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<th>EXPORT</th>
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Port of London Authority

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Editor: Yoshio Hayashi

July, 1971 Vol. 16 No. 7

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Auckland Harbour Board Centenary:

Address By

Rt. Hon.

Viscount Simon, C.M.G.

Mr. R.C.F. Savory, Auckland, introduced Lord Simon, Chairman of the Port of London Authority, who was visiting Conference in that capacity and also representing the International Association of Ports & Harbors and the International Cargo Handling Co-ordination Association.

Rt. Hon. Viscount Simon:

May I say first how pleased I am to be attending this Conference of the Harbours Association of New Zealand, at your invitation, Mr. President.

I am privileged to be here representing not only the Port of London Authority, which still has some way to go to its centenary, although the Port is of course many centuries old, but also two much younger organisations—the International Association of Ports and Harbours whose President, Mr. Vic Swanson, is well-known to you, but on account of illness cannot be here and has asked me to represent him. And also the International Cargo Handling Coordination Association (ICHCA for short) whose President, Mr. Axel Johnson of Stockholm, Sweden, has unfortunately for us all been unable to travel to New Zealand at this time, has asked me to represent him. I saw him in London a few days before I left and he sends warmest greetings to you all.

When you asked me to address the Conference I wondered what you would wish me to talk about and I came to the conclusion that perhaps you would consider it appropriate if I spoke about the changes in cargo handling methods which have recently been introduced and which are presenting Port Authorities all over the world with new problems. This is of course, a subject of special interest to ICHCA which seeks, as its name implies, to co-ordinate activities in this field between all interested parties—cargo owners, forwarding agents, land, sea, and air transport companies and the Portx where inter-change takes place between land sea or between land and air.

Some people have argued that Port Authorities as such are not directly concerned with these things. I believe this is quite wrong. Whether or not Port Authorities engage directly in cargo operations about which I shall offer a few observations later, we must all be concerned with the speed and effectiveness with which cargo is moved through our installations, because it is upon the throughput of traffic that the return of our capital investment depends. So every go-ahead Port Authority—and I know there are many in New Zealand—will want to keep abreast of the latest developments and ensure, even if the Authority does not itself provide these facilities, that modern cargo handling facilities are provided to meet whatever may be, at the Port in question, the requirement of ship owners and merchants.

It must seem surprising in these days of rapid change, to see, if one looks back, for how long there was no substantial change in the traditional method of receiving, loading and stowing cargo on board ship and later discharging and delivering it. When labour was plentiful and cheap there was little incentive to seek for improvement. A simple derrick to hoist cargo over the ship’s side and lower it into the hold or to carry out the reverse operation, was about all that anyone thought of providing. With the adoption of mechanical power came the steam winch and progress stuck for several generations.

It was of course, the rising cost of labour which first led to the mechanisation of cargo handling operations. While the rising cost of ships, and therefore of ships time gave an added stimulus, so did the World War of 1939-45 when “turn around” became a watch word. It is quite hard to believe that that versatile instrument, the fork lift truck now found in practically every port in the world, is only 30 years old.

Now I do not intend to take you in detail through the history of these last 30 years, but rather to come
straight down to today and to look briefly at the new cargo handling techniques which have been developed and are now being widely and ever more widely adopted. I need not say much about bulk cargoes—grain, ores and the like. These, and oil is of course in the same category, readily lend themselves to mechanical and indeed semi-automatic methods of loading and discharge. The development of installations for this purpose, has been left largely to the enterprises which produce, or as the case may be consume the particular commodity, and where, as is often the case, facilities of this kind are purpose-built in connection with a single industrial undertaking, Port Authorities will normally leave both the provision and the operation of these facilities to the undertaking concerned. There are however cases where common user facilities of this type are needed, as for instance at a port where there are several undertakings of a similar kind, the requirements of any one of which are not large enough to justify the considerable expense of modern bulk handling facilities. I may perhaps be allowed to mention the Port of London Authority’s new grain terminal at Tilbury. This is the largest installation of its kind in Britain, and one of the largest in Europe, with storage capacity for 100,000 tons of grain and able to receive ships of up to 50,000 tons capacity and discharge at the rate of 2000 tons an hour. Clearly no single miller would require so large an installation and although we did at one time discuss with potential users the desirability of forming a consortium to build and operate the terminal, we came down in the end in favour of the Authority doing the job. We have a large area adjacent on which several customers have built mills which are directly supplied through the terminal while at the same time a substantial proportion of the through-put is despatched by road, rail, coaster or river craft to other consumers. This grain terminal has proved a great success and in 1970 its first full year of working, it handled nearly one and a half million tons of grain.

While steady improvements have been made through the years in the design of installations of this kind, it is in the handling of that mixed assortment of boxes, bales, drums sacks and what have you that we call general cargo that such dramatic changes have taken place in recent years, and to this I now turn.

The motive force behind these changes has been first to reduce the labour content in the loading and discharging of cargo. Second to speed up the operation so as to save ships time, and third to reduce the number of times an individual package is handled in order to minimise the risk of damage. These three aims are of course closely related, and taken together they point to what has come to be called the “through traffic concept.” It seems obvious enough, but while the loading and discharging of general cargo continued to be dealt with almost by piece by piece, it was natural that delivery from the point of production to the ship, and again from the ship to the point of destination, should remain un-coordinated. Moreover the whole legal concept of the sea voyage as an enterprise entirely on its own, with a special code of duties and liabilities attaching to carriers by sea—a concept formulated at least six centuries ago in Europe and deriving from much earlier legal codes—served to emphasize and preserve the distinction between different parts of what we now see as a single operation—the movement of goods from where they are produced to where they are to be consumed.

Clearly one of the best ways of achieving the three related needs to which I have referred is the unitisation of cargo. That is to say the bringing together of a number of individual packages into a composite and indivisible load that can be moved in one piece. There are several ways in which this can be done. The independent packages can be stowed in a large box which we have come to know as a container; they can be strapped together on a pallet; they can be loaded on to a vehicle which can then be driven or towed on or off the carrier ship; they can similarly be loaded on a barge which can be lifted or even floated on and off the ship.

All these and other systems are possible and all achieve to a greater or lesser extent the three aims. Which is the best to adopt will always depend on the characteristics of a particular trade, and this I hope disposes of any suggestion that one method is intrinsically better than another, or that every port should provide itself, for example, with the most expensive facilities of all—those required for container traffic.

Since the container is very much in the news perhaps I should refer to that first. Large containers capable of lifting 10 or 15 tons of cargo, or even more, can be handled as ordinary conventional general cargo provided there are adequate lifting facilities either in the ports served or on the ships. But the full advantage of a container system depends upon having ships of special design to carry a full load of containers. The earliest ships so designed carried their own lifting equipment and this gave the ship greater flexibility in operation since it can serve any port at which quayside berthing facilities are available. But this means of course that the ship has to carry and propel through the water the considerable extra weight of the gantry crane or sometimes two cranes, and also that an expensive piece of capital equipment is only employed when working cargo in port. The alternative which is now more generally adopted when a regular container service is established, is to provide the gantry crane on the quay. This involves the port strengthening the quay to carry the weight of the crane and if in addition the port authority provides the crane the further heavy capital investment is involved. Container operation also requires a very large area of land adjacent to the quay on which containers can be marshalled prior to loading and again after discharge while awaiting distribution. Where land is readily available and not excessively expensive, up to 40 acres may be set aside for each berth, or even more, and containers awaiting loading or distribution are spread over it on a pre-arranged plan. Where adequate adjacent flat land is not available or is too expensive because of competing demands for industry, housing etc., a smaller area can be made to do by stacking containers on top of each other.

The question which port authorities are likely to ask themselves if their customers show an interest in
container facilities is this—Should the Authority in addition to providing as it obviously must the quay and the required marshalling area, provide also the crane or cranes, and should it operate the facility?

Once again the answer will depend upon the circumstances and upon the customers wishes. But having gathered some experience of these matters during the last few years, may I mention as an illustration what we have done in London.

At one berth we provide the crane but the customer operates the facility employing contractor’s labour; at another berth the customer provides the crane and operates the berth but we provide the labour; at a third berth we provide the crane and operate the berth for the benefit of common users. All these different arrangements work equally well, but I think it is worth mentioning that unless a single operator at a berth is going to have a ship in more frequently than, say, once a week, a higher through-put is likely to be achieved over a “common user” berth, and it is that, after all, which determines the true viability of the capital investment.

One other matter which our experience has taught us (among many others) is that a berth must be provided with an adequate supply of van carriers—to use the genetic term applied to all types of equipment used for moving containers about and putting them under the cranes or taking them away—and let me assure you that an adequate supply is always substantially larger than the number you first thought of.

I would like to touch briefly on one other matter that will concern all ports in investing in container found possible to make existing conventional general cargo berths suitable for container traffic even with extensive reconstruction, since there is unlikely to be sufficient backup land available. The new container facility if it is to be used to near capacity, as it must be if it is to justify the investment, will be able to deal with all the cargo that can now be handled through six or seven conventional berths which then become redundant. That being so the economic aim must be to redevelop areas no longer needed and thereby to recover in one form or another at least a part of the new capital expenditure.

Before I leave the subject of containers I must refer to one remarkable “first” which has been achieved by New Zealand. I believe I am right in saying that a New Zealand Airways operator has been a first in the world to offer a passenger service by container to passengers. I congratulate them on their enterprise. As a fairly frequent air traveler I have been waiting for the time when I could walk into the downtown terminal sit in a chair and be lifted by a fork lift truck and conveyed door to door to my destination. May the example of this New Zealand enterprise soon catch on with the great international airlines. Naturally as with any mechanical operation, a well surfaced quay and shed is a must and wide shed doors to facilitate a movement, and very successful operations of this kind have been carried out in the Millwall dock in London by the Norwegian shipowner, Fred Olsen. In this case the Port Authority does no more than provide the quay and build the shed to the customer’s design, at his expense. The operation is carried out entirely by the customer who employs his own labour. It is a highly efficient operation and I can warmly recommend anyone interested in this type of traffic if he is visiting London to come and see it.

For relatively voyages the roll on
roll off system is probably the most effective of the unit load systems. This is essentially a ferry. In this case the unitised load remains on the platform on which it is carried from point of origin to destination. It may be on a trailer on its road wheels or on a low loader which can be transferred to a road trailer, the prime mover normally being detached at the loading point and replaced at port of destination by another similar one. The rail ferry is of course a variety of the same system. This requires the provision by the port authority of suitable loading ramps which in the case of a port with a big tidal range may require to have incorporated in them fairly expensive devices to enable them to be used at all stages of the tide. In most cases it will also be desirable to have a reasonably large marshalling area, but as loads move on and off the ship under their own power it is not essential for this area to be immediately adjacent to the berth although clearly it must not be too far away. A highly successful operation of this type is carried out by the Swedish Lloyd Company from one of our berths in Tilbury Dock, also carrying passengers and passenger cars; I would remind you that international standard containers can of course be moved in this way and these may well be a suitable method of distributing containers to and from a main line container terminal if a suitable berth can be provided nearby.

All these systems have as one of their objects the reduction in the number of handlings to which goods are subjected, and the reduction of the manpower required to move them. It is inevitable therefore that the adoption of any of these systems gives rise to concern among those previously employed in conventional cargo handling. This means that if the changeover is to be smoothly effected, early discussion must take place with the recognized representatives of labour to agree on how it should be done. And this brings me to the final point I would like to talk about.

I referred earlier to the question of port authorities engaging in cargo handling operations. Looking around the world you will find that this is not commonly done. May I express my own personal view. I believe there is much to be gained by the port authority engaging directly in these operations. In fact I would go further and say there is much to be said for the port authority being the sole employer of labour in the port, as is done I know in a few ports. I do not know if there are any in New Zealand.

After all the port authority has a large capital investment at stake, and the return on that investment depends upon the smooth and efficient running of port operations. Is it not right then that the port authority should have some say in how these operations are carried out and in particular on the arrangements made for labour. I recognise that in many parts of the world—perhaps in New Zealand—no one is likely to jump at the chance of being responsible for labour relations in this industry. But in my view that is where port authorities ought to stand. And may I put this final thought in your minds—that in the present industrial climate some advantage may be found for in difficult and delicate negotiations, as these always are, the employer is a statutory body which is not out to make profits for profit shareholders, although I hope you are all getting an adequate return on your investment to plough back into new facilities for the benefit of your customers.

The President asked if there were any questions.

Mr. Lyle King:

I would first say that I thoroughly agree with everything Lord Simon has said and I think there is a great deal of wisdom in the broad principles you outline that each port must evaluate its problems and trade very carefully and determine what it needs in the way of port facilities.

I have one question with respect to the matter of the port actually being a major or exclusive employer of the men who work on the waterfront. We have carefully avoided being an employer in New York. In your handling of labour relations and the negotiating of contracts with the labour to what degree can the Port of London Authority control the direction of these negotiations and are they participated in by other employers or is it almost exclusively done through the Port of London Authority.

Lord Simon

This is a pertinent question. The present position in London is that the port is the largest single employer, therefore we take part in negotiations as part of the employers panel. This has certain disadvantages and it is this which has led me to believe myself it is better probably to go the whole way or else to give it up.

We find that a great deal of the difficulties in getting the smooth working of general cargo ships arise from the fact that there is one stevedore on the ship and someone else in the shed and co-ordination of effort leaves much to be desired.

Mr. Lyle King:

Enquired whether the containers were packed at the port side or away from the port.

Lord Simon:

Once again things are done in different ways. The majority of containers come already packed from the manufacturer, perhaps in the midlands, by train. On the U.S. Lines which operates out of Tilbury has a consolidation area in the dock itself. I really have not a complete answer which varies according to circumstances. Some are packing inland and some like the U.S. Lines have a packing and unpacking station in the dock area.

Mr. R. R. Reeves:

Lord Simon mentioned two or three systems working in Tilbury, including operation by the Port of London Authority—would you be good enough to broadly outline the position of legal liability where containers are taken over by the Port of London Authority?

Lord Simon:

Not without notes and not without the Solicitors being present. I would certainly be happy to find out the position and let Mr. Reeves or the Association know about it.

Mr. R. T. Lorimer:

Lord Simon you referred to the modern technological changes creating redundancy of wharves and dock systems, and I wondered if you could indicate what the port authority is doing about the St. Kathe-
riner docks area. Is the Authority maintaining this, is it free-holding it or leasing it?

**Lord Simon:**

As far as the St. Katherin Docks which is our smallest dock is concerned, this was sold freehold to the local authority some two years ago. They have a redevelopment scheme which has just been started. We have much larger areas now available and our intention is to get the best price we can. There have been rather long and difficult negotiations because as soon as the land is sold it comes under ordinary planning procedure.

It is a long and painful time-consuming process. But our intention is to sell. Whether or not it might be best to keep some interest in the land and perhaps grant building leases, or whether to take a share in some development, each case will have to be considered on its merits as it comes forward.

**Mr. Elwood:**

I would like to enquire whether the rates of remuneration paid at the consolidation centres the same as those paid in the consolidation centres at the port? Do the packers and storemen receive the same rate of remuneration as the waterside workers.

My second question is after listening with interest to the Governor General and his suggestion that there should be greater co-ordination and consultation between management and unions am I correct in understanding that at the Port of London Authority where you have an appointed Authority rather than an elected Authority, that the union have direct representation at management level?

**Lord Simon:**

I don't know that I can answer precisely the first question, but I think in the majority of cases inland points are not paid as much as waterside workers in the dock. In the case of question 2, it is quite right that the Port of London Authority since its inception in 1909 has always had two members appointed who represent the interests of organized labour. They are not strictly appointed by the Unions and never have been. But they are appointed by the Minister who consults with the Unions. I would like to make one point. The practice has been in the Port of London Authority that the two members have been closely associated with the dock industry and have not been officials of the union we have most to do with. In the nationalized industry in our country the principle of having representatives of organized labour was continued, but the practice has been for the Minister to appoint some experienced unionist from another interest so that he brought to the council a good knowledge but not from the personnel involved in the working force. I think this is right and they maintain their interest but it does not make any difficulties and they can help by special knowledge. There are dangers of course as their special knowledge enables them to interfere with management which is not the duty of the Board.

**Mr. Calder:**

Having passed the initial development stage on the English coast what has been the experience on this coast generally for other container ports and are these other ports showing any particular leaning towards container cranes or roll on roll off?

**Lord Simon:**

That is not an easy question to answer. The majority of ports which have build container facilities usually have already secured assurance of some support because our National Ports Council acts rather similarly to the New Zealand Ports Authority as to recommendation and approval of the capital investment and should satisfy itself that there is some viability behind it. As to whether you should have what is now almost the conventional container handling or the roll on roll off, my idea is that in the shore trade roll on is more profitable. The capital cost is much less. The objection to it in the longer routes is that there is a substantial loss of space and that there is a good deal of carrying of heavy weights. They have found in England that container services are generally best for the longer journey, but roll on successful in the trade with Europe which is closer. But it would be quite wrong to make it categorical because we operate from conventional user berths some five or six services to ports on the continent.

**Mr. Savory:**

When negotiating conditions and wage structure for the port labour is any regard given to its effect on industry or industrial conditions throughout the country. For instance our direct port labour people work under what we call the Waterfront Industry Tribunal and has no regard to the Arbitration Court which is over all other activity in the community.

**Lord Simon:**

I think my answer to your first question would be in the course of negotiations of this kind very little regard is paid to what is happening in other industry, but there have been times when we have had Government intervention to the extent of wage freezing or wage steps and guide lines by various trades and during those times the port industry is subject to the same restraints and the same guidance as anyone else.

**Mr. E. M. Hodder (Wellington):**

Lord Simon it is my privilege this morning on behalf of all present here today to offer to you our very sincere thanks and appreciation for your address. Your long and active association with ports and harbours both in the United Kingdom and internationally makes your presence and address doubly welcome to us in New Zealand at this time. Might I offer you our very sincere congratulations on holding the important office of Chairman of the Port of London Authority for 13 years.

Your address has touched on many problems which face every port in New Zealand and the amount of interest which has been displayed by questions is I think ample evidence of our interest in it.

Gentlemen at this point I would like you to rise and express your appreciation for Lord Simon's address.

(*Applause.*)
Auckland Harbour Board Centenary:

**Port of New York Authority:**

**50 Years Young**

A. Lyle King

Director Marine Terminals
Port of New York Authority

To be invited to address the Annual Conference of New Zealand Harbour Boards is an occasion of unqualified pleasure. I am delighted and honored to be here. I am delighted and honored to participate as well in observance of the centenary of the Auckland Harbour Board, a hundredth birthday and a century of service is a most joyous occasion and a most impressive achievement. The Port of New York Authority will be only half that age on our own next birthday next month. We hail our sister port and we wish her well:

May she see ships from every nation on her sparkling waters*, and may her commerce be of peace and plenty forever.

As port people, we continue the great tradition begun in your land in the wake of Captain Cook, and in mine in the wake of Giovanni Da Verrazzano, a Florentine who in 1524, in the service of Francis the First of France, sailed the First European ship into New York Harbor. He reported to the King that the channel into New York harbor was very deep. He said prophetically that "any laden ship might have passed." Beyond the harbor entrance he found what he called "a very beautiful lake, with a circuit of about three leagues," now known to us as Upper New York Bay.

The centuries have run great changes, not only in technology, but in the environment, the ambience, the community significance of a port. The sight of a sail no longer brings people thronging to the pier for their only word of lands beyond the sea,—for news of war, famine, death and great changes in markets and governments. There is no smell of spices on the wharves; the work chantey and the peddler's song, the awe for the mariner for having been where you might not dare to go—that image of wharf and harbor is gone.

It is a hundred years since Auckland's Quay Street, New York’s South Street, St. Katherine's Docks in London, Boston's Commercial Street and San Francisco's Embarcadero were a forest of masts and spars and bowsprits. No Jack London hero is hauled from the waters of a port to serve under sail and a sea wolf, and no poet, dreaming of himself as a mariner, sings today that he 'must go down to the sea again, to the lonely sea and the sky, and all I ask is a tall ship and a star to steer her by.' Even the gala days of the great liner, with reporters meeting her in the pilot boat to interview and photograph arriving celebrities, are part of the past.

Today, in the planning, promotion and operation of major world ports, we put our minds to the problems of colossal tankers and of container-ship three times the size of a football field.

Where the mariners of 50 years ago listened to the lonely clang of the bell at the harbor's mouth, to the melancholy call of the foghorn, our mariners today look at blips on a radar screen, and use a radiotelephone in the channels.

The hand-copied foolscap bills of lading, the manifests sealed in an oilskin pouch are long gone. Even the photocopied documents of today face replacement. Electronic data control systems will soon flash documentary information across the ocean to harbormaster and customs house.

Even the coastal steamer of Masefield's 'Cargoes,' though the late. Poet Laureate may not have intended it, has acquired a nostalgic historic overtone, with its "salt-caked smoke stack,/With a cargo of Tyne coal,/Road rails, piglead,/Firewood, ironware and cheap tin trays."

So too, perhaps, the port problems of today, with their new and jarring dimensions, will look in the future like a continuation of the old challenges and excitements.

In that light let us face the new ones.

In New York, certainly, we have more than enough to choose from, whether it be in the area of public law, or the acquisition of land for a new port facility, or an engineering problem to be solved at any of our piers, tunnels, bridges, terminals or airports scattered over our assigned Port District of some 1,500 square miles.

The Port of New York Authority itself, as a matter of fact, came into being as a suggested solution of century-old disputes between the states of New York and New Jersey, some to the point of official violence, over control of the port. It was all the
same port, serving the same overall area, but at one time policemen from New York on one side and from New Jersey on the other exchanged small arms fire over a question of jurisdiction. The railroads with railheads in New Jersey fought for freight rate advantages over railroads with railheads in New York.

Finally, in 1921, after three years of study of all the port problems by a specially appointed commission, and in response to the commission's recommendation, the States of New York and New Jersey entered into an Interstate Compact creating The Port of New York Authority, a new and different type of public agency, for the express purpose of developing the Port District on a joint and cooperative basis.

Under the bi-state compact, the two States charged the Port Authority with two major responsibilities: "to purchase, construct, lease and operate any terminal or transportation facility within said (port) district"; and to promote the commerce of the port and to protect it from inequitable transportation charges and practices. The signing of the Compact laid the foundation for the future development of a new and untried agency of government.

Not only was it the first agency in the United States to be created in the now familiar "Authority" form, it was also the first instrumentality to be created by an interstate compact under the express provision of the Constitution of the United States.

To enable the Port Authority to pursue its mandate of providing transportation services and port development and protection in the most efficient and practical manner possible, Port Authority lawyers, through the years, had to work on a case-to-case basis the evolution of a new body of public law.

Even before it was officially born, a lawsuit challenged our Port Authority's right to exist. And throughout the half century of its existence, every major Port Authority facility, or group of facilities, that the States of New York and New Jersey have directed it to operate, has at one time or another been the subject of a major court battle.

Thus the Port Authority has been a pioneer among government agencies in the United States, a pioneer in government, a pioneer in the development of our public law, a pioneer in public administration in our country, and a pioneer in the way in which it has financed some $2.5 billion in public port, terminal and transportation facilities.

Today the Port Authority operates six tunnels and bridges connecting the two States, four airports and two heliports, piers and docks along the New York and New Jersey waterfront, an interstate commuter rail system, two bus terminals that serve both commuters and over-the-road buses, three truck terminals, and The New York World Trade Center, a giant complex of buildings and services now moving toward completion in downtown Manhattan.

Obviously, the New York-New Jersey Port Authority has been charged with a much wider range of transportation responsibilities than are found in the usual Port authority concept involving marine activities only.

In creating The Port of New York Authority, the two State Legislatures attached a basic condition which is crucial to an understanding of the nature and role of the entire organization. They specified that the Authority's overall operations must be self-supporting. They did this by expressly providing that the Authority should have no power whatsoever to tax or assess or to pledge the credit of either State. The Port Authority obtains its capital funds through the public sale of revenue bonds.

Thus, before the Port Authority can go forward with any new program, it has to be able to convince private investors that the Authority's program as a whole will continue to be self-supporting and that the new project will not impair the security of our outstanding bonds. So too, we have to make pledges to our bondholders as to the flow of our revenues and the maintenance of reserves just as a private corporation has to do in borrowing money for capital improvements.

At the apex of the organization is our Board of Commissioners, appointed by the Governors of New York and New Jersey—six from each State—to serve overlapping terms of six years to assure continuity of policy and planning. Our Commissioners receive no salaries or other compensation. Traditionally, appointments have been based on ability, integrity, and outstanding records of accomplishment in business, the professions, or public leadership. Through the years also, Governors have appointed and re-appointed Commissioners without regard to political affiliation.

The Commissioners conceive the Board's role as the policy-making body. They depend on an executive director and his professional staff to carry out these policies and for the day-to-day management of the organization.

Reporting to the Executive Director are a series of staff and line departments, we have line departments for each mode of transportation—bridges and tunnels, piers and docks, airports, bus and truck terminals, the interstate railroad, and the Trade Promotion (which includes New York's World Trade Center), each of these Departments has a mixture of operating personnel, engineers, accountants, and all the professional specialists needed to accomplish its mission.

A group of central staff departments with specialized skills in policy planning, advice, evaluation and technical services—such as the Law Department, the Finance Department, the Engineering Department are available as required by the line departments. Internal machinery has been set up to facilitate the most effective interchange of information, ideas and suggestions among all departments.

The interplay of line and central staff may be illustrated by the following example:

In the course of planning airport redevelopment to accommodate the new 747's and airplanes, our Aviation Department, responsible for the functional planning, became concerned with the durability and serviceability of runway and tarmac pavements. It turned to the Central Engineering Department for a design that would meet the new challenges, including a target of lower cost. In response, the Engineering Depart-
ment developed what is now known as 'flyash pavement,' a new process, using what had been an industrial waste product, to achieve a pavement of greater durability, flexibility, cheaper to make, lay and maintain. Its use is spreading around the world.

Again, when commuter traffic into New York on workday mornings began jamming the approaches to one of our tunnels, our Planning and Development Department conceived, organized and helped the Tunnels and Bridges' staff to activate what is now known as an 'exclusive bus lane.' The idea was simple enough—to convert a westbound highway lane into an eastbound facility, for commuter buses only, during peak hours—but it took seven years for this simple pioneering concept to be accepted as a major contribution to mass transit by the state and municipal authorities involved. I may say that it is so successful an innovation that most commuter-laden cities in the United States are studying its application to their own urban systems.

Creative solutions to port problems, to keep the Authority not only functioning well in its day-to-day responsibilities, but to advance its competitive status demands a well-motivated staff. The Port Authority personnel program, involving a current roster of 8,000 employees, was developed over the years as a system of competitive recruitment and advancement, fashioned in a way that will offer self-fulfillment to the employee and, at the same time, adequate flexibility for supervision. Most important of all for the continued usefulness and future planning of a public corporation is the sound development of a career service which encourages young men and women to devote their business and professional careers to the challenges and satisfactions of public service. One measure of our success in attaining this objective is the fact that a growing number of our department and division heads came from the universities to begin their careers at the Port Authority as trainees.

The Port Authority has maintained its personnel standards based wholly on the demonstrated competence and potential of those who join our staff. Our personnel policies aim to recruit and stimulate able and creative staff; to motivate them to perform effectively; to contribute to their development; and to make the Port Authority a desirable place to work. In our search for those best able to perform the service the Authority needs, the Authority early recognized that the employment of people from disadvantaged minorities will contribute, through their very involvement and improved standard of living, to the greater prosperity and peaceful development of the Port District. Accordingly, we have an intensively pursued Equal Opportunities Program as an instrument to search out and encourage talented minority members to work with us or our contractors, and to provide the training tools and facilities, both within the Authority organization and the community at large, by which latent talents might be encouraged and developed.

We have plenty of work to do and, as we enter our 51st year, many challenges to meet.

The primary problem, from which most others seem to spring, is congestion. Some 18 million people live within the New York Port District, and the centralization of wealth and livelihood in and around the port makes for a mealstrom of local, national and international traffic, through the port, in the air, on the ground and underground. The needs of suburban commuters to get to and from work in the center of the city lead to some of the most complicated urban mass transit problems the world has ever seen. Air traffic problems and the competition of airlines for best arrival and departure times leads us to forecast, this coming summer, over 9,000 international arriving passengers requiring clearance through a single building in a three-hour period, unless arrivals are planned and successfully staggered. We have championed a method of reducing aircraft engine noise, and pressed for the necessary national ruling to effect it, on behalf of those who live near our airports. These are samples of problems we face and must overcome. Solutions will depend upon the vigor, ingenuity and dedication of all Port Authority people to all the tasks at hand. In addition, it is incumbent upon the Authority never to lose sight of its statutory obligation, to update and, as necessary, introduce new modes of port operation that changing conditions suggest, and sometimes demand.

In lieu of refurbishing and rearranging basically limited terminal capacities at our Newark Airport in New Jersey, for example, it was decided to develop an entirely new terminal complex—now designed, engineered and under construction in another area of the airport, at an estimated capital cost of $200 million.

Our research had prepared us, in addition, for the so-called 'Container Revolution' that jolted so many ports and shipping companies throughout the world in 1966. The Port Authority had, in fact, foreseen this great technological change ten years before and had pioneered in the planning and construction of container terminals—the first container terminals to be built at any port in the world. As a result the Port of New York has a ten-year jump on all other ports along the Atlantic Coast of the United States in providing facilities for containership operations.

Our Newark-Elizabeth docks on the New Jersey shore comprise four miles of wharves devoted to containership berths. Each berth—31 in all—will have 50 acres of paved upland area in which to marshal thousands of ocean-going containers. Supplementing the berths at the Elizabeth-Newark complex, nine other containership berths are planned in other areas of the port—a total of 44. Each berth now handles an annual average of 600,000 long tons, a figure about to be increased when containerships laden with New Zealand meat begin service this summer to the Port of New York. The total handling capacity of our containership berths will run close to 44 million long tons a year and, as a cushion against the anticipated development of containerization, the Authority has now under study an area in which to create another massive containershipport fronting on Upper New York Bay itself.

To our mind, however, world trade has moved far beyond the sum of the technical modalities developed to transport it.
No matter how modern our piers, docks and airports may be, they must have the backing of a modern market place where the international trade community can transact its business efficiently and with the fastest dispatch that modern communications and a centralized market place can provide. That market place, as many of you undoubtedly know, is New York's World Trade Center—two great 110-story tower buildings and four low-rise plaza buildings, including a hotel, now nearing completion in downtown Manhattan.

The Trade Center in New York is well along in construction and some of the tenants are already in occupancy. It will cost about $650 million and occupancy is limited to companies which perform functions, activities and services in world trade. Eighty percent of the space in the Trade Center complex (which includes in all about 11 million square feet of space) has been committed either under signed leases or leases in process. The project will be completed in 1975.

For the international businessman, The World Trade Center will offer the dual advantages of comprehensive world trade services and rapid and concentrated business contracts, two factors which are indispensable to more efficient international marketing. These two advantages will contrast markedly with the inefficient, wasteful and time-consuming manner in which trade is conducted at the present time. The Trade Center will provide a focal point for international trade much as the clearing house does for banking and the stock exchange for the corporate securities market.

In the New York Trade Center, every tool and convenience of modern business will be at hand for developing export-import activities and for processing the essential documentation which accompanies every shipment of overseas commerce. Intangible, but just as important, will be the creation of an atmosphere of world trade leadership and cooperation.

The Trade Center will make available to our world trade community in New York quick interchange of information and proposals, prompt processing of documents and rapid consummation of transactions. It will house all of the services related to the movement of trade including such vital export-import trade services as New York's new Custom House, other government trade services, foreign consulates and national government trade centers, international banks, marine insurance firms, and steamship, rail, truck and air carriers. Included within the Center will be a comprehensive World Trade Information Service which will provide accurate up-to-date information on world trade markets, regulations and opportunities, and a service which we call 'Interfile.'

'Interfile,' as conceived by our World Trade Center staff will provide a swift interchange of data among the trade centers now developing all over the world. It is the natural evolutionary step of connecting single trade centers, each serving its own commercial community, into a network of compatible centers monitoring, speeding and stimulating the commerce of the world.

Let me give you some examples of facilities that The World Trade Center will afford one of its tenants, in the area of communications alone:

A. Picture-phones, closed circuit television, telephone language translations.
B. Telephone access to central computer processing at substantial savings. As one example of the countless services possible with such a system, a company traffic manager, via his desk telephone, may send details of an order into the Trade Center computer and receive a type-written response telling him the most economical use of carrier—truck, air and railroad—to meet a dockside delivery date;
C. A videophone that will permit a dialer to scan quickly an entire library for desired information, and obtain a hard copy of any data required for permanent use.
D. Prompt international communications including public international telex booths;
E. Telephone access to information storage and retrieval units that provide instant verbal, video or hard copy on world trade data;
F. A system for receiving the thousands of daily business visitors to the Center, electronically analyzing their interests and referring them to the appropriate places and tenants in the Center.

If all this sounds something like TV's science-fiction Twilight Zone, I urge you to think of it not in terms of twilight but of the dawn of a new day in world trade.

The World Trade Center in New York will house, in addition, the World Trade Institute dedicated to world trade education, the exchange of trade concepts and analyses of developments in international trade and commerce.

That the World Trade Centers of the world will stand, each in its own community, as the essential medium for the development of world trade, is evidenced by the spectacular spread of the concept, from Malaysia to Chicago, from Japan to Amsterdam, and the extent to which major business areas have sought to join the World Trade Centers Association. I know of the effort, well begun here in Auckland, to raise a Trade Center on your own waterfront, a project described with singular appeal, in my opinion, as a 'mini-Manhattan.' The intent I read behind the phrase, to create the means of centralizing and facilitating all aspects of trade in the port, is one with which I am in complete accord. It is my opinion that a trade center in any community capable of sustaining it will be the key twine to all world trade systems. It will be the major means of trade stimulation, and commercial efficiency, ultimately as necessary to the competitive status of any broad commercial community as the telephone today is to the individual businessman.

With the availability of container-ships of unbelievable tonnage, with the capacity to interchange information and documentation as never before, and with the evident determination of the members of this conference to contribute your full share to world progress and trade, I can safely prophesy for all the people of New Zealand what I have already wished for Auckland: A thriving prosperous future lies just below the horizon, on its way to your ports.
Auckland Harbour Board Centenary:

Auckland Harbour Board Celebrates Centenary

When Auckland city was first encountered by Europeans in 1840 its harbour was little more than one long beach set half a mile from navigable water.

Today the city is the commercial centre of New Zealand and has the largest, busiest, port in the country—right at its doorstep.

The port began with one small jetty. Now eleven wharves are in full operation, and others are being built to meet the demands of highly sophisticated shipping operating throughout the world.

The rapid growth of the Port of Auckland and its expansion are the results of careful planning and foresight. A foresight which began with the first Harbour Board, which formed 100 years ago in 1871.

That foresight has passed to each subsequent generation of Harbour Boards, and is still a major quality of the present Board under its chairman, Mr. R. C. F. Savory.

The first Board, whose chairman, Captain William Crush Daldy, was both a seaman and a financier, adopted a reclamation policy, which dispensed with the non-navigable water, replacing it with many acres of solid, valuable leasehold land, which it let to the young industries that were forming in the emergent city. This land is still a major source of revenue to the present Board.

Some of the land is being redeveloped under an ambitious scheme instigated by the Auckland Harbour Board. Known as the Downtown Redevelopment Scheme, it involves the reconstruction of seven acres of land immediately behind the passenger wharves to form a gateway to the city.

When the scheme is completed it will provide the city with a new department store, a shopping mall, and a world trade centre. This is in addition to a motor hotel and multi-storey car park which were completed recently.

The project—which will cost $36 million—is being built in three stages, and work on the first phase began two years ago.

The world trade centre will be housed in a 32-storey building earmarked for commerce. Due to be completed by 1974, this construction

The redevelopment scheme instigated by the Auckland Harbour Board is providing the city with a World Trade Centre, a Motel Hotel, car park facilities, and an Airways Terminal.
Eventually this wharf will be extended by another 900 ft to accommodate two container ships at once. This should be possible by 1973. The first berth will be used by all shipping companies until container trade increases to the extent that one major shipping line would need sole access to the wharf. This would be leased to the company concerned.

A second container crane is envisaged, again when trade increases, and a transtainer crane will be added to the terminal facilities.

In the past ships coming into the port have spent days, often weeks, for unloading and loading. Container ships will spend only hours in port; helping to eliminate one of the high costs of shipping.

Still with an eye to the future, the Auckland Harbour Board sent officers to America recently to look into the question of bulk granular cargo handling, realising that facilities for this are of vital importance to the shipping industry. The Board will be planning suitable wharves for this function in the near future.

Creating new ports is only a part of the Harbour Board's current story. In addition, it is replanning and revamping the wharves built by that first Board at the turn of the century. They have served the Port magnificently for the greater part of 100 years. Reconstruction will ensure that they continue to function even more efficiently.

Looking to the future, the Chairman, Mr. Savory, says the introduction of new kinds of ships and even hovercraft will be included in the Port's progress.

"The evolution of the container principle will continue to expand and develop. Likewise the vehicle deck and stern door loading ships must be catered for. Plans are already on the drawing board and it is expected that a comprehensive development scheme will be publish-
An Appeal for Improved Philadelphia Port Area

Statement of S. Harry Galfand, City Representative and Director of Commerce, before the Pennsylvania State Government Committee of the House of Representatives, Friday, March 26, 1971, at 10:00 a.m., at the State Office Building, Penthouse, Broad & Spring Garden Sts., Phila., pa. (Rep. Harry R. Comer, Chairman)

Mr. Chairman, and distinguished members of the Committee:

My name is S. Harry Galfand, City Representative and Director of Commerce for the City of Philadelphia. By definition under the City Charter, both positions are occupied by the same appointee who is the ceremonial representative as well as chief commercial officer of the city.

It is in this latter capacity that I should like to address the members of the Pennsylvania State Government Committee here today, since the Commerce Department is responsible for the promotion and development of the city's commerce and industry through its port, airport, civic center and business services.

The Port of Philadelphia plays a vital role in advancing the welfare of both the city's and the state's commerce and industry, and I want to thank you gentlemen for taking the time to conduct these hearings on the Port. I hope they will improve our mutual understanding and advantages.

While we in the Commerce Department prefer to look to the future, rather than the past, it sometimes helps to review where we have been in order to know where we stand now, and where we want to go.

July 1, 1965, was an important date in the long history of the world's greatest freshwater seaport. On that day, the city began to transfer its port operations from the Commerce Department to the new Philadelphia Port Corporation. It promised then—and has since become—an effective partnership between the City, the Commonwealth, and the Greater Philadelphia Chamber of Commerce. It represented positive action based on the recognized need to keep the port healthy, for the economic good of this area and indeed of the entire Commonwealth.

As many of you know, Philadelphia has long been an important importer of bulk cargo, mostly, oil and ore. While we still remain largely a bulk-handling port, most of you in the port community will agree that general cargo generates more business, more jobs, and more revenue.

To increase this flow of general cargo, the Port Corporation was commissioned to construct from fifteen to twenty-one new ship berths as promptly as possible, and the City and the Commonwealth budgeted about $100 million for this port improvement program.

In the six years since the Port Corporation was formed, Philadelphia's waterfront has taken on a new look. As you saw on your port tour yesterday, the two major construction projects of the corporation—the Tioga Marine Terminal and the extension of the Packer Avenue Marine Terminal—are well along toward completion. Additional improvements are being made to older pier facilities, and plans for future port expansion are underway. The Port Corporation's 1970 annual report, given to you by the Chairman, Mr. Potts, describes these facilities and plans in detail, so I will not take the time to do so today.

Much has been accomplished, but much more remains to be done. Since this will require additional financing on the part of the City and the State, I am encouraged to note that several members of your House State Government Committee are also on the Appropriations Committee—including Chairman Harry Comer, Vice Chairman Peter Perry, Martin Mullen, Guy Kistler, and William Piper. The Port needs your help, gentlemen.

When the Port Corporation was formed, the Commonwealth and the City each agreed to appropriate $600,000 annually for a period of approximately 12 years. However, due to delays in construction and engineering which could not have been foreseen, costs have greatly increased.

In order to meet our commitment to make the Port of Philadelphia one of the finest in the country, both the City and the Commonwealth must now increase their appropriation to the Port Corporation, each by $400,000 annually to a total of $1 million for the five year period 1972 through 1976. The Commerce Department has recommended this increase in its budget to City Council, and we sincerely hope the state will join us in this partnership by also appropriating $1 million.

The Port Corporation has under construction enough berths and facilities which will be capable of handling an additional one and a half million tons of cargo per year. We strongly feel that this tonnage can be attracted from competitive ports and will represent new business for the Port of Philadelphia, the Commonwealth of Pennsylvania, and the entire country. For example:

The economic importance of the Port of Philadelphia in the nation's economy is indicated by the customs receipts collected on imports of foreign goods and raw materials entering its industrial-commercial life. For the past five years these import duties have been in excess of $100 million, reaching the figure of

(Continued from Page 17)

"World port authorities have an enormous task in keeping abreast of new methods and the Auckland Harbour Board, as it has shown throughout its 100 years, will be prepared to apply the latest technology to its business of working an efficient port for the benefit of all New Zealanders," he said.

(Continued on Page 25)
A Glimpse of Nagoya Port

By Kiyoshi Sugito

President, Nagoya Port Authority
Mayor of Nagoya City

First, look for those green islands with the sea all around—Japan. Then run your finger along the eastern seacoast till you reach their center. There, sheltered deep in Ise Bay by the protective arms of the Chita and Kii Peninsulas, is a harbor of unusually calm waters. There is Nagoya Port. And we are proud of it.

In the more than 70 years since it assumed the name, Port of Nagoya has grown, matching strides with ongoing industry, first with more and better moorings, then wharves and industrial sites, and now with the most modern facilities ever among man-made ports.

It was between 1955-1961, those miraculous years of economic growth in Japan, that our progress was most marked. Heavy industry sprang up along the southern seacoast and industry boomed inland. The Port rode this crest, handling in 1968 almost five times 52,450,000 tons the cargo of a decade earlier. And in a single year—1969—cargo increased 20% (61,120,000 tons). It was not long until ships of call came to number well over 72,000 per year, making Nagoya rank only behind Yokohama and Kobe in Japan.

Recent times have seen all major ports confronted with the same phenomena. There are more ships calling. And more congestion and "full house" situation. Ship size is...
increasing, exclusive handling facilities in demand and containerization on the march. There is the appearance of long-distance ferries, a difference in cargo handled, and many qualitative and quantitative changes at work in maritime transport. All this is why we came to revise our Port and Harbor Plan.

1. Nagoya Port Plan Revision of 1970

The revision projects a 145 million tons in cargo handling capacity by 1980. It streamlines distribution by exclusive handling at enlarged foreign trade terminals, centralizes berthing and slates pier improvements for increased domestic cargo for the burgeoning industry inland.

There will be tramp berth construction for lumber and the like, and improved terminal function with commercial port facility development. Coastal transportation network is to be improved, moorings modernized, provision for construction of mammoth tanker sea berth and selective incorporation of the planning previous, regarding industry. All this figures to turn Nagoya into a strategic port of international proportions. Development of port function will be integral, efficient and more than apt to meet expectations for Chubu Region industrial development as well as contribute to international trade.

2. Containerization Sparks Establishment Of Unique Company

Unitization for efficiency and economy of distribution is now a watch-word. The dawn of containerization has meant speed, safety and cost-down at world ports, these latter being well on their way to being equipped to handle it. In Japan, both in the Tokyo-Yokohama and Osaka-Kobe districts, a special container organization (Keihin & Hanshin Port Development Authority) was set up in 1966 to provide foreign trade container berths and facilities. The need was seen in Nagoya. But realization had to lag a bit behind. The Port Authority stepped in with hurried construction of two container berths at Kinjo Pier in 1968-9. But these would not be able to cope with oncoming containerization.

Hence, a new foreign trade group was formed speedily to run exclusive container terminal dealings and development. In May of 1970, at Nagoya Port's strong urgings, the Japanese Government made an unprecedented decision to allow private investment participation in port and harbor projects. This new policy reversed previous legislation, making it possible for private sectors outside existing public foreign trade terminal corporations, to undertake construction of authorized container facilities under port authority supervision.

Nagoya Port here opted for a company type approach. On December 26, 1970 an official joint stock company was formed under the title "Nagoya Container Berth Co." and headed by Mr. Fumio Kohmura, the executive vice president of Nagoya Port Authority. This company was made up of the ruling body for Nagoya Port, Nagoya Port Authority, and six maritime companies which are container ship operators (Japan Line, K Line, NYK Line, Mitsui OSK Lines, Showa Line and YS Line).

The new company project plan calls for a target date of fiscal 1974 as to completing a 4-berth container wharf in West-4 complete with loading equipment and leasing services for full container companies. These exclusive container pier construction plans promise Nagoya the needed facilities for forthcoming cargo

Mr. Fumio Kohmura, Exec. Vice President of Port Authority, elected President of N.C.B. on Dec. 26, 1970.
### Particulars of N.C.B.'s Container Wharf at West-4 Section

<table>
<thead>
<tr>
<th>Berth No.</th>
<th>Depth</th>
<th>Berth Length</th>
<th>Ship Capacity</th>
<th>Crane</th>
<th>Opening Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Berth</td>
<td>-12m</td>
<td>300m</td>
<td>35,000 P/W</td>
<td>2 gantry cranes per berth</td>
<td>April 1, 1972</td>
</tr>
<tr>
<td>2nd Berth</td>
<td>-12m</td>
<td>300m</td>
<td>35,000 P/W</td>
<td></td>
<td>April 1, 1973</td>
</tr>
<tr>
<td>3rd Berth</td>
<td>-12m</td>
<td>250m</td>
<td>25,000 P/W</td>
<td>Rated load 30.5 t</td>
<td>April 1, 1974</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lifting load 37.5 t</td>
<td></td>
</tr>
<tr>
<td>4th Berth</td>
<td>-12m</td>
<td>250m</td>
<td>25,000 P/W</td>
<td></td>
<td>April 1, 1975</td>
</tr>
</tbody>
</table>

Handling volume. For the efficiency and economy it brings to distribution, the advance of containerization is sure to continue. Nagoya is thinking ahead, too. In terms of 1980 cargo handling capacity. It wants to be a step ahead always. Yes, NaGOya is “on the GO.”
Maybe your link is Rotterdam-Europoort. Home to Europe's biggest oil refining conglomerate - 60 million tons last year. With super tanker harbours that can take ships of up to 250,000 dwt. Pipelines to Belgium, Germany, throughout Holland. Europe's biggest harbour and petrochemical centre. Europe's biggest container terminals. Spang in the middle of Europe's greatest concentration of big-spending consumers. The nucleus of inland waterways and sea routes, railways, superhighways, airways. Rotterdam-Europoort. On the map Dutch. Industrially speaking, very European. If oil and Europe interest you, look into Rotterdam-Europoort.

For data on what's happening, write the Municipal Port Management of

rotterdam-europoort
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**Orbiter Probe**

**IAPH News:**

**Mr. McConnell**

Tokyo:—Mr. McConnell, J. P., A.A.S.A., Chairman, Fremantle Port Authority, Australia, arrived in Japan Wednesday, May 26 on his way to Montreal, Canada. He called on Mr. Toru Akiyama, Secretary General, Friday at his business office, and was invited by the S. G. to a dinner that night. On Sunday he inspected Tokyo Port’s container wharfs and later Tokyo’s sightseeing highlights. Monday he toured Yokohama’s container wharfs. He is scheduled to depart for Montreal via Vancouver on Tuesday.

(Continued from Page 18)

$150 million in 1968.

The taxes generated by the four million tons of general cargo imports brought to the city over $2.5 million dollars revenue (at 70 cents per short ton) and approximately similar tax benefits accrued to the Commonwealth. The bulk shipments of petroleum products, ores and minerals, sugar and molasses provide the raw materials for factories employing many thousands of Pennsylvanians in such industries as petroleum processing, chemicals, metals, textiles, paper, food, transportation and electrical machinery.

It is on the export side that we have to concentrate our efforts and for which we urgently ask your assistance. The U.S. Census Bureau reports that Pennsylvania produced nearly $2 billion worth of U.S. exports in 1969, while the total value of the general cargo shipped out of that amount ($483 million). Using an average value of $256 per ton of export general cargo, both Pennsylvania and the Commonwealth could have benefited by an additional annual revenue of $3 million each if we had the facilities to handle additional cargo.

World’s Biggest Ore Port

New York, N.Y., May 11:—Construction is underway at Tubarao, Brazil of facilities to handle 250,000 DWT ore carriers and to increase shiploading capacity of the port to 30,000 tons per hour.

The sixty million dollar expansion was engineered by Soros Associates, consulting engineers of New York, to handle annual shipments of 50 million tons. The project provides a second ore berth with two 16,000 ton per hour shiploading systems, a four and a half kilometer approach channel and an enlarge turning basin. On shore, a new two million ton ore yard with 16,000 ton per hour stockpiling capacity connected to two twin rotary car dumpers will be located on reclaimed land, with sampling and weighing facilities as well as full integration of the conveying systems to merge with existing operations.

This expansion is being carried out in accordance with a MASTER PLAN developed by Soros Associates on the basis of long term projections of global bulk movements and fleet compositions, providing a staged program to increase annual ore shipments to 80 million tons and accommodate vessels up to 400,000 DWT. Coal and fuel berths, as well as large scale general cargo operations to serve a planned steel mill, are part of the comprehensive Soros plan.

The new loading berth and handling systems now under construction are designed so that at a later stage vessels up to 400,000 DWT can

The task before us can be even better illustrated by an analysis of the five Pennsylvania Counties comprising the major portion of the Greater Philadelphia Metropolitan Area (Bucks, Chester, Delaware, Montgomery and Philadelphia). The Commonwealth’s Department of Commerce statistics show this area producing over $420 million worth of goods for exports in 1968, but shipping only about one third of this amount through the Port of Philadelphia. This indicates that the City and Commonwealth are losing annually a total of some $1,400,000 of potential tax benefits from these five counties alone.

In order to get our full share of port business the task of port improvement and development requires the help of all interested parties. I should like to emphasize, however, that the benefits which our port will reap will far surpass our investments and our efforts.

In conclusion, I should like to call your attention to Penn’s Landing, which is being developed in three stages at the Port. The Commerce Department has been the moving force behind this project for many years. The Penn’s Landing Corporation, chartered by the Commonwealth of Pennsylvania Development Corporation.

This project will add an exciting dimension to the Philadelphia waterfront. It will realize the historic, aesthetic, and commercial potential within the entire area from the Benjamin Franklin Bridge to Catharine Street.

It is being designed with a careful balance of private commercial and public uses in mind. This would involve restaurants, specialty shops, recreational facilities, and other tourist attractions in an area near Independence National Historical Park, where Independence Hall already has more than three million visitors a year.

However, if Penn’s Landing is to become a reality, we urge—indeed, we need—your continued support of this unique development on the Philadelphia waterfront.

Thank you, Mr. Chairman. I consider it a privilege to have this opportunity to speak to the members of the Pennsylvania Government Committee. (City of Philadelphia News Release, March 25).
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A good example of our latest crane technology is the 37.5-ton container and general cargo handling model above. (A 39-ton model of the same type is under construction now.) It features reactor controls, automatic hoisting, trimming operation, and an all-welded construction that assures reliable performance for decades to come.

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be loaded at a rate of 32,000 tons per hour when the channel depth is increased to 28 meters. In combination with the existing finger pier this will provide an ultimate ship-loading capacity of 46,000 tons per hour at Tubarao. (Soros Associates International)

**Bulk Port Expansion**

New York, N.Y., May 25:—The Board of Commissioners of the Port of New Orleans has adopted a new master plan developed by Soros Associates, Consulting Engineers of New York.

The first stage of improvements under the new plan has been authorized and is scheduled to be operational in 1972. This expansion plan conforms with the Soros recommendations to tailor the port facilities to attract the growing and changing bulk markets in the Gulf Region, as indicated by their study.

The new master plan calls for creating additional facilities in stages during the next 25 years to handle competitively a 400% increase in annual tonnage throughput.

Elements in the $37,000,000 overall plan include adaptation of existing structures to larger vessels, creation of open and covered ground storage, separate silo storage, separate barge loading berth with additional barge fleeting facilities, third unloading berth, second railroad loading station, enlargement of railroad marshalling yards and conveyor system geared to simultaneous handling of multiple products. (Soros Associates Inc.)

**Reefer Service**

Duluth, Minn., April 28:—A new combination refrigerated and general cargo service linking Duluth-Superior with European ports will be inaugurated this season, Duluth Port Director C. Thomas Burke announced today.

Burke said East West Lines, headquartered in New York City, has agreed to include Duluth-Superior as one of two Great Lakes ports of call for three refrigerated, or “reefer,” ships.

Sailings will be triweekly to and from Antwerp, Belgium, Newhaven, England (near London), and Le-Havre, France. Company officials said cargoes also will be accepted for Rotterdam, Holland.

Burke said the new liner service is especially significant because it marks the port’s entry into the “reefer” trade and further enhances Duluth-Superior’s status as a full-service port.

Refrigerated cargoes will be handled through Mid-Continent Warehouse Co.’s public dry and refrigerated warehouse at the Clure Public Marine Terminal in Duluth. The Mid-Continent facility, built on property leased from the Seaway Port Authority of Duluth, has been used almost exclusively for domestic products since its opening in September 1969.

Burke said establishment of the service is the result of numerous meetings involving representatives of the Port Authority; Mid-Continent; Ceres, Inc., managing agent of the Public Marine Terminal; East West Lines; Nordship Agencies, Inc., Chicago, general agents for East West Lines; Guthrie-Hubner, Inc., Duluth agent for Nordship, and Midwest firms engaged in international movements of refrigerated cargoes.

A Nordship official said the service will begin when the Ulysses Reefer loads cargo for Duluth and other ports in Antwerp May 5. The ship is expected to call at Newhaven and LeHavre May 8 and 10, respectively, and is due in Duluth about June 1.

Joining the Ulysses Reefer in the service will be the motorships Ulysses Island and Ulysses Castle. All are modern vessels under Greek registry.

In addition to Duluth, other North American ports to be served by East West are Milwaukee, Wis., and Montreal, Que.

Burke said he was extremely pleased with East West’s decision and pointed out that the inclusion of Newhaven on the schedule will help Duluth regain cargoes potentially lost by the discontinuance of service by Manchester Liners, Ltd., of Manchester, England. The Manchester firm recently announced it was eliminating its traditional Great Lakes service to Duluth and, instead, plans to concentrate on building container shipments.

East West’s schedules will provide new opportunities for transportation savings for Upper Midwest shippers, Burke said.

“Regularly scheduled ship service
is a must if a port is to continue its growth in world trade,” he said. “These new sailings by reefer ships not only contribute to such growth, but actually open new trade areas for us.”

Spokesmen for the line said the ships will carry general cargo in addition to the refrigerated commodities, particularly on the westbound sailings from England and the Continent.

Marshall Chabot, Duluth, Mid-Continent president, praised the efforts of the Port Authority and others involved for “turning an idea into a reality.”

Chabot observed that the Mid-Continent facility was built to help the port become a factor in the refrigerated cargo world market.

“This service is just the first step in Duluth’s development as a reefer service port,” Chabot said. “Once the freight savings become evident to our Midwest customers, I’m certain that this trade will grow substantially.” (Seaway Port Authority of Duluth)

New Executive Director

Houston, Texas, April 28: — George W. Altvater has been named executive director of the Port of Houston to replace J. P. Turner, who resigned earlier this week.

Meeting in executive session today, members of the Port Commission selected Mr. Altvater after surveying a list of eligible port managers.

Mr. Turner, 67, who has directed the Port of Houston for the last 14 years, resigned Monday. He will continue to serve as a special consultant for the next 16 months when his contract expires.

“The Port Commissioners selected George Altvater because we believe that he is the logical man to direct the port during this extended period of growth which we are entering,” said Fentress Bracewell, chairman of the commission. “Mr. Altvater is already intimately acquainted with many of the problems which will face us in future years and we believe he will be able to give us the best solutions.”

Chairman Bracewell praised the new executive director for his outstanding ability and the administrative leadership he has demonstrated since he joined the Port of Houston in May, 1959.

“We are happy to be able to promote someone on our staff to this position of responsibility and authority,” Bracewell added.

Mr. Altvater said he is eager to implement the broadened powers of the Port of Houston Authority, which was recently passed by the Legislature.

“We were the first port in the world to handle a container ship and this new concept has revolutionized shipping around the world,” Mr. Altvater said. “To retain our position as the leading container port on the Gulf I want to push the rapid development of our new $100 million terminal facilities at Barbours Cut.

“I want to strengthen our rapport with all segments of the industry, the maritime group, the railroads, the truck lines, freight forwarders and brokers, consular corps and labor because we must have complete cooperation of everyone involved to give our best service,” Mr. Altvater said.

Mr. Altvater has been involved in planning port facilities as well as the development of foreign and domestic trade. He has spoken to meetings in the major cities of the United States, Great Britain, Europe and Japan and he has toured extensively to develop better relations with shippers, importers and exporters.

While president of the Houston World Trade Association, Mr. Altvater led three delegations to Washington and succeeded in having Houston named as one of nine regional headquarters for the U.S. Customs.

Widely recognized as a dynamic leader in the transportation industry, Mr. Altvater served as co-chairman for the American Association of Port Authorities national convention which was held in Houston last October and he is general chairman for the national convention of the Propeller Club of the United States to be held in Houston in 1972. He is also active in the Traffic Club, Rotary Club and the international business committee of the Houston Chamber of Commerce.

Mr. Altvater, who was born January 6, 1914, in Lynn, Massachusetts, was graduated in 1938 from Northeastern University in Boston with a business administration degree. He worked days and attended school at night.

In 1938 Mr. Altvater went to New York City as a sales representative for Waterman Steamship Corporation. In 1954 he was named manager of the New York office for the Port of Mobile, which at that time was managed by Mr. Turner. In 1957 Mr. Altvater became manager of the Port of New Orleans’ New York office, a position he held until he was named executive director of the Port of Baton Rouge in 1958.

In May, 1959, Mr. Altvater moved to Houston to become general sales manager. He has been director of sales and director of international trade and development prior to being named deputy director of the port in 1967.

Mr. Altvater is married and has a son, Kenneth, who is with American General Insurance Company, and a daughter, Janet, who is a senior at the University of Texas. He is an elder in the Memorial Drive Presbyterian Church. (Port of Houston News Release)
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Port’s Customer

Los Angeles, Calif., May 24:— Testimony, unsolicited, to the value of Port of Los Angeles ‘trade missions’ was given Wednesday (May 19) by a man who expects, before the year is out, to be a million dollar customer of the port.

The customer, already in the half-million bracket, is Yohji Ban, president of Japan’s Tokai Shipping Co., Ltd., and chairman of the board of Ban Warehouse Corp., which is a Los Angeles Harbor Department tenant.

Ban appeared at the regular weekly meeting of the Board of Harbor Commissioners and was introduced (by retiring Commissioner Fred I. Wada, who is of Japanese descent) as “a man who brings us $500,000 yearly,” moving 500,000 tons of cargo, generally steel pipe, at a $1 per ton tariff.

The visitor from Tokyo quickly corrected the figures.

“I hope,” he told the commission, “that before the year is over I will have brought between 800,000 and 900,000 tons of cargo into this country through the Port of Los Angeles.”

With a scheduled tariff increase to $1.25 per ton, that would make Ban a $1 million-or-more customer of the Harbor Department.

A major portion of the increase, Ban said, will be 150,000 to 200,000 tons of steel products from the Wakayama works of Sumitomo Metals Industries, Ltd.

According to Ban, until recently Sumitomo’s Wakayama steel had been imported into this country through another port.

“But a little more than two years ago,” Ban told the Harbor Commission, “the City of Los Angeles and the Prefecture (state) of Wakayama signed a trade agreement. Commissioner Wada was one of the signatories for Los Angeles.

“Because of that, Wakayama Prefectural Governor Masao Ohashi used his influence to favor the Port of Los Angeles when it became time for contracts to be renegotiated.”

Harbor Commissioner Frank C. Sullivan noted that “while these trade agreements of the City of Los Angeles are strictly unofficial, with no legal power, they and city’s trade missions do establish friendly relations that help increase business through the Port of Los Angeles.”

Ban thanked the Harbor Commission for “the big help,” on both sides of the Pacific, they had given him, saying he would “endeavor to bring more and more trade to and through Los Angeles.

If it were not for unofficial quotas on steel imports from Japan, he added, he believed he could even now be importing much more.

Ban ended his remarks, after saying he hopes the growth of the Port of Los Angeles would continue uninterrupted, with a deep bow, Japanese style, to the commission. The bow was returned by Commission President Sullivan. (Port of Los Angeles)

L. A. Port Praised

Los Angeles, Calif., May 19:— Writing as one congressman to another, Michigan’s John D. Dingell has high praise for the operation of the Port of Los Angeles, and thinks other American ports would do well to follow its lead.

Dingell’s views, in a letter to Maryland’s Congressman Edward A. Garmatz, were made public Wednesday (May 19) when Los Angeles Harbor Commission President Frank C. Sullivan read a copy of the letter at the board’s weekly meeting.

Dingell, a member of the house Merchant Marine and Fisheries Committee, told committee chairman Garmanzt he’s “had the opportunity to observe the splendid job done by the port authority in handling heavy traffic at the busy port” of Los Angeles.

“That port does one of the best jobs of handling traffic ... I have ever seen,” Dingell wrote, “both by coordinating the intelligent use of its pilots and utilizing a large capable shore based radar coordinated with VHF radio telephone and closed circuit teletype.”

In February, Dingell chaired a special house subcommittee studying port traffic safety. This followed the January 19 collision, in San Francisco Bay, of the tankers Oregon Standard and Arizona Standard, with subsequent oil spillage. Hearings were held in both San Francisco and Los Angeles.

Sullivan later wrote Dingell and other federal officials, urging a federal Marine Traffic System be instituted for the Port of Los Angeles. In his letter, Sullivan outlined current traffic safety procedures in use at the port.

The hearings, Dingell wrote Garmatz, “led me to the clear conclusion that the kind of system outlined by (board) President Sullivan ... is clearly a necessity in every major port, and in heavily congested waterways . . .”

Legislation covering harbor traffic safety procedures with “positive controls in port areas,” Dingell added, is “an absolute necessity if other disasters in the harbors of . . . our major cities is to be avoided.” (Port of Los Angeles)

Coastal Development

Los Angeles, Calif., May 12:— California is being short-changed in the matter of coastal development, but there is an organization trying to correct the situation, a Los Angeles Area Chamber of Commerce committee meeting was told Tuesday.

The organization is the newly-formed California Marine Affairs and Navigation Conference (CMA-N). Proposed remedies were outlined by its president, Lawrence L. Whitenuck, chief engineer of the Los Angeles Harbor Department, at a meeting of the chamber’s Maritime and Harbor Affairs Committee.

Since the national government was formed, Whitenuck said, it has collected $45 billion in customs duties, but has spent only $1.5 billion on navigation channel development. Local governments have added an additional $3.7 billion.

In 1969, he continued, customs brought in some $3 billion, of which only $35.9 million was spent on navigation channels.

And neither in relation to its size or its needs, Whitenuck charged, is California receiving a fair share of coastal development funds from the federal government.

“California’s underwater coastal
areas represent its greatest—and least developed—area of potential resources," Whiteneck said. He urged that the state’s entire 1,500 miles of coastline be developed according to an integrated plan.

"Changes along the coast in one spot can affect what happens at another spot miles away," he explained. "San Pedro Bay can be affected by what happens as far south as Newport Beach or as far north as Ventura."

CMANC, Whiteneck said, was organized from two earlier groups interested in, respectively, small boat harbors and commercial ports. The combined forces plan to support coordinated requests for funds for harbor and coastal development, either from state or federal government.

Additionally, CMANC will urge local input of planning in overall development of the state’s coastline, opposing "from the top" planning in Sacramento and Washington that does not take into consideration local desires and needs.

Whiteneck particularly urged chamber members to contact their congressional representatives to support increased appropriations for a hydraulic study model of San Pedro Bay. He said an appropriation for $350,000 was included in the proposed President’s budget for the coming year, but that at least $500,000 is needed, and the entire project will cost about $1.6 million.

"Because of an inadequate budget," Whiteneck said, "the model study project will be delayed at least a year, and because of that, coastal development planning in many areas is stymied." (Port of Los Angeles)

**Port Economic Benefits**

New Orleans, La., April 26—Economic benefits totaling $226,671,721 to the local New Orleans area were realized from the movement of 22,815,632 tons of foreign waterborne commerce thru the Port of New Orleans during calendar 1970, according to a study just completed by port statisticians.

The tonnage figures were supplied by U.S. Department of Commerce and the per-ton benefits are based on projections of figures reported by the Commerce Department’s Maritime Administration in a publication entitled “The Economic Impact of U.S. Ocean Ports.”

Port economic benefits are computed by averaging costs for handling various commodity groups, based on actual costs tabulated in U.S. ports. They do not take into account cost factors relating to movement of the cargo to and from the port area.

Economists estimate that money generated by port activity turns over four or more times in spending channels before leaving the community. Total benefit to the New Orleans area economy, therefore, was close to $1 billion.

A total of 7,835,383 short tons of general cargo, handled at an average cost of $19.21 a ton, provided a total port benefit of $150,517,707—largest commodity group in the study. Tanker cargo (refined and crude) totaled 2,742,885 tons, was handled at $4.57 a ton and produced a total benefit of $12,534,984.

Coal and coke moving thru the port weighed 491,626 tons and, at a per-ton handling cost of $3.14, delivered a total port benefit of $1,543,706.

Grain and soybeans totaled 7,260,581 tons, with a per-ton cost of $7.35 and a total port benefit of $53,365,270. Ores totaled 1,080,371 tons, with a per-ton cost of $3.65 and a total benefit of $3,943,354. All other commodities totaled 3,404,786 tons, with an average per-ton cost of $1.40 and a total port benefit of $4,766,700.

Port benefits cover port terminal expenditures and consist of pilotage, tug hire, line running, dockage, government charges (including immigration service, entrance and clearance fees); labor—stevedoring, clerking, checking, cleaning and carpentry, repairs, supplies (includes dunnage doctor, laundry and dunnage doctor); bunkers—coal, oil and water; miscellaneous vessel disbursements; port terminal income (includes car loading and unloading, handling and storage, and demurrage); rail and motor freight revenue credited to area; auxiliary services (steamship agents, foreign forwarders, customhouse brokers, public warehouse companies, marine insurance companies, and foreign departments of area banks.

All of the port benefit data is based on a study initially made in 1966 by the Maritime Administration. (Port of New Orleans Press Release)

**Port Assisted by PNYA**

Camden, N.J., May 7—At the request of Chairman Edward J. McManimon, Jr. of the South Jersey Port Corporation, Camden, New Jersey, The Port of New York Authority will assist the South Jersey Port Corporation by providing executive staff assistance. This was announced jointly today by Chairman James C. Kellogg III of the bi-state agency and Chairman McManimon of the Port Corporation.

Robert L. Pettegrew of the Port Authority’s Planning and Development Department staff, has become Executive Director of the South Jersey Port Corporation as part of the arrangement.

Chairman McManimon said that as the South Jersey Port Corporation’s first Executive Director, Mr. Pettegrew will direct staff in carrying out policies during a period of great challenge and potential growth.

The South Jersey Port Corporation was established in January 1969 to operate the Camden Marine Terminal. It has recently purchased the former New York Ship Building Corporation properties in Camden County, New Jersey, and is planning to convert these properties into modern marine terminal facilities. The Corporation is the successor organization to the South Jersey Port Commission and acts as the sole agency of the State of New Jersey for port development in the South Jersey Port District which encompasses the counties of Mercer, Burlington, Camden, Gloucester, Salem, Cumberland and Cape May.

Chairman McManimon said: "We are very pleased with the arrangement, which was approved unanimously by the Board of Directors at its public meeting of April 21."

Mr. Pettegrew is joining the South Jersey Port Corporation as part of a program in which outstanding Port Authority staff members are assigned to managerial positions in other departments of the bi-state agency or in other organizations. Under this program, such staff mem-
Lighterage Opposed

Mr. C. Kellogg III, Chairman of The Port of New York Authority, announced today that the bi-state agency will vigorously oppose the Penn Central Railroad’s proposal to impose a charge for lighterage service in the Port of New York. The railroad announced yesterday that it is taking steps to establish a charge of $15.08 per cent ton for cargo moved by lighter in the Port of New York.

Chairman Kellogg pointed out that “almost since the inception of railroad service to and from New York, the railroads have provided lighterage service from the New Jersey railheads to points and piers throughout the Harbor. Until the present time, there has never been an additional charge for this service, lighterage being considered an extension of the line of each of the railroads.”

At the present time, the great bulk of lighterage service is to and from steamship piers in Brooklyn. “The imposition of the Penn Central’s proposed new charge for lighterage,” Chairman Kellogg said, “will severely affect steamship operations on the Brooklyn waterfront. We believe the result of any such charge will be to drive the steamship lines now using Brooklyn to other ports with a consequent loss of traffic, employment and other benefits which Brooklyn now receives from its docks and piers.”

“The Port Authority will, therefore, oppose this proposal in every available forum, as we have opposed similar attacks on the harbor’s lighterage service over the past 50 years.” (New from The Port of New York Authority)

PAD Line

Oakland, Calif., April 7:—Pacific Australia Direct Line introduced roll-on/roll-off service to Northern California when the company’s new vessel Paralla arrived at the Port of Oakland April 3.

PAD, which has served Australia through the Port for more than three decades, established the base for its new roll-on/roll-off operation at Oakland’s 140-acre Seventh Street Terminal.

The cargo handling method employed by the Paralla is termed roll-on/roll-off because freight is actually driven aboard the ship via a 150-ton angled stern ramp which lowers onto the wharf. Additional ramps provide internal connections to each of the ship’s four cargo decks.

The Paralla carries her own cargo-handling equipment for loading and discharging operations. Included are four straddle carriers, six forklifts and a side loader for 40-foot containers. The ship also has two 18-ton cranes that provide vertical access to all decks.

PAD official selected the roll-on/roll-off system after careful study, believing it combines the best features of containerization, unitization and break-bulk techniques. While containerized cargo is expected to be an important portion of their tonnage, a number of products in the Australia-West Coast trade do not lend themselves well to containerization. Examples are heavy earth moving machinery and farm equipment, lumber, wood pulp, sheet steel, pipe and similar commodities.

The Paralla, along with two sister ships, will form an international fleet of vessels for PAD’s new service. The Paralla flies the Swedish flag; a second vessel, the Allunga, will be of Australian registry; and a yet-to-be-completed third vessel will fly the British ensign.

The three ships are 653 feet long, of 20,300-ton deadweight capacity and feature a speed of 22½ knots. Each will offer 1.8 million cubic feet of inside cargo space, plus the weather deck which has nearly 300,000 cubic feet of freight space.

When the latter two ships are incorporated into the PAD operation later this year, the company will offer service every three weeks between ports in the Adelaide/Townsville range of Australia and the Pacific Coast. (Port of Oakland)

1971-72 Budget

San Diego, Calif., May 18:—A preliminary budget for 1971-72 fiscal year was distributed to Unified Port
District Commissioners at Tuesday's board meeting with total proposed budgetary requirements down $300,000 from last year.

Gabriel J. Gallina, Assistant Port Director, noted that year-end undistributed reserves will not be reduced as expected because revenues were greater than anticipated, and less expenditures for pay-as-you-go capital that budgeted. (Greater emphasis was placed on bond projects during this fiscal year.)

Revenues are expected to be "about the same next year," he noted "with the principal difference expected in interest income. It'll be down next year about $300,000 because of a smaller 'carry-over' reserve and lower prevailing interest rates than those enjoyed last year." He told Commissioners, however, that he expects revenue increases from operations to offset this anticipated loss.

The capital outlay part of the budget is reduced by almost two-thirds in 1970-71 "because emphasis will be placed on bond related projects next year," he explained.

A net of sixteen additional personnel are requested with significant increases in personnel in marketing, planning and harbor police. (Port of San Diego News Release)

Man-of-the-Year

Seattle, Wash., May 21—J. Eldon Opheim, general manager of the Port of Seattle, was today named the Maritime Man-of-the-Year by the Puget Sound Maritime Press Association. Opheim is the 21st recipient of the award which is given to the person who has contributed the most to the maritime field in the Puget Sound area. The award was announced by Martin L. Erickson, president of the Maritime Press Association, at the annual Maritime Day luncheon sponsored jointly by the Seattle Chamber of Commerce and the Propeller Club and held at the Olympic Hotel.

Opheim became general manager of the Port of Seattle in 1964 after several years as controller and assistant general manager. During his seven years of direct leadership of the Port, the market value has more than tripled and Seattle has been an unexcelled period of waterfront and airport growth. Seattle has become the No. 1 port on the West Coast in the handling of OCP cargoes— cargoes arriving from the Pacific Rim countries and destined for delivery beyond the Rockies. The new export grain terminal at Pier 96, deepest in the world, the big container complex at Terminal 18, development of the Duwamish Industrial Waterway and the soon-to-be trans-European container terminal at Pier 25 are all major accomplishments and additions to the Port under his stewardship.

Opheim joins a distinguished roster of previous Maritime Men-of-the-Year including today's principle speaker, Warren G. Magnuson, senior senator from Washington, who was named in 1956. (Puget Sound Maritime Press Association)

O.C.P. via Seattle

Seattle, Wash., April 29.—The Port of Seattle has been named the official port of entry for Datsun cars and truck destined for delivery to the mid-west and east coast, according to Karl A. Henning, National Car Distribution Manager for Nissan Motor Corporation in U.S.A. Cargo originating in the Pacific Rim countries and destined for delivery beyond the Rockies is known as O.C.P. or overland common point. Since the Port of Seattle is the nearest to the Orient via the Great Circle Route—only 8 days by record-breaking cargoliner — and only 56 hours by rail to Chicago, it seemed a logical, and most economical choice for Nissan motors to route its ships, each with nearly 2,000 Datsuns, to Seattle for rapid transit to the mid-west and eastern markets. Los Angeles, headquarters for Nissan in the U.S., will receive Datsuns for other mid-west and east coast areas not conveniently served by the Port of Seattle.

This marketing concept via the Port of Seattle's O.C.P. system was arrived at by careful study of the results of a 3-month experimental run just ended in which the Port, Nissan, Burlington Northern Railroad and Auto Warehousing Co. of Seattle teamed up to bring in several shiploads of Datsuns to Pier 91. It was a simple task to off-load thousands of Datsuns, place them on special auto carrying railcars which Burlington Northern had brought out from Detroit with U.S. vehicles for west coast markets, and then ship the Datsuns back east in quick time. Having Datsun's own special auto carrying ships coming direct to Seattle amounts to more than 22 days saved in running time per ship per voyage, when compared with the old system of sailing directly to the east coast—almost 11,000 miles longer roundtrip. Since ships cost several thousands of dollars to operate, it is easy to see that delivery via the Port of Seattle would cost less that half just in ship's operating time alone. Since there is a critical ship shortage in Japan these days, the shorter turnaround of vessels calling at Seattle (18 days roundtrip via Seattle versus 40 to east coast ports), gives Nissan a double fleet in effect, and tends to relieve the vessel shortage for Japan.

Several ports on the west coast were considered and results computed. The Port of Seattle's natural advantages, modern facilities and closeness to markets helped cinch the bargain. Supplmenting these advantages were the services and facilities of Burlington Northern and Auto Warehousing.

Working with Henning in this effort were J. Eldon Opheim, general manager of the Port of Seattle and his Far Eastern Representative Taul Watanabe who conducted the project from the beginning. For Burlington Northern, two vice presidents worked on the project, Mal Scanlon of marketing and traffic and George Diefel of real estate.

Jim Stein, Auto Warehousing's president, provided the quick transfers from discharge off ship to the loading on railcars and their unloading in Chicago. His firm handles most of the incoming import cars through the Port.

This business, which is in addition to all Datsuns arriving at the Port for local deliveries, is one more foundation block in local economy. Some 3,500 Datsuns each month will enter the Port of Seattle for this O.C.P. traffic, plus the Datsuns arriving for local distribution.

It is interesting to note that the Pier 91 area, known as Smith Cove, was in the news in a similar way
over 60 years ago when the famous Silk Trains stood by with steam up to receive bales of raw silk from Japan from ships docking at Pier 88. Trains were sometimes loaded and underway in 3 hours and rushed with white flags flying on highest priority orders to the east coast in only 75 hours. It's the same Smith Cove, the same railbed, but now it's Datsuns.

And it's still the fastest ship-rail transport in the country, as history repeats itself. (News Release from Port of Seattle)

American Memorial Day

Sydney, 26th May: — American Servicemen who visited Sydney during the Second World War will be remembered in a ceremony at a memorial situated in Sommerville Road, Glebe Island, at 12 noon on Friday, 28th May, 1971. This was announced today by the Maritime Services Board.

The Ceremony is held each year on a week day near the 30th May, American Memorial Day, which is regarded as being a day of remembrance in America for ex-service personnel.

The memorial commemorates the first landing of American Armed Forces at the Port of Sydney on 28th March, 1942, and the fact that 1,000,000 U.S. personnel and 5,000-000 tons of U.S. war materials were transported through the Port of Sydney and were handled by the N.S.W. Government Railways during the Second World War.

Glebe Island was the principal site of U.S. Army Operations in the Port of Sydney which was a major base for Allied operations in the South West Pacific Area.

At the ceremony wreaths will be laid on the Memorial by the Hon. J.C. Maddison, B.A., LL.B., M.L.A., Minister of Justice, representing the Premier, Mr. J. L. O'Sullivan, the American Consul General in Sydney, Mr. G. P. Hill, Acting President of the Maritime Services Board, Mr. D. H. Watson, representing the Commissioner for Railways, representatives of the Navy, Army and Air Force and representatives of American organisations in Sydney.

The ceremony is usually attended by a number of prominent American Citizens resident in Sydney and it is also open to members of the public. (The Maritime Services Board of N.S.W.)

30th Anniversary

Tokyo, May 20:—The 30th anniversary of the opening of the Port of Tokyo as a trade port will be celebrated today with the holding of a port festival and various other commemorative functions.

The port was designated as an international trading port in May 1941.

Since then, it has grown into one of Japan's largest ports.

According to port officials, a total of 76,816 ships, aggregating some 38 million g/t, called at Tokyo Port last year.

They included 2,796 oceangoing vessels, aggregating some 15 million g/t.

The port has berths and piers extending a total of 8,779 meters, or five times that at the time of its opening.

It also has 23 gantry cranes and 27 sheds and open-air cargo storage space covering an area of 1,024,135 square meters.

The Tokyo Metropolitan Government is now pushing its second plan to improve and expand the port at a total cost of ¥300,000 million.

When the plan is completed in 1975, the port will be able to handle 72,450,000 tons of cargoes annually, or 10 times the volume at the time of its opening.

The port also will boast 96 berths, extending a total length of 20,983 meters. (Shipping and Trade News)

Flat Racks

Tokyo, May 25:—First additional deliveries of highly versatile flat rack containers have been made here to Australia Japan Container Line Ltd. (AJCL).

AJCL recently ordered 150 more of these special-purpose containers in view of their popularity with shippers on the Australia-Japan container route.

Flat rack containers have a fixed floor and frame, with removable roof and sides. They are ideal for transporting heavy or bulky cargo, such as machinery and metal prod-
ucts. They are also used for bagged commodities, including agricultural produce.

When deliveries of the 150 extra flat racks are completed in June, AJCL will have a total of 300 of these special-purpose containers to offer shippers.

AJCL, represented in Japan by Swire Mackinnon, operates a regular container service between Japan and Australia. Photo shows a complete flat rack container.

**Bulk Container**

Tokyo, May 12:—A special-type bulk container to be used by Overseas Containers Limited on its Japan/Europe through-transport container service beginning early in 1972, was recently displayed at the AJCL depot in Yokohama by Swire Mackinnon, the OCL agents in Japan.

Executives of major Japanese trading firms and manufacturers were invited to inspect the many advantages of the bulk container and to acquaint themselves with the loading-unloading process of such containers.

OCL staff personnel were on hand to explain details of the Australian-made twenty-foot steel bulk container, which is used for transporting bulk commodities such as wheat, corn, malt grain, beans and synthetic resin.

Among its unusual design features are three holes on the top through which commodities are blow-packed. The bottom of the container opens during unpacking, which is accomplished almost instantaneously by crane-lifting the container to a slanting position.

Among those inspecting the bulk container was Mr. Ken Ochiai of Shell Kagaku K.K., who said, “We export our company’s main product, synthetic resin, in paper bags. This requires much time and is an expensive method of packaging. Quite often, bags are torn during shipment. It seems quite obvious that bulk container shipment is simpler and more efficient. I hope to try a test shipment of plastic resin via OCL dry container very soon.”

Photo shows executives of Japanese trading companies inspecting the bulk container. (OCL Press Release)

**Container Terminal**

Hong Kong, 6 May:—Three million cubic yards of seabed material is to be dredged from Rambler Channel in connection with the construction of the Kwai Chung Container Terminal. The Government will carry out the dredging under the conditions of sale of the container terminal land. The approach channel to the berths will be dredged to a depth of 40 feet below Chart Datum, which is the minimum depth required for large container ships expected to use the terminal.

Three container berths are now under construction by the purchasers of the lots.

**Easter Ferry Service**

Penang:—The first of the two new ferries, the “Pulau Redang”, will be arriving Penang during the first half of May this year, and it is very likely that she will join the service at the end of May. The eighth ferry “Pulau Labuan” would follow in four months time.

With the addition of the “Pulau
Supertankers

Whangarei, N.Z.—Marsden Point hit the headlines early this year with the arrival on January 28 of the largest ship yet to come to New Zealand.

She was the 103,998-ton Mobil supertanker Aramis which carried 77,400 tons of crude oil and 22,000 tons of naphtha from the Persian Gulf for the refinery.

Her arrival was in the middle of a particularly busy time for Marsden Point with five visits from tankers over 90,000 tons dwt.

Starting the year off, the 101,282-ton Mobil Astral and 94,411-ton Tasman Maru preceded the Aramis in January, while the 101,307-ton Mobil Comet arrived in February and the Tasman Maru returned in March.

The Aramis, over 900 ft long and with a 127 ft beam, was shepherded in by the Northland Harbour Board’s four big tugs. Sitting low in the water with 50 ft 2 in below the surface, she berthed at the refinery’s discharge jetty.

 Owned by Mobil Oil Francaise and named after one of “The Three Musketeers” in Alexandre Dumas’ novel, the Aramis is 91,000 tons over 16,000 sq. yds., of land from the Mersey Docks and Harbour Board, adjacent to the £40 million Seaforth Dock which will be commissioned at the end of the year.

Described as vital to the Kellogg Company’s expansion plans for their factory at Trafford Park, Manchester, the installation will be the largest Corn Mill in Europe and will be supplied from the Dock Board’s Grain Terminal now in an advanced state of construction as part of the Seaforth complex. The Terminal will be capable of handling 75,000 ton bulk grain carriers.

The mill has been designed by the Company’s own engineering and design staff at Manchester and will have a direct conveyor link with the Seaforth Grain Terminal capable of delivering 500 tons per hour to re-inforced concrete silos 32 feet in diameter and 120 feet high with a capacity of 7,500 tons. All the mill’s conveying equipment will be the most advanced in design in the world.

The initial capacity of the mill, which is expected to be in operation by the summer of 1972, will be 30 tons per hour and this can be extended to 45 tons per hour in the future. The installation will be operated on a ‘round-the-clock’ basis five days a week.

Tokyo, May 13.—Mr. Anders Hillerstrom, center, a Director of Australia Japan Container Line (AJCL), was introduced to local shipping and business leaders at a reception at the Okura Hotel Tuesday.

Mr. Hillerstrom, who is also a Director of Overseas Containers (Australia) Ltd., based in Sydney, is currently visiting his agents in Japan, Swire Mackinnon, to study AJCL’s operations and marketing activities in this country. The company operates a direct container service between Australia and Japan. Pictured with Mr. Hillerstrom are Mr. Y. Tanaka, left, Sales and Marketing Manager for AJCL in Japan, and Mr. Y. Arimoto, right, a senior Swire Mackinnon executive. (AJCL News)

The mill has been designed in close co-operation with the Borough Engineer of Crosby and their Consultants to be acceptable to local residents. Particular attention has been given to the limitation of noise level, and the most modern air filter systems have been designed to prevent any dust nuisance. Gas fired boilers supply the 5,000 h.p. electric power necessary for the machinery.

The mill will process maize from South America and South Africa.

The Kellogg Company export some 10% of their output from their Trafford Park factory and much of this bound for destinations such as Japan and Venezuela is exported through Liverpool. They also use the port for imports of American rice amounting to some 50% of the total tonnage into Britain. (Mersey Docks and Harbour Board)

Tilbury Grain Terminal

London, 14th May.—A fine achievement, believed to be a world record for two Marine Leg grain discharging towers, was reached yesterday (May 13th) at the Port of London Authority’s 26 million Tilbury Grain Terminal.

The two Terminal shifts working the “BONANZA”, which had arrived with 25,000 tons of Australian
grain, discharged a total of 19,582 tons in the 14 hours working day.

The first shift at 7.00 a.m. and completed 10,593 tons by change-over time at 2.00 p.m. This beat the previous best at the Terminal by 1,123 tons; the record set up last October on "OLYMPIC PEARL" was 9,470 tons. At that time two consecutive shifts out-turned 16,630 tons and yesterday's performance exceeded this by 2,952 tons.

Colin Betts, the Grain Terminal manager, is at present in Australia discussing forward shipments with grain exporters. He had the success story flashed to him by Doug Wright, his deputy, who said: "We had everything going for us, including a spell of good weather, and we made the most of our opportunities.” (News from PLA)

Southampton

London, 19 May:—A standard shipping note is to be introduced by the British Transport Docks Board at Southampton on Monday, 14th June, for goods forwarded to the port by road and rail for shipment.

The new note, which is similar to those already in use in London and the Tees, will apply to all services operating from Southampton except the British Rail Channel Islands Service and the cross-Channel ferries operated by Thoresen Car Ferries, Normandy Ferries, Southern Ferries and Swedish Lloyd; full containerload traffic delivered direct to the Container Terminals is also excluded, but where loose cargo is sent for consolidation at the Docks Board's Container Depot the new shipping note will apply.

Use of the standard shipping note will become compulsory from Monday, 13th September, 1971, and after that date all goods subject to the new system must be accompanied by a properly completed standard note when presented at the docks. If a standard note is not provided or is incorrectly completed, the Docks Board will prepare one, charging £1 for the service.

Describing the method of using the new standard note, which consists of an aligned, colour-coded and numbered six-part set, a Docks Board spokesman explained that the company preparing the note should retain Copy No. 6 (white), presenting copies 1–5 with the goods. Copy No. 5 would then be returned to the driver as a receipt for the goods received and copies 1–4 would be retained for port use.

Supplies of the new note are available free of charge from local agents in Southampton or direct from the British Transport Docks Board, Dock House, Canute Road, Southampton, S09 1PZ. Postal applications should be marked 'Shipping Note' and include an addressed label, stamped to the value of 9p for first class postage on a packet of ten sets, 20p for 20 sets, 30p for 30 sets, 45p for 40 or 50 sets, and 60p for 60 sets. (British Transport Docks Board)

Inflatable Transit Shed

London, 27 April:—A 30,000 sq.ft. Polydrom Air Structure supplied by Youngman System Building Limited, of Crawley, believed to be the first inflatable building used in a British port, is being installed by the British Transport Docks Board this week (ending 30th April) at Cardiff Docks for use as a transit shed for the increasing tonnages of imported fruit passing through the port.

The Polydrom, a dome-shaped structure some 60 ft. in height, 250 ft. in length and 120 ft. in width, is being sited at Bell's Wharf, at the eastern end of the north side of Queen Alexandra Dock, at a cost of about £20,000. Manufactured in Sweden by Polydrom AB, of Enkopping, the building is a frameless structure fabricated from PVC reinforced with woven nylon, anchored to the ground at the periphery and supported by air at low pressure. It is capable of withstanding winds of up to 90 m.p.h.

Following preparatory work, erection of the Polydrom is expected to take four or five days, and the final stage of inflating the structure is scheduled to begin at 1400 hrs. on Wednesday (28 April).

The low-pressure air supply is provided continuously by a double fan unit, with an emergency diesel generator as an automatic standby in the event of power failure. Access points to the building are of three types: an air lock, 40 ft. long, 13 ft. high, and 10 ft. wide, which permits the entry of road vehicles collecting or delivering cargo; an air curtain which provides an opening of the same height and width for continuous use by mobile equipment during working hours; and three emergency personnel exits.

The Polydrom is particularly well-suited for the storage of fresh fruit, as the reflective qualities of its fabric result in an internal temperature several degrees below ambient temperatures outside. Light penetration permits work to proceed without artificial lighting during daylight hours. Portable floodlights will be used at other times.

The Polydrom is the second project announced by the Docks Board recently to cater for the growth of general cargo trade, particularly fruit imports, at Cardiff. A £350,000 redevelopment is already under way at Queen Alexandra Dock which will provide a permanent new 90,000 sq. ft. transit shed early next year to cater for an estimated extra 90,000 tons of trade a year.

The inflatable shed will provide valuable additional storage accommodation in the interim and will almost certainly continue in use after the redevelopment is completed. The fact that it is portable also means that it could easily be transferred to another site, possibly to meet increased demand for transit accommodation at another Docks Board port. (British Transport Docks Board)

New Chairman, B.T.D.B.

London:—Sir Humphrey Browne was appointed chairman of the British Transport Docks Board from 1 May 1971. He is also deputy-chairman of the Woodall-Duckham Group, and becomes chairman in July 1971. He has spent most of his working life in the coal industry, and was deputy chairman of the National Coal Board from 1960 to 1967. Sir Humphrey received his C.B.E. in 1952, and was knighted in 1964. He is a Fellow of the British Institute of Management.
Career Details
Chairman, British Transport Docks Board, May 1971.
Director, Bestobell Ltd., 1969.
Chairman of the West Midlands Division, National Coal Board, 1953–1960.
Production Director, North Western Divisional Coal Board, 1947–1948.
General Manager and Director, Manchester Collieries Limited, 1943.
Manager, Chanter's Colliery, 1936.
Joined Manchester Collieries Limited, 1932.

Other Offices
Member, Commonwealth Development Corporation since 1969.
President, Institution of Mining Engineers, 1957.
Member, Clean Air Council, 1960–1967.

Personal Details
Born at Astley, Warwickshire on 7th April 1911.
Educated at Report; Magdalen College, Cambridge.
Married 1934; two sons.
Hobbies are shooting, fishing and gardening.

Bridge at Southampton
London, 24 May:–A contract valued at over £300,000 has been awarded by the British Transport Docks Board to Brims and Company Limited, of Southampton, for the construction of a major new dual carriageway road bridge to cross the main London/Bournemouth railway line and provide a completely new access route for road traffic to the container berths at Southampton's Western Docks Extension.

By using this new route, heavy road vehicles carrying containers will avoid Southampton city centre completely, passing to and from the Western Docks Extension direct to the trunk road system.

Commenting on the announcement of the contract, Mr. Donald Stringer, port director, Southampton, said the new bridge would bring important benefits both to port users and to the people of Southampton.

"Whilst I feel that the people of Southampton welcome, by and large, the tremendous development taking place in their port, they have naturally felt concerned that the economic advantages should not be outweighed by environmental disadvantages.

"From the outset the Docks Board have been conscious of the possible impact of the dramatic growth of container trade, which we estimate, on known business, will reach 1,000 container movements daily over the next two years," he said.

"We have planned accordingly, and this new bridge, together with the improved link road being provided by Southampton Corporation to connect it with the Millbrook roundabout, will carry virtually all the additional, as well as much of the existing, heavy docks traffic away from the city centre."

For port users, Mr. Stringer went on, the new bridge represented a major step towards improving inland access to the port. Southampton's easy accessibility to shipping had been a vital factor in attracting new business, but if the port was to deal with that business completely successfully road and rail links with the rest of the country must be equal to the task.

"The new bridge, which is an integral part of the Western Docks Extension project, will give direct and speedy access to the container berths and avoid the problems of congestion which have bedevilled the ports industry in the past," he said.

The new bridge will have an overall width of 67 ft., with dual 24 ft. carriageways, two 7 ft. footpaths and a 5 ft. central reservation. Overall length of the bridge, including approaches, will be 1,067 ft., of which 557 ft. will be suspended.

Eleven arches with a maximum clearance of 16 ft. will carry the new access road over both the new railway line and the major Maritime Freighliner Terminal being constructed by Freightliners Ltd.

Work on the bridge, which is part of the current £14 million extension being carried out at the Container Terminal, will begin immediately, and is scheduled for completion early in 1972. (British Transport Docks Board)

Old Freighters Doomed
Bremen:—The increase and strengthening of the container services operating on the universal trading highways between Europe, North-America and Japan will soon result in 800 conventional freighters becoming superfluous. A total of 212 ships will be put into service for the combined trade on these routes by 1973/74, which will—according to the Institute for Maritime Economy, Bremen's publication "Statistik der Schiffahrt"—have the effect of 847 conventional freighters having to be withdrawn from these trades.

This will be seen to be exactly four times the number of the new specialised ships. Particularly pronounced is the relationship between the old and the new type of freight vessels operating in trades requiring the covering of greatest distances. Thus on the Europe-Australia service there are 19 containerships as opposed to 117 conventional type freighters. For the freight trade between Western Europe and the Far East the proportion is given as 23, against 172 units; and for that between Western Europe and North-America as 66 to 240. (Bremen Air Mail, May)

Fast Container Handling
Bremerhaven:—The container terminals in Bremen and Bremerhaven did a roaring trade also in April 1971. In the first 7 days 14 full-container ships handled 4,503 containers. The m.v. "Euroliner" of Messrs. Seatrain Lines, for instance,
Europe-Africa

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Gas-Turbine Containership

Bremen:—The container fleet is becoming ever more diverse. At the end of March 1971 the Rheinstahl Nordseewerken in Emden delivered the first gas-turbine driven full-container ship, under the name “EUROLINER” to the Scarsdale Shipping Company of London, who have given the gas-turbine vessel on long-term charter to Messrs. Seatrain Lines, for their North Atlantic service. The “EUROLINER” has a displacement of 32,000 tons, a length of 243.3 metres, a beam of 30.5 metres, a side-elevation of 19.2 metres and a draft of 10.7 metres. A double-turbine plant, generating 60,000 s.h.p., gives the ship a speed of 27.9 knots. The improved space-availability, allowed by the gas-turbines, gives the “EUROLINER” a capacity of 816 40-foot-type containers. A centralised AEG-computer constantly controls several hundred measuring instruments within the total engine-range, detecting any incorrect deviation and, as a subordinate system-component, executes spontaneous action in the even of dislocations occurring. All check and control installations are concentrated through to one location. This automated ships-propulsion-system, to include gas-turbines and shaft-generators, is an initial joint-development in the specialised field of ship-building of AEG-Telefunken and the American firm of Turbo Power & Marine Systems—which is one of the Pratt & Whitney group (power-unit manufacturers for the Boeing jet-aircraft) — which, itself, is a subsidiary of the United Aircraft Corporation. Gas-turbines were first to gain significance in aeronautics, they attain their maximum output already three minutes from a cold start. Conventional steam-propulsion plants require several hours for this. (Bremen Air Mail, May)
**Larger Tankers**

Amsterdam:—A working party studying the proposed outer port for Amsterdam at Ijmuiden has concluded that it would be technically feasible to make such a port navigable for ships of us to 180,000 tons. If the port were built on a 100 hectare site and made to accommodate ships of up to 150,000 tons, costs would be about 220 million guilders. On 200 hectares and negotiable for 180,000 ton vessels, the outer port would cost 320 million guilders.

The working party has also studied the feasibility of the construction of new sealoocks at Ijmuiden leading to the North Sea Canal and the Port of Amsterdam itself. This project could be carried out in about 12 years and cost between 400 and 450 million guilders. The working group’s report noted that a real improvement in accessibility to the North Sea Canal area can only be attained by the construction of an outer port.

This conclusion concurs with the points raised in the Inbucon Report which was published last December. Commissioned by the Municipality of Amsterdam, the Shipping Association North and the Amsterdam Chamber of Commerce, the Inbucon Report urged construction of an outer port in order to attract more traffic and industry to the entire Amsterdam-North Sea Canal area.

Recommendations are that the outer port be sited to the south of the present port entrance to take advantage of good existing road and rail connections. The working party was ordered to make the report by the government in The Hague and a final decision on the construction of the facility has been promised before the end of the year. (Amsterdam Newsletter, May)

**Export of Iron Ore**

Lourenço Marques:—Each year that passes shows an increase of traffic in the handled. It is continuously difficult to make forward forecasts because the movement has always turned out to be greater than calculated.

There is naturally an explanation for this—it is in the development of the hinterland areas of the port, which for years has been so bewilderingly rapid as to make an accurate forecast impossible, even by the governments of the countries in those areas.

Recently, just after a contract had been closed with Germany for the supply of some millions of tons of iron ore, there arose an agreement between the Swaziland Mines and Japan for the delivery of 7,500,000 tons of the same ore over and above that already contracted.

In this way, Lourenço Marques, from the middle of next year, will see yet another substantial increase in traffic. (Boletim Portos, Caminhos de Ferro e Transportes de Moçambique, April 1970)
THE SHOWA LINE OPERATES WORLDWIDE

Taking the lead among Japanese shipping companies in August, 1968 in using fully containerized ships on the Japan/Pacific South West Route (P.S.W. Line), the Showa Shipping Co. has exerted its utmost during the past year in the rationalization of container transportation by evolving a transport system for “faster, safer and cheaper transport” of cargoes on a large scale, which is now the motto of transportation revolution. The Showa Line has thus contributed a great deal to the expansion of trade between Japan and the U.S.A. Making active use of the abundant experience and fine record achieved during the past year in the operation of container service, the Showa Line opened in May 1970 a container service on the Japan/Pacific North Route (P.N.W. Line) with a view to responding to the expectation of our shippers. Rely on the Showa Line for container transportation of your cargoes of the Japan/P.N.W. Route.

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WHY SHELL CHOSE YOKOHAMA PNEUMATIC RUBBER FENDERS for lightening operations—for oil jetty service

SHELL knows the importance of dependable equipment. Their shipping operations involve valuable tankers, cargoes and other vessels—all reliably protected with YOKOHAMA PNEUMATIC RUBBER FENDERS. Our pneumatic fenders absorb impacts from contact with other ships, quays, buoys or jetties. Now widely used by whaling fleets, factory ships, tankers and ore carriers around the world, they successfully protect both vessel and cargo. Patented in Japan, the United States, England, Norway and elsewhere—eleven sizes are available according to ship tonnage and impact requirements. A mammoth fender for 500,000 ton tankers (energy absorption 1920 ft-kips (260 ton-m) per piece) is also available.

CONSTRUCTION OF A FENDER
It consists of an outer rubber layer, a reinforcement synthetic cord layer, and an interior rubber layer, and has a rational construction wherein characteristics of respective layers are utilized to the fullest.
We plan ahead

In 1827, a man called Johann Smidt, Mayor of Bremen, founded Bremerhaven. Bremen's port on the open sea. Step by step we have built a modern seaport complex. Planned for the future, geared to modern sea transport.

Bremerhaven has a lot to offer. The Columbus Quay for giant passenger liners. Berths for sea-going ferries. The deep-water iron-ore port, Weserport. Non-tidal docks for efficient handling of both roll-on/roll-off vessels and full-container ships.

We have planned ahead, so that we can give you a service others dream of: two speedy, all-round ports; one of them direct on the sea.

And here we are now building berths on the deep-water channel. For the huge carriers of tomorrow.

We plan ahead.

To keep our service up-to-date.

for your benefit

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Bremen
Bremerhaven

For details write to: Bremer Lagerhaus-Gesellschaft, 29, Bremen, Übelseehafen, Phone 3 89 61, Telex 2 44 840
Kajakmbnltz Bremerhaven der Bremer Lagerhaus-Gesellschaft, 285, Bremen, Stubenstr., Phone 48 41, Telex 2 38 722