan is to proceed, using the Sway Stop control system through various steps of control and automation with the ultimate objective of eventually preparing a magnetic tape of the loading of a ship, which can be sent with the ship to the unloading port. The tape would be fed into a tape reader and the entire ship could then be unloaded and reloaded automatically. Using the programmed controller simultaneously with the loading operation another unloading tape would be prepared.

Our studies lead us to believe that we are not going to eliminate operators from the equipment. It appears that at the present time the cost of providing and maintaining sufficient backup computers and control devices to insure sufficient reliability will exceed the savings in obtaining fully automated maximum container throughput. The step to the future for container automation is to keep the operator on the equipment for over-ride and to provide a simple protective equipment which will detect a fault and will shut down the equipment for safety. At this point manual operation will be used for any of the loading/ unloading, storage, retrieval operations during the period of high throughput demand when the ship is in port. Simple backup systems, we think, can be provided to increase the operator efficiency, which will, in the event of the failure of any automated portion of the total terminal container handling system, provide a secondary system of automatic control to insure the maximum speeds and duty cycles of the various pieces of container handling equipment at non-critical points of any cycle.

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AN IMPORTANT COURT CASE

BY

R. K. TRIMMER, L.L.B.,

CHAIRMAN

NORTHLAND HARBOUR BOARD

NORTHLAND HARBOUR BOARD v AUCKLAND WATER TRANSPORT LIMITED

1. Towards the end of 1961 the Northland Harbour Board of Whangarei, New Zealand, was requested by the McKendrick Glass Company Limited to design and construct a jetty adjacent to its glass factory, capable of carrying 600-odd tons of sand.

Plans and specifications were prepared and the proposed work was costed. The estimate was £25,000 minimum. Depending on a number of factors in respect of which no decision could at that time be made, the cost might have varied up to £30,000.

The Directors of the Glass Company were therefore informed by the Harbour Board that such a jetty would result in it having no alternative but to increase the harbour dues on sand from 1/6 to 4/- a ton.

The Directors of the Glass Company then told the Harbour Board that their new glass industry could not stand such an increase in costs. They asked that a much lighter structure be built against which a barge could rest while the sand was unloaded by the barge's own grabs into motor trucks which would carry each load about 20 yards across the apron of the jetty onto terra firma, where the sand would then be stockpiled.

The Harbour Board informed the Glass Company that such a structure could be built for only $\pounds 10,000$ or $\pounds 11,000$ and that the interest on such an amount of money could be absorbed within the existing harbour dues on sand, namely 1/6 a ton.

The Glass Company then asked the Harbour Board to proceed on this basis and the Board did so.

As a precautionary measure, on 22nd March, 1962 the Board wrote a letter to the Glass Company which included the following paragraphs: —

" Finally, I am bound to remind you that the jetty now being constructed is not, and never has been inten-

" ded to be used for the storage of large weights of sand. It is structurally not capable of doing so. After

" discussion with Mr. Halstead this wharf was designed lightly because it was agreed that it was not to be

" used as a warehouse.

" The truth of the matter is that it has been understood by us that you intended to use Culham's buildings

" for storage of sand. The Board must hold your Company responsible for any damage incurred by over-

" loading on the wharf or by the construction or use of any equipment."

(NOTE: Mr. Halstead was Chairman of Directors of the Glass Company.)

On 6th June, 1962 the Harbour Board Engineer reminded the engineer to the Glass Works of the absolute necessity of seeing that the load on the jetty at any time was not a concentrated one.

While the construction of the jetty was being completed, the Glass Company contracted with the defendant barge company, the Auckland Water Transport Limited, to bring sand from about 120 miles away, and discharge it at the new jetty near its factory at Whangarei. On 9th June, 1962, at about 12.30 p.m., a Saturday, the defendant's barge arrived at the sand jetty for the first time and proceeded to unload with its own gear 610 tons of sand onto the jetty. When the complete load of 610 tons had been stacked on the deck of the jetty, it collapsed.

It appears that the Head Office of the McKendrick Glass Company Limited, situated in Auckland, 100 miles from Whangarei, failed to acquaint its Whangarei Branch Manager and the barge contractor of the arrangement that the sand jetty was being built lightly so as to keep the wharfage rate at 1/6 a ton, nor did it advise the Branch Manager or the barge contractor that the arrangement was that the sand had to be removed a truck-load at a time across the apron of the jetty onto terra firma.

Some time later, the McKendrick Glass Company went into liquidation. The Northland Harbour Board therefore brought an action against the defendant barge company, the Auckland Water Transport Limited, alleging that the collapse of the sand jetty was caused by persons employed about the defendant's tug and barge stacking sand on the jetty beyond its carrying capacity.

2. The Harbour Board relied upon Section 209, Harbours Act 1950 (New Zealand) which is as follows: ---

" 209. Responsibility for Injury to Works of Harbour ---

- " (1) Where any injury is done by any vessel, floating timber, or material, or by any person employed about the same, to any part of the works or property of any Board, the following persons, namely—
- " (a) Whether the injury is caused through negligence or not, the owner of that vessel, floating timber, or material; and
 - (b) In case the injury is caused through the wilful act or negligence of the master of that vessel or of the person having charge of that timber or material, that master or person—
- shall each be answerable in damages to the Board for the whole injury; but neither the Board norany person shall be entitled by virtue hereof to recover twice for the same cause of action.

"(2) Where the owner of any vessel, floating timber, or material pays any money in respect of any injury done to any part of the works or property of any Board by any master or other person, or pays any fine by reason of any act or omission of any master or other person, he shall be entitled to recover the money so paid, with costs, from that master or other person."

The legislation in the United Kingdom corresponding to Section 209 Harbours Act 1950 (New Zealand) is Section 74 of the Harbours, Docks and Piers Clauses Act 1847, which reads as follows:—

"The owner of every vessel or float of timber shall be answerable to the undertakers for any damage done by such vessel or float of timber, or by any person employed about the same, to the harbour, dock or pier, or the quays or works connected therewith, and the master or person having the charge of such vessel or float of timber through whose wilful act or negligence any such damage is done shall also be liable to make good the same; and the undertaker may detain any such vessel or float of timber until sufficient security has been given for the amount of damage done by the same: Provided always, that nothing herein contained shall extend to impose any liability for any such damage upon the owner of any vessel, where such vessel shall at the time when such damage is caused be in charge of a duly

"

"

" licensed pilot whom such owner or master is bound by law to employ and put his vessel in charge of."

An attempt was made by the plaintiff, the Northland Harbour Board, to have the action heard before a Judge sitting alone. The Judge, however, held that on the law as it stood in New Zealand at that time, the action must be heard before a Judge and jury of twelve.

At the trial in the Supreme Court, the Judge put two issues to the jury, the first of which was:

" Did any persons employed about the tug "Otapiri" or the barge "Moehau" do any injury to the wharf?"

The jury answered "NO" to this issue. It was therefore unnecessary for them to answer the second issue, which related to damages. The Judge gave judgment against the Harbour Board.

3. The Harbour Board appealed from this judgment to the New Zealand Court of Appeal on the grounds:

(1) The learned Judge had misdirected himself on questions of law.

(2) That the verdict of the jury on the above issue was perverse.

The Court of Appeal dismissed the appeal.

The Harbour Board believes that the Judges of the Court of Appeal have taken too restricted an interpretation of Section 209. They appear to have followed the Judges of the first instance and of the Court of Appeal in the United Kingdom, who, in practically every case that has come before them in respect of Section 74 of the Harbours, Docks and Piers Clauses Act 1847, have found for the defendants. This is a situation that has been rectified from time to time only when the particular case has gone on appeal to the House of Lords.

Thus, River Weir Commissioners v Adamson (1877) 2A.C.74,3

Great Western Railway Co. v Owners of S.S. Mostyn 1928, A.C.57

Workington Harbour & Dock Board v S.S. Towerfield 1951, A.C.112 1950 Vol. 2 AER 414

4. In the Towerfield case, the British Court of Appeal (Scott, Bucknill and Asquith L.JJ.) held that Section 74 does not apply to damage done to the property of a harbour authority if such damage was wholly or partly due to the negligence of that harbour authority.

These Court of Appeal judgments in the Towerfield case, insofar as they purport to qualify Section 74, were completely reversed by the judgments of a strong House of Lords — Lords Porter, Normand, Morton of Henryton and Radcliffe, with Lord Oaksey dissenting.

THUS, at page 426, Vol. 2, 1950 AER, Lord Porter said ---

" My Lords, until The Mostyn decided the true effect of the wording of the Section a profound diffe-" rence of view as to its construction was to be found among those who practised in that branch of the " law which is devoted to shipping matters, but that dispute has now been decided on broad lines, and " like VISCOUNT DUNEDIN, who though he was of the other opinion, expressed his satisfaction that a " clear rule for future cases had been laid down, I cannot think that fine distinctions should be intro-" duced which would limit the generality of the decision which has been reached."

At page 434, Lord Normand said ----

" VISCOUNT DUNEDIN's view that the judgment of the House had finally cleared away all doubt " about the meaning of the section by construing it as imposing an absolute liability subject only to the " restriction created by the decision in Adamson's case, is the more significant because he was dissenting. " There is no room left for a construction which would introduce a new exception. It cannot be said that " the House may have overlooked the case in which the cause of the damage done by the ship was the " negligence of the harbour authority or its servants, for a case was cited in which the authority's claim " under this section had been held to fail on that very ground: Det Forenede Dampskibs Selskab v Barry " Ry. Co. "

At page 439, Lord Morton of Henryton said ---

" As to question 6, I have not formed any view on the question whether damage can be said to be "done " by" a vessel to a harbour within the meaning of S.74 of the Act of 1847 in cases where the sole

" cause of the damage is negligence on the part of the harbour authority. This point does not arise, on the

" views which I have expressed in answer to questions 2 and 4 and it was not fully argued in this House,

" owing to a concession made at an early stage by counsel for the board. I am, however, of opinion that

" contributory negligence on the part of the harbour authority is no defence to a claim by the harbour

" authority under the section. This is, I think, the inevitable result of the views expressed by the majority

" of your Lordships' House in The Mostyn. "

At page 440, Lord Radcliffe said ----

" But that conclusion leaves outstanding the appellants, claim under the Harbours, Docks and Piers " Clauses Act, 1847, S.74. This is the third occasion on which that section has visited our Lordships' "House, and it is perhaps unfortunate that so much should still remain to be said about it. Nevertheless " the section itself is an important one, since it appears in a general Act that has been widely adopted, and " its application involves a question of some moment as to the relationship between a court of law and an " Act of Parliament. It is for that reason that I ask leave to deal with the matter at greater length than I " should otherwise have thought necessary. My Lords, there is no escape from the view that S.74 is an " arbitrary provision. Once it was decided by this House in The Mostyn that the shipowners liability under " it did not depend on any imputation of default to him or to others who might be in charge of the ship, " it was plain that the section was conceived in the interests of the dock or harbour authority and was cal-" culated to produce on occasions what might be very rough justice indeed. But I do not know that I should " deduce from that that a court of law would be entitled to give its language any meaning other than that " which the words will fairly admit. It is not always easy to see the whole picture when one is scrutinizing " a particular detail of a general code. After all, undertakers of a dock or harbour are providing an im-" portant public utility, which the law requires them both to conserve in reasonable condition and to " keep open for the service of the shipping public without discrimination. No doubt, their enterprise must " have its customers, but, if the works of the undertakers get damaged, someone must find the money to " restore them to proper condition in the public interest, and I do not think it unfair to recall that it is " the shipowners' property that has been the instrument of harm and it is the shipowners' adventure that " brings the vessel to the dock or harbour where the damage occurs."

and again at page 441, he said ---

" So S.74 is again before this House. The appellants' harbour has suffered damage and the damage has "been done (so it is said) by the respondents' vessel. Your Lordships are invited to read the section as if "it contained a qualification to the effect that shipowners are not to be answerable if the harbour author-"ity making the claim can itself be convicted of contributory negligence in the matter of the damage. I "think that there are two commanding reasons why the section must not be so read, and I do not know which reason to put before the other. First, we are bound by the interpretation which the House placed on the section in The Mostyn and that interpretation leaves no room for a defence of contributory negligence. I might regret that conclusion if I thought that the possibility of a harbour authority causing or contributing to the damage done to its works could have escaped the attention of the noble Lords who "formed the majority in The Mostyn."

5. The New Zealand Court of Appeal has reacted in the same way as the Judges of the first instance and of the Court of Appeal in the United Kingdom have done, by reading qualifications into Section 209 Harbours Act, 1950 so as to lessen its arbitrary nature.

It has introduced the following qualifications into the Section by holding that:---

- (a) The section does not apply to indirect damage.
- (b) The section does not apply unless the ship or crew be shown to be the effective cause of the damage.
- (c) The section does not apply unless the material that did the damage be "floating" material.

THUS: All three Judges in the New Zealand Court of Appeal held as a first qualification that only direct and not indirect damage is covered by S.209.

At page 17 of the typed judgment North, P. said ---

" For my part, unless I am compelled to so hold by higher authority, I am not prepared to adopt this

" unreasonable construction of the section. On the contrary, consistently with the plain meaning of the " earlier words in the section to which I have referred, in my opinion the liability of the owner of a ves-" sel for injury done to the wharf by its employees must be limited to damage directly caused to the wharf " by such persons. I cannot believe that the legislature could possibly have had in mind that the owner of " a vessel unloading in a proper way cargo on to a wharf is absolutely liable to the harbour board for dam-" age to the wharf which followed from its defective construction. If, however, I am wrong, then in " my opinion in a case like the present one (as Perry J. has held) it is necessary to go on and determine " what was the real cause of the injury. Mr. Chilwell quite rightly pointed to the observations of Lord "Radcliffe in the Towerfield case as supporting his contention that the section was not directed to " considerations of tortious liability. This may be so though, as I have pointed out, their Lordships in " that case were not prepared to decide — for it was unnecessary for them so to do — that the owner of " a vessel was nevertheless liable under the section even if the real cause of the damage was the sole ne-" gligence of the harbour board. It is true that Lord Radcliffe did suggest that the owner of a vessel who " had been caught by the section might be entitled to counter-claim in negligence for the sum it had been " called upon to pay the harbour board. This circuitous approach, I must confess does not attract me " and I would be reluctant to reach the conclusion that the only remedy of the defendant, in this case, was " to pursue its counter-claim which has not yet been determined by Perry J. I prefer then to adopt the " view that the section does not apply in the circumstances of the present case."

All three judges held that to establish "done by" a harbour authority must first establish the effective or real cause of the damage. This is a further qualification to the meaning and intent of the section.

Turner, J. holds that for the section to apply there must always be an inquiry on the question "did the acts complained of cause the damage " (page 3) He says that such an inquiry is necessary particularly where there is a lapse of time between the act and the damage. He then goes on to propound the proposition that a defendant, in defending proceedings under S.209, would be in a more difficult position if the wharf collapsed upon the deposit of the first grab load of sand.

Both North, P. and Turner, J. introduced a further qualification, namely, that the world "material" in S.209 means "floating" material, though the section does not say so.

These new qualifications of S.209 propounded by the New Zealand Court of Appeal do not appear to accord with the firm judgments of the House of Lords as set out in The Mostyn and the Towerfield cases.

Such qualifications, if sound in law, bring serious consequences for harbour authorities. Every wharf is designed and built to withstand a certain load. If a wharf is over-loaded by the discharge of cargo from a ship by the crew and it collapses, then, consequent upon the decision of the Court of Appeal in New Zealand, this is indirect damage which, the Court has held, is not within the ambit of S.209. Moreover, the Court has held that the defendant shipowner can defend any such claim on the ground that the overloading was not the effective cause of the damage. According to the New Zealand Court of Appeal, the owner of cargo so unloaded would also not be liable under S.209 because cargo so unloaded would not be "floating."

6. Some comment can be made on the jury's finding that nobody employed about the tug or the barge did any injury to the wharf.

These men continued to unload the sand until there were 610 tons standing upon the jetty. At that stage, and only then, did it collapse. There was evidence that some of the ties that held the front beam (against which the barge rested) were defectively welded. The fact remains that the jetty was standing up until 610 tons of sand were stacked upon it. The welding was, therefore, sufficiently strong for the purpose for which the wharf was built, i.e. the transport of a few tons of sand at a time from barge side to terra firma. This jetty was not strong enough to hold 600 tons of sand and, as finally agreed between the Glass Company and the Harbour Board, it was not intended to be.

If the judgment of the Court of Appeal in this case is sound law, then in all ports of the British Commonwealth that we know of, a ship would be able to tie up at a wharf and then proceed to unload its cargo onto that wharf and keep on doing so to the point where the wharf collapses and do it with impunity.

7. In truth, every man-made structure has a point of destruction when subjected to pressure. The point of destruction varies only as to the time taken to reach it, the methods adopted and the nature of the structure.

Wharves are not designed or constructed to be indestructible. They are customarily designed to be strong enough to carry the load that it is anticipated they will have to carry. Thus a wharf intended to service a passenger launch could reasonably be built lighter than a wharf intended to service a vehicular ferry and this latter one might reasonably be built lighter than a wharf intended to be used by large cargo ships.

For over 100 years it has, I believe, been the practice in the ports of the British Commonwealth, for the shipping companies to accept the responsibility for damage to wharves caused as the result of unloading cargo upon them. In my experience, whenever a ship is en route to one of our ports for the first time and is carrying an unusual cargo, the ship's agents enquire of the Harbour authority as to the loading factors of the wharf at which the ship is to unload.

8. Thus, on one occasion, a fertilizer ship was en route for Whangarei and, because of a strike, it became impossible for the local fertilizer works to take delivery of 4,000 tons of phosphate rock. The ship's agents, well before the ship reached Whangarei, asked the Harbour Board what was the loading factor of the wharf, even though they knew it was a ferro-concrete one, having piles of 22" diameter and a deck 14 inches thick. The ship's agents and our Harbour Engineer and Harbourmaster then conferred as to the way in which the phosphate rock was to be unloaded and the extent to which the load was to be spread upon the wharf.

Even though this particular wharf is very strongly built, there is a point at which, if a ship were to keep on loading it with concentrated weights, it would disintegrate.

At Port Whangarei, as in a great many other ports throughout the world, the terrain has been formed over geological ages by the siltation of mud. The result is that wharves in that area are built with friction piles. That is, because the solid ground is too deep for piles to be embedded in it, wharf piles are designed to take certain weights and to do so even though they do not stand on the solid ground. It is the friction of the mud and other solids which encompass them, that holds the piles in place. This is approved engineering practice throughout the world. Naturally, the greater the length and the greater the diameter of the pile, the greater is the surface upon which friction is exercised. Such a wharf, even though well designed and strong, could nevertheless be destroyed by a ship's master continuing to unload onto it heavy equipment until its design load is exceeded.

The sand jetty in this case was, of necessity, built on friction piles.

Shipping Companies and port authorities throughout the British Commonwealth have faced up to these risks for generations.

9. The findings of the jury that it was not the placing of sand on the landing that caused it to collapse, was held by the Supreme Court and the Court of Appeal not to be perverse.

How can that possibly be?

Whether the welding of the ties was good, bad or indifferent, it held the structure together until over 600 tons were piled upon it. The structure was only intended to carry a motor truck and its load of 5 or 6 tons. It did very well to stand up to 600 tons. It is a perversion of common sense and logical thinking to say that the cause of the collapse of the sand jetty was the weakness of the ties due to defective welding.

Had the Captain of the fertilizer ship mentioned earlier, come into Whangarei during a weekend and had he proceeded to unload 4,000 tons of phosphate rock upon the wharf with the result that it collapsed, could he have reasonably claimed it was not the placing of the fertilizer on the wharf that caused it to collapse, but that the friction piles should have been longer and greater in diameter? If the horizontal beams capping the piles had first given way, could he reasonably claim that it was not the placing of the fertilizer upon the wharf that caused it to collapse, but that the ties for the beams were inadequate for the weight and, therefore, their inadequacy was the cause of the collapse?

10. It may be of some value for me to recount what took place a few years ago when a consortium of builders contracted to build a $\pounds 15$ million thermal power station for the State at Marsden Point on Whangarei Harbour.

The Northland Harbour Board had, some years previously, built a wharf at Marsden Point having a loading factor per square foot equal to No. 1 Highway standards. The main purpose of the wharf was to accommodate inter-colonial ships (i.e. 2,500 to 4,000 tons) only and to act as a base for the duty tugs and senior pilot launch. The consortium found that the only practical way in which it could bring the turbines (each 171 tons) and the transformers (each 141 tons) into New Zealand and reach the power station, was to unload them onto this wharf, which was only 2 miles from the power station they were building. The wharf was not, however, designed to take pin-pointed loads of 171 or of 141 tons.

The consortium and the agents for the ship that was proposed to be used for the purpose, asked the Harbour Board whether the Marsden Point wharf could be available. To this the Board agreed upon the following conditions:

- (a) that the usual port dues were paid, and
- (b) that the unloading was done under the direction of the Harbourmaster, and
- (c) that at the cost of the consortium, a vehicle was constructed having 64 tyred wheels so as to spread each load and bring it within the designed load factor of the wharf, and
- (d) that the consortium entered into a joint and several deed undertaking to indemnify the Board against any damage to the wharf arising out of the use of the wharf for the above purpose whether such damage was due to its negligence or not and regardless of whether such damage was due to the negligence of the Board either wholly or in part or not.

It is sufficient to say that the consortium and the Shipping Company had no hesitation in entering into the agreement the Harbour Board sought. Obviously, they did not approach the consideration of their logistic problem imagining that they could tie up at the Marsden Point wharf and unload turbines weighing 171 tons each and transformers weighing 141 tons each, thereby causing the wharf to collapse and do so with impunity.

In the past, port authorities have not usually had to insure their wharves against the risk of ships damaging them by placing excessive weights upon them. The shipping companies have traditionally accepted that risk. If the New Zealand Court of Appeal decision is sound law, all port authorities in the British Commonwealth will have either to insure their wharves or to raise their port dues. The cost would be stupendous.

11. The final Court to which the people of New Zealand can appeal against the decisions of their own Courts, is the Privy Council in London. This is not the position in the United Kingdom, Canada and Australia, although decisions of the Privy Council have a strong persuasive influence upon the Courts in those countries.

The consequences of the decision of the New Zealand Court of Appeal in the above case, to those port authorities to which legislation similar to Section 209, Harbours Act 1950 (N.Z.) applies, could be so serious that the matter cannot be reasonably left where it stands at present.

The cost of insuring its own wharves, alone justifies the Northland Harbour Board in appealing to the Privy Council in London against the decision of the New Zealand Court of Appeal. It is proceeding to do so.

As frequently happens when a court case has been heard before a jury the main issue can become complicated by factors that in truth should have had no importance whatever. This case is no exception to that tendency. These complications could conceivably prevent a completely successful appeal. On the other hand, the interpretation given to Section 209 by our Court of Appeal is, in three ways that have already been demonstrated, so restrictive that the over-ruling by the Privy Council of any one of those restrictions would be most helpful; the over-ruling of two or more of them would be a considerable success. The appeal would certainly then have been well justified. It would still be justified however, if the appeal failed entirely, for the uncertainties left unresolved by the House of Lords in past cases would have been removed. Port authorities would then know where they stand on this important matter. Appeals to the Privy Council in London take time. A report of the result of the appeal will, in due course, be sent to the Secretary-General for circulation to Members.

London's Future—PLA Director-General Addresses European Shipping Press

News from PLA, 5th May, 1972

Director-General of the Port of London Authority, Mr. John Lunch, was the guest of honour at a luncheon given today at Antwerp at the joint invitation of the Antwerp Port Authority, Assiport, and the European Shipping Press Association.

Mr. Lunch became the Director-General of the Port of London Authority last July, and this was his first major speech on the Continent about the PLA.

In his address to a distinguished gathering of leading port operators, shipowners, and journalists, he spoke of the Port of London "Yesterday, Today and Tomorrow." Mr. Lunch said: "The Thames Estuary is one of the greatest industrial rivers of Europe. From the City of London to the mouth of the river, industrial enterprises are spread along both sides of the Thames for about 65 kilometres. One-quarter of Britain's trade lies within only a 35 mile radius from the centre of London. The Port of London's estuary channels handle more oil than any other estuary in the country.

After 1945 Western Europe ports were faced with restoring the devastation quickly to receive the vital supplies necessary to rebuild their shattered economics. The Continental ports were particularly hard hit and took the opportunity to rebuild on modern lines. In Britain, world-wide responsibilities meant that they had many priorities, and resources that might have been used for the ports were needed urgently elsewhere. Real modernization of British ports took place in the 60's.

Technical developments, coming at a time when the PLA were planning for the port of the future, gave the opportunity to build both for the container revolution and for deeper and faster ships. The PLA extended the seaward limit well into the North Sea and set about dredging our approach channels still deeper. It cut a completely new channel, the Knock John Channel, to allow the new large tankers access to the oil installations in the estuary.

The Port of London improved its navigation systems by setting up the Thames Navigation Service, equipped with the latest radar and radio equipment, to give complete radar coverage of the river and allow ships safe passage in all weathers.

It then became apparent that new dock facilities would be needed down river to take the new larger vessels. Tilbury, 25 miles below London Bridge was the ideal site. The PLA pushed ahead with the new dock with both speed and flexibility. Faith in this venture was justified and Tilbury has now become an international container port of significance, also handling other unit loads and bulk products, such as forest products and grain.

Tilbury is well established as Britain's largest container port and container traffic has been growing by about 50% per annum. Last year it handled over 200,000 containers and it expects around 300,-000 this year. In tonnage figures that represents a growth from about 2 million tons of cargo to 3 million tons.

Since the beginning of this year, the PLA has welcomed four more container lines to Tilbury—Comar Line, ACT(A)ANL, Hapag-Lloyd and Combi Line—and this progress has made it confident of reaching the target. When Tilbury container port is fully extended, it will have a maximum capacity of between 4 and 5 million tons and we estimate that it will reach this point about 1974/5. The PLA has taken Britain's entry into the Common Market into account in this estimate, and has already planned for the next stage further downriver.

In the river near Tilbury, the PLA has established moorings for SEABEE vessels and its grain terminal (a riverside terminal) has been a great success. Last year it handled more than 1.5 million tons of grain and is now responsible for transhipments to all parts of the U.K. and overseas—to Malta and Rotterdam. One broker recently stated that the terminal was "becoming too popular, being more competitive than Continental transhipment ports". We deem this a high compliment.

Relations with dock labour have greatly improved and PLA's recent gains of Tilbury container services were partly a result of union official's participation in visits by the PLA to the shipping company principals on the Continent.

Mr. Lunch continued that once the Tilbury development was under way and the changing pattern of trade and shipping became clearer, it was obvious that some of PLA's upriver facilities were no longer suitable or needed and it began a rationalization process that aimed to achieve the correct balance between conventional facilities and modern unit load facilities.

Development at Tilbury combined with closures of the oldest docks had two effects: PLA were able to offer shipowners alternative up-river berths in docks nearer the sea, and large areas of real estate were released for redevelopment. One of the dock systems concerned has an area of over 158 hectares and it is within two kilometres of the City of London.

Mr. Lunch stated that, with emphasis "Let me, here, correct a misunderstanding which I still find in some shipping circles. London has not turned its back on conventional cargo. We are pleased with the successes of our conventional upriver docks—and our largest capital expenditure this year is likely to be on a new Tilbury terminal to handle the U.K.-West Africa trade: conventional cargo in modern form.

The India & Millwall Docks now the nearest group to the centre of London—have been very successful in handling many kinds of car-

Deepwater Seaport Development at Maplin

London, 26 April (News from PLA):—The Minister for Transport Industries today announced in the House that he had agreed in principle the PLA proposals for the first phase of the construction at Maplin of the deep water approach channel, the oil terminal, and associated reclamation work.

This enables the PLA to get ahead with the commercial negotiations and justification essential for authorization under Section 9 of the Harbour Act.

The PLA today announce the appointment of the first Director of Maplin to head a new business division to market and progress development.

The effect of the Government's agreement in principle is that planning of the total Maplin reclamation including the 3rd London Airport proceeds on the assumption that an oil terminal of the kind proposed by the PLA will be provided, and that within the Maplin reclamation area there should be provision for a total long term requirement for 1,000 acres for an oil terminal and associated facilities.

In expressing the PLA's pleasure on learning of the Minister's statement the Director-General, Mr. John Lunch said "this agreement in principle to a deep water oil port



go.

Lorry congestion in the docks was now only a memory. PLA's lorry appointment schemes in the docks have been widely acclaimed. The PLA were offering the best service to importers and exporters in their history."

Talking of staff, Mr. Lunch said that PLA's head office staff used to number about 800. Not it is shaping up to the 100 mark. It used to occupy two massive buildings in the City—eight floors in all. PLA shall next month occupy a little over one floor in one building for our head offices—in London's World Trade Centre.

Mr. Lunch talked frankly about labour relations, saying that over a period of six years:

London had done away with the casual system of labour and every man had a permanent employer.

It has abolished piecework (bonus payments) in the enclosed docks and men now receive a high standard wage.

It has a new procedural agree-

ment with dock labour with eliminates delays in settling problems that arise.

On the surplus labour question he said that no-one is made compulsorily redundant. Manpower reductions are achieved by voluntary severance schemes, with "golden handshakes", plus natural wastage.

"The Port Newspaper", of which Mr. Lunch is one of the trustees, has a character unique in British, and probably European industry.

Mr. Lunch pointed out that the National Ports Council statistics for 1971 showed that London had the lowest number of man days lost through strikes or industrial disputes out of all the major ports of the United Kingdom.

Of the future, Mr. Lunch said that the Port of London in 1972 is already building for its future to the end of this century and beyond, with development plans on an unprecedented scale.

Mr. Lunch ended by talking of the latest development for the Port of London of the future, about Maplin. PLA now has Government agreement in principle to build a deepwater seaport at Maplin Sands in the outer Thames Estuary for the oil trade—and it is seeking similar agreement to new container and roll-on/roll-off facilities there.

"I hope I have given an indication of progress in the Port of London" Mr. Lunch said "But much remains to be done".

Concluding, Mr. Lunch said that the international ports industry is highly competitive, but also friendly and co-operative. He took the opportunity of acknowledging the knowledge encouragement, and helpfulness the Port of London has had, particularly from the great Continental ports in forming its plans. Among the people who have helped it most are Mr. Vleugels, General Manager of the Port of Antwerp, and his most able deputy, Mr. Suykens. PLA shook hands in friendship across those Narrow Seas which have so much influencedand will continue to influence-the growth of our great ports.



at Maplin will enable us to press ahead with the business negotiations that are the next step."

Announcing the appointment of Mr. John Black, formerly Chief Planner, as the first Director of Maplin, Mr. Lunch continued: "the establishment of a new PLA business division for Maplin, under the leadership of John Black, will help us proceed quickly with marketing and

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completion of the planning of this development.

"The PLA have already spent over £0.5 m. on research on this project. The market research has taken into account foreseeable developments in the North West European oil trade including North Sea oil. Physical research has gone as far as dredging trial sections of the proposed deep water channel. We can, therefore, now market this project with some confidence."

The seaport developments at Maplin will, of course, need to be integrated with the Third London Airport and other developments there and the PLA are working closely with the Government and BAA.

It is hoped that dredging will commence in 1973 and the first phase of the oil terminal will be in operation in 1976.

Continuing, Mr. Lunch said: "This project makes good business sense. In creating a deep water channel it adds land to South-East England. It exploits the geographical and economic advantages of Maplin which is close to deep water and to the country's major business concentration. It enables advantage to be taken of the lower freight costs of full oil shipments in VLCCs, avoiding transhipment. The terminal will greatly add to the Port of London's capacity to handle the expected increase in oil traffic and size of tankers without the present limitations on draught".

Mr. Lunch outlined the environmental advantages of the Maplin scheme, explaining that the outerestuary terminal combined with pipeline distribution would greatly reduce large ship movements in the Thames, avoiding congestion and minimizing the risk of pollution. About the safety factors, he said: "Naturally we have a first class port navigation system to ensure safe movement. The same careful attention to safe navigation and berthing at the new terminal is a feature of our planning and the most modern aids will be provided for it after consultation with shipowners and pilots".

The Director-General paid tribute to the extensive planning and research for the project carried out over several years by Mr. Noel Ordman, PLA Assistant Director-General, assisted by Mr. John Black.

PLA's thinking on Thames Estuary developments included provision for all types of ships. Following their oil terminal submission, the PLA had made a similar submission for container and unit load facilities at Maplin. This was still under consideration.

Port of Bordeaux Authority

Extracts from the booklet "Port of Bordeaux Authority"

(The three photographs inserted here, including the one on the front cover, have been furnished recently by the port authority.)

The President's Introduction

The long and rich history of the Port of Bordeaux began over twenty centuries ago in a loop of the Garonne River a hundred kilometers from the sea. In this convenient location—from which the name "Port of the Moon" is derived —a great seaport was born.

For a long time the "Port of the Moon" remained a simple mooring ground. In the days of sailing ships, the water front played an important part, because the shipyards for the construction or repair of vessels required no great accomodation. However, the port followed a natural evolution and was gradually equipped with the latest appliances of the era, which, when out-moded, were renewed or replaced.

With the growth of the port's activities, new work sites were opened up in the estuary. The port, originally only a transit and trading post, began attracting other interests and activities, thus creating the traditions which are still alive in our city.

Although today one may no more dream of sailing from Bordeaux to the West Indies in search of exotic spices, Bordeaux still remains one of the main ports for cocoa imports.

More than a century ago, growing industrialization caused the port to expand and a large city grew up around it. From the small transit point it had been, Bordeaux became, and has remained, a center of culture and its diversified and increasing activities earned for it the just title of metropolis.

It is now the administrative capital, as well as the commercial industrial and communications center of the entire Southwest of France. Bordeaux is also a center of tourist attraction, and is a pleasant place in which to live.

Because of these varied activities, Bordeaux's port movements appear to be less predominant as in certain other European ports, but this apparent disproportion only emphasizes the vitality of our metropolis and the well-known modesty of its population. We Bordelais are convinced that we possess sufficient urban support for our port activities to be able to face up to the formidable competition which threatens us at the end of this century.

Those who are interested in Bordeaux should get to know its harbor, as well as its place in European and regional economy, which will doubtless grow in importance in the years ahead.

We hope that this booklet, whose text and illustrations we have tried to make as attractive as possible, will help you to know Bordeaux.

LE PRESIDENT, Pierre DELMAS

Bordeaux, A Trade Port

The "Port of the Moon", at first located only on the left bank of the Garonne, saw the birth of its local trade in conditions very different from those of today. Ships moored in mid-stream often served as warehouses, trans-shipment was made by lighters, etc.

Today everything is different. From the beginning of the century constant improvements have been taking place. In 1924 the harbor received 2 million tons of coal, a source of energy now replaced by oil, partly imported, partly extracted from the Aquitaine subs-oil. Bordeaux was likewise an importer at first, and later an exporter of cereals.

Exports of lumber from the Landes Department, which amounted to 745,000 tons in 1925, have now decreased as the wood is being used for local paper manufacture. This has proved to be more lucrative. Bordeaux, moreover, has become the center of important lumber imports (tropical woods, Northern pine, etc.) destined for furniture factories and building construction.

In the last ten years new trades have appeared, such as the increasing import of raw material for different industries, and imports of basic products for the food industry. The region has become an exporter of nitrate fertilizers, and shipping in containers has made a most encouraging start and is used by lines on West African coastal and North American runs.

These changing port traffic conditions have naturally brought about the transformation of port equipment. The old-time landing slips have become docks, and these are now being extended out over the river, thereby permitting ships to take advantage of deeper water. The port is expanding, Bacalan now possesses wet docks, and Bassens has new wharves.

At present, the equipment which merchant ships find at their disposal is essentially as follows:

-60 berths equipped with 110 wharf cranes for general cargo. This does not include special wharves for oil tankers;

--Several specialized installations for the transport of minerals, cereals, etc.;

—Diverse gear including, apart from the wharf cranes and machinery for goods in bulk, several floating cranes or shears capable of handling heavier loads (up to 250 tons).

Bordeaux, A Mineral Port

In Bordeaux, as in all big seaports, industry has growing recourse to raw materials from overseas, and there is a tendency to group the factories around the waterfront. The rapid development of shipping for industrial purposes has ensued. This, in addition to but not altering the existing transit and trading traffic, has radically changed the profile of the port which now receives huge shipments, sometimes entire shiploads, of bulk goods. These are unloaded by powerful gear which handle and stock heavy merchandise. The Port Autonome de Bordeaux has had to build a dock for the reception of minerals such as iron ore, phosphates, potash, etc. This dock is located at Bassens-Amont.

Here ships of 25,000 tons deadweight can come alongside and be unloaded at a rate of 10,000 tons a day. The unloading equipment comprises:

-4 automatic grab cranes (2 of 12 tons each);



The port of Bordeaux owns 4 floating cranes from 15 to 250 t (of which 2 self propelling cranes of 15 and 60 t). Here, the 60 t crane handles a railcar.

- —1 conveyor running along the edge of the wharf;
- -1 transversal conveyor to lift the merchandise onto a sorting tower.

From this tower certain products such as phosphates are directed toward silos. Iron ore and potash are loaded onto other conveyors which lead to and fill the stockyards by means of a mobile swivel-thrower.

The mineral stockyards were built for an initial capacity of 70,000 cubic meters. Situaded close to the north of Bordeaux, and to the Paris-Irun railway line, they are well placed for the expedition of the goods by land.

Other bulk cargoes such as crude sugar, peanuts and peanut oil, oilcakes and molasses are unloaded at various other wharves for local industries.

Bordeaux, A Lumber Port

Bordeaux was once a port from which large quantities of lumber were exported. The exportable surplus of the Landes forests having considerably dwindled, the traffic in this commodity has dropped, although it still represents some 60,000 tons yearly. On the other hand, lumber imports from all sources have risen to over 300.000 tons annually. Lumber is mainly unloaded Bassens-Amont, where at the wharves, equipped with powerful cranes (15-ton and 6-ton capacity), have been extensed toward midchannel. There are vast stockyards close by which include enclosed log and sawn-lumber yards covering 5 acres, and a warehouse of 8,000 sq. meters equipped with travelling cranes for stocking tropical woods.

Bordeaux, A Port for Agricultural Products

The Port's active traffic in agricultural products consists of:

—Citrous fruit and early crop imports;

-Wine, fruit and cereal exports. Citrous fruit and early crop imports.

Traditional good relations with Morocco result in the Port of Bordeaux receiving from that country, during the winter season-i.e. October to June-shipments of early crops and citrous fruit. This produce is mostly stocked in the climatized warehouse at Wet Dock N° 2. This warehouse has an area of 7,000 square meters and is accessible by rail and road. The temperature can be regulated and maintained at any setting desired either above or below perfect preservation of these expensive and fragile cargoes. 50,000 to 60,000 tons are thus stored every outside temperature to ensure the season, with arrivals of 2 to 3 ships a week at its peak.

In summer the Port of Bordeaux also receives cargoes of citrous fruit from South Africa and South America.

Exports of wines, fruit, cereals.

Bordeaux is situated in the center of a world-famous wine region as well as in a vast agricultural area. Its products are therefore being exported in large quantities. Wine exports consist mainly of bottled quality wines, of which 50,000 to 60,000 tons are sent abroad annually. Fruit exports are in full development and consist principally of apples grown in the Garonne valley. Finally, cereals have been produced in particularly large quantities these last years in Southwest France. As a result, proportionally large quantities of cereals are being exported. Before the last war, Bordeaux was the gateway through which cereals were imported for distribution in a relatively poor region. Today the tables are turned, and in 1969 500,-000 tons of cereal were exported through Bordeaux.

To face all this new traffic, the Port Autonome has built a special wharf 225 meters long, which is in use the year round by vessels of all sizes, from small tramps to heavy cargo vessels, bound for South America, the Far East, etc.

This wharf has an equipment for the continuous handling of bulk cargoes. The equipment belongs to the S.I.C.A. a firm which combines the interests—and efforts—of agricultural cooperatives and dealers in the region, and of the Port Autonome de Bordeaux. S.I.C.A.'s equipment makes it possible to load at the rate of 300 tons per hour, a speed soon to be doubled, and insures the liaison between the wharf and the nearby silos. The silos belong either to the National.

Union of Agricultural Cooperatives for Cereals (U.N.C.A.C.) or to the Aquitaine Society of Bordeaux-Bassens Silos. The stocking capacity directly connected with the wharf represents 1,250,000 hundredweight. New extensions are being planned.

Bordeaux, A Coal and Later an Oilport

Coal imports which, before the last war, amounted to several million tons per year have decreased, owing to the hydro-electrical equipment of the Pyrénées, the electrification of railways and the discovery of natural gas on the lower slopes of the Pyrénées and its distribution throughout Southwest France. At the same time, the rapid expansion of refined oil products as well as the measures taken by the Government for the protection of its national coal mines, have hastened the downfall of coal traffic. There still remains, however, an appreciable quantity of superior coal imports for private consumption.

In the Southwest of France, as everywhere in the world, the oil industry has risen by leaps and bounds since the end of World War II. Among the oil fields of western Europe, the Aquitaine is privileged. Not only does this region consume more and more oil products, but it is one in which oil has been found (Parentis, Lamothe). The supply of oil refined in the Elf and Esso-Standard refineries in Ambès and in the Shell refinery in Pauillac comes from the regional oil wells as well as from overseas.

Crude and refined oil carriers may load an unload at a full range of public and private docks. Wharf facilities are available along both sides of the Ambès Peninsula (Bec d'Ambès) and are used by Elf and Esso-Standard in Ambès and Shell in Pauillac, as well as for Blaye and Furt's (4 kms downstream from Bec d'Ambès) tanks.

However, the principal port complex for oil is at Le Verdon. Conceived at first for 65,000 ton tankers to supply the refineries of the Gironde, it was built with an eye to greater quantities being imported. Now, after a few minor alterations, tankers of 110,000 tons dock at Le Verdon.

In 1967, shortly after these improvements had been terminated, they again proved to be insufficient. SHELL decided to develop its installations in Pauillac, and at the same time, tankers began being built for greater and greater loads. The problem was then clear—the Port had to be made large enough for 200,000 to 250,000 ton tankers, firstly for part or their cargo and then for whole tanker-loads.

This was the objective of the new work undertaken and terminated in 1969 at Le Verdon and its approach channels.

The progress of the landing capacity in Le Verdon since January 1967 is apparent in the following table (figured in deadweight):



The Bassens-amont quays of Bordeaux are specialized in bulk traffic. They can accommodate carriers up to 25,000 tdw. At background, we can see silos for phosphates and stock yards for potash and iron-ore.

	Tanker	(deadweight)
—1967:	Passy	30,000 tons
—1968:	Ventôse	70,000 tons
	Nivôse	70,000 tons
—1969:	Dauphine	110,000 tons
	Saintonge	117,000 tons
—1970:	Frimaire	143,000 tons
	Magdala	210,000 tons

For such cargoes, the oil companies had to expand the stocking capacity which now amounts to 800,-000 cubic meters.

The liaison between the depots in Le Verdon and the refineries is made by pipeline to Shell in Pauillac, and by ships of 5,000 tons capacity for the refineries at Ambès.

The last operation is the distribution of the refined oil. Each plant has its own specialized equipment. Supply by land is made from a common depot which the Société des Docks des Pétroles d'Ambès has put up in Bassens near Bordeaux. Linked by pipeline to the three oil refineries, this depot (capacity 190,-000 cu.m.) is conveniently situated near road, water and railway connections to the whole of Southwest France.

Though the refineries still distribute their own oil, the Docks des Pétroles d'Ambés at Bassens plays a growing part as a distributor to a fleet of oil trucks, specialized railway lines and river motor barges which serve the estuary, the Garonne and other waterways of the Southwest and South of France the year round.

Bordeaux, An Industrial Port

All over the world nowadays, more and more industries establish themselves in seaports along the regular sea routes. European countries import raw materials from overseas in larger and larger quantities by sea from considerable distances, and it has become common practice for industries utilizing raw materials to group themselves in industrial zones in seaports. In this way ships may moor at the very doors of a factory to unload their cargoes, and the factories may send overseas the whole or part of their production in the best possible conditions.

—At present, the installation of an iron works, an aluminium plant or a refinery entails the proximity of maritime equipment for the loading and unloading of ships with a draught of 15 to 20 meters. There are few ports along our coasts with such facilities. The Port de Bordeaux is one of these lucky ones. Its harbor at Le Verdon, already partially being used by large oil tankers, has almost unlimited possibilities as far as deep-draught ships are concerned.

However, let us not forget that the entry or departure of 100,000 to 200,000 ton giants involves many problems as to the unloading and storing of their huge cargoes. Only heavy industries whose annual raw material consumption amounts to millions of tons may envisage such shipments. For average sized industries consuming not more than a few hundreds of thousands tons, the economic solution is to use vessels of no more than 40,000 tonnage.

It is interesting to note that exports from Bordeaux are made mainly by 15,000 ton shiploads.

The estuary of the Gironde river offers many nautical possibilities. On both banks of the river from its mouth to the heart of Bordeaux, a 100 mile water front can be developed as well as the vast areas lying behind it.

Already Le Verdon can receive tankers of 110,000 tons fully loaded and 200,000 ton tankers lightened to 150,000 tons. Soon 200,000 to 250,000 ton fully loaded tankers will be able to come alongside.

The Pauillac and Ambès installations are designed for 25,000 35,000 ton tankers, these to of Bassens, for 25,000 tons those of the left bank in the center of Bordeaux, 15,000 to 20,000 tons vessels. As for Le Verdon, the nautical characteristics will be improved in the future to permit access to 50,000 to 60,000 ton ships to the different areas upstream of the estuary. However, this is a long term project.

Port conditions are a vital factor but not the only criterion in the choice of a location for a factory. The dynamism of the local population, the existence of a center of communications, as well as the availibility of labor are also indispensable. The Gironde estuary offers all these facilities, as it is located in the area of a big city where all branches of industry and public services are already installed.

Moreover, industry cannot expand if sufficient energy and water are lacking. On these two points the Gironde estuary is again particularly favored. There are not only important sources of energy (natural gas fields at Lacq, oil products, electric power, etc.) but water in the Garonne and Dordogne basins. The present and projected improvements on the EDF (Electricité de France) thermo-electric plant in Ambès (at the junction of the Garonne and Dordogne rivers) are the most important. The present capacity of 250 MW will be increased to 1250 MW in the course of the VI Plan. Plans for a new plant of 3600 MW are now being studied.

In short, industrialization of the Gironde estuary combines many assets. Numerous firms have already setttled there:

—In Bassens: On the right bank of the Garonne 8 kilometers from Bordeaux, on finds cereal silos: cold storage warehouse tobacco hangars: heavy transport companies plywood, asbestos, metal structure and chemical fertilizer plants. Among these Michelin manufactures rubber; Gironde-Languedoc makes chemical fertilizers, and the Docks des Pétroles d'Ambès maintains a depot for refined oil products;

--In Ambès: On the right bank of the Garonne, 26 kilometers from Bordeaux, are installed:

Elf and Esso oil refineries (see above). Their refining output is respectively 2,200,000 and 3,000,000 tons per year;

• A gas storage of 77,000 cubic meters capacity which the Société des Docks des Pétroles d'Ambés manages together with their Bassens reservoirs;

• A factory for the production of carbon black;

• An industrial pipe plant and a boiler works;

• The thermo-electric plant of the E.D.F., presently being expanded.

—In the industrial zone of **Pauillac-Saint-Esthèphe**, the new Shell-Berre oil refinery opened in the summer of 1970. Its refining potential is 4,500,000 tons per annum. Various industrial plants linked with this refinery will shortly be installed.

Le Verdon, Port of the Future

The Port Autonome de Bordeaux foresees for the future, both near and far, a vast industrial zone at Le Verdon, where raw materials will be supplied by means of sea-going vessels, and where there will be sufficient space for many industrial plants. The site will also have unlimited fresh water supplies.

For the immediate future, a second landing dock has been planned for giant tankers of the 200/250,000 ton category. The dock will be of the same type as the one already in use.

Also planned for the immediate future is a public wharf for quick calls of vessels such as containercarrying ships. This wharf will be supplemented by immense stockyards connected to the ships berths by conveyors.

Later, mineral carriers of large tonnage will require appropriate wharves and stockyards linked by continuous handling circuits.

However, the most ambitious part of the program for equipping Le Verdon is certainly the preparation of railway tracks, drainage and other networks, all on a very large scale.

The Port Autonome de Bordeaux believes itself to be in a position to offer a few years from now the first part of the industrialization plan on several hundred hectares of prepared land. Already general studies concerning these accomodations have begun. They are mainly geological and hydraulic for the time being, but economic studies relating to industrial installations are also under way. Le Verdon appears to be, finally, one of the trump cards of Aquitaine and this card the Port Autonome is ready to play.

A Traffic in Full Expansion

During the last ten years, Bordeaux's maritime traffic has increased steadily. From 4,910,000 tons in 1959, it has risen to 9,040,000 in 1969, and 11,450,000 in 1970.

To this traffic, to and from oversea destinations, must be added the traffic within the estuary of seagoing vessels and an important river traffic. The total was 7,240,000 tons in 1959, and 18,560,000 in 1969, and 22,100,000 tons in 1970.

Until now, the predominance of oil products in Bordeaux's foreign maritime traffic has been less marked than in other European ports, but it is already possible to foresee a steadily increasing figure for this type of traffic. The increase will be due, firstly, to certain economic factors such as the opening up of frontiers, the growing recourse to raw material from overseas, the shortening of economic distances due to the improvement in means of transportation, especially by sea, etc. Secondly, and in particular for

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Port Developments in Two Stages

Reprinted from "International Dredging and Port Construction", January/February 1972

First stage: Consultants get things Moving

Two Ecafé dredging experts have recently visited Ceylon to inspect the locally available dredging facilities. Their final report should by now be in the hands of the Ceylonese Government.

They seem to have reached the conclusion that these facilities could be used more efficiently. The dredging fleet operated by the Colmbo Port Commission is working below its capacity. The Ecafé experts favour setting up a centralized dredging organization in Ceylon using standardized equipment.

At the request of the Argentinian Government Sir William Halcrow & Partners of London will undertake a dredging study of the River Plate. In cooperation with the Hydraulic Research Station at Wallingford the consultants will survey the existing navigation channels in the Plate estuary and search for suitable testing sites. Extensive trials may be carried out to establish the relative merits of various dredging and disposal methods in this area. The available equipment will also be examined. Officers from the Argentine Ministry of Public Works will come to Britain to study dredging techniques used in this country. The Government of Guyana is contemplating the establishment of a new port on the Essequibo River where a natural deep-water harbour is available. It is a promising nucleus for a development which could pro-

Aquitaine, the progressive association of Spain with the Common Market will have obvious results.

The present predictions for 1975 for foreign sea traffic are about 18 million tons, and for the total traffic of the Port of Bordeaux, a 35 million tons mark in 1975. vide Guyana with a new port of major importance. The European Investment Bank have loaned US \$ 4,680,000 to the Government of the Ivory Coast Republic. The money will be used to improve the access channels of the port of Abidjan. The port entrances must be deepened so that vessels with a draft of 10 metres and a length of 260 metres can enter and moor off. In this way Abidjan will be in a better position to serve its vast hinterland which includes its own country as well as the republics of Mali and High Volta. The total cost of the project is estimated on US \$ 9,900,-000.

In Madagascar the national society for the management of Narinda is drawing up plans for a new deep-water port in the north-west of the country. The plan was first put forward in July 1971 and was one of the items studied by World Bank representative, Mr. Knapp, during his visit to Madagascar in December 1971.

The main objective of the new project is to create service and repair facilities for giant tankers which are using the Mozambique Channel between Madagascar and the African mainland.

An industrial and agricultural zone around the new port will then be developed. The total cost of the project is estimated at more than US \$ 120,000,000.-. South Africa may participate in financing the project.

Madagascar has also applied for assistance from the four 'nuclear powers' to remove a ledge of rock in a river mouth. When the four powers deem this feasible a nuclear explosion may be used to do away with this obstacle which prevents Madagascar from exploiting bauxite deposits in the interior of the island. The consulting engineers, Rendel

Palmer & Tritton, of London have been engaged by the Overseas Development Corporation to survey the dredging requirements for the main eight ports of Chile. A team consisting of a dredger specialist, a siltation specialist and a civil engineer will study the existing depths of water in these ports and the drafts of the vessels using them now and in the future. Basing themselves upon the actual dredging facilities and the long-term development possibilities for each individual port the experts will then submit a dredging programme for the near future. The same British consultants are working on an extensive Libyan government scheme which entails the further development of Derna Harbour and the building of a new port at Derna. Tender documents are now being prepared which at Derna call for the upgrading of a berth, provision of two new berths and establishing a water depth of 8 metres. In the new port of Misurata three berths must be built for bulk and general cargo with a depth alongside of 12 metres.

The National Oil Company wants to build a petrochemical complex and associated port facilities at Marsa el Brega. A detailed study and model tests are already being carried out.

Meanwhile, their colleagues of Livesey, Henderson and Partners will survey the Nicaraguan dredging situation. Nicaragua plans to develop a new port at El Bluff on the east coast. The Government also wants to know whether it is worthwhile for them to operate their own dredging service, possibly in cooperation with other Central American countries.

A fourth well-known British consulting firm, Sir Alexander Gibb & Partners, are studying the economic and technical feasibility of port development at Mauritius. At the request of the Government of Mauritius they have been engaged by the Overseas Development Administration to survey the existing facilities at Port Louis and look into the possibilities for a second harbour at Grand Port. A nine-man team of engineers and economists will draw up a long term master plan after extensive on-the-spot surveys.

Second stage: New Jobs for Contractors around the World

The Empresa Nacional de Puertos del Peru has entrusted VO2 Dredging of Utrecht, The Netherlands, with the deepening of the Salavery harbour in Peru to an average depth of 11 metres. This harbour which is of great importance to Peruvian sugar exports but was so much silted up that shipping movements were seriously obstructed. Around New Year 1972 the brand-new trailer "Volvox Hollandia" owned by VO2 set out for Peru. It is expected that the completion of this dredging project will take about six months. From down under comes the report that the Melbourne Harbour Trust has awarded a contract worth about \$A 500,000 to the Australian Dredging and General Contracting Works Pty. Ltd. and General Contracting Works Pty. Ltd. The operation entails the removal of an old sewer tunnel which was constructed in 1896. It crosses the River Yarra at Spotswood but was recently replaced by a new and larger tunnel.

The Australian-based trailing suction hopper dredger "Geopotes V" has executed a dredging job beyond the outer shoals of Port Nelson in New Zealand. During the past two years a sandbar had been building up around the access channel which was limiting the draft of ships entering the port.

From South Africa it is reported that the dredging work at the new Walvis Bay entrance channel to the fish docks has now been completed. Water depths of 5.35 to 6.10 metres will allow modern trailers to enter the new fishing harbour which will be built here alongside the existing fishing factories sites.

As the first of a threesome that will be put to work on the new Durban developments trailing suction hopper dredger "HAM 302" has begun dredging at the Pier Nr. 2 complex in the Durban Bay. Later on 60 hectares of swamp and shallows will be reclaimed in the same locality.

At Richard's Bay, South Africa, an entirely new harbour entrance will be dredged straight through the dunes to replace the inadequate natural entrance which is now in existence.

The Government of the Seychelles

has entrusted Costain Blankevoort Civil Engineering Ltd. with a contract covering the second stage of the redevelopment of the port of Victoria. The project includes a deep water quay, a port terminal building, a power station and various other facilities. Completion is planned towards the end of 1973 and it is reported that an amount of 2.4 million pound sterling is involved which is provided by the U.K. Overseas Development Administration.

A contractors combine consisting of Mowlem of London. Porien of Hamburg and an Italian-Thai company has been awarded the contract for building new facilities in the Thailand port of Bangkok. Four new berths for oceangoing vessels are to be provided in this port. The contract is worth Baht 430 million. The Port of Santarem, Brazil, is situated on the important junction of the Amazon and Tapajos rivers. It is a crucial point in the development of the Amazon Basin. To accommodate the tug and barges which are now active in the area and to allow the entering of oceangoing vessels with a draft of up to 27 feet the port must be improved and the number of piers increased. The project includes a hovercraft terminal and its total cost is estimated at US \$ 100 million.

Sir Lindsay Parkinson & Co. Ltd., of London, are building deepwater berth extensions at the port of Mombasa, Kenya. Two new berths are being provided at a cost of 4 million pound sterling. These berths are designed to cater for container traffic and must be ready in 1974. To provide the depth of water needed for the expected container ships HAM Dredging Ltd. of London have dredged away more than 500,-000 cubic metres of silt and rock.

The Israeli port of Ashkelon is now building a third quay for oil tankers so that they will be able to handle approximately 24 million metric tons of crude a year. It is expected that a fourth quay will be built as soon as the third quay is completed so that the port can keep pace with the output of Eilat which is expected to rise to 30, later perhaps 40 million tons of crude a year. In the final stage the port capacity may reach the 60 million tons mark.

Far from the sunny shores of the

Mediterranean lies Kolpashevo a new port on the river Ob in Sibiria. The navigating season here is short but the requirements Kolpashov has to meet are building up rapidly. For the mining, lumber and fishery industries this port will soon be handling 500,000 tons of cargo annually, but then compressed in a very short period of time. Therefore an array of the most advanced cargo-handling equipment will be installed, extensive mechanization and a road system which will enable the port to service a large hinterland.

Calcutta is also rapidly developing its facilities and a modernized deepwater dock system is now being completed in its satellite port Haldia. The scheme includes a container berth with marshalling yard where 1500 containers can be stored. Two high-speed mobile cranes with a hoisting capacity of up to 30 ton and additional modern cargo-handling equipment will ensure that containers can be handled at Haldia with a minimum of delay and a maximum of ease.

It has been reported from Malaysian sources that the navigation channels between Malacca and Sumatra are going to be dredged. Djakarta spokesmen have denied that this was agreed to. As a matter of fact Indonesia is afraid of the possibility that foreign warships may use these deeper channel and thus present a threat to the national security of Indonesia.

Port Rashid in Dubai is rapidly developing into one of the Middle East's most interesting ports. Until 1955 or thereabouts the sheikhdom had depended on the port of Khor. This was hardly more than a tidal creek, offering some shelter to ships. Since then an energetic programme of expansion has been executed in the course of which channels were deepened, land was reclaimed and wharves were erected. In 1970 the port of Dubai handled more than ten times the volume of goods as compared with 1963. At this moment even more audacious plans are being formulated. Costain-Blankevoort are dredging a port area which measures 350 acres of sheltered water. The low-tide depth of water will be 30 feet. Protection is provided by a main breakwater with a

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Role of Port Swettenham Authority in the Second Malaysia Plan

(Reprinted from "Voice of the Port Swettenham Authority", Vol. 1. No. 2)

Port Swettenham evolved from a railway terminal in 1900 to that of a National Port with growth as its dynamic characteristics. The emergence of the Port Swettenham Authority in 1963 as a result of an Act of Parliament under the Port Authorities Act of 1963 marked the beginning of a new era in sea transportation in Malaysia.

The progress of Port Swettenham may perhaps be best viewed from its activities in the last 5 years and its future role in the forthcoming 5 years i.e. during the Second Malaysia Plan 1971/75.

Between 1966/1970, Port Swettenham handled a total tonnage of 14,-743,000 D/W tons as compared to 13,443,000 D/W tons estimated for the 5 year period. This gives an increase of 1,300,000 D/W tons or an increase of 9.68% over the estimated figure. This increase was due to the effort of the Malaysian Government in promoting economic development of the port's hinterland combined with the government policy of as much imports and exports be channelled through the ports of Malaysia and last but not least the improved operations of the port itself.

During the next 5 years the Port Swettenham Authority estimates to

length of more than 210 metres and a lee breakwater with a length of 225 metres. Now plans are being developed to use several million cubic metres of sand dredged up from the harbour as fillings behind a rock seawall with a length of nearly 4 kilometres. This will conbat erosion which is a serious threat in locality which is not far away from Deira. Deira lies on the other side of the creek from Dubai. A tunnel to connect these localities is also being discussed. handle 22,450,000 deadweight tons of cargo. This will give an increase of 52.28% over the last 5-year period or an average increase of 52.25% per year for the next 5 years.

While there is an increase in tonnage handled, there is also a corresponding increase in the number of ships calling at Port Swettenham. From 2,184 ships called at the port in 1966 the figure for 1970 accounted for 2,202 ships. Of this total 1,658 ships were worked alongside the Port Authority's wharves in 1966 and this has increased to 1,978 ships for 1970.

The last 5 years also saw the improvement in the turnround of vessel and today the Authority records an average turnround of 1.70 days for foreign-going ships, 1.80 days for home-trade ships and 1.68 days for local trade ships. Improvement in tonnage handled per ship working day also showed an upward trend and in 1970 the average tonnage handled was 650.1 tons for foreigngoing ships and 759.7 tons for hometrade ships. While there was an increase in the amount of cargo handled and the number of ships calling at Port Swettenham, there was however no corresponding increase in facilities during the last 5 years. The increase in activity may therefore be attributed to the increased efficiency of working resulting from better training of staff and additional mechanization of port operations and to a greater extent the introduction of third shift working in late 1969. The limit for absorbing further increases in tonnage and number of ships to Port Swettenham without further corresponding increasing facilities in the immediate future may result in absolute chaos.

Realising the important role of the port in an expanding economy the Port Swettenham Authority geared itself for a co-ordinated effort to tackle the future with greater vigour and courage. Among the projects to be undertaken in the next 5 years, the most significant is the development of the North Port wharves extension project and, in particular, the provision of container facilities. This project is a continuation of work carried out in 1968 for the building of 2800 feet of berth of which 2100 feet will be sufficiently strengthened for taking in the latest known container vessels and the balance of 700 feet will form a conventional berth with lighterage facilities.

The construction of berths alone will absorb an expenditure of over \$58 million and over \$30 million is required to meet the cost of container handling equipment and storage facilities. This development will give Malaysia an opportunity to reap the advantages in the latest form of transportation i.e. containerization.

Built on a 75-acre site these facilities are planned for completion in June 1973. Already the work of reclaiming the area from the swamp has reached its completion and about 500 feet of berth has already been completed. In terms of percentages of work carried out, 38% of the total work is now completed.

Another significant area of development to be carried out under the Second Malaysia Plan is the attempt to rehabilitate the South Port i.e. the original port of Port Swettenham and to equip it with facilities so that it can continue to play a leading role in the transportation namely of liquid cargo. In this connection 3 projects are envisaged.

- (a) The provision of an additional berth by joining of wharves 3 and 4.
- (b) Reconstruction of C Lighterage and subsequent joining up to wharf 5.
- (c) Reconstruction of godowns behind wharves 4 and 5.

The Authority expects to expend a sum of \$9 million to provide these facilities. With part of these projects being implemented it is expected that on completion South Port will have the facilities to handle liquid cargo up to the period 1977, by which time the tonnage to be

(Continued on Page 30)



AMSTERDAM

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For further information, apply to: Vereniging "De Amsterdamsche Haven" (Amsterdam Port Association), De Ruijterkade 7, Amsterdam, Netherlands.



Annual Report of The Tampa Port Authority

The Tampa Port Authority continued its activities along three major lines during 1971: Harbor Deepening, Port Development and Environment. All three of these important elements are interwoven in the over-all program for improvement of the Port of Tampa, the fastest growing port in the United States.

The port jumped from ninth to eighth place in the nation in terms of tonnage; and cargo reached the predicted figure of 36 million tons,

- handled is estimated as follows:
- (1) Latex 165,000 tons
- (2) Palm oil 904,000 tons
- (3) Fuel and chemicals 261,000 tons 1.330,000 tons

The provision of modern godowns immediately behind wharves 4 and 5 will assist in the storage of cargo for ships that take in dry cargo simultaneously as they are pumping alongside the wharves unless the future pattern of liquid cargo carriers vary drastically from the current trend. In any case the demand for storage facilities in the South Port is not likely to diminish so long as ships will have to be serviced in the stream.

The Authority also allocated a sum of \$21,750,000 towards the provision of quarters for staff, re-designing of the Engineering Workshop, provision for Special Service Projects and a port feasibility study.

These projects have their own definite role to play in servicing projects to be carried out in the North Port and the future development of the South Port.

From the point of view of financing the Second Malaysia Plan projects, the Authority will expend a sum of nearly \$50 million out of its own resources while the balance of over \$60 million will be forthcoming from a loan granted by the Central Government. an increase of nearly 4 million tons over the previous record-breaking year of 1970. This success story unfolded despite the fact that during a large part of the year the nation was suffering under a business recession, growing inflation and a longshoreman's strike. The port moved up in rank from fifth to fourth in the nation in foreign exports, behind only the ports of Norfolk, New Orleans and Houston.

The growth can be attributed to a rapidly-developing State of Florida, with population and business activity soaring. The opening of Disney World in Central Florida in the Fall of the year gave new impetus to the growth, and its impact is only just beginning to be felt. Building materials and agricultural products moving through the port to serve Disney World and the buildup in the vicinity of the attraction are certain to continue.

But growth brings problems of its own and the Tampa Port Authority, looking to the future, during 1971 solidified plans which will meet the needs of the maritime industry served by the port into the next century.

As stated at the outset, the Authority centered its activities around three goals: Harbor Deepening, Port Development and Environment. Following is a summation of the Authority's activities in these fields during 1971.

The Port Authority recognized many years ago the necessity for deepening the harbor channels, first to accommodate the large phosphate carriers and to make certain the Florida phosphate industry remained in the forefront of the industry worldwide. In recent years it has also become evident that the petroleum industry would require deeper water to accommodate larger tankers and especially larger petroleumcarrying barges.

In early January 1971, President Nixon signed the bill authorizing the deepening of the Tampa Harbor Channels from 34 to 44 feet. The project is estimated to cost \$112 million, the largest single harbor project ever authorized by the Congress of the United States. As the Authority geared up for the next task: that of obtaining the necessary appropriations from Congress to start the work, a new problem presented itself. Requests for funds for preliminary engineering ran into trouble at the White House level, the Office of the Management of the Budget (OMB).

The OMB, guardian of the nation's funds, decided that three basic questions must be answered before actual engineering could be accomplished. These questions were: (1) Is 44 feet actually needed? (2) What about the possibilities of offshore facilities? (3) What environmental damage will be done by the dredging?

Recommended was an appropriation for the U.S. Corps of Engineers to study these questions. Congress voted \$200,000 to do the job and the funds were eventually released by the OMB.

At this writing the study continues and preliminary evidence indicates that there is a possibility the recommended depth of 44 feet can be reduced to 42 feet. And, offshore facilities appear to be out of the question at the present time because of the distance from shore (up to 60 miles) before the water of the Gulf becomes deep enough to safely load and off-load large vessels.

The environmental study is continuing.

Tampa Port Authority anticipated the environmental problems accompanying the enormous dredging project some years ago, and to meet this situation, in October of 1970 the Authority entered into an agreement with the United States Geological Survey for an environmental study of Tampa Bay. This \$300,000 study, which will require three years, was begun shorty after the agreement was signed, with the Geological Survey and the Port Authority splitting the cost approximately down the middle.

In less than a year after the study had begun it captured the attention of high-ranking government scientists who reviewed it as a prototype for the entire globe. Put in simple terms, the study would give the answers to how to accomplish the dredging projects without endangering the environment of Tampa Bay. Indeed the Survey scientists are convinced that, when the Bay is mapped by computerizing data, translated into plans and specifications, and the dredging accomplished, the results will show the environment of the Bay will be vastly improved.

But Tampa Port Authority was not satisfied with meeting this single problem and recognized that such an enormous project would require additional impetus if it were to be accomplished. This was supplied by a complete Plan of Port Development submitted by a three-men committee of the Authority consisting of members Mr. Charles Birdsong and Mr. Clint Brown and Port Director Guy N. Verger.

This proposal, presented to the Board November 11, 1971, and adopted the same day, was designed to keep Tampa in the forefront of the nation's ports. It is a far-reaching and imaginative plan which will carry the port well into the next century. It seeks a balance between continued economic vigor and preservation of the natural environment which is a requirement for the continued health and well-being of the area served by the port. And it sets out a philosophy of self-help rather than continued reliance upon the Federal Government for the funds for harbor deepening. It was determined the Federal Government would look more favorably upon funding the harbor project if funding began at the local level.

Basically, the development plan includes:

- 1. Deepening of the harbor channels.
- 2. Design and construction of five general cargo berths at Holland Terminal on East Bay Channel and Turning Basin.
- 3. Design and construction of bulk cargo berths on Sparkman Channel at Hookers Point.
- 4. Design and construction of a cruise berth at Holland Terminal if deemed feasible.

In order to achieve these goals

the Authority:

- 1. Selected the firm of Frederic R. Harris, Inc. of New York as consultants and for preliminary engineering.
- 2. Selected Pierce, Wulbern and Murphey Corporation, Tampa, as fiscal agents.
- 3. Approved a package of bills to be presented to the Hillsborough County Legislative Delegation designed to increase the financial capability of the Port Authority.

Accomplishment of harbor deepening is being approached from three directions: Cooperation with the State Department of Transportation; initiative to obtain funds at the local and state level; and maximum effort to obtain funding from the Federal Government. The first two items represent a program of self-help.

The cooperative effort with the State Department of Transportation (DOT) is a plan for providing needed road building base from the material dredged from the channels. DOT requirements have been estimated at 40 million cubic yards in the next five years for area road building. The material could be stockpiled on uplands.

One of the duties of the Frederic R. Harris firm was to determine the feasibility of using the material. Preliminary studies show the project to be entirely feasible.

The Harris firm also will determine the feasibility of various spoil stockpile areas on uplands, give some input to marine biological aspects and consider and recommend the best methods of the dredging process.

Indications are at present writing that dredging in East Bay will begin by mid-1972.

In February 1971, the site of the new general cargo terminals on the West side of the East Bay Channel and Turning Basin was dedicated and named for the late Senator Spessard L. Holland who was of incomparable aid to the Authority in making the Harbor Deepening Project a reality. Through the years Senator Holland was instrumental in obtaining funds for channel deepening and maintenance as well as funds for the Corps of Engineers' feasibility report on the deepening and final authorization. Among those present at the dedication were U.S. Senator Lawton Chiles, U.S. Representative Sam Gibbons, I. S. Representative John Blatnik of Minnesota, Chairman of the House Committee on Public Works, and several of his aids, members of the Hillsborough County Legislative Delegation, Mayor Dick Greco, County Commission Chairman Ellsworth Simmons, and other members of the Commission, City Council and several hundred members of the public.

Senator de la Parte gave the principal address in dedication of the terminal to Senator Holland.

In April the Port Authority reset the bulkhead lines in that area of Tampa Bay within its jurisdiction at the mean high water mark. This move, taken after a public hearing, effectively cut off further residential development dredge and fill in the Bay. The move had widespread public support.

The Authority also indicated its deep interest in environmental matters in other ways, including financial backing of the U.S. Geological Survey environmental study of the Bay and entertaining proposals on wilderness areas in the Bay. Chairman Delmar B. Drawdy appointed Mr. Lester Hirsch, Board members, as chairman of the Board's Environmental Committee.

Mr. Drawdy emphasized that the philosophy of the Board is "a clean Bay. . . . We are 100 per cent for improving the environment. . . ."

The Port Authority's financial position and operating efficiency continues to improve. Net operating income for the 1970–71 fiscal year was \$377,280. These funds will be utilized to improve the Port of Tampa and Port Authority facilities through capital improvements, port development projects and studies, and the payment of bond interest and principal.

In the fiscal year 1970–71, the Port Authority paid \$32,000 and Port Authority tenants paid \$118,-000 in ad valorem taxes. Port Authority tenants also pay intangible and tangible personal property taxes as well as other city, county, state and federal taxes.

Man-made Offshore Terminal Seen as Solution to U.S. Crude Supply

Soros Associates, New York, N.Y., U.S.A.

New York, May 18th, 1972:—An offshore deepwater terminal located on the Continental Shelf serving the entire northeast region through feeder vessels and pipelines—offers a practical solution to the environmental problems created by the forecasted increase of crude oil imports to answer the impending energy crisis in the United States, according to one of the country's leading port development consultants.

Paul Soros, president of Soros Associates of New York, told a gathering of industrial and government leaders at the Biltmore Hotel today that unless the United States provides such a deepwater terminal for large tankers outside the congested and ecologically sensitive coastal areas, the Nation will face increasing foreign control over its crude oil supply and force domestic oil companies to spend millions of dollars to build additional transshipment terminals in Canada and the Caribbean. From these terminals, the oil would be shipped to the United States in an ever-increasing number of small foreign flag tankers with a corresponding increase in the danger of pollution and damage to the environment.

The Department of Commerce's Maritime Administration in cooperation with the Port of New York's Propeller Club, sponsored the allday conference on the interrelationship of new super tankers, deepwater ports and the environment.

Mr. Soros, whose firm is working on a major feasibility study on offshore terminals for the Maritime Administration, said that the North Atlantic-Deepwater Terminal (NA-DT) would represent a great improvement from the environmental standpoint over present operations or alternate solutions proposed to date. He added that construction in the open sea of such an artificial island protected by a breakwater is entirely feasible and could be built in stages to meet growing U.S. requirements for imported oil in this area. He said the terminal could be in operation by the late 1970's. It would easily accommodate the newest of the supertankers of 350,000 deadweight tons and over and would connect to shore facilities initially by a feeder vessel system and later by pipelines. According to Soros, the cost of the terminal would be selfliquidating and the cost of delivered oil would be lower compared to any alternate solution proposed.

Mr. Soros stated that none of the other proposed solutions to expand United States' crude handling facilities offered the long-range economic and environmental benefits of the man-made offshore island terminal. He pointed out that large scale dredging to expand present port facilities to accommodate the huge crude carriers would be environmentally unacceptable even if the large expenditures required could be justified. Lightening the loads of the big tankers to permit them to enter ports present environmental risks, Soros added. The development of a fleet of shallowdraft, large capacity tankers which could navigate present or moderately deepened port channels would be economically unfeasible, he said.

Mr. Soros further observed that a number of conventional plans advanced by private industry had been stymied of late due to environmental objections. They include terminals near Machiasport, Maine, to serve new refineries proposed by Occidental Petroleum and Atlantic Richfield; a deepwater oil terminal at Big Stone Beach in the lower Delaware Bay to be connected by pipeline to existing refineries in Philadelphia, and a single buoy mooring facility off the coast of New Jersey.

Mr. Soros said that deepwater transshipment terminals have already been built and others are contemplated or under construction in Canada and the Bahama Islands. He pointed out that as U.S. development falls behind, the greater will be the pressure to develop additional facilities outside the United States, with an unfavorable effect on the Nation's balance of payments and making the Nation's position in the energy crisis weaker, less flexible and more subject to foreign control.

Strike hours extended

Tokyo, May 31:—The All Japan Seamen's Union (AJSU) May 29 ordered its coastal service member seamen to extend their ship loading and unloading strike to twenty hours daily beginning June 1.

They have been on strike from 5 p.m. to 8 a.m. daily since mid-April at 52 ports across the country to back their demands for an average wage boost of $\frac{1}{22,000}$. The extension ordered by the union will have them off the job from noon to 8 a.m. the following morning.

The union at the same time instructed crewmen aboard vessels owned by the member lines of the National Coaster Owner Association (NCOA) to extend their first-wave strike for 10 days until June 9.

As of 6 p.m. Monday, 1,240 vessels, comprising 553 ocean-going ships, 377 coasters and 310 small coasters owned by NCOA member lines were strike-bound.

As of the same time, crewmen aboard 317 ocean service ships defied departure orders for foreign ports and those aboard 209 coasters suspended all cargo-handling work. (Shipping and Trade News)

Correction

On page 24 of Ports and Harbors, June, 1972, the middle and bottom photographs should have been changed places.

Orbiter Probe

IAPH News:

Executive Committee and 2 Other Committees Meet in Europe

The inter-conference meeting of the Executive Committee as set forth by the Association By-Laws was held in Lisbon, Portugal, close at heel of the meeting of the Ways and Means Committee held in Barcelona, Spain, and was followed close at heel by the meeting of the Committee on Containerization which met in Antwerp, Belgium.

Ways & Means Committee

This Committee met in Barcelona, Spain, April 27-28, 1972 at the Port Office Building.

Those present: Mr. B. J. Caughlin, Chairman (General Manager, Port of Los Angeles); Mr. J. Mc-(Chairman, Fremantle Connell Port Authority); Mr. J. C. Oliga (Financial Adviser & Chief Accountant, East African Harbours Corporation); Mr. L. C. Purdey (Executive Director, Port of Toledo); Mr. R. C. F. Savory (Chairman, Auckland Harbour Board); Mr. D. N. Morgan (Deputy General Manager, Auckland Harbour Board) assistant to Mr. Savory; Mr. D. E. Taylor (Chairman, National Harbours Board of Canada); Mr. J. K. Rooney, Chairman, Legal Counselors (Port Attorney, Port of Oakland); Mr. T. Akiyama, Secretary General; Mrs. K. Tatsuta, IAPH Under Secretary.

Financial matters of the Association including the settlement of account for 1971, working budget for 1972, estimated budget for 1973 and other matters were deliberated and approved for presentation by the Chairman to the Executive Committee Meeting due the next week in Lisbon.

Executive Committee

This Committee met in Lisbon, Portugal, May 2–5, 1972 at the Ritz Hotel.

Those present: Mr. A. L. King, Chairman, IAPH President (Director of Marine Terminals, The Port of New York Authority); Ir. J. Den Toom, 1st Vice President (Managing Director, Port Management of Amsterdam); Ir. D. R. A. Stapel, assistant to Ir. Den Toom; Mr. Howe Yoon Chong, 2nd Vice President (Chairman/General Manager, The Port of Singapore Authority); Rt. Hon. Viscount Simon (Past President, IAPH); Mr. C. S. Canals (Executive Director, Puerto Rico Ports Authority); Mr. S. Johnson (Managing Director, British Transport Docks Board); Mr. J. McConnell (Chairman, Fremantle Port Authority); Dr. F. Moreira (President. Ports of Douro and Leixoes Administration); Mr. B.



Mr. Katsuya Yokoyama, new IAPH Deputy Secretary General.

Introducing A New Staff In the Head Office

Dear Members,

I have the pleasure of introducing to you Mr. Katsuya Yokoyama, your newly appointed Deputy Secretary General of the Association.

It has long been suggested to have a senior Head Office staff who takes care of all the administrative and the external matters of the Head Office as an integral part of "Head Office reinforcement scheme" aiming to provide better services to our member colleagues.

Now, I have appointed Mr. Katsuya Yokoyama as one of the Deputy Secretaries General, effective from June 1, 1972, having the unanimous support expressed by the Executive Committee Members at its meeting in Lisbon, Portugal, last May.

Mr. Yokoyama has been engaged in the shipping business in Japan for nearly 27 years, and he has been serving as the chief of secretariat of the Japan Container Association for the recent three years.

I am confident that Mr. Yokoyama's participation with us will enable the Head Office to serve more effectively for the Association's further development.

> Toru Akiyama Secretary General



Barcelona, April 27, at the Board Room of the Port Office Building. This being the first day of the Ways and Means Committee meeting, Mr. Ramón Guardans Vallés, president of Puerta de la Paz, Barcelona (second from right), accompanied by Mr. Aurelio Gonzáles Isla, General Manager (extreme right), was present briefly to offer a greeting of welcome. Others are, left to right: Messrs. Rooney, Akiyama and Caughlin.



Barcelona, April 27, at the same table as the top photo, left to right: Messrs. Taylor, Purdey, McConnell, Savory and Morgan.

E. Nutter (Executive Director, Port of Oakland); Mr. A. Pages (Director, Port of Bordeaux Authority); Mr. J. L. Stanton (Port Administrator, Maryland Port Administration); Mr. D. E. Taylor (Chairman, National Harbours Board of Canada); Mr. G. Tsuboi Japanese (Managing Director, Shipowners' Association); Mr. R. L. M. Vleugels (General Manager, Port City of Antwerp); Mr. R. K.

Trimmer (Chairman, Northland Harbour Board), proxy for Mr. E. M. Hodder; Mr. B. J. Caughlin (General Manager, Port of Los Angeles), Chairman, Ways and Means Committee; Mr. J. K. Rooney, Chairman, Legal Counselors; Mr. T. Akiyama, Secretary General; Mrs. K. Tatsuta, IAPH Under Secretary.

The first day (May 2) began with discussion of financial matters.

PORT ECONOMIST

A vacancy exists in the secretariat of the United Nations Conference on Trade and Development (UNCTAD), for someone to work on the economic issues involved in the development of ports in developing countries. The person appointed would be based in Geneva but may be expected to undertake missions to various parts of the world,

Candidates should have a good degree in economics and several years experience working, in a port, or airport, preferably on development plans.

The appointment will be for two years in the first instance.

Fluency in English is essential. A working knowledge of French or Spanish would be desirable.

Please send brief details to Office of Personnel, UNCTAD. Palais des Nations, Geneva, Switzerland, before 15 August 1972.

Advertisement

The Secretary General reported on the settlement of account for 1971, working budget for 1972, and estimated budget for 1973. Mr. B. J. Caughlin, Chairman of Ways and Means Committee, reported on his Committee's findings the week before in Barcelona.

The second day was spent in the discussion of other activities of the Association. The third day was reserved for inspection tour of the Port of Lisbon, guided personally by Eng. Pedro Nunes, President of the General Administration of Port of Lisbon.

The last day (May 5) was spent exclusively on discussion of the 8th Conference program. Definitely confirmed, among other things, was the Conference time: i.e. May 7-12, 1973. The entire program will be announced soon.

Container Committee

The Committee on Containerization met in Antwerp, Belgium, May 8-9, 1972 at the City Hall where General Management of the Port, City of Antwerp, is located. Extracts from the report by Mr. Decock are given below:

Those present: Mr. B. Nutter, (Executive Director, Chairman Oakland, Calif., U.S.A.); Mr. V. Lai (Secretary/Asst. Director, Singapore); Mr. Wee Keng Chi (Director-Administration, P.S.A. Singapore); Mr. P. Bastard (General Manager, Le Havre, France); Mr. S. Johnson, Managing Director, British Transport Docks Board); Mr. R. Vleugels (General Manager, Antwerp, Belgium); Mr. R. K. (Chairman, Northland Trimmer Harbour Board, New Zealand); Mr. R. C. F. Savory (Auckland Harbour Board, New Zealand); Mr. D. N. Morgan (Deputy General Manager, Auckland Harbour Board, New Zealand), Observer; Mr. K. Miyota (Manager Planning Section, Keihin Port Development Authority, Tokyo, Japan); Mr. John Lunch (Director General, Port of London Authority); Mr. Horacid S. Mendoza (District Engineer III, Manila, Philippines); Mr. P. De-(Commercial Counsellor, cock Antwerp), Secretary; Mr. Toru Akiyama IAPH Secretary General; Mrs. K. Tatsuta, IAPH Under Sec-



Lisbon, May 2, at Ritz Hotel. The first day of the Executive Committee meeting. Clockwise, from extreme left: Messrs. Moreira, Taylor, Canals, Nutter, Lord Simon, Messrs. Trimmer, Purdey (observer from W. & M. Committee), Tsuboi, Stanton, Den Toom, Caughlin, King (Chairman), Akiyama, and Rooney.



At the same table, left to right: Mrs. Tatsuta, Messrs. Johnson, Mc-Connell and Chong.

retary.

The chairman pointed out that the Executive Committee in Lisbon requested an extension of the activities of the Containerzation Committee, which should in future also deal with barge carrying ships. The Committee agreed. In future its name shall be: "Committee on Containerization and Barge Carriers."

The Committee agreed to continue the survey of container facilities, since information from other sources is not certified by the port authorities and not uniform in presentation. Ports will be asked for information on facilities (in operation, under construction or planned) not only as changes to the information already published, but as a fully new review.

Regarding the standardization in reporting container statistics, the Committee decided that statistics, as detailed as possible, will be published by each port, as close as possible to the suggestion made by I.A.P.H. The Committee unanimously decided that the purpose is not to report to I.A.P.H., but to use this form in all publications. The Committee is speaking for detailed statistics, in order to gather data which might be useful in an action for the use of ISO-standard containers. If not otherwise possible, statistics shall only list length of containers and weight may be given in metric tons.

Traveler

Mr. John Christian Oliga, Financial Adviser and Chief Accountant, East African Harbours Corporation, after attending the IAPH Ways and Means Committee meeting in Barcelona, arrived in Japan Friday, May 12 to stay until May 16 before departing on his round-theglobe study tour via the U.S.

Mr. Oliga called at the IAPH Head Office on Monday. At his request, IAPH staff members took him on a study tour of an off-shore oil berth in Chiba and another oil berth in Kawasaki, both in the Tokyo Bay.

" TERRA "

"TERRA" is the name of a new journal published by the IADC (International Association of Dredging Companies) in The Hague, The Netherlands. It is an international journal on public works, ports and waterways development. The TERRA 1 now published is a $210 \times 296 \text{ m/m}$ size, 28-page brochure printed on heavy art paper with many illustrations, many of them in attractive multi-color. Its editorial is reprinted in full here for our readers' benefit:

Practically all countries feel the need to develop port facilities further, to deepen and widen access channels or to create land out of the sea. The basis is the desire to stimulate economic growth through modern technology. What is being done today was technically impossible a decade ago. This new scope makes viable projects which were once merely pipe dreams. Some, indeed, are now realities of great social and economic significance. Information concerning actual problems and actual solutions may stimulate responsible officers all over the world into thinking up new solutions for the particular problems with which they have to deal. Yet such information is often available only in scientific journals or technical trade papers which are sometimes not widely circulated or readily accessible.

TERRA is a response to that situation. This is its first issue. It is a journal devoted to the development of ports and waterways and the developmental aspects of hydraulic engineering in general. Its aims are to disseminate information useful to the civil servant, politician or financial expert who is involved in local problems and bears responsibility for the decisions which have to be made. The Editors have endeavoured to make its contents interesting also for the man who is directly engaged in port development and dredging activities.

TERRA is a periodical publication presented by the International Association of Dredging Companies. A forerunner of this journal, published under the titling Dredging/ Dragage, had a worldwide distribution and was announced in many civil engineering and financial trade papers. More than a thousand requests for additional copies have come from organizations and executives associated with development projects. With such a proved demand for information on dredging and the dredging industry, the IADC is happy to pursue its policy of reporting the global activities of its members.

The Association does not represent any commercial or national interest, but draws its membership from dredging contractors in the United States of America, Great Britain, France, Belgium, The Netherlands and other countries throughout the world.

Whatever the project size, the dredging contractor can offer economical and technical advantages. This applies especially to work in the developing countries and areas and locations where the necessary equipment and skill is not generally available.

A main feature presented in this second IADC publication highlights the problems connected with dredging projects in ports and estuaries of the developing countries. Dredging experts will recall a paper read by Mr. H. C. Frijlink at the symposium Dredging Today which took place in Rotterdam in 1970. The author is Managing Director of Nedeco, a leading Dutch organization of consulting engineers, and the paper won praise for the way it handled a complicated subject. We reprint the paper knowing that it will be appreciated by financial and economic executives who have to make decisions relating to dredging operations in the developing countries.

The second feature concerns Monaco and shows how more sophisticated nations have to solve individual problems. The reclamation of land for building sites by the use of dredging equipment is now accepted and present techniques allow this to be done in deeper waters than ever before. From various developments in Japan, Great Britain and The Netherlands, it is clear that NPC Book:

"U.K. International Trade 1975"

Foreign traffic through United Kingdom ports will increase by about 14 million tons —from 103.2 million tons to 117.0 million tons in the five years 1970–1975, if the latest traffic forecasts of the National Ports Council, published today*, are realized. And these figures take no account of traffic in fuels, notably oil, which has been a major growth traffic over the last ten years.

Exports are expected to increase by over 7 million tons, and imports by $6\frac{1}{2}$ million.

The new forecasts cover about 50 commodity groups under five main classifications (food and live animals, basic materials, chemicals, machinery and transport equipment, and miscellaneous manufactures) and include breakdowns into eleven overseas trading areas. In total, imports are expected to grow from

* "United Kingdom International Trade 1975", published by the National Ports Council, Commonwealth House, 1-19 New Exford Street, London WC1A 1DZ. Price £ 5.00.

the dredging industry is now embarking on such offshore operations with great success.

The Monaco project shows that with foresight, careful planning and co-ordination of wet and dry operations, very impressive results can be achieved. This project also highlights the excellent working cooperation between authorities and private enterprise.

The third feature describes the spectacular success of Milford Haven, U.K. Twelve years ago it was still a minor port on the Welsh coast. Today it is bustling with activity and has developed into Great Britain's major oil port.

75.0 million tons in 1970 to 81.5 million tons in 1975, and exports from 28.2 million tons to 35.5 million tons.

But there need by no fear that British ports will be unable to cope with the increase, Mr. Philip Chappell, chairman of the National Ports Council, said today.

'The importance of the Council's forecasting work is that it enables the ports to cater for growth in good time', he said, 'Our latest forecasts are in line with trends which we had already discerned, and the necessary provision to cater for the expected increase has already been made in projects which port authorities have either already completed or currently have under development'.

In preparing their forecasts the Council's staff reinforced their own econometric studies by consultations with firms, institutions and Government departments concerned with particular trades and foreign markets, and with work done by the Cambridge University Growth project on aggregate imports into the U.K. The report includes a chapter on the methodology employed.

Mr. Chappell said that the forecasts had already been supplied to port authorities.

'Our aim is to produce such forecasts regularly as a service for the ports themselves and in a form that will assist the Council in advising the Minister for Transport Industries on port projects'

Mr. Chappell added that so far as was possible forecasts took account of the effect of U.K. entry into the Common Market in 1973. 17th April 1972

Boom with us?



Container cranes supplied to the Port of Portland, U.S.A.

Five container cranes load and unload quickly at the Port of Yokohama, Japan. A pair of diesel-electric cranes hoist for the Port of Seattle, U.S.A.

Profits go up. Costs go down. In Portland, Seattle and Yokohama. And in Boston, Honolulu, Singapore and other Japanese ports, too. Worldwide. Via over 15,000 Hitachi cranes. Container and otherwise. And a word to the wise. Check out our patented "semi-rope" trolley gantry cranes. They eliminate shock and sway of cargo.

We have also developed high speed container cranes which employ our most recent control technology. Put both in your port and see for yourself. You will be busy . . . but happy.





Yokohama Pneumatic Rubber Fenders Prove Themselves in Quebec, Canada.

Crude oil tankers, ranging up to 100,000 dwt, call at the St. David de Levis marine terminal on the St. Lawrence River. The modern terminal serves a Golden Eagle Canada Ltd. refinery, producing 100,000 barrels per day. Protecting these tankers from collision damage when berthing, drift from wind velocity and ice floe pressure are Yokohama Pneumatic Rubber Fenders. Since July 1971, the fenders have functioned perfectly even under severe cold weather conditions. Yokohama pneumatic rubber fenders stand up under the most rugged usage.



For further information, please contact Yokohama export department, or for the U.S.A.and Canadian market: Mitsubishi International Corp. (gr), New York (277 Park Avenue, New York, N.Y.10017. Phone: (212)922-6681~2), Houston Branch (1605, First City National Bank Bldg. Houston, Texas 77002 Phone: (713)224-4733) or Toronto Branch (Toronto Dominion Centre Suite 1907, P.O. Box 43 Toronto I. Ont. Phone: (416)362-5136) and for the England market: Mitsubishi Corp. London Branch (Bow Bells House, Bread Street, (Cheapside) London, E.C.4, England. Phone: City-3292) We carry in stock in New Orleans, U.S.A. and London, England.

THE YOKOHAMA RUBBER CO., LTD. C.P.O. Box: 1842, TOKYO, 100-91, JAPAN Telex: J24673 Cable Address: "YOKORUCO TOKYO" Telephone: TOKYO 432-7111

New tonnage records

Ottawa, May 19, 1972:—New tonnage records are indicated in the 1971 Annual Report of the St. Lawrence Seaway Authority, tabled in the House of Commons today by Federal Transport Minister Don Jamieson.

The new record was established on the Montreal-Lake Ontario section with 53 million tons compared to 51.2 in 1970. The 1971 record of 63.1 million tons on the Welland section surpassed the 1970 record of 62.9 million tons, despite a strike of U.S. coal producers that adversely affected movements of this commodity. Of interest was the rapid rise in container traffic with increases of 87.6 percent on the Montreal-Lake Ontario section and 107 percent on the Welland.

The navigation season was marked by exceptional ice conditions that delayed the opening and by an unprecedented number of ocean vessels in the Seaway towards the end. A priority system was designed to clear the system before closeup and, despite heavy traffic this was accomplished.

Construction of the Welland By-Pass continued ahead of schedule and the overall project is due to be completed for the opening of the 1973 season.

Canada's share of toll revenues reached a record of \$20 million and, while it was possible to pay \$12.3 million in interest to the government, the revenue still fell short of the amount needed to reduce the debt. (The St. Lawrence Seaway Authority)

Licensed in Brazil

Alameda, Calif., May 3:—Mecanica Pesada, S.A., Sao Paulo, one of the largest steel fabricating firms in Latin America, has signed an agreement with PACECO, a Division of Fruehauf Corporation, Alameda, California, to manufacture and market Paceco container handling equipment in Brazil.

Container handling cranes under Paceco's registered trade names of PORTAINER, TRANSTAINER AND SHIPSTAINERS, will be manufactured at Mecanica Pesada's modern industrial park in Taubaté,



Alameda, Calif., May 3:--Mr. C.D. Ramsden, President & General Manager of PACECO, a Division of Fruehauf Corporation, Alameda, California (left) signs a license agreement with Mr. Manuel Garcia Filho, Director, Mecanica Pesada, S.A., for the manufacture and sale of PACECO container handling equipment in Brazil (PACECO News)

which has approximately 1200 employees.

Other Paceco licensees for container handling equipment are in Australia, Canada, France, Germany, India, Italy, Japan, South Africa, Spain and the United Kingdom. (PACECO News)

'Port Man of the Year'

Baltimore, Md., April 24:—Joseph L. Stanton, Maryland Port Administrator, will be presented the "Port Man of the Year" award of the Baltimore Junior Association of Commerce, Wednesday, April 26, 1972.

Mr. Stanton will receive the award at the annual luncheon sponsored by the Jaycee's Port and Industrial Development Committee at the Hilton Hotel, in downtown Baltimore. Featured as guest speaker will be Mrs. Helen D. Bentley, chairman of the Federal Maritime Commission, herself a past recipient of the award.

The award is given annually to a person who has, in the judgment of the Jaycee's Port and Industrial Development Committee, contributed to either the development of the port or local business and industry. Mr. Stanton will be presented the honor by the President of the Junior Association of Commerce, Ira Himmel.

Originated six years ago, the award already has a distinguished list of past recipients which includes, besides Mrs. Bentley, Congressman Edward A. Garmatz (Dem.-Md.), retiring chairman of the House Merchant Marine and Fisheries Committee. (News from Maryland Port Administration)

Great Lakes outlook

Buffalo, N.Y.:—A Buffalo-Great Lakes study carried on by the department of commerce, maritime administration, office of ports and intermodal systems, indicates that some of the future movement in the Lakes will include cargo that is not carried via the Lakes at the present time. It also indicates that 10 years from now, as much as 80% of the cargo carried on the Great Lakes will be new. A prime example is lumber which will come from the West Coast to the Lake Head to the Great Lakes. (Port of Buffalo Progress Bulletin, March 1972)

3-day container Seminar

Houston, Texas: — A three-day seminar on containerization—considered by many the greatest revolution in moving cargo since the advent of the steam engine—will be held at the Houston Oaks Hotel May 16th–18th.

More than 400 shippers, carriers and others engaged in foreign trade are expected at this first container conference ever held in the Southwest to discuss the impact of intermodal transportation on ports and shipping, especially in the Gulf.

With the theme "The Gulf Coast Comes Alive", the seminar is sponsored by the Port of Houston Authority, Houston Chamber of Commerce and the Houston World Trade Club. Marc Felice, editor of CON-TAINER NEWS Magazine, which is directing the conference, will be moderator for most of the sessions.

Among the nationally recognized transportation authorities who will speak are Federal Maritime Commissioner George H. Hearn; John L. Hazard of the U.S. Department of Transportation; Jacques Leblanc, chairman of the Containerization Institute and president of Dart Container Lines, and Eric Rath, executive vice president of the International Cargo Handling Coordination Association (ICHCA).

Steamship executives from leading container-carrying lines as well as from lines specializing in the new barge-carrying concept will appear on the two-a-day panels, as will key executives of the six major railroads serving the Port of Houston.

The whole container concept got its start just sixteen years ago at the Port of Houston when the first full container ship, the SS MAXTON, arrived from New York with some 200 containers and took aboard a similar load for the return voyage.

Since that time the container revolution has spread throughout the world, especially in the Atlantic trade to Europe, but its full impact is only now beginning to be felt in the Gulf.

The Port of Houston has taken

the lead among Gulf ports in this new movement with its two container cranes, several container marshalling yards, and several full container and barge-carrying services. Its new Barbours Cut terminal goes into operation next month 25 miles downstream, where it will berth the huge new barge-carrying and container vessels which run as large as 900 feet and 50,000 tons or more.

The advantages of intermodal transportation are manifold. The containers are easily and quickly loaded and unloaded aboard ship, train or truck; they come direct from shipper and are delivered directly to consignee; they keep merchandise free from weather damage, pilferage and breakage. Costs are lower because of streamlined transportation procedures and less handling.

Certain of the same advantages are enjoyed by the huge 30×60 foot barges carried by the mother ships. The barges, however, move from inland ports on rivers or canals to other inland ports, as well as from seaports. No overland transportation is involved but the fast, easyhandling, weather and pilferage protection and point of origin to destination benefits still prevail. (Port of Houston News Release)

Zim Container Service

Long Beach, Calif., April 26:-One of the world's longest trade routes was launched by Zim Container Service with arrival here today (April 26) of the 36,300 ton containership Zim New York on her maiden voyage linking Israel with the Far East via Port of Long Beach.

The Italian-built New York, with capacity for 713 container boxes of 40 foot configuration, cruises at 23 knots and is the largest, fastest containership ever to call at Long Beach. The 683-foot vessel is the first of six such vessels now under construction for Zim, at a total cost of \$150-million.

Other ports of call along the globe-girdling trade route are in Greece, Italy, France, Spain, Eastern Canada, the U.S. East Coast, Japan, South Korea, Hong Kong and Taiwan.

Bi-monthly service is planned by Zim, which is using the newly-completed \$10-million 51-acre container terminal at Berth 234, Pier J, and operated by International Transportation Service, Inc.

Captain I. Lipkin, vice president operations U.S.A. for Zim, noted that Southern California and Israel both export a great volume of fresh citrus. Because of this similarity, Zim has designed a new-type ventilated container for perishables. The ships can carry up to 110 refrigerated containers.

Chaim Newmann is West Coast marketing and sales manager for Zim, which currently has a fleet of over 150 ships in worldwide service. The parent company, Zim Israel, is actually three years older than the state of Israel. Zim's Los Angeles office is at 530 West Sixth Street, and the phone is 627-2966. W. H. Wickersham & Co., Inc., represents Zim on the West Coast. (Port of Long Beach News)

Harbor ecology boat

Long Beach, Calif., May 22:-Long Beach Harbor, already one of the world's cleanest deep water ports, has designed and commissioned a unique craft to serve as a harbor debris and trash pickup vessel.

Dubbed the "Big Dipper", the \$100,000 barge-like boat features a hydraulic basket in the bow to scoop up debris from harbor waters and deposit same in bins stowed amidship. These are in turn offloaded into trucks for disposal ashore.

Designed by Marine Architect John Marriner upon the basic requirements furnished by the Harbor Department and on findings made by Battelle Memorial Institute, it well may be the world's first ecologyoriented Port-operated harbor craft. The "Big Dipper" was constructed by California Shipbuilding Company in less than four months.

Following a traditional shipyard champagne christening, the Dipper was officially christened by 4-yearold Little Miss Ecology, Laura Ann Oliver, granddaughter of the boat's skipper, Walter Oliver, a veteran of 28 years with the Long Beach Harbor Department. Laura Ann used a golden dipper to pour a scoop of harbor water over the bow of what

(Continued on Page 43)



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(Continued from Page 40)

is expected to be a prototype of similar boats in harbors everywhere.

Among possible adaptations are using the boat to install barriers to contain small oil spills, skimmers to remove them and pump and suction attachments to assist in this operation. (Port of Long Beach News)

Sewer project

Los Angeles, Calif., April 26:— A \$6,600,000 harbor sewer construction project was given the go-ahead by the Los Angeles Board of Harbor Commissioners today (April 26), following a three-point recommendation by the Harbor Department staff that the system be designed, constructed, and maintained by the Los Angeles Board of Public Works.

A fourth recommendation, that a portion of the project be paid for by port tenants who construct and own facilities, was held over for further study.

The recommendations, submitted to the Board by Harbor Department General Manager Bernard J. Caughlin and Chief Harbor Engineer L. L. Whiteneck, estimated at \$1,662,800 the amount to be recovered over a period of time from harbor tenants affected under the plan. Method of implementation of this recovery is yet to be determined, but the signal for the Harbor Department to proceed with construction was given in order to meet water quality standards deadlines set earlier by the California State Water Quality Control Board.

On July 8, 1970, the Harbor Commission approved an interdepartmental work order of \$200,000 to the City's Public Works Department to initiate the design and preparation construction drawings and specifications for a sanitary sewer system throughout Harbor Department londs.

The total project was divided into 10 sections of the harbor for which design, construction and cost schedules have since been established.

Today's action by the Board carries the project forward, and represents a major step in the Harbor Department overall program of env'ronmental improvement.

Projects 1 through 9 include the

construction of sewer lines in the areas of (1) Signal Street, 22nd Street, and Miner Street; (2) Water Street, Canal Avenue, Matsonia Way, and Yacht Street; (3) Mormon Island; (4) Neptune Avenue, Pier "A" Street, and Pier "A" Place; (5) Wilmington and San Pedro Road; (6) Northwest Terminal Island; (7) East Terminal Island; (8) Swinford Street; and (9) Anchorage Road.

Lines constructed in Projects 1 through 9 will be immediately connected to the City's interceptor sewer lines presently serving the sewer treatment plant on Terminal Island.

The schedule for Project No. 10, Fish Harbor, has been adjusted to provide service to the fishing industry as soon as the canneries are ready to use it.

Since the Harbor Department sewer collection system is not an interceptor sewer, it cannot be financed by the City of Los Angeles from the general funds, bond funds, grant, etc. Therefore, the Harbor Department must construct and pay for its own sewer collection system, with tenant participation.

First of the projects scheduled for construction is the Swinford Street area. Most will be completed in early 1973, and the entire program of sewer construction is expected to be completed by 1974. (Port of Los Angeles)

K Line's container service

Oakland, Calif., April 27:—A direct container service from the Port of Oakland to Korea and Hong Kong will be introduced this week by K Line, with the sailing from the Port's Seventh Street Terminal of the containership Colorado Maru, it was announced today by Y. Charles Soda, President of the Oakland Board of Port Commissioners.

K Line, which operates regular trans-Pacific container service to Japan from the Oakland Container Terminal, will now include Oakland as the last outbound port of call on its service to Pusan, Korea, and Hong Kong. Previously, the route of the K Line ships was via calls in the Pacific Northwest and Southern California.

Transit time from Oakland to

Pusan will be 14 days and 17 days from Oakland to Hong Kong. K Line has scheduled three ships in the service, with the Montana Maru and the Oregon Maru joining the Colorado Maru to offer a sailing from the U.S. West Coast every two weeks.

The addition of the three K Line ships to Korea and Hong Kong further strengthens the Port of Oakland's position as the leading containerport on the Pacific Coast with more than twice as many outbound sailings of containerships than any other port. The Port of Oakland now averages 25 containerships sailings a month, or nearly one every day.

Honoring the Colorado Maru in a shipboard ceremony, Port of Oakland executives helped inaugurate the new service with presentations to the ship's master, Captain H. Hanasaka. (Port of Oakland)

Income increase expected

San Diego, Calif., 18 May:—A significant increase in property and airport revenues during Fiscal Year 1971–72 and the anticipated continuance of this trend has resulted in the proposed budget by the Unified Port District for the fourth straight year eliminating the need for any tax levied by the Port of San Diego.

According to statistics released Tuesday (May 16) at a meeting of the Board of Port Commissioners, revenue anticipated by the staff for the 1972–73 fiscal period include increases of \$800,000 from airport operations, \$540,000 from property administration and \$324,000 from other revenue producting activities of the Port for a total increase of \$1,664,000 over last year's income.

The preliminary budget presented Tuesday anticipates a total of \$9,-539,000 in revenue and \$9,448,000 as a total funding requirement.

(The 1971–72 budget reduced the undistributed reserve of the District by \$1,854,000 since the income of \$7,875,000 did not meet the total funding requirement amounting to \$9,729,000.)

Figures for FY 72-73 do not at this time reflect any salary adjustment. This item will be proposed to the Board of Port Commissioners within the next several weeks. Personnel requirements for the year are virtually the same as last year with a net increase of only one position in the Port staff over the '71–72 budget of 230 positions.

Sharp increases in property revenues were traced to expected completion of the new Harbour Island-Sheraton Hotel which is currently scheduled for June 2,1972. Corresponding increase in income from that and similar sources was noted by a Port spokesman presenting the budget recommendations.

Income from all restaurant and hotel facilities also increased markedly due, in part, to San Diego's healthy tourist economy during the fiscal year, which is expected to increase during the on-coming 12month period (the District receives a percentage of gross revenue from commercial operations). certain Rental reviews are constantly being held as leases expire and are renegotiated, based on existing fair market value. Increases from 25 to 100 per cent have occurred and this trend, too, is expected to continue into the future.

The projected \$800,000 revenue from Lindbergh Field, San Diego's International Airport reflects a steady increase in passenger rates and renegotiation with the airlines for use of Lindbergh Field facilities.

Requirement forecast for operations are \$253,000 lower than the previous year's budget primarily due to a reduction in major maintenance projects.

The capital outlay program for 1972–73 is \$543,000 less than last years reflecting an emphasis in 1972–73 on bond projects. The requirement for '72–73 debt service is up approximately \$393,000 over the preceding year. (Port of San Diego News Release)

The First Annual Conference of U.S. National Committee of ICHCA Was Held in Oakland

Oakland, Calif., April 28:—More than 200 transportation executives from throughout the United States and seven foreign nations attended the International Cargo Handling Coordination Association technical conference held April 20–21 in Oakland, Calif.,

Hosted by the Port of Oakland, the two-day symposium at the Hilton Inn was the first of an annual series of conferences to be held by the U.S. National Committee of ICHCA.

Focal points of discussion were the developments in cargo handling techniques and equipment and what those advances mean for more efficient and economical shipping.

Following a keynote address by Ben E. Nutter, Executive Director of the Port of Oakland, President of ICHCA's U.S. National Committee and general chairman for the conference, the program of panel discussions and paper presentations got underway.

Discussion topics for the April 20 morning session were "Innovations in Marine Terminal Design and Operation" and "New Developments in Refrigerated Cargo Movements". A special paper "The Challenge Facing the Ocean Shipping Industry" followed. The paper presentation was made by R. P. Holubowicz, Executive Vice President of International MacGregor Ltd., London.

April 21 panel topics included "Air Cargo Intermodal Handling and New Developments," "Load Center/Feeder Systems Port Relationship" and "Labor Practices and Port Productivity."

In addition, recent changes in international relations affecting world commerce were also examined.

Arthur T. Downey, recent special assistant to White House adviser

Dr. Henry Kissinger, discussed current U.S. foreign policy and the effect policy shifts may have on American trade with Russia and China.

Downey spoke at a special dinner meeting for delegates and their wives at the Kaiser Center in Oakland.

Professor Stanley Lubman of the University of California at Berkeley examined potential pitfalls for American businessmen trading with China in his April 21 morning address.

Lubman, a former practicing attorney who studied Chinese language and institutions at Columbia University before conducting field research on China's trade practices, negotiating procedures and contracts, detailed a number of potential problem areas for the Western trader.

"Many Americans, struck by the dramatic reopening of direct Sino-U.S. communication, may be misled by the affection for profit-seeking, publicity and novelty which have placed China trade in the headlines," he said. "The very speed with which American business has turned attention to the long-closed China market signals a lack of sophistication in American expectations about China trade, which may eventually lead to some considerable disappointment."

Dr. Weldon B. Gibson, Executive Vice President of the Stanford Research Institute, and Armour S. Armstrong, Chief of Office of Ports and Intermodal Systems for the U.S. Maritime Administration, were principal April 21 speakers. Gibson's topic was "Impediments to Intermodalism" while Armstrong em-

(Continued on Page 46)



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phasized that there are certain administrative, technical and legal problems in the field of world container transport that require attention on an international level.

A paper entitled "United Load Systems: State of the Art" was presented by William J. Honan Jr., General Manager of Marketing and Sales for Moller Steamship Co. during the afternoon session.

In addition to the panels and papers, a question and answer session covering the entire symposium and a host tour of Port of Oakland container and general cargo facilities were also included in the program.

A complete transcript of the Conference proceedings, including a set of papers from each speaker, is available for \$25 by writing ICHCA Conference, c/o Port of Oakland, 66 Jack London Square, Oakland, Calif. 94607.

World's First LASH Terminal Was Formally Inaugurated

Port of San Francisco

San Francisco, Calif., May 11:-The Port of San Francisco today formally inaugurated a new shipping terminal and stepped into the world of tomorrow.

The prize beauty is the World's first LASH (Lighter Aboard Ship) terminal—50 acres, two berths, \$22 million, two years under construction.

Joining the Port as co-host in today's ceremony was Pacific Far East Line, the San Francisco-based steamship company which has leased the new facility for 50 years to serve not only its LASH vessels but most of the rest of its fleet of 17 ships.

PFEL presently operates four of

the huge new LASH ships with two more to be delivered before the year is out. The company serves the Far East and the Orient, Guam and the Australian trade. It also owns the two former Matson passenger liners MARIPOSA and MONTEREY.

The LASH terminal, officially designated as Pier 96, is on India Basin, at the very southernmost end of San Francisco's famed 6½-milelong waterfront. It is in an area that many San Franciscans—familiar with the finger piers of the north and central waterfront—were largely unaware of up until last Sunday, May 7.

On that date some 8,000 of them



came out at the Port's invitation to a public open house to stroll and marvel at the new technological innovations created for LASH, and the acreage itself which rose from Bay mud.

Pier 96 represents the culmination of PFEL's ambition to step forward into the revolutionary LASH concept and the Port's desire to add another major new terminal in its \$100 million reconstruction program.

PFEL operations personnel and the Port's engineering department, headed by Chief Engineer Eugene L. Sembler, worked as closely as lyricist and composer in devising a facility as new as tomorrow in Pier 96.

Among some of its outstanding features are:

1. The $853' \times 266'$ lighter freight station that looms on the horizon like a behemoth. This building, which eventually will be added to, to become 1203 feet long—the length of a super-carrier—is unique in the world. It is built to "float" on the fill dike rather than resting on piling. It is made to ride out a lateral shift of up to 4 feet in the event of a severe earthquake without collapsing, and has a built-in jacking capability to compensate for site settlement.

2. The five barge-loading 5-ton stacker cranes (dubbed "Flying Forks") which load and unload the lighters tied alongside an apron that can accommodate at one time 15 lighters under shelter.

3. The gatehouse, with three lanes of entry, at which truckdrivers do not leave their cabs. The inside lane is next to a "teller window" and the two outer lanes in contact by pneumatic tube and loudspeaker.

4. Two tandem 50-ton cranes with a 100-ton total capacity which are designed to lift empty barges from the water for repair and maintenance.

5. The container freight station with special container-holding metal racks in front of the loading docks. The racks are removable, so that a truck and container may stand side by side for case of stuffing or unstuffing a container. '(The forklift would simply make a "U" turn from one to the other.)

6. Electrical connections and



Alameda, Calif., May 15:-Two Transtainers ordered for new MSB Glebe Island facility will be similar to these now operating at White Bay in Sydney, Australia. (PACECO News)

space for 210 refrigerated 20-foot containers or 40-foot equivalent.

7. The container yard with space for 2,000 20-foot boxes or 40-foot equivalent.

8. Two giant Paceco shoreside container cranes with a lift capacity of 30 long tons at a 115-foot reach.9. Rail connections to both con-

tainer and lighter freight stations. Joining in today's brief inaugural ceremony were San Francisco Mayor Joseph L. Alioto; Leo C. Ross, president of Pacific Far East Line; and Cyril Magnin, president of the San Francisco Port Commission.

2 more container cranes

Alameda, Calif., May 15:—An order for Two Transtainers has been awarded to Vickers Hoskins Pty. Limited, licensee of Paceco, a Division of Fruehauf Corporation, USA, by the Maritime Services Board of New South Wales, Sydney, Australia. The Transtainers, Paceco's registered trade name for terminal container handling cranes, are 35 Long T capacity with rotating trolleys.

Scheduled for installation at the new Glebe Island docks in December, 1972, the two cranes duplicate the three ordered by the Maritime Services Board in 1970 and now operating at White Bay in Sydney. When the Glebe Island facility is finished, the first three cranes will be moved there making a total of five Paceco Transtainers to handle container transfer and storage for the MSB.

Vickers Hoskins Pty. Limited, Paceco licensee in Australia, is responsible for the sale and manufacture of all five Transtainers. (PACECO News)

Harbour pollution study

Hong Kong, 24 April:—The Public Works Department is to release hundreds of special markers into Victoria and Tolo harbours in May, in connection with a pollution study. The markers, known as bottom drifters, will be released at submarine outfalls and in this way should follow the course of the sewerage discharge as it is moved by the tidal currents. This will give the department an idea of what happens to the sediment on the seabed.

The markers are expected to be hauled up by fishermen in their nets and they have been asked to note the position and the date where each is located. Altogether 1,600 bottom drifters will be released during the first phase of the study and there are plans to release another batch later in the year. The results of the study are not expected to be known until some time next year. (The Week in Hong Kong)

Successful conference

New Plymouth, N.Z.:—For four days last month the Taranaki Harbours Board were hosts to 65 delegates and their wives from harbour boards in New Zealand, and 27 special guests who included some of the world's top experts on maritime affairs.

The occasion was the 39th annual conference of the Harbours Association of New Zealand.

Interviewed at the conclusion of the conference several delegates said the four days' work (and entertainment) had been an unqualified success, and they were loud in their praise for the organizers.

Arrangements were made by Taranaki Harbours Board General Manager, Mr. J. G. Boddy, who stayed in the Devon Motor Lodge, where the conference was held, for the four days. He was assisted by Messrs. P. G. S. Crichton and P. J. Plimmer, Taranaki Harbours Board officers.

While the delegates were attending to harbours business in the conference rooms, their wives were entertained with social functions and sightseeing tours.

All those interviewed found the conference a "rewarding experience."

The conference heard the Minister of Marine, the Hon. J. B. Gordon, M.P., give an assurance that New Zealand Railways will not set out deliberately to undercut coastal shipping in order to obtain traffic:

Opening the conference, Mr. Gordon said: "One fact stands out above all others. It is still cheaper to move bulk goods in large tonnages by water than by other means.

"What we all hope has been a temporary phase in manpower costs relating to ships and their handling, could change so that ports can play a full role in the national transport scene." Referring to the problems harbour boards faced in raising approved loan finance, Mr. Gordon suggested the association prepare a document for Cabinet consideration.

Treasury had been consulted over the possibility of a World Bank loan, he said.

He said that he was well aware that the board had "a very real loan problem" and that once Government was satisfied that all possible sources of loan money in Taranaki had been exhausted it would come in and "allocate higher priorities".

Other matters discussed at the conference included:

Although it had been estimated that by the end of the decade more than half the world's cargoes would be in containers, conventional cargoes will continue to form a significant portion of the trade for many years to come.

This was the opinion of Mr. George Brimyard, managing director of the Mersey Docks and Harbour Company.

The cost of containerization was tremendous, but the Australia-Europe route previously served by 60 ships was now served by 13 container ships. He said that so far very few companies had yet succeeded in making containerization a profitable enterprise, "but there is no doubt the day will come when massive investments will produce a profitable return."

However, there were still large sections of world trade not yet containerized, nor likely to be for some years to come.

"With our massive investment in containerization at Seaforth," he added, "we are greatly committed to the continuation of the container concept, but equally we are conscious that there are substantial economies to be made in co-ordinated loading and discharging of vessels, particularly with commodities which are susceptible to block stowing, palletization and unit loading."

He added that while containerization was the total economic concept, the biggest and best container of all must be the properly stowed vessel which could be loaded and discharged at custom-built facilities on both sides of the world.

"We are convinced that this development must go side by side with the changeover to containers in this decade."

also on cargo handling, the Assistant Director General of the Port of London Authority, Mr. William Bowey, had this to say:

"Conventional ships using ports like New Plymouth would be vital links in international transport for many years. But at the same time other types of ships would be developing "as had always been the case in the history of ocean cargocarrying."

The conference passed a remit calling for the exemption from payroll tax, especially in items of capital expenditure.

The Otago Harbour Board claimed that harbour boards were nonprofit concerns and supplied a public service in the same way as territorial local bodies.

It was claimed that the tax had to be passed on as an extra charge because harbour boards could not increase productivity; the extra charge would be an additional burden on export trade: Government vessels and cargoes were exempted from payment of dues.

The Otago Board pointed out that the Minister of Finance had already dismissed these objections but it urged a re-examination of the matter. If the Minister decided that boards must pay the payroll tax it was suggested that he be asked to consider exemption for items of a capital nature. (Taranaki Harbours Board Port News, April)

New HANZ president

Wellington, N.Z.:—At the Thirty-Ninth Conference of this Association held at New Plymouth on 17th March 1972 Mr. R. K. Trimmer, Ll. B., J.P., was unanimously elected President of this Association.

At the same meeting the following were elected members of the Executive Committee of this Association. Vice-Presidents:

- The Chairman of the Auckland Harbour Board, Mr. R. W. Carr;
- The chairman of the Wellington Harbour Board, Mr. R. O'Re-



Mr. R. K. Trimmer gan. Executive Members:

- The Chairman of the Lyttelton Harbour Board Mr. J. Brand; The Chairman of the Nelson Harbour Board, Mr. G. P. Dixon;
- The Chairman of the Timaru Harbour Board, Mr. H. H. Elworthy.

The Immediate Past President, Sir Henry Blyde, K.B.E., is ex officio a member of the Executive Committee.

Sir Henry Blyde has been President of the Association since November last following the resignation of Mr. F. I. Sutton, but did not offer himself for re-election to the post of President.

I would mention that under the Rules and Constitution of the Association which were adopted on 16th March 1972, the gentlemen named above hold office only so long as they remain the Chairmen of their respective Harbour Boards. (Extracted from the letter to the Secretary General from Mr. R. E. Dawson, Chief Executive Officer of the Harbours Association of New Zealand)

Container traffic in 1971

Antwerp: — Last year, 133,443 containers were discharged and loaded in the port of Antwerp (empty containers not included). The tonnage of goods involved thereby amounted to 1,954,808 tons, which is slightly less than the year before, when records became abnormally influenced by Australian

traffic, usually passing via Tilbury (London), being temporarily diverted to Antwerp. Traffic to North America (USA and Canada) continued to show a rapidly ascending curve. In the latter sector, the outward bound cargo amounted to 40,-897 containers holding 597,327 tons of goods, as compared to 28,508 containers and 358,908 tons of goods, in 1970. As to inward bound cargo, the figures are 41,388 containers (639,134 tons) as compared to 39,-639 containers (549,912 tons) in 1970. When taking the entire period for which figures are available (1966-1971), one is struck once more by the rhythm the container traffic is evolving at:

As to traffic with North America, the one million ton line was exceeded for the first time.

Figures would naturally have been much better still, but for the strikes in the American ports which detrimentally influenced the traffic, with the greatest effect during the 4th quarter 1971. When taking an overall view of the traffic, it strikes that the inward and outward movements have a tendency to become equilibrated, though arrivals are still in excess of departures. The average cargo per container was 14.6 tons. In addition, 15,971 empty containers were handled in 1971 (not included in the figures above). (Antwerp Port News, March 1971)

Year	Discharged Number	Tonnage	Loaded Number	Tonnage
1966	29,121	197,524	14,699	98,440
1967	33,269	267,661	23,811	213,639
1968	32,191	328,121	25,256	276,561
1969	51,369	594,065	49,075	601,511
1970	92,150	1,236,761	75,639	979,266
1971	72,895	1,062,169	60,548	892,639
	Totals Number	Tonnage	Out of which North America	
1966	43,820	295,964		
1967	57,020	481,323		
1968	57,447	604,682	385,289	
1969	100,442	1,195,576	486,023	
1970	167,789	2,216,027	908,820	
1971	133,443	1,954,808	1,236,461	

Groupage dispute

London, 2nd May (News from PLA):—In an interview today (Tuesday May 2nd) with "The Port" Newspaper, Mr. John Lunch, PLA Director-General, speaking about the current groupage dispute said: "PLA's management discuss problems frankly so that all who work in the Port understand what is involved. I want to give some facts about Tilbury's container trade".

He went on to say: "As containerization develops, more and more cargo is moving from factory to destination, door-to-door. About 85% of Tilbury's container traffic is door-to-door, and only 15% is groupage. This groupage cargo represents only a few hundred jobs in relation to the total London register 14,500, which handles some 18 million tons of cargo a year. This puts the groupage question into perspective. Of the 15% (less than 400,000 tons of cargo a year) about one quarter is "stuffed and stripped" by Tilbury dockers, and part of the rest of this groupage cargo is also known to be handled by registered dock workers.

He went on to say: "Our present high standard of living has largely been achieved by technological progress of which the container revolution is a vital part. It means improved conditions of work and other benefits. It also means large capital expenditure and a reduction in the number of men employed. That is why the employers, with the agreement of the unions, have established the voluntary severance scheme to enable dockers to receive payments of up to $\pounds 2,330$ tax free on leaving the industry. This is quite voluntary. Under the present offer



Antwerp: Fast growing shipments of motor cars.—Photograph shows motor cars waiting for shipment on a terminal at Churchilldock. This traffic is rapidly growing in the port of Antwerp both incoming and outgoing. Outgoing are cars assembled in Antwerp and neighbourhood (General Motors, Ford, Mercedes Benz, Renault, Volkswagen, BMW, British Leyland and DAF have assembly plants here); Incoming are Japanese, American and British cars. It is expected that Toyota will in the near future build its European distribution centre in Antwerp (most Toyota cars for the E.E.C. are already imported via Antwerp). Last year some 660.000 cars were shipped via Antwerp. Including the spare parts for cars to be assembled in Belgium the total motor car traffic amounted to 278.577 metric tons unloaded and 483.533 metric tons loaded, or in total 762.110 tons. (Port of Antwerp)

which opened on 20th March, over 850 London dockers have already applied for severance".

"The container revolution affects in the same way all those engaged in international freight transport. Against this background of a reducing level of transport employment, the present dispute is largely between two sections of the T. & G.W.U. over what is to be regarded as dock work. Dock work is, of course, defined in the National Dock Labour Scheme". "I hope that all who work in the Port will continue to co-operate in working the Scheme, will keep cool heads, and will exercise sound judgement to keep the Port working normally. This dispute must not be allowed to overshadow the great gains in trade made by the joint efforts of employers and unions, particularly in the last few months".

PLA charges reviewed

London, 1st May (News from PLA):—In accordance with the circular letter to all customers dated 1st December, 1971, the Port of London Authority have informed members of the Port Users' Consultative Committee of their plans for a charges increase effective from 1st July, 1972. These increases will amount to the 5% increase in PLA gross revenue which was forecast in December.

The intention is to increase Port Rates on goods (including grain and containers charged under the House to House Container Schedule), Conservancy Charges, Dock Charges and Import and Export Charges (including containers charged under the House to House Container Schedule) by $8\frac{1}{2}\%$, the hire of Quay and Floating Cranes by 16% and the Towage of vessels by 6%.

However, the proposals contain a substantial benefit: goods on 'through' pallets will have their allowances increased to $\pounds 1-15$ per ton for imports and $\pounds 1-50$ per ton for exports. A meeting of the Committee has been called for Thursday, May 4th, to discuss these proposals.

Tour of Asia, Russia

London, 3rd May (News from PLA):—Port of London Authority Assistant Director-General, Mr. N. N. B. Ordman, and the Director of Tilbury, Mr. R. H. Butler, leave today (Wednesday 3rd May) for a business tour of Singapore, Japan and Russia, following the route of the trans-Siberian railway which is served by shipments from Tilbury.

The purpose of the visit is an onthe-spot assessment of the growth potential for container traffic on this service, for which shipments are regularly made from container berths in Tilbury and of the potential for growth in container traffic with Russia generally. Mr. Ordman and Mr. Butler will be accompanied on the tour by Mr. D. A. Zvonkin, Chairman, and Mr. D. P. Brennan, General Manager, of the Anglo Soviet Shipping Company Limited. The party will fly first to Singapore before proceeding to Tokyo, Yokohama and Kobe. Mr. Ordman and Mr. Zvonkin will be returning to London on 20th May but Mr. Butler and Mr. Brennan will stay on to visit Archangel before returning to London on 24th May.

A consulting engineer

London, 9th May (News from PLA):—The Port of London Authority announce today that Mr. John Stanbury, C.Eng., F.I.C.E., M.I. Mun. E., M. Soc. C.E. (Fr.), Director of Engineering would be leaving at the end of June to become a partner in the consulting engineering firm of Peter Fraenkel, B. Sc., C. Eng., F.I.C.E., F.I. Struct. E., M. Cons. E., who has been responsible for many major dock, harbour and power station projects in the United Kingdom and overseas.

During his six years with the P.L.A., Mr. Stanbury has been associated with one of the greatest engineering expansions ever undertaken by any British port—the Tilbury Container Terminal. He has been responsible for some £35 mlilion of engineering works which also include the Grain Terminal at Tilbury, the Olsen Development at India & Millwall Docks, Manchester Road Bridge and Bulk Wine Storage Facilities at India & Millwall.

Prior to joining the P.L.A. in 1966, Mr. Stanbury was with the Admiralty for some 20 years engaged on engineering construction for naval ports in this country and overseas. He is a Member of the Council of the Institution of Civil Engineers and also a Member of Council of the British Hydromechanics Research Association.

Apart from his specialization in dock and harbour engineering work he takes an active interest in the education and training of engineers and is Chairman of the Education and Training Group Committee of the Institution of Civil Engineers.



Manchester, June 1972:—The photograph shows the container vessel "CRAIG ERIN" (499 n.r.t.) making her first call at the new container terminal, Ellesmere Port. Within eight minutes of berthing the first container, a 40 ft. one, was put ashore. The vessel, which is owned by Cawoods Containers Ltd., had come from Cork to initiate the commencement of a twice-weekly service between the two ports. The "Craig Erin's" cellular capacity is 88 20 ft. units and, on their first call, 21 containers were discharged and 25 loaded. Starting shortly will be a weekly container service Ellesmere Port—Rotterdam. (The Port of Manchester)

Freight forwarders' head

London, 26th April (News from PLA):—Mr. John Lunch, VRD, Director-General of the Port of London Authority, today became President of the Institute of Freight Forwarders at the Institute's annual general meeting in London. He succeeds Mr. Keith Granville, CBE., Chairman of BOAC.

In beginnig his term of office, Mr. Lunch stressed the increasingly important role that freight forwarders play in modern transport.

The present time, he said, was one of great challenge in transport and offered great opportunities for freight forwarders. Modern documentation and computers are taking over routine work and simultaneously the huge technological revolution in international transport offers bewildering changes, choices, problems and opportunities for the importer and exporter.

"All this gives the freight forwarder full scope for his role as transport counsellor and advisor and also for engaging in any services which make through transport simpler and cheaper for the customer", Mr. Lunch said.

He added that professionalism in transport had never been more in demand and freight forwarders must continue to display those qualities of determination, judgement, timing and flexibility of thinking that mark the true professional in transport.

Fleetwood Docks

London, 28 April (B.T.D.B.):--The Greek motor vessel 'Smaro', 846 tons gross, sailed from Fleetwood Docks this morning (Friday, 28th April) with the largest export cargo ever handled by the British Transport Docks Board at the port.

The shipment, 1,633 tonnes of steel scrap bound for the Greek ports of Volos and Piraeus, was loaded by Fleetwood dockers in $23\frac{1}{2}$ gang hours using one of the fleet of Coles 'Vigorous' 35-ton mobile cranes with which the port is being re-equipped.

Today's cargo is the twelfth shipment of scrap exported from Fleet-



Dunkirk, France:--PORT OF DUNKIRK. m/v "E.R. Scaldia" in Charles de Gaulle lock. This lock can receive 125.000 tdw vessels.

wood since the end of January, when the port was selected by Mayer Newman & Company Limited, of Erith, Kent, as its Northern base of operations, and brings the total shipped to date to over 8,000 tonnes.

Mr. Anthony Winfield, Fleetwood's docks manager, pointed out that although this was the port's largest-ever export cargo, Fleetwood had regularly dealt with inward cargoes in excess of 2,000 tonnes. Shipments of up to 2,000 tonnes of potatoes at a time were due to begin arriving from Cyprus shortly.

Plymouth/Roscoff ferry

London, 27 April (B.T.D.B.):— A completely new company has been formed to run the recently announced roll-on/roll-off ferry service between the port of Roscoff in Brittany and the British Transport Docks Board's Millbay Docks, Plymouth. The company, Societé Anonyme B.A.I. (Bretagne Angleterre Irlande), has been created by three French interests — the Morlaix Chamber of Commerce, SICA (Societé d'Interets Collectifs Agricoles de Saint Pol de Leon) and Monsieur J. Henaff, who will be managing director of the company and represents shipping interests in the Brittany region.

As announced in January, an agreement was reached between the British Transport Docks Board, the Morlaix Chamber of Commerce, and the Comité Economique de Bretagne, for the importation of vegetables and other produce from Brittany through Plymouth, and rollon/roll-off terminals are being constructed at Roscoff and Millbay Docks to accommodate this service which commences is January 1973. The frequency of sailings between the two ports is expected to be five a week in each direction during the produce season (January/June) and three a week at other times. It is expected that during the holiday season private car, caravan and passenger traffic will be attracted to this route.

The Societé Anonyme B.A.I. are initially chartering a vessel to operate on this service. The vessel will have a length of 98 metres, beam 16 metres, draft 4 metres and a speed of 17 knots. The voyage time between the two ports will be six to seven hours.

The ship will be capable of carrying fifty 40 ft. lorries or trailers, 45 motor cars and 36 passengers. The company are building a similar vessel, which is expected to be in commission by July 1973. This vessel will accommodate fifty 40 ft. lorries or trailers, 75 motor cars and 100 passengers.

Local shipping agents for this service will be appointed shortly.

New cranes for Ayr Docks

London, 17 May (B.T.D.B.):— The first of two new £35,000 mobile cranes ordered for use at Ayr Docks has been formally handed over in London to the British Transport Docks Board by the manufacturers, Jones Cranes Ltd.

The handing-over ceremony took place at the 1972 International Mechanical Handling Exhibition at Earls Court where the crane, in its Ayr Docks livery, is the centre-piece of the Jones Cranes exhibit. The crane was received on behalf of the Docks Board by Capt. R. J. Nicholls, docks manager and harbour master, Ayr and Troon, from Br. B. W. Raftery, field sales manager for Jones Cranes.

Afterwards, Capt. Nicholls said that the machine represented an important step both for the port of Ayr and for the west of Scotland.

"The two cranes, the second of which will be delivered in September, are the beginning of a recranage programme which will enable the port of Ayr to extend the range of services it offers to shippers in the west of Scotland and the border country," Capt. Nicholls said.

"This diversification of Ayr's trade can be of immense benefit to the area, which contains about 75 per cent of Scotland's population, by providing a speedy new route for both import and export goods," he said.

Capt. Nicholls went on to point out that the port expected to handle about a million tons of traffic in 1972, but that at least three-quarters of this would be coal, traditionally its major commodity. With the new cranes in operation the port would be equipped to deal with a wide range of general merchandise, and was actively seeking to promote this aspect of its trade. Ayr was particularly well located to deal with Scotland's trade with the Mediterranean region and could cater for ships of up to 2,500 tons, Capt. Nicholls said.

Ayr's new cranes, known as the Jones 565 H.L.B. High Quay Crane, are specially designed with a high cab giving the driver a clear view for ship working, and can lift up to 30 tons.

Chosen by the Docks Board for its extreme versatility, the 565, can deal with bulk cargoes, general merchandise, and containers.

Transhipment of gas

Le Havre:—Le Havre is the only port fully equipped for the direct transhipment of liquefied gas under ideal conditions. Only a few weeks ago the British Faraday, carrying 11,030 tons of propane, transferred 2,100 tons to the Norwegian Thor Heyerdahl and 9,000 tons to the Swedish Roland. Transhipment is a delicate operation and is carried out at a berth away from the main harbour installations. (Port of Le Havre Flashes, April 1972)

MS "Elbe Maru"

Bremerhaven:—A new era of containerization in the Ports of Bremen began on Sunday, 30th April, 1972: with MS "Elbe Maru" of the Mitsui O.S.K. Lines, the Japanese/English/ German trio-group, consisting of Ben Line Containers Ltd., Hapag-Lloyd AG, Mitsui O.S.K. Lines, Nippon Yusen Kaisha and Overseas Con-



MS "Elbe Maru" at Bremerhaven.

tainers Limited, started their fullycontainerized service between Bremerhaven and the Far East (Tokyo and Kobe). The next vessels on this route arriving at Bremerhaven are expected to be MS "Liverpool Bay" on May 18, MS "Kamakura Maru" on May 25, MS "Tokyo Bay" on June 4, MS "Kurama Maru" on June 12, MS "Rhine Maru" on June 21, and MS "Elbe Maru" again on June 29, 1972.

This new fully-containerized service of the trio-group will not only considerably strengthen the position of the ports of Bremen/Bremerhaven in world-wide container traffic, but will also support their leading position in Europe. Now eight all-container lines, including the trio-group, connect the Ports of Bremen with three continents. The Sea-Land Service, Inc., Seatrain Lines, Inc.,

the Hapag-Lloyd AG, the Atlantic Container Line, the American Export Isbrandtsen Lines, and-since February of this year-the United States Lines offer weekly departures to and from the U.S. East Coast; the Australia Europe Container Service (AECS) calls at Bremerhaven every ten days on the Australian route; the trio-group will eventually offer departures every five days from Bremerhaven to the Far East. Bremerhaven is the last German port of call for this services. With these eight all-container services the ports of Bremen/Bremerhaven can offer regular sailings on all routes served by full containerships.

The Ports of Bremen have made extensive preparations for the allcontainer service of the trio-group. The "Container Crossroads Bremerhaven" proves this very clearly. This container terminal, which required investments of nearly DM 300 million, is indeed predestinated for fully-containerized services to the Far East, owing to its geographical location direct on the North Sea, which means that the very dangerous navigation of river channels is avoided. Other advantages are its modern technical facilities, enabling very high handling figures. It is already quite usual for 1.000 containers a day to be handled by this ter-

SCOREBOARD TANKER RECORDS

Туре	Tanker	Date	Figure attained
Gross tonnage	"Port Hawkesbury"	6.12.71	133.699 tons
Length	"Esso Bretagne"	18. 2.72	348.83 m (1.144 ft)
Beam	"World Mitsubishi"	11. 5.71	52.40 m (172 ft)
Draught	"Port Hawkesbury"	6.12.71	20.50 m (67 ft)
Load	''lade''	29. 1.72	248.114 tons
Deadweight capacity	''Jalinga''	1. 7.71	263,004 dwt

N.B. – 43 % of France's total supply of crude oil comes through Le Havre.

(Port of Le Havre Flashes, April 1972)



LARGEST LOG IN PORT'S HISTORY: AMSTERDAM, 24th April—The heaviest tree trunk ever to be handled in the Port of Amsterdam was transhipped at the establishment of "Amsterdamsch Havenbedrijf" in the Vlothaven today. The log came from a 280-yearold Samba tree. The giant 54 cubic metre log weighed 33 tons and has a length of 11 metres, a girth of over 7 metres and a diameter of 2.47 metres. The log was shipped from Abidjan on the Ivory Coast by the m.v. NEDLLOYD NIGER for the account of the Amsterdam timber importing and trading company Fetim-Bekol" which has sold the log "off quay" to a firm in Switzerland. The photograph shows the transhipment by means of a floating crane of Messrs. Goedkoop (Mammoet Transport) into an inland barge which will carry the log to Basle via the Amsterdam-Rhine Canal and the Rhine River.

ANOTHER RECORD: Amsterdam has always been—and remains an important timber port and its timber trade has moved with the times. Though the timber arrivals have never displayed any spectacular fluctuations, total traffic has more than doubled in the last 20 years. In 1950, the seaborne timber traffic amounted to 370.000 tons, in 1970 it had moved to 790.000 tons and last year it topped the 800.-000 ton mark for the first time. Hardwood accounted for 300.000 tons of this figure, while the remainder was (mostly sawn) softwood (Vereniging "de Amsterdamsche Haven").

minal.

After the third berth at the Stromkaje (River Quay) has been put into operation in a few weeks' time, the complete container terminal will be finished, with 1.7 km of quay, 780.000 sq. metres of storage and marshalling area, 9 container cranes, 46 straddle carriers and other mobile trucks, as well as two packing centres with an area of 7.000 sq. metres each. One of the most important buildings here is the "gatehouse", which is equipped with most modern means of communication and controlling equipment. All firms and authorities involved in container transport have offices in this building, thus guaranteeing the very best organization of movements. A second "gatehouse" is now being constructed, owing to the rapidly increasing importance of the "Container Crossroads Bremerhaven", and will be officially opened at the end of this year.

The Ports of Bremen adapted themselves very quickly to the structural changes in international ocean shipping, thus gaining a leading position for themselves, which can be seen not only in the number of container lines, which can be seen not only in the number of container lines calling here and the size and efficiency of their container handling facilities. Above all, this leading position can be seen in the total

number of containers moved in Bremen/Bremerhaven. Last year's handling figures alone meant that the Ports of Bremen could maintain their top position in container traffic; in 1971, 145.410 containern (243.951 on a 20-ft basis) with 1,836,622 tons were moved. The new all-container service of the triogroup will cause further rates of growth, so that the Ports of Bremen can expect to handle at least 195.000 containers (320.000 on a 20-ft basis) carrying 2,4 million tons in 1972. If the container handling figures continue to rise so rapidly, or even faster, in future, it is quite possible from a technical point of view to expand the "Container Crossroads Bremerhaven" within a very short time. At all events, Bremen and Bremerhaven are well prepared for future developments. (Via Bremen Bremerhaven)

More car-handling capacity

Bremen:-Bremen is determined to hold its leading position in the European ports as far as car-handling is concerned. Up to the present a good 50% of the total German car exports have been handled through the Bremen/Bremerhaven group of ports-and Bremen will do everything possible to meet the increase in this traffic. The handling facilities in the "Cape Horn" areal in Bremen, which was constructed in 1960 for DM 11 millions, has handled 2.1 million cars to date for overseas destinations-it is to be expanded at a cost of DM 2.5 millions resulting in: increase in quayage by 90 metres, extension in berths and an increase over the present daily handling capacity of 4,000 cars-to between 5,000 and 6,000. (Bremen Air Mail, March)

1971 satisfactory

Bremen:—Maritime cargoes for the Bremen/Bremerhaven group of ports declined from 23.3 million tons in 1970 to 22.7 million tons in 1971 —after the cargo-handling had been constantly on the increase in recent years. The cause for the 644,000-ton (or 2.8%) recession is, above all, to be found in the unfavourable events in international economy: the setting aside of the exchange rates; the introduction of the import sur-



charge in the USA; and the American dock strike. After taking all this into consideration those in the know adjudge the year's result to have been satisfactory, especially as the 1971 December result of 1.95 million tons was running very close to the current monthly record result of 2.1 million tons attained in July 1971—and also level with the December-1970 cargo-handling figure. (Bremen Air Mail, March)

2 more LASH services

Bremerhaven:—After the LASH liner-service of the Central Gulf Contramare Lines, which has been running to Bremerhaven since 1971, was able to show increasing cargo carryings, the Combi Line (joint Hapag - Lloyd/Holland - America Line) and the Lykes Lines of New Orleans both intend to take up liner services with LASH-ships to Bremerhaven during 1972. (Bremen Air Mail, April)

4 cars in container

Bremen: — The test-shipment of cars from England to Canada has been considered, in the light of first experiences, as favourable. Four Jaguars were transported in a container. The vehicles are protected from the weather, damage and theft; do not need to be smeared with protection wax aid also do not suffer damages from careless drivers during the transportation. They can be delivered to the trade and to the purchaser in the export country in first-class condition, without first needing additional treatment. This 'car-persh'-as this new shipping method is called-is to be recommended in the main for the luxury class of car. It is undoubtedly not a paying proposition in comparison with the specialized car-transportership method. (Bremen Air Mail, April)

Port of Nacala

Lourenço Marques:—The port of Nacala, which is situated in the bay of the same name, is justly recognized as one of the best ports on all the East Coast of Africa due to its magnificent conditions of shelter and access and its vast and excellent anchorage.

Nacala serves the North of the Province of Mozambique, and its extensive hinterland recently became enlarged to beyond the borders with the completion of the rail connection between Mozambique and Malawi. With the planned connection of the latter to the Tete line, it will also shortly become the outlet of prime products from the Tete region.

To enable it to handle the expected increase in traffic as a result of the expansion of its zone of influence, the Government some time ago decided to amplify the port of Nacala by the construction of new

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wharves.

By decision of the Board of the Mozambique Harbours Railways and Transport Administration on 13.9.71, aproved by the Government General, a contract will be awarded to the Portuguese firm, CONST-RUÇÕES TÉCNICAS, SARL for the construction of 408 metres of wharf with a minimum depth of 15 metres, and 165 metres with a minimum depth of 7.5 metres, at a cost of 171 300 000\$00=R 4 282-500.00 and within a period of 510 days.

The wharf with the minimum depth of 7.5 metres constitutes a simple extension of the existing berths and will join them up with the wharf of 15 metres minimum depth. This latter, which represents the fundamental part of the undertaking, is a completely independent wharf having its own accesses.

When the work is completed, the

port will have at its disposal 980 metres of berthing wharf, thus more than doubling the existing installations both in length (424 metres) and in the capacity for handling goods; the number of berths will double from 3 to 6, but the future berths will be larger than the existing ones.

The construction of a wharf with a minimum depth of 15 metres, the deepest of all those already built in Mozanmbique, is of extraordinary importance as it will create, in Nacala, potencial conditions for the berthing, without any complications, of large vessels which cannot be dealt with at any of the other ports of the Province.

This award is also the most important ever made in Mozambique in respect to port works.

Work will commence immediately and should be concluded in the first six months of 1973, and in the meantime will be completed with the other indispensible superstructures such as warehouses, railway lines and roads. However, the first part of the wharf will be usable even before the end of 1972.

The job awarded is the beginning of a plan of improvements far more vast and includes at least a terminal for ore loaders, berths for the discharge of tankers, ship repair yards, etc. and by which advantage will be taken of the extraordinary conditions which Nature gave to the bay of Nacala, grand port of the North of the Province of Mozambique. of the Province of Mozambique. bique Harbours Railways and Transport Administration, September 1971)

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